



IP Office 5.0

Manager 7.0

Notice

While reasonable efforts were made to ensure that the information in this document was complete and accurate at the time of printing, Avaya Inc. can assume no liability for any errors. Changes and corrections to the information in this document may be incorporated in future releases.

Documentation Disclaimer

Avaya Inc. is not responsible for any modifications, additions, or deletions to the original published version of this documentation unless such modifications, additions, or deletions were performed by Avaya.

Link Disclaimer

Avaya Inc. is not responsible for the contents or reliability of any linked Web sites referenced elsewhere within this Documentation, and Avaya does not necessarily endorse the products, services, or information described or offered within them. We cannot guarantee that these links will work all of the time and we have no control over the availability of the linked pages.

License

USE OR INSTALLATION OF THE PRODUCT INDICATES THE END USER'S ACCEPTANCE OF THE TERMS SET FORTH HEREIN AND THE GENERAL LICENSE TERMS AVAILABLE ON THE AVAYA WEBSITE AT <http://support.avaya.com/LicenseInfo/> ("GENERAL LICENSE TERMS"). IF YOU DO NOT WISH TO BE BOUND BY THESE TERMS, YOU MUST RETURN THE PRODUCT(S) TO THE POINT OF PURCHASE WITHIN TEN (10) DAYS OF DELIVERY FOR A REFUND OR CREDIT.

Avaya grants End User a license within the scope of the license types described below. The applicable number of licenses and units of capacity for which the license is granted will be one (1), unless a different number of licenses or units of capacity is specified in the Documentation or other materials available to End User. "Designated Processor" means a single stand-alone computing device. "Server" means a Designated Processor that hosts a software application to be accessed by multiple users. "Software" means the computer programs in object code, originally licensed by Avaya and ultimately utilized by End User, whether as stand-alone Products or pre-installed on Hardware. "Hardware" means the standard hardware Products, originally sold by Avaya and ultimately utilized by End User.

License Type(s): Designated System(s) License (DS).

End User may install and use each copy of the Software on only one Designated Processor, unless a different number of Designated Processors is indicated in the Documentation or other materials available to End User. Avaya may require the Designated Processor(s) to be identified by type, serial number, feature key, location or other specific designation, or to be provided by End User to Avaya through electronic means established by Avaya specifically for this purpose.

Copyright

Except where expressly stated otherwise, the Product is protected by copyright and other laws respecting proprietary rights. Unauthorized reproduction, transfer, and or use can be a criminal, as well as a civil, offense under the applicable law.

Third-Party Components

Certain software programs or portions thereof included in the Product may contain software distributed under third party agreements ("Third Party Components"), which may contain terms that expand or limit rights to use certain portions of the Product ("Third Party Terms"). Information identifying Third Party Components and the Third Party Terms that apply to them is available on Avaya's web site at: <http://support.avaya.com/ThirdPartyLicense/>

Avaya Fraud Intervention

If you suspect that you are being victimized by toll fraud and you need technical assistance or support, call Technical Service Center Toll Fraud Intervention Hotline at +1-800-643-2353 for the United States and Canada. Suspected security vulnerabilities with Avaya Products should be reported to Avaya by sending mail to: securityalerts@avaya.com. For additional support telephone numbers, see the Avaya Support web site (<http://www.avaya.com/support>).

Trademarks

Avaya and the Avaya logo are registered trademarks of Avaya Inc. in the United States of America and other jurisdictions. Unless otherwise provided in this document, marks identified by "®," "TM" and "SM" are registered marks, trademarks and service marks, respectively, of Avaya Inc. All other trademarks are the property of their respective owners.

Documentation information

For the most current versions of documentation, go to the Avaya Support web site (<http://www.avaya.com/support>) or the IP Office Knowledge Base (<http://marketingtools.avaya.com/knowledgebase/>).

Avaya Support

Avaya provides a telephone number for you to use to report problems or to ask questions about your contact center. The support telephone number is 1 800 628 2888 in the United States. For additional support telephone numbers, see the Avaya Web site: <http://www.avaya.com/support>.

Contents

1. Manager

1.1 What is New in 5.0.....	18
1.2 Installing Manager.....	27
1.3 Starting Manager.....	30
1.4 Connecting Manager to IP Office.....	31
1.4.1 Scenario 1.....	32
1.4.2 Scenario 2.....	33
1.4.3 Scenario 3.....	34
1.4.4 Scenario 4.....	35
1.5 Changing the Manager Language.....	36
1.6 Backward Compatibility.....	37
1.7 IP500 Standard/Professional Edition.....	38
1.8 IP500 Licenses.....	39
1.9 Ports.....	40

2. Configuration Mode

2.1 The Configuration Mode Interface.....	45
2.2 Security Settings.....	46
2.3 Title Bar.....	48
2.4 The Menu Bar.....	49
2.5 Toolbars.....	50
2.6 Using the Navigation Pane.....	52
2.7 Using the Group Pane.....	54
2.8 Using the Details Pane.....	56
2.9 Using the Error Pane.....	58
2.10 Altering the Interface.....	59
2.11 The Status Bar.....	61
2.12 Editing Configuration Settings.....	62
2.12.1 Mergeable Settings.....	63
2.12.2 Configuration Sizes.....	64
2.12.3 Setting the Discovery Addresses.....	65
2.12.4 Loading a Configuration.....	67
2.12.5 Known IP Office Discovery.....	70
2.12.6 Creating a New Configuration.....	72
2.12.7 Importing and Exporting Settings.....	73
2.12.8 Copying and Pasting.....	75
2.12.9 Saving a Configuration Offline.....	75
2.12.10 Sending a Configuration.....	76
2.12.11 Erasing the IP Office Configuration.....	78
2.12.12 Default Settings.....	78

3. Security Mode

3.1 Security Settings.....	81
3.2 Default Security Users.....	83
3.3 The Security Mode Interface.....	84
3.4 Security Administration.....	86
3.5 Editing Security Settings.....	95
3.5.1 General Settings.....	98
3.5.2 System.....	100
3.5.3 Services Settings.....	105
3.5.4 Rights Groups.....	106
3.5.5 Service User Settings.....	110

4. Menu Bar Commands

4.1 Configuration Mode.....	115
4.1.1 File Menu.....	115

4.1.2 View.....	136
4.1.3 Tools Menu.....	137
4.2 Security Mode.....	141
4.2.1 Open Security Settings.....	141
4.2.2 Close Security Settings.....	141
4.2.3 Save Security Settings.....	141
4.2.4 Reset Security Settings.....	141
4.2.5 Preferences.....	141
4.2.6 Exit.....	141
4.2.7 Configuration.....	141

5. Configuration Settings

5.1 BOOTP.....	146
5.2 Operator.....	147
5.3 System.....	148
5.3.1 System.....	149
5.3.2 LAN1.....	152
5.3.3 LAN2.....	162
5.3.4 DNS.....	163
5.3.5 Voicemail.....	164
5.3.6 Telephony.....	166
5.3.7 Directory Services.....	172
5.3.8 System Events.....	181
5.3.9 SMTP.....	185
5.3.10 Twinning.....	185
5.3.11 SMDR.....	187
5.3.12 VCM.....	189
5.3.13 CCR.....	192
5.4 Line Settings.....	193
5.4.1 Analog Line.....	194
5.4.2 BRI Line.....	198
5.4.3 E1 Line.....	202
5.4.4 E1R2 Line.....	209
5.4.5 T1 Line.....	213
5.4.6 T1 PRI Line.....	218
5.4.7 S0 Line.....	225
5.4.8 H323 Line.....	229
5.4.9 IP DECT Line.....	236
5.4.10 SIP Line.....	240
5.4.11 SES Line.....	248
5.5 Control Unit.....	253
5.6 Extension Settings.....	255
5.6.1 Extn.....	256
5.6.2 Analog.....	258
5.6.3 VoIP.....	260
5.6.4 T38 Fax.....	264
5.6.5 IP DECT.....	265
5.7 User Settings.....	266
5.7.1 User.....	268
5.7.2 Voicemail.....	270
5.7.3 DND.....	273
5.7.4 Short Codes.....	274
5.7.5 Source Numbers.....	275
5.7.6 Telephony.....	277
5.7.7 Forwarding.....	284
5.7.8 Dial In.....	286
5.7.9 Voice Recording.....	287
5.7.10 Coverage.....	288

5.7.11 Button Programming.....	290	5.21.2 IP Security Tunnel.....	383
5.7.12 Menu Programming.....	291	5.22 Logical LAN.....	385
5.7.13 Phone Manager Options.....	295	5.23 Wireless Settings.....	386
5.7.14 Hunt Group Memberships.....	296	5.23.1 SSID.....	386
5.7.15 Mobility (Twinning).....	297	5.23.2 Security.....	386
5.7.16 Announcements.....	302	5.24 User Restrictions Settings.....	387
5.7.17 Personal Directory.....	304	5.24.1 User Restrictions.....	388
5.7.18 SIP.....	306	5.24.2 Short Codes.....	388
5.8 Hunt Group Settings.....	307	5.25 User Rights Settings.....	389
5.8.1 Hunt Group.....	309	5.25.1 User.....	391
5.8.2 User List/Select Members.....	312	5.25.2 Short Codes.....	391
5.8.3 Voicemail.....	314	5.25.3 Telephony.....	392
5.8.4 Fallback.....	317	5.25.4 Button Programming.....	395
5.8.5 Queuing.....	319	5.25.5 Menu Programming.....	395
5.8.6 Voice Recording.....	322	5.25.6 Phone Manager.....	396
5.8.7 Announcements.....	323	5.25.7 Twinning.....	398
5.8.8 Hunt Group Operation.....	325	5.25.8 User Rights Membership.....	398
5.9 Short Code Form.....	331	5.25.9 Voicemail.....	399
5.10 Service Settings.....	332	5.26 Auto Attendant Settings.....	400
5.10.1 Service.....	333	5.26.1 Auto Attendant.....	401
5.10.2 Bandwidth.....	334	5.26.2 Actions.....	402
5.10.3 IP.....	336	5.27 Authorization Codes.....	403
5.10.4 Autoconnect.....	337	5.28 ARS.....	406
5.10.5 Quota.....	338	5.28.1 ARS.....	408
5.10.6 Fallback.....	339	5.28.2 Cause Codes and ARS.....	410
5.10.7 DialIn.....	340	5.28.3 ARS Operation.....	411
5.11 RAS.....	341	5.29 E911 System Settings.....	420
5.11.1 PPP.....	342	5.29.1 E911 Adjunct.....	421
5.12 Incoming Call Route Settings.....	343	5.29.2 Zones.....	422
5.12.1 Incoming Call Route.....	345		
5.12.2 Voice Recording.....	349	6. Short Codes	
5.12.3 Destinations.....	350	6.1 Short Code Fields and Characters.....	425
5.13 WAN Port Settings.....	351	6.2 User Dialing.....	428
5.13.1 WAN Port.....	352	6.3 Application Dialing.....	429
5.13.2 Frame Relay.....	353	6.4 Secondary Dial Tone.....	430
5.13.3 DLCIs.....	354	6.5 ? Short Codes.....	431
5.13.4 Advanced.....	356	6.6 Short Code Matching Examples.....	432
5.13.5 PPP.....	357	6.7 Default System Short Code List.....	435
5.14 Directory.....	359	6.8 Short Code Features.....	437
5.15 Time Profile.....	361	6.8.1 Acquire Call.....	438
5.16 Firewall Profile Settings.....	363	6.8.2 AOC Previous Call.....	439
5.16.1 Standard.....	364	6.8.3 AOC Reset Total.....	439
5.16.2 Custom.....	365	6.8.4 AOC Total.....	439
5.16.3 Static NAT.....	367	6.8.5 Auto Attendant.....	440
5.17 IP Route Settings.....	368	6.8.6 Break Out.....	440
5.17.1 IP Route.....	369	6.8.7 Barred.....	441
5.17.2 RIP.....	370	6.8.8 Busy On Held.....	441
5.18 Least Cost Routing Settings.....	371	6.8.9 Call Intrude.....	442
5.18.1 LCR.....	373	6.8.10 Call Listen.....	443
5.18.2 Main Route.....	373	6.8.11 Call Pickup Any.....	444
5.18.3 Alternate Route 1.....	374	6.8.12 Call Pickup Extn.....	444
5.18.4 Alternate Route 2.....	375	6.8.13 Call Pickup Group.....	445
5.19 Account Code Settings.....	376	6.8.14 Call Pickup Line.....	445
5.19.1 Account Code.....	377	6.8.15 Call Pickup Members.....	446
5.19.2 Voice Recording.....	377	6.8.16 Call Pickup User.....	446
5.20 License.....	378	6.8.17 Call Queue.....	447
5.21 Tunnel Settings.....	380	6.8.18 Call Record.....	447
5.21.1 L2TP Tunnel.....	381	6.8.19 Call Steal.....	448

6.8.20 Call Waiting On.....	449	6.8.78 Forward On Busy On.....	475
6.8.21 Call Waiting Off.....	449	6.8.79 Forward On Busy Off.....	475
6.8.22 Call Waiting Suspend.....	449	6.8.80 Forward On No Answer On.....	476
6.8.23 Cancel All Forwarding.....	450	6.8.81 Forward On No Answer Off.....	476
6.8.24 Cancel Ring Back When Free.....	450	6.8.82 Forward Unconditional On.....	477
6.8.25 Channel Monitor.....	450	6.8.83 Forward Unconditional Off.....	477
6.8.26 Change Login Code.....	451	6.8.84 Group Listen Off.....	478
6.8.27 Clear After Call Work.....	452	6.8.85 Group Listen On.....	478
6.8.28 Clear Call.....	452	6.8.86 Headset Toggle.....	479
6.8.29 Clear CW.....	452	6.8.87 Hold Call.....	479
6.8.30 Clear Hunt Group Night Service.....	453	6.8.88 Hold CW.....	480
6.8.31 Clear Hunt Group Out Of Service.....	453	6.8.89 Hold Music.....	480
6.8.32 Clear Quota.....	454	6.8.90 Hunt Group Disable.....	481
6.8.33 Conference Add.....	454	6.8.91 Hunt Group Enable.....	481
6.8.34 Conference Meet Me.....	454	6.8.92 Last Number Redial.....	482
6.8.35 CW.....	454	6.8.93 MCID Activate.....	482
6.8.36 Dial.....	455	6.8.94 Mobile Twinned Call Pickup.....	482
6.8.37 Dial 3K1.....	456	6.8.95 Off Hook Station.....	483
6.8.38 Dial 56K.....	456	6.8.96 Outgoing Call Bar Off.....	484
6.8.39 Dial 64K.....	456	6.8.97 Outgoing Call Bar On.....	484
6.8.40 Dial CW.....	457	6.8.98 Park Call.....	485
6.8.41 Dial Direct.....	458	6.8.99 Private Call.....	485
6.8.42 Dial Direct Hot Line.....	458	6.8.100 Private Call Off.....	486
6.8.43 Dial Emergency.....	459	6.8.101 Private Call On.....	486
6.8.44 Dial Extn.....	459	6.8.102 Priority Call.....	487
6.8.45 Dial Fax.....	460	6.8.103 Record Message.....	487
6.8.46 Dial Inclusion.....	460	6.8.104 Relay On.....	488
6.8.47 Dial Paging.....	461	6.8.105 Relay Off.....	488
6.8.48 Dial Physical Extension By Number.....	462	6.8.106 Relay Pulse.....	489
6.8.49 Dial Physical Number By ID.....	462	6.8.107 Resume Call.....	489
6.8.50 Dial Speech.....	463	6.8.108 Retrieve Call.....	490
6.8.51 Dial V110.....	463	6.8.109 Ring Back When Free.....	490
6.8.52 Dial V120.....	463	6.8.110 Secondary Dial Tone.....	491
6.8.53 Dial Video.....	463	6.8.111 Set Absent Text.....	492
6.8.54 Disable ARS Form.....	464	6.8.112 Set Account Code.....	493
6.8.55 Disable Internal Forwards.....	464	6.8.113 Set Authorization Code.....	493
6.8.56 Disable Internal Forward Unconditional.....	464	6.8.114 Set Hunt Group Night Service.....	494
6.8.57 Disable Internal Forward Busy or No Answer.....	465	6.8.115 Set Hunt Group Out Of Service.....	494
6.8.58 Display Msg.....	465	6.8.116 Set Inside Call Seq.....	495
6.8.59 Do Not Disturb Exception Add.....	466	6.8.117 Set Mobile Twinning Number.....	496
6.8.60 Do Not Disturb Exception Delete.....	466	6.8.118 Set Mobile Twinning On.....	496
6.8.61 Do Not Disturb On.....	467	6.8.119 Set Mobile Twinning Off.....	496
6.8.62 Do Not Disturb Off.....	467	6.8.120 Set No Answer Time.....	497
6.8.63 Enable ARS Form.....	467	6.8.121 Set Outside Call Seq.....	497
6.8.64 Enable Internal Forwards.....	468	6.8.122 Set Ringback Seq.....	498
6.8.65 Enable Internal Forward Unconditional.....	468	6.8.123 Set Wrap Up Time.....	498
6.8.66 Enable Internal Forward Busy or No Answer.....	468	6.8.124 Shutdown Embedded Voicemail.....	499
6.8.67 Extn Login.....	469	6.8.125 Suspend Call.....	500
6.8.68 Extn Logout.....	469	6.8.126 Suspend CW.....	500
6.8.69 Flash Hook.....	470	6.8.127 Start After Call Work.....	501
6.8.70 FNE.....	470	6.8.128 Toggle Calls.....	501
6.8.71 Follow Me Here.....	471	6.8.129 Unpark Call.....	501
6.8.72 Follow Me Here Cancel.....	472	6.8.130 Voicemail Collect.....	502
6.8.73 Follow Me To.....	472	6.8.131 Voicemail Node.....	503
6.8.74 Forward Hunt Group Calls On.....	473	6.8.132 Voicemail On.....	504
6.8.75 Forward Hunt Group Calls Off.....	473	6.8.133 Voicemail Off.....	504
6.8.76 Forward Number.....	474	6.8.134 Voicemail Ringback On.....	505
6.8.77 Forward On Busy Number.....	474	6.8.135 Voicemail Ringback Off.....	505

7. Button Programming

7.1 Programming Buttons.....	509	7.3.20 Busy On Held.....	568
7.1.1 Programming Buttons with Manager.....	509	7.3.21 Call Forwarding All.....	569
7.1.2 Programming Button via the Menu Key.....	511	7.3.22 Call Intrude.....	570
7.1.3 Programming Button via an Admin Button.....	513	7.3.23 Call List.....	570
7.1.4 T3 Self-Administration.....	514	7.3.24 Call Listen.....	571
7.1.5 Customizing Text Labels.....	515	7.3.25 Call Park.....	572
7.1.6 Interactive Button Menus.....	516	7.3.26 Call Park To Other Extension.....	573
7.2 Phone Details.....	517	7.3.27 Call Pickup.....	574
7.2.1 Phone Add-Ons.....	519	7.3.28 Call Pickup Any.....	574
7.2.2 Button Types.....	520	7.3.29 Call Pickup Group.....	575
7.2.3 1603, 1608, 1616.....	521	7.3.30 Call Pickup Members.....	575
7.2.4 2030.....	523	7.3.31 Call Queue.....	576
7.2.5 2050 and 20CC.....	524	7.3.32 Call Record.....	576
7.2.6 20DS.....	525	7.3.33 Call Steal.....	577
7.2.7 2402D, 5402D.....	526	7.3.34 Call Waiting Off.....	578
7.2.8 2410, 5410.....	527	7.3.35 Call Waiting On.....	578
7.2.9 2420, 5420.....	528	7.3.36 Call Waiting Suspend.....	579
7.2.10 3616, 3620, 3626.....	530	7.3.37 Cancel All Forwarding.....	579
7.2.11 3641, 3645.....	531	7.3.38 Cancel Leave Word Calling.....	580
7.2.12 3810.....	532	7.3.39 Cancel Ring Back When Free.....	580
7.2.13 4406D+, 4606.....	533	7.3.40 Channel Monitor.....	581
7.2.14 4412D+.....	534	7.3.41 Clear Call.....	582
7.2.15 4424D+, 4624.....	535	7.3.42 Clear CW.....	582
7.2.16 4450.....	536	7.3.43 Clear Hunt Group Night Service.....	583
7.2.17 4601, 5601.....	538	7.3.44 Clear Hunt Group Out Of Service.....	583
7.2.18 4602, 4602SW, 5602, 5602SW.....	539	7.3.45 Clear Quota.....	584
7.2.19 4610SW, 5610SW.....	540	7.3.46 Conference Add.....	584
7.2.20 4612.....	541	7.3.47 Conference Meet Me.....	585
7.2.21 4620, 4620SW, 4621, 4625, 5620, 5620SW, 5621.....	542	7.3.48 Consult.....	585
7.2.22 6408D.....	543	7.3.49 Coverage Appearance.....	586
7.2.23 6416D.....	544	7.3.50 Dial.....	587
7.2.24 6424D.....	545	7.3.51 Dial 3K1.....	587
7.2.25 9040.....	546	7.3.52 Dial 56K.....	588
7.2.26 T3 Compact/T3 IP Compact.....	547	7.3.53 Dial 64K.....	588
7.2.27 T3 Classic/T3 IP Classic.....	548	7.3.54 Dial CW.....	589
7.2.28 T3 Comfort/T3 IP Comfort.....	549	7.3.55 Dial Direct.....	589
7.3 Actions.....	550	7.3.56 Dial Emergency.....	590
7.3.1 Abbreviated Dial.....	556	7.3.57 Dial Inclusion.....	590
7.3.2 Abbreviated Dial Pause.....	556	7.3.58 Dial Intercom.....	591
7.3.3 Abbreviated Dial Program.....	557	7.3.59 Dial Paging.....	592
7.3.4 Abbreviated Dial Stop.....	557	7.3.60 Dial Physical Extn by Number.....	593
7.3.5 Account Code Entry.....	558	7.3.61 Dial Physical Extn by ID.....	593
7.3.6 ACD Agent Statistics.....	559	7.3.62 Dial Speech.....	594
7.3.7 ACD Stroke Count.....	559	7.3.63 Dial V110.....	594
7.3.8 Acquire Call.....	560	7.3.64 Dial V120.....	595
7.3.9 AD Special Functions.....	560	7.3.65 Display Msg.....	595
7.3.10 AD Special Function Mark.....	560	7.3.66 Dial Video.....	596
7.3.11 AD Special Function Wait.....	561	7.3.67 Directed Call Pickup.....	597
7.3.12 AD Suppress.....	561	7.3.68 Directory.....	598
7.3.13 After Call Work.....	562	7.3.69 Do Not Disturb Exception Add.....	599
7.3.14 Appearance.....	563	7.3.70 Do Not Disturb Exception Delete.....	599
7.3.15 Automatic Callback.....	564	7.3.71 Do Not Disturb Off.....	600
7.3.16 Automatic Intercom.....	565	7.3.72 Do Not Disturb On.....	600
7.3.17 Break Out.....	566	7.3.73 Drop.....	601
7.3.18 Bridged Appearance.....	567	7.3.74 Extn Login.....	602
7.3.19 Busy.....	568	7.3.75 Extn Logout.....	602
		7.3.76 Flash Hook.....	603
		7.3.77 Follow Me Here.....	604

7.3.78 Follow Me Here Cancel.....	604	7.3.136 Toggle Calls.....	646
7.3.79 Follow Me To.....	605	7.3.137 Twinning.....	646
7.3.80 Forward Hunt Group Calls Off.....	606	7.3.138 Unpark Call.....	648
7.3.81 Forward Hunt Group Calls On.....	606	7.3.139 User.....	649
7.3.82 Forward Number.....	607	7.3.140 Visual Voice.....	651
7.3.83 Forward On Busy Number.....	607	7.3.141 Voicemail Collect.....	652
7.3.84 Forward On Busy Off.....	609	7.3.142 Voicemail Off.....	653
7.3.85 Forward On Busy On.....	609	7.3.143 Voicemail On.....	653
7.3.86 Forward On No Answer Off.....	610	7.3.144 Voicemail Ringback Off.....	654
7.3.87 Forward On No Answer On.....	610	7.3.145 Voicemail Ringback On.....	654
7.3.88 Forward Unconditional Off.....	611		
7.3.89 Forward Unconditional On.....	611	8. Key and Lamp Operation	
7.3.90 Group.....	612	8.1 Appearance Button Features.....	657
7.3.91 Group Listen On.....	613	8.2 Call Appearance Buttons.....	658
7.3.92 Group Paging.....	614	8.2.1 Example 1.....	659
7.3.93 Headset Toggle.....	615	8.2.2 Example 2.....	660
7.3.94 Hold Call.....	615	8.2.3 How are Call Appearance Buttons Treated?....	661
7.3.95 Hold CW.....	616	8.2.4 Button Indication.....	662
7.3.96 Hold Music.....	616	8.3 Bridged Appearance Buttons.....	663
7.3.97 Hunt Group Enable.....	617	8.3.1 Example 1.....	664
7.3.98 Hunt Group Disable.....	618	8.3.2 Example 2.....	665
7.3.99 Inspect.....	619	8.3.3 Example 3.....	666
7.3.100 Internal Auto-Answer.....	620	8.3.4 How are Bridged Appearances Treated?.....	667
7.3.101 Leave Word Calling.....	621	8.3.5 Button Indication.....	668
7.3.102 Line Appearance.....	622	8.4 Call Coverage Buttons.....	669
7.3.103 Manual Exclude.....	623	8.4.1 Example 1.....	670
7.3.104 MCID Activate.....	623	8.4.2 Example 2.....	670
7.3.105 Off Hook Station.....	624	8.4.3 How is Call Coverage Treated?.....	671
7.3.106 Park.....	625	8.4.4 Button Indication.....	672
7.3.107 Park Call.....	626	8.5 Line Appearance Buttons.....	673
7.3.108 Priority Call.....	627	8.5.1 Example 1.....	674
7.3.109 Priority Calling.....	627	8.5.2 Example 2.....	675
7.3.110 Private Call.....	628	8.5.3 How are Line Appearances Treated?.....	676
7.3.111 Relay Off.....	629	8.5.4 Button Indication.....	677
7.3.112 Relay On.....	629	8.5.5 T3 Phone Line Appearances.....	678
7.3.113 Relay Pulse.....	630	8.6 Other Appearance Controls.....	679
7.3.114 Resume Call.....	631	8.6.1 Selected Button Indication.....	679
7.3.115 Retrieve Call.....	631	8.6.2 Idle Line Preference.....	680
7.3.116 Ring Back When Free.....	632	8.6.3 Ringing Line Preference.....	683
7.3.117 Ringer Off.....	633	8.6.4 Answer Pre-Select.....	686
7.3.118 Self-Administer.....	634	8.6.5 Auto Hold.....	687
7.3.119 Send All Calls.....	635	8.6.6 Ring Delay.....	688
7.3.120 Set Absent Text.....	636	8.6.7 Delayed Ring Preference.....	690
7.3.121 Set Account Code.....	637	8.6.8 Collapsing Appearances.....	692
7.3.122 Set Hunt Group Night Service.....	638	8.6.9 Joining Other Calls (Bridging).....	693
7.3.123 Set Hunt Group Out Of Service.....	639	8.6.10 Multiple Alerting Buttons.....	695
7.3.124 Set Inside Call Seq.....	640	8.6.11 Twinning.....	696
7.3.125 Set Night Service Group.....	640	8.6.12 Busy on Held.....	696
7.3.126 Set Out of Service Group.....	641	8.6.13 Reserving a Call Appearance Button.....	696
7.3.127 Set No Answer Time.....	642	8.6.14 Logging Off and Hot Desking.....	697
7.3.128 Set Outside Call Seq.....	642	8.6.15 IP Office Applications.....	697
7.3.129 Set Ringback Seq.....	642	8.7 Programming Appearance Buttons.....	698
7.3.130 Set Wrap Up Time.....	643	8.7.1 System Settings.....	700
7.3.131 Stored Number View.....	643	8.7.2 User Settings.....	701
7.3.132 Suspend Call.....	644	8.7.3 Line Appearance ID Numbers.....	702
7.3.133 Suspend CW.....	644	8.7.4 Outgoing Line Programming.....	703
7.3.134 Time of Day.....	645	8.8 Upgrading from Pre-3.0 Systems.....	704
7.3.135 Timer.....	645	8.8.1 Call Handling Changes.....	704

8.8.2 Twin LED Button Users.....	706	10.3.4 Logical LAN Connection.....	784
9. Telephone Features		10.3.5 Remote Access.....	785
9.1 Handsfree Announced Transfers.....	711	10.3.6 WAN PPP.....	788
9.2 User Directory Access.....	713	10.3.7 WAN Frame Relay.....	789
9.3 Mobile Call Control.....	714	11.Small Community Networking	
9.4 one-X Mobile Client.....	717	11.1 Supported SCN Network Layouts.....	793
9.5 Advice of Charge.....	723	11.2 Supported SCN Features.....	794
9.6 Centralized System Directory.....	724	11.3 Enabling Small Community Networking.....	796
9.7 Centralized Personal Directory.....	727	11.4 SCN Fallback.....	797
9.8 Centralized Call Log.....	728	11.5 SCN Short Code Programming.....	798
9.9 Coverage Groups.....	731	12.Appendix: Locale Settings	
9.10 T38 Fax Relay.....	732	12.1 Locale Defaults.....	802
9.11 Dial Tone Transfer.....	734	12.2 Argentina.....	804
9.12 Malicious Call Tracing (MCID).....	736	12.3 Australia.....	805
9.13 Call Barring.....	737	12.4 Belgium - Flemish.....	806
9.14 Caller Display.....	738	12.5 Belgium - French.....	807
9.15 Call Intrusion.....	739	12.6 Brazil.....	808
9.16 Call Tagging.....	739	12.7 Canada - French.....	809
9.17 Private Calls.....	740	12.8 Chile.....	810
9.18 Call Pickup.....	740	12.9 China.....	811
9.19 Call Waiting.....	741	12.10 Colombia.....	812
9.20 Parking Calls.....	742	12.11 Customize.....	813
9.21 Ring Back When Free.....	743	12.12 Denmark.....	814
9.22 Message Waiting Indication.....	744	12.13 Finland.....	815
9.23 Ring Tones.....	745	12.14 France.....	816
9.24 Music On Hold (MOH).....	746	12.15 Greece.....	817
9.25 Date and Time.....	747	12.16 Germany.....	818
9.26 System Phone Features.....	749	12.17 Hong Kong.....	819
9.27 The 'No User' User.....	750	12.18 Hungary.....	820
9.28 Forwarding and Transferring Calls.....	751	12.19 Iceland.....	821
9.28.1 Do Not Disturb.....	752	12.20 India.....	822
9.28.2 Follow Me.....	754	12.21 Italy.....	823
9.28.3 Forward Unconditional.....	756	12.22 Korea.....	824
9.28.4 Forward on Busy.....	758	12.23 Mexico.....	825
9.28.5 Forward on No Answer.....	760	12.24 Netherlands.....	826
9.28.6 Determining a User's Busy Status.....	762	12.25 New Zealand.....	827
9.28.7 Chaining and Loops.....	763	12.26 Norway.....	828
9.28.8 Transferring Calls.....	764	12.27 Peru.....	829
9.28.9 Off-Switch Transfer Restrictions.....	765	12.28 Poland.....	830
9.28.10 Centrex Transfer.....	766	12.29 Portugal.....	831
9.29 Conferencing.....	767	12.30 Russia.....	832
9.29.1 Default Conference Handling.....	768	12.31 Saudi Arabia.....	833
9.29.2 Using Conference Meet Me.....	768	12.32 South Africa.....	834
9.30 Hot Desking.....	769	12.33 Spain.....	835
9.30.1 Remote Hot Desking.....	770	12.34 Sweden.....	836
9.30.2 Call Center Agents.....	770	12.35 Switzerland.....	837
9.30.3 Hot Desking Examples.....	771	12.36 Taiwan.....	838
9.30.4 Automatic Log Off.....	772	12.37 Turkey.....	839
9.31 Paging.....	773	12.38 United Kingdom.....	840
9.31.1 Paging Via Voicemail Pro.....	775	12.39 United States.....	841
10.Data Routing		12.40 Venezuela.....	842
10.1 Network Address Translation (NAT).....	780	13.Appendix: SMDR	
10.2 DHCP.....	780	13.1 SMDR Fields.....	846
10.3 Examples.....	781	13.2 SMDR Examples.....	849
10.3.1 Simple ISDN Internet Connection.....	781	14.Appendix: AIM and IP Office	
10.3.2 ISDN Link Between IP Offices.....	781		
10.3.3 Using a Dedicated T1/PRI ISP Link.....	782		

14.1 AIM Applications.....	857
14.2 Password Administration.....	858
14.3 Configuring an IP Office for AIM.....	859
14.4 PIM Templates.....	860
14.4.1 Hardware Template.....	861
14.4.2 User Template.....	862
14.4.3 Auto Attendant Template.....	863
14.4.4 General Template.....	864

15. Appendix: CDR Records

15.1 CDR Record Fields.....	867
15.2 Call Splitting.....	869
15.3 Record Formats.....	870
15.3.1 59 Character (Normal).....	870
15.3.2 Expanded (Normal).....	871
15.3.3 Expanded (Enhanced).....	872
15.3.4 INT-Direct (Normal).....	873
15.3.5 INT-ISDN (Normal).....	874
15.3.6 INT-Process (Normal).....	875
15.3.7 LSU (Normal).....	876
15.3.8 LSU (Enhanced).....	877
15.3.9 LSU (ISDN).....	878
15.3.10 LSU-Expanded.....	879
15.3.11 Printer (Normal).....	880
15.3.12 Printer (Enhanced).....	881
15.3.13 Printer (ISDN).....	882
15.3.14 Teleseer (Normal).....	883
15.3.15 Teleseer (Enhanced).....	884
15.3.16 Teleseer (ISDN).....	885
15.3.17 Unformatted (Normal).....	886
15.3.18 Unformatted (Enhanced).....	887

16. Appendix: History

16.1 What was New in 4.2.....	890
16.2 What was New in 4.1.....	899
16.3 What was New in 4.0 May 2007.....	904
16.4 What was New in 4.0.....	905
Index	913

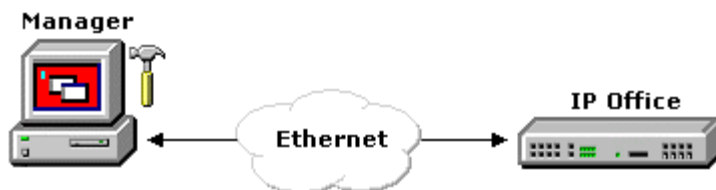
Chapter 1.

Manager

1. Manager

IP Office Manager is an application for viewing and editing an IP Office system's configuration. It is a tool meant primarily for system installers and maintainers.

Manager runs on a Windows PC and connects to the IP Office via Ethernet LAN or WAN connections.



- **⚠ WARNING - Password Change Required**

New IP Office systems use default security settings. These settings must be changed to make the system secure. At minimum you must change the default passwords of the Security Administrator and the default Service Users. Failure to do so will render the IP Office system unsecure. See the [Security Mode](#)^[80] section for details.

- **⚠ IMPORTANT**

Manager is an off-line editor. It receives a copy of the IP Office system's current configuration settings. Changes are made to that copy and it is then sent back to the IP Office for those changes to become active. This means that changes to the active configuration in the system that occur between Manager receiving and sending back the copy may be overwritten. For example this may affect changes made by users through their phone or voicemail mailbox after the copy of the configuration is received by Manager.

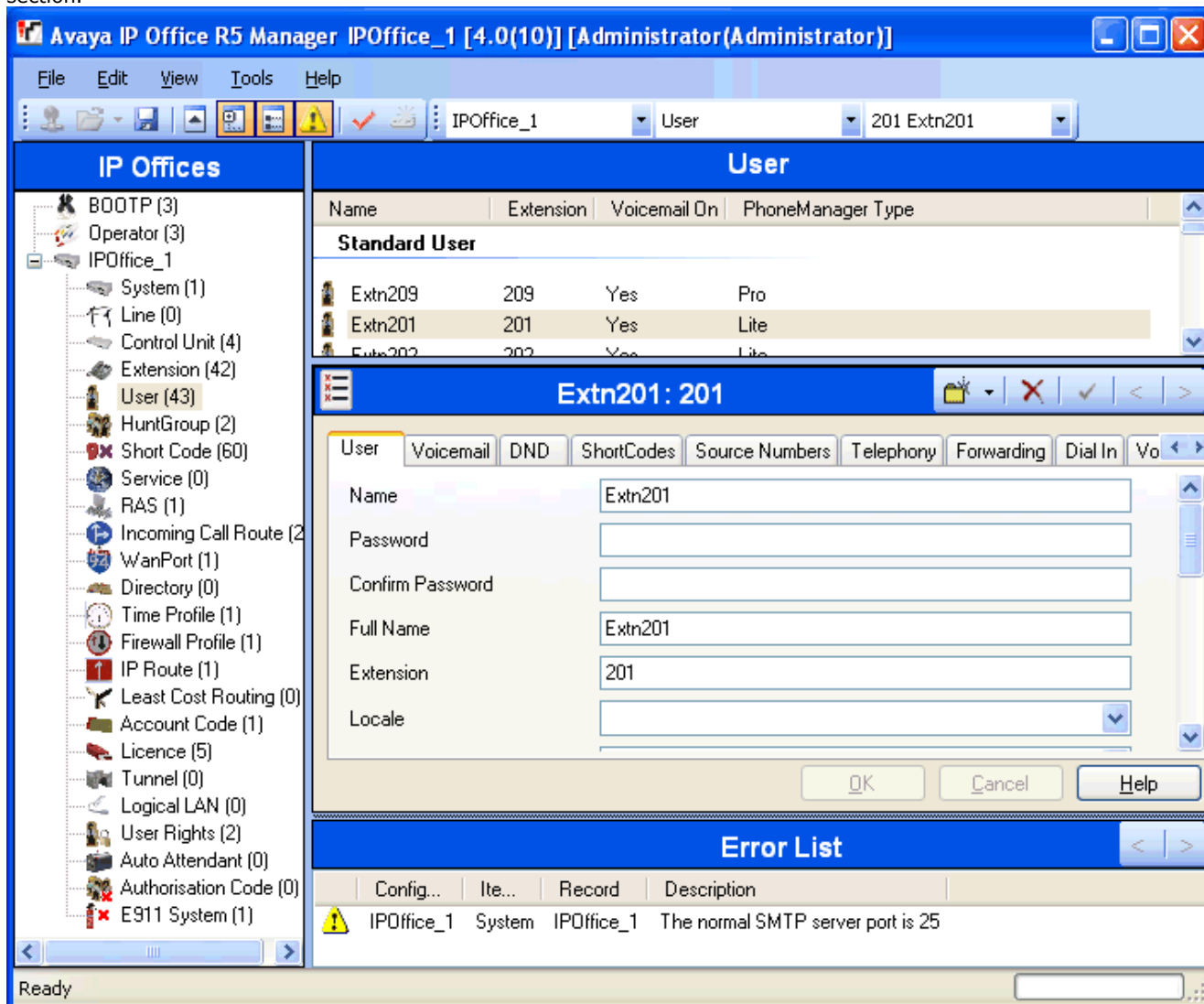
Manager is part of the IP Office Admin suite of programs. It is important to note that the software level of IP Office Manager application is 2 higher than the software level of the IP Office system core software with which it is released. For example IP Office Manager 6.2 was released with IP Office 4.2 core software. The IP Office Manager application can be used to manage configurations from systems running IP Office 2.1 core software. See [Backward Compatibility](#)^[37].

IP Office Functions

Manager performs a number of roles for IP Office systems.

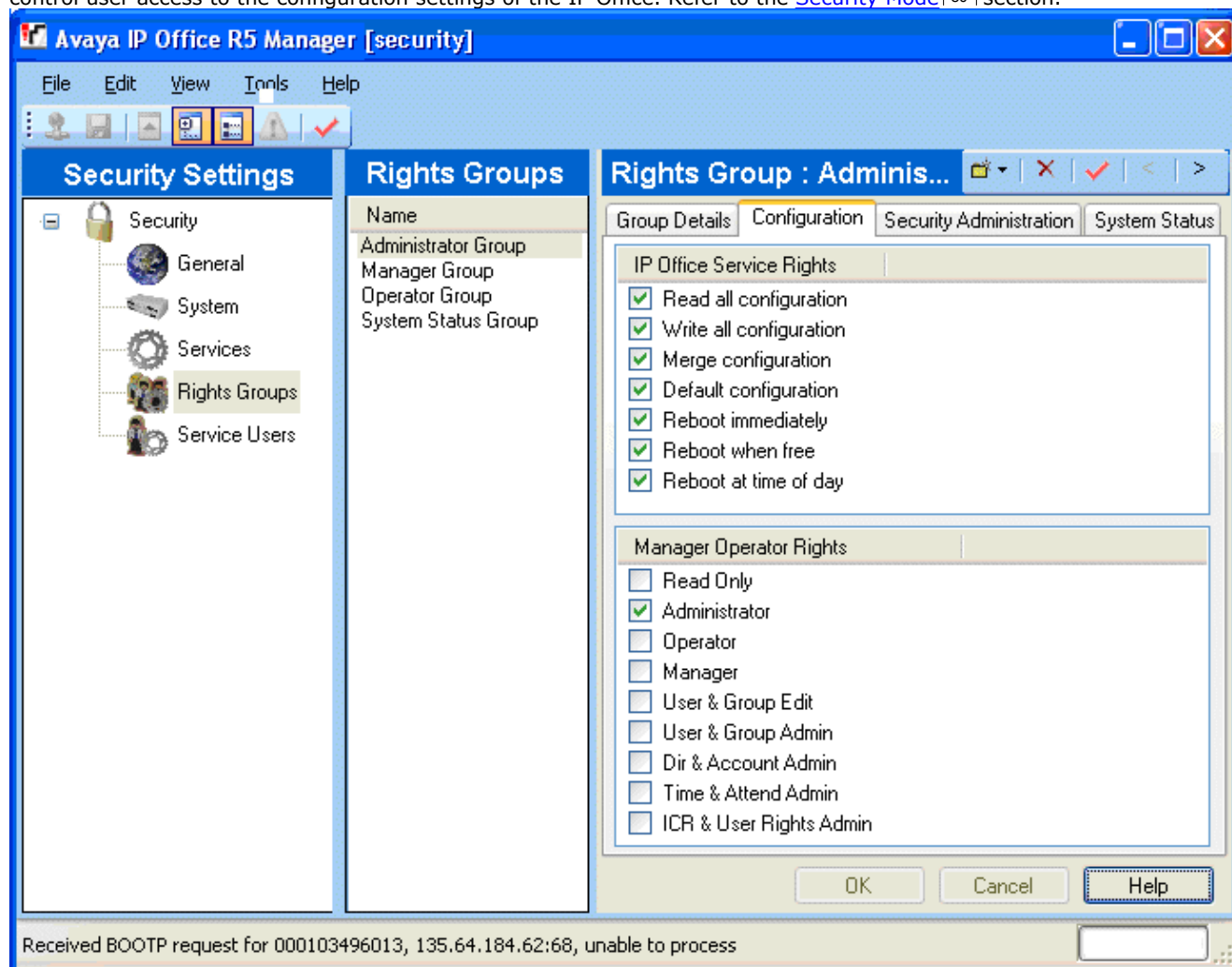
- **Configuration Settings Editor**^[44]

In configuration mode Manager is used to edit configuration settings for IP Office systems. Those settings control the call and data function that the IP Office system provides to users and callers. Refer to the [Configuration Mode](#)^[44] section.



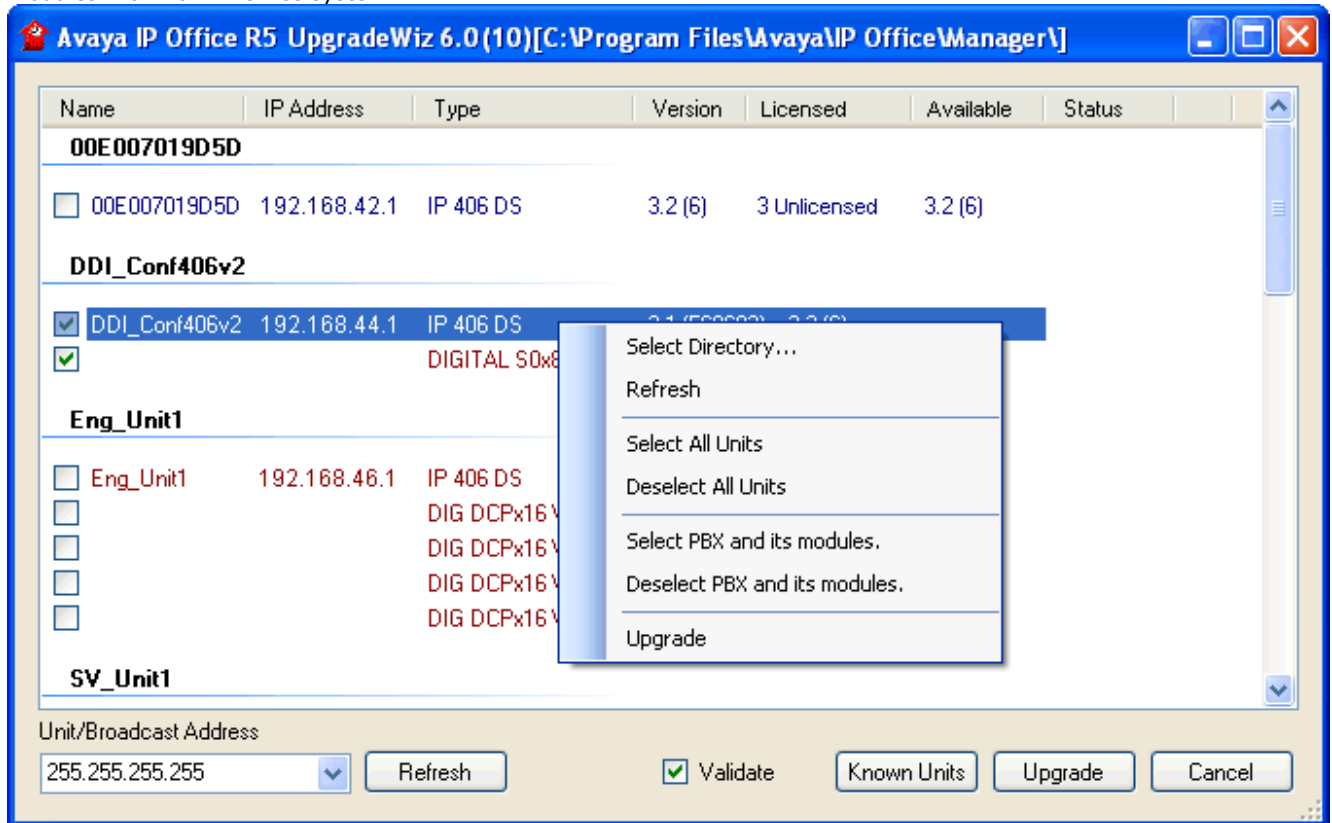
- [Security Settings Editor](#)^[80]

In security mode Manager is used to edit the security settings of IP Office 3.2+ systems. Those settings are used to control user access to the configuration settings of the IP Office. Refer to the [Security Mode](#)^[80] section.



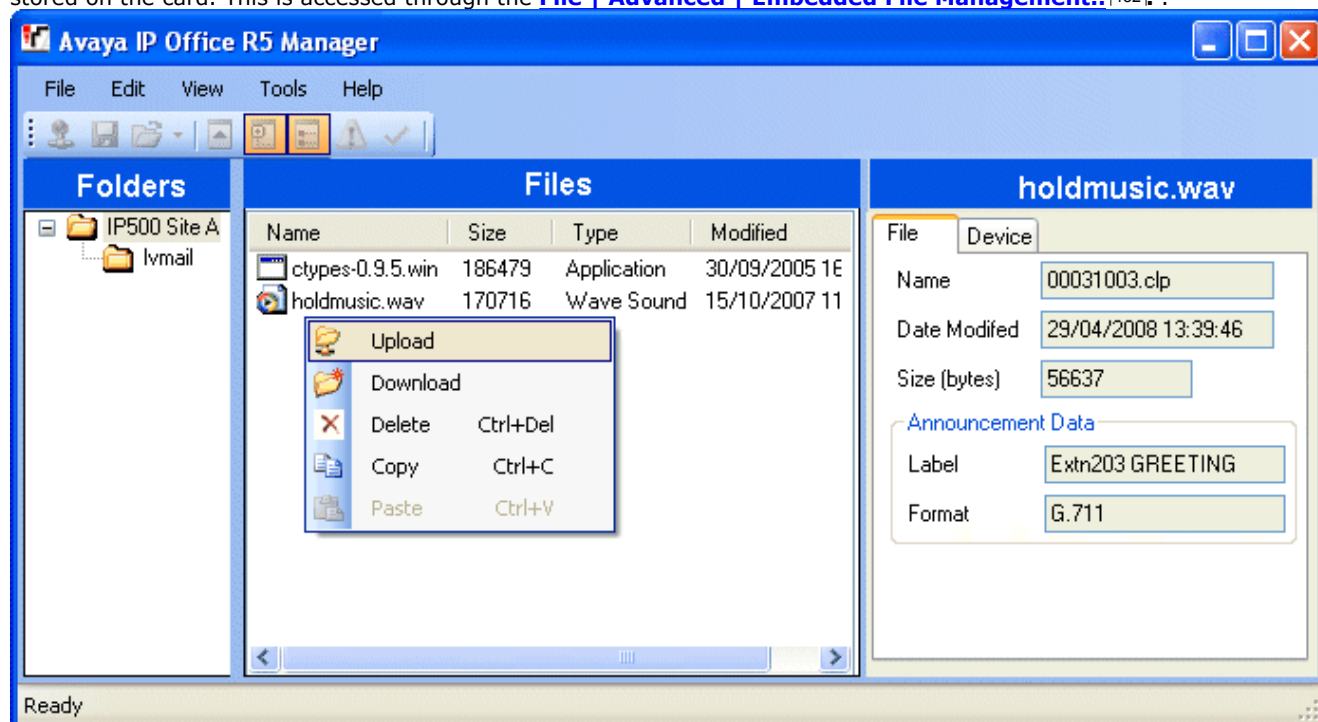
- [Upgrade Wizard](#) ^[125]

The Upgrade Wizard is a component of Manager used to upgrade the firmware run by the control unit and expansion modules within an IP Office system.



- **Embedded Memory Card Management**

For systems with a compact flash card installed, the IP Office 4.2+ Manager can be used to view and manage the files stored on the card. This is accessed through the [File | Advanced | Embedded File Management..](#) ^[132].



- **BOOTP Server**

Manager acts as a BOOTP server, providing software files in response to BOOTP requests from IP Office systems. This task is required for maintenance. This function can be switched off if not required.

- **Time Server**

Manager acts as an Internet Time server (RFC868), providing the time in response to requests for IP Office systems. This function can be switched off if not required.

1.1 What is New in 5.0

This section outlines the major new features and changes in IP Office 5.0. For detail of other releases see [Appendix: History](#)^[89].

- [IP500 Control Unit](#)^[18]
- [Licenses](#)^[18]
- [IP Telephony](#)^[19]
- [Centralized Directories and Call Logs](#)^[21]
- [1600 Series Phones](#)^[22]
- [Voicemail \(General\)](#)^[24]
- [Embedded Voicemail](#)^[24]
- [Small Community Networking](#)^[20]
- [Appearance Buttons](#)^[22]
- [SIP Telephony](#)^[20]
- [Voicemail Pro](#)^[25]
- [Other Features](#)^[23]

General

- **Supported Control Units**

IP Office is supported on IP500, IP412 and IP406 V2 control units. It is not supported on [Small Office Edition](#) control units or IP401, IP403 and IP406 V1 control units.

IP500 Control Unit

- **Extension Capacity Increased to 384**

The maximum supported extension capacity of IP500 control units has been increased from 272 to 384 extensions. The maximum number of supported users remains 500.

- **Conference Capacity Increased to 128**

The conference capacity of IP500 control units has been increased to 128 conference channels with a maximum of 64 parties in any particular conference. Unlike the IP412 control unit, this capacity is not split into two separate banks of 64 party capacity. Note that the capacity is reduced by the number of embedded voicemail channels in use.

- **Voicemail Channels Capacity Increased to 40**

The IP500 can now be licensed for up to 40 voicemail channels.

- **IP500 4-Port Expansion Card**

This IP500 base card can be used to provide the IP500 control unit with an additional 4 ports for connection to external expansion modules.

- Installing the card provides the following changes to the IP500 system capacity:
 - Support for 12 expansion ports. These can be used for the same external expansion units as already supported by the IP500's integral expansion ports.
- The card is only supported in slot 4 of the control unit. That is the right hand slot when facing the control unit.
- The card does not support the addition of an IP500 trunk daughter card.
- The card is supplied with four 2 metre yellow interconnect cables. These cables or the 1 metre blue interconnect cables supplied with each external expansion unit can be used for connection to the IP500 4-Port Expansion Card. No other cables must be used. The 2 metre yellow interconnect cables must not be used for the connection of external expansion modules to the expansion ports on the rear of the IP Office control units.

Licenses

The following changes have been made to license operation:

- **IP500 Professional Licenses No Longer Needed**

For IP Office 5.0+, the **IP500 Upgrade Standard to Professional** license is no longer required. Features [previously restricted](#)^[38] if this license was not present and valid can now be used. That include support for the Voicemail Pro and Conferencing Center applications, support for external expansion modules and support for the Conference Meet me short code.

- **IP500 Voice Networking License Change**

For IP Office 5.0+, **IP500 Voice Networking (Additional channels)** licenses can be used without needing an **IP500 Voice Networking (Base 4 channels)** license to be present first.

- **Advanced Small Community Networking License No Longer Needed**

For IP Office 5.0+, the **Advanced Small Community Networking** license is no longer needed to enable [advanced Small Community Network features](#)^[79]. That includes support for remote hot desking and for distributed hunt groups.

one-X Portal for IP Office

- one-X Portal for IP Office is an IP Office application that allows users to control their phone via a web browser. It can be used to make and answer calls and to perform call related actions such as hold, transfer and conference. It also allows the user to access their voicemail messages, call log, personal and system directories.
 - one-X Portal for IP Office runs on a server connected to the IP Office via the LAN.
 - Accessed is licensed per user and enabled by the [Enable one-X Portal Services](#) ^[268] option ([User | User](#) ^[268]).
 - The application uses an new TSPI interface provided by the IP Office and configured within the IP Office's security settings.

IP Telephony

- **SIP Extension Support**
The IP Office can now support SIP extensions. Each SIP extension requires an **IP End Points** license in order to register with the IP Office.
- **H323 Phone File Generation**
When using the IP Office memory card as the source for H323 phone files, the IP Office system is able to provide auto-generate appropriate settings files in response to phone request when the actual file is not present. This feature is supported for phones requesting any of the following files: *46xxupgrade.scr*, *16xxupgrade.txt*, *46xxsettings.txt*, 16xx language files and *ext_16xxdata.txt* files.
- **Phone Firmware Upload**
Within Manager the Embedded File Management option can be used to view the files on an IP Office memory card. For IP Office 5.0, an option Upload Phone Files is provided. When selected, all necessary binary files for DS, H323 and IP DECT are transferred from Manager to the embedded memory card.
- **1600 Series Phone User Settings Backup/Restore**
These phones can be configured to restore and backup user settings from an HTTP server. For IP Office 5.0+, the IP Office memory card can be used for this backup and restore operation.
- **Codec Selection**
A number of changes have been made for compression codec selection on IP lines and extensions.
 - By default, for all IP lines and extensions the **Compression Mode** is set to **Automatic Select**. That uses the following order of preference for codec negotiation during call setup: G729, G723, G711 U-Law, G711 A-Law. For IP Office 5.0, the [Automatic Code Preference](#) ^[168] setting ([System | Telephony | Telephony](#) ^[168]) allows selection of which codec should come first in the order of preference for lines and extension set to **Automatic Select**.
 - On SIP/SES lines and SIP extensions, the codecs used and the order of preference can be adjusted.
- **Phone Quality of Service (QoS) Monitoring** ^[158]
The IP Office System Status already display H323 trunk QoS information. For IP Office 5.0 it can also display QoS information for phones. For 4600, 5600 and 1600 Series H323 phones, the IP Office can collect VoIP QoS data from the phones. For other phones, including non-IP phones, it can collect QoS data for calls that use a VCM channel.
 - The collection of phone QoS data is enabled by the [Enable RTCP Monitor](#) ^[158] setting ([System | LAN1 | VoIP](#) ^[158]).
 - The QoS data collected by the IP Office is displayed by the IP Office System Status Application.
 - QoS alarm thresholds can be configured for round trip delay, jitter and packet loss. If during a call, any of the thresholds is exceeded, an alarm is sent to the System Status Application. The alarm can also be sent to any of the [System Events](#) ^[187] outputs configured in the IP Office configuration (SNMP, Syslog and SMTP Email).

SIP Telephony

- **SIP Extensions**

IP Office now supports SIP extension devices. That includes both SIP phones and SIP devices such as conference servers. SIP Extension use the **IP End-Points** license.

- **T38 Fax Relay** ^[732]

T38 Fax Relay is a set of protocols that allow the transport of Group 3 faxes over IP connections. IP Office 5.0 can act as a T38 Fax Relay gateway. This is only supported for IP500 systems fitted with an IP500 VCM card.

- T38 fax is supported on SIP trunks and SIP extensions. Each T38 fax call uses a VCM channel.
- Within a Small Community Network, an T38 fax call can be converted to a call across across an H323 SCN lines using the IP Office **Fax Transport Support** protocol. This conversion uses 2 VCM channels.
- In order use T38 Fax connection, the **Equipment Classification** of an analog extension connected to a fax machine can be set **Fax Machine**. Additionally, a new short code feature **Dial Fax** is available.

Small Community Networks (SCN)

The following new features are supported for IP Office Small Community Networks.

- **Support for 32 IP Offices** ^[792]

The maximum supported capacity for an SCN has been increased from 16 systems to 32. The maximum number of users within the network remains 500.

- This option is only supported if all systems in the network are running IP Office 5.0 or higher.
- Networks including any IP Office running pre-IP Office 5.0 software are still restricted to a maximum of 16 systems.

- **Support for Meshed Layouts** ^[793]

Within a Small Community Network of IP Office 5.0+ systems, the H323 SCN lines can be connected in a meshed layout.

- **Small Community Network Fallback** ^[797]

A number of fallback features are supported. These are intended to maintain a minimal level of functionality while possible issues with the IP Office system are resolved. One IP Office SCN Line within the local systems configuration can be set a its fallback trunk. The other IP Office to which that trunk connects will then provide fallback support. The following features can then be selected for fallback support:

- **Secondary DHCP Gatekeeper for IP Extensions**

Avaya 1600, 4600 and 5600 Series phones registered with the IP Office are re-registered with the other IP Office during fallback.

- **Advertised Hunt Groups**

Hunt groups hosted by the IP Office are advertised from the the other IP Office during fallback.

- **Voicemail Pro Server Support**

If the locale IP Office is hosting the Voicemail Pro server for centralized voicemail, the other IP Office act as the voicemail server host during fallback.

Centralized Directories and Call Logs

- **Centralized System Directory** ⁷²⁴

The IP Office directory consists of both configuration records and temporary imported records. The following changes have been added for IP Office 5.0:

- The capacity for directory records has been increased as listed in the table below.
- In addition to the existing LDAP directory import, an IP Office system can be configured to automatically import directory records from another IP Office system using HTTP.
- LDAP directory records are now included in the directory on phones. Previously LDAP records were only included in Phone Manager and SoftConsole listings.
- A system phone user, using a 1600 Series phone, can edit an IP Office's configuration records

IP Office	Number of Directory Records			Total Number of Directory Records
	IP Office Configuration	LDAP Import	HTTP Import	
IP500	2500	5000	5000	5000
IP412	2500	2500	2500	2500
IP406 V2	2500	2500	2500	2500

- **Centralized Personal Directory** ⁷²⁴

Previously, when using a T3 phone, the user could view up to 100 personal directory entries that were stored for them within the the IP Office system configuration. For IP Office 5.0 the following changes have been made to this personal directory:

- The user can now view and use their personal directory when using a 1600 Series phone or T3 phone.
- In addition, when using a 1600 Series phone, the user is able to edit their personal directory entries.
- If the user hot desks to another T3 or 1600 Series phone in the Small Community Network, their personal directory is accessible across the Small Community Network.

- **Centralized Call Log** ⁷²⁴

Previously, individual phones have maintained the call log shown to users, ie. it is a log of calls handled by the phone rather than calls to the user. If the user then hot desked to another phone, the call log did not move with them. For IP Office 5.0, the call log shown on 1600 Series phones is a user call log stored by the IP Office system.

- The user call log is updated even when the user is using a phone that cannot display it. The log contains records for the 30 most recent calls (10 on IP412 and IP406 V2 systems).
- It includes calls while the user is logged off or set to do not disturb.
- It includes calls made and answered by the user using a twinned devices, one-X Mobile client, using mobile call control and Phone Manager Telecommuter mode.
- When the user hot desks to another 1600 Series phone, their call log becomes viewable on that phone.
- When the user has hot desked to another system in the Small Community Network, their call log is still updated. If they are using a 1600 Series phone they can also still view and their call log.
- The IP Office also maintains a missed call log for hunt groups (a missed call being one not answered by any of the group members). This group log will contain records for the 10 most recent missed calls. The IP Office can be configured to include selected hunt group logs within a users view of their personal call log.
- The user's call log is also used for the Redial function.

1600 Series Phones

- **1603SW Phone**^[52]
The new variant 1603SW phone is supported. This phone is similar to the existing 1630 but provides a PC port for connection of the user's PC through the phone.
- **BM32 Capacity**^[51]
The total number of BM32 modules supported on a system has been increased from 16 to 32. The number supported on any 1616 phone is 3.
- **1600 Series Phone Display and Menu**
The menus used to access features on 1600 Series phones have been changed and expanded to allow access to wider set of user features. This set is similar to those accessible by T3 phone users.
- **Phone Locking**
1600 Series phone users can select a **Phone Locked** option through the phone's menu. This prevents the being used to make outgoing external calls. It also prevents changes to user settings. The phone can still be used to answer incoming calls and to make internal calls. The lock can only be removed using the user's login code.
- **Line Appearances**^[67]
IP Office 5.0 allows line appearance buttons to be placed before call appearances. The user still requires at least one call appearance button. This configuration is only supported for users using 1600 Series phones. When configured in this way, idle line preference will select the first free line appearance before the first free call appearance.

Appearance Buttons

- **Bridged Appearance / Call Covering Appearance Ring**^[28]
For each user, IP Office 5.0 allows the selection of either normal ringing, a single abbreviated ring or no ringing when a call alerts on any of their call coverage appearance and bridged appearance buttons. The choice is selected through the **Coverage Ring**^[28] setting ([User | Telephony | Multi-line Options](#)^[28]). This is in addition to the existing per button settings for immediate, delayed or no ring.
- **Bridged Appearance / Call Coverage Appearance Lamp**^[16]
On 1500 Series and 1600 Series phones and BM32 button modules, the button lamp flash type for external calls can be selected. This is done using the **Visually Differentiate External Call**^[16] setting ([System | Telephony | Telephony](#)^[16]). When selected, a slow flash (500ms on / 20ms off) is used for external calls. When off and for internal calls the normal flash is used (500ms on / 500ms off).
- **Line Appearances**^[67]
IP Office 5.0 allows line appearance buttons to be placed before call appearances. The user still requires at least one call appearance button. This configuration is only supported for users using 1600 Series phones. When configured in this way, idle line preference will select the first free line appearance before the first free call appearance.

Other Features

- **Coverage Group** ^[73]
A user can be configured to have unanswered external calls presented to a group of other users rather than to voicemail. When a **Coverage Group** ^[279] ([User | Telephony | Supervisor Settings](#) ^[279]) is selected, unanswered external calls continue ringing at the users extension. After the user's no answer time expires, the call also alert at the phone's of the Coverage Group members. If the user is logged off or on DND, the coverage group is used immediately for external calls.
- **CDR Support** ^[866]
Output of CDR records is not supported by IP Office 5.0+.
- **Forward to Voicemail** ^[284]
A user's forward unconditional setting can be set to voicemail. This is done through the IP Office configuration or the menu on 1600 Series phones. This option is not applied to hunt group calls and is cleared if the user disabled forward unconditional using short codes or an IP Office application.
- **Drop External Only Impromptu Conference Control** ^[166]
This option (on the [System | Telephony | Telephony](#) ^[166] tab) can be selected to have the IP Office system automatically end any conference when the last internal user exits. This stops users using conference as a method to transfer external callers back off switch.
- **CSV User Import/Export** ^[73]
The CSV import and export of user details now supports the full name of the user.
- **Button Label Printing** ^[139]
If a version of DESI label printing software is installed on the same PC as IP Office Manager, the option **Tools | Print Button Labels** becomes available. Manager can then be used to select and export user button details to the DESI software for printing.
- **Dial Tone Transfer** ^[734]
A user who is not able to make external calls (for example, due to **Outgoing Call Bar**), can call a user who is able to make external calls and ask to be transferred to dial tone. Similarly, this feature can be used by a user unable to dial specific numbers to request dial tone from a user who is able to dial such numbers. The transfer destination must be an ARS form that provides secondary dial tone.
- **Improved Internal Twinning** ^[297]
When using T3 or 1600 Series phones that are internally twinned, access to user settings and information from either extension has been improved. That includes status indication for those features and related functions such as message waiting indication.
 - Personal directory.
 - Group membership.
 - DND Exceptions list.
 - Call Log.
 - Forwarding.
 - Voicemail access.
 - Redial.
 - Voicemail On.
 - Do Not Disturb.
- On 1600 Series phones twinned status is indicated by a **T** in the display.
- **Phone Manager Screen Popping**
For IP Office 5.0 and higher, screen popping is only supported with Outlook 2003/2007.
- **Configuration Size Restriction Controls** ^[64]
Previously if a configuration that was too large was sent to an IP Office control unit, the control unit would need to be reset to default using its DTE port. For IP Office 5.0 a number of changes have been made:
 - For IP Office Manager R5, when you attempt to save a configuration that is too large, you will be prompted and the save is canceled.
 - During normal operation, additional configuration entries can be added to the configuration without using Manager (for example call log entries and directory entries made from phones). If, during the overnight [backup to Flash memory](#) ^[62], the configuration is found to be too large, entries will be removed until the configuration is sufficiently small to be backed up. The entries removed are call log records, system directory records and then personal directory in that order. Note that those entries will still exist in the configuration running the IP Office in its RAM memory, however if the IP Office is restarted they will disappear as the configuration is reloaded from the Flash memory.

Voicemail (General)

- **System Default Mailbox Reception Numbers**

Breakout numbers allow callers to select another destination while listening to a user's mailbox greeting. Each user mailbox can have up to 3 possible breakout numbers set, accessed by the caller dialing 0, 2 or 3 (*0, *2, *3 on Embedded Voicemail).

- IP Office 5.0+ allows system default numbers to be set for each mailbox breakout. These system defaults are then applicable to all user mailboxes unless overridden by a user's own breakout number settings.
- IP Office 5.0+ also allows the breakout numbers to be set through **User Rights**.
- For Voicemail Pro 5.0 with IP Office 5.0, the additional breakouts 2 and 3 are now also supported in IP Office mailbox mode as well as Intuity emulation mailbox mode.

- **Forward Unconditional to Voicemail**

Within the IP Office configuration for a user's forwarding settings, for **Forward Unconditional** the option **To Voicemail** can be selected. This will override any forwarding number set and send calls immediately to voicemail when forward unconditional is enabled. This option is supported with all IP Office voicemail types including Voicemail Pro.

- **Voicemail Lite**

The Voicemail Lite application is not supported with IP Office 5.0.

Embedded Voicemail

The following new feature has been added to IP Office embedded voicemail operation:

- **[Auto Attendant Dial by Name Action](#)** ^[402]

Embedded voicemail auto attendant menus can now include Dial by Name as a menu option. Callers can dial the name, or part of the name, of the user they require. Then, using the recorded name prompts of mailbox users, the matching names are listed to the caller to either make a selection or to enter further characters to improve the match. When a match is selected, the user is called.

- Users without a recorded name prompt or set as Ex Directory are not included.
- Each auto attendant can be configured to match names using either **Last then First** or **First then Last** order.
- The mailbox prompt menu now includes an option (*05) that lets mailbox users record their name prompt.
- The existing Record Message short code feature can be used to record mailbox name prompts.

- **[Prompt Upload](#)** ^[132]

Using the embedded file management option, the IP Office Manager application can now automatically load the prompts onto the Embedded Voicemail Card including any new prompts required for IP Office 5.0 features.

Voicemail Pro 5.0

- **ContactStore 7.8**

The ContactStore software has been updated. The new version uses a different database format and supports a wider range of search options. The method of interaction with the voicemail server and IP Office has not changed. However, ContactStore 7.8 has not been tested with pre-5.0 versions of Voicemail Pro and IP Office. For full details refer to the IP Office ContactStore Installation manual.

- **Updated Text To Speech TTS (ScanSoft) Prompts and Software**

The TTS (ScanSoft) software include with Voicemail Pro 5.0 has been updated. The change allows:

- **Additional Languages**

Additional language support for Chinese (Mandarin), Danish, Finnish, French Canadian, Greek, Hungarian, Polish, Portuguese and Swedish. The set of TTS languages now matches the recorded prompt languages provided by Voicemail Pro with the exception of Hungarian.

- **Vista Support**

The updated TTS drivers are supported on Vista and on 64-bit versions of supported Windows operating systems.

- **IP500 Voicemail Pro Ports**

For IP500 control units, the maximum number of licensable voicemail channels has increased to 40.

- **Small Community Network Fallback**

Within an IP Office Small Community Network, voicemail server is associated with a central IP Office via which it provides voicemail services to all the IP Offices in the SCN. IP Office 5.0 provides a number of fallback settings, including allowing the voicemail server to work with fallback IP Office if the central IP Office is removed from the network for any reason. This feature is configured within the IP Office configurations and requires the fallback IP Office to have the appropriate licenses for the voicemail features required during fallback.

UMS Enhancements

The following additions have been made to UMS operation:

- **Hunt Group Mailbox Support**

Hunt group mailboxes are now supported. A **UMS Web Service** option is available on the **Hunt Group | Voicemail** tab within the IP Office configuration. The use of this option allows access to the hunt group mailbox messages using IMAP or a web browser. This consumes **UMS Web Service** licenses in the same way as enabling users for UMS.

- **Additional Web Browser Playback Options**

During message playback through the UMS web browser interface, options for previous message, next message, first message and last message are now available to the user. In addition if playing back using an extension an option to callback the caller is available if the CLI is known. Also the forward message option now displays a list from which selection of the forward destination or destinations can be made.

- **UMS Exchange 2007**

A user or group can be configured to have their voicemail messages forwarded to the inbox of an Exchange 2007 email account. Telephone, including Visual Voice, mailbox access is redirected to that email inbox as the store for voicemail messages. Alternatively the user can access their voicemail messages using Outlook 2007 or any other mechanisms supported by Exchange 2007. Voicemail messages in an Exchange 2007 inbox are not visible to UMS IMAP and UMS Web Voicemail, however Exchange 2007 provides its own methods for IMAP and web browsing of Exchange mailboxes.

Call Flow Actions

The following changes have been made to Voicemail Pro actions.

- **Whisper Action**

Two new options are now provided by the Whisper action. The action can now be used requiring a caller recording. The transfer target is still able to accept or reject the call but will do this based on the displayed text and the prompts pre-recorded with the action when it was setup. Whisper calls can also be used with auto accept. When selected, after hearing the caller's recording and the action prompts the call is automatically connected to the transfer target.

- **Alarm Set**

This action was previously restricted to setting up a single non-repeated alarm back to an internal caller's own extension. The action has now been enhanced to allow the setup of alarms to other extension and repeating alarms.

- **Clock Action**

The clock action can now be used to say the time just once before moving to the next call flow action or to repeat the time until the caller presses a DTMF key or hangs up.

- **Increment and Test Counter / Decrement and Test Counter**

These two new actions have been added to the list of Condition actions. They can be used to change the value of one of the 15 new **\$COUNTER** call variables and then branch the call flow if the new value matches a specified target value.

- **Transfer / Assisted Transfer**

These actions now include an option to change the caller's priority prior to the transfer.

- **Generic Action**

The **Specific** tab settings of this action have been changed to allow the entry of generic commands by the selection from a list of commands and then completion of relevant parameters. The resulting text string for the resulting generic command can still be displayed and edited if required or if a generic command not included in the parameterized command list is being used.

Call and User Defined Variables

The following changes have been made to the call and user defined variables provided by the voicemail server.

- **\$COUNTER**

A set of \$COUNTER call variables, \$COUNTER1 to \$COUNTER15 have been added. The value of these can be set, incremented and decremented using Generic actions and the specific Increment and Test Counter, Decrement and Test Counter actions.

- **User Defined Variable Display**

The current values of all the user defined variables can be displayed and edited through using the Voicemail Pro client. This is done by selecting **Server Queues** and then **User Variables** in the left hand navigation pane.

Voicemail Pro Client Changes

- **Minimum Message Length**

Through the voicemail server's general preferences, the minimum message length saved by the voicemail server can be seen and changed. The value can be set between 0 and 10 seconds.

- **Navigation Changes**

A number of changes have been made to the items that can be selected in the left hand navigation pane of the Voicemail Pro client.

- **Users / Groups**

Selecting Users or Groups in the left hand navigation pane displays details for each mailbox. Voicemail Pro 5.0 provides the following additional options when using this display.

- **Disable Mailbox**

By right clicking on a listed mailbox and selecting **Disable Mailbox**, the use of the mailbox can be disabled. Attempts to connect to the mailbox will receive number unobtainable indication from the voicemail server.

- **Clear Mailbox**

By right-clicking on the listed mailbox and selecting Clear Mailbox, all existing messages and prompts in the mailbox are deleted.

- **Server Queues**

The option **Server Queues** in the navigation pane gives access to the following information.

- **Alarms**

When selected, outgoing alarms calls set using Alarm Set actions are listed in the Voicemail Pro client's right hand pane. The list can also be used to add, delete alarms and to edit alarm settings.

- **User Variables**

When selected, the current values of user defined variables are listed in the Voicemail Pro client's right hand pane. The list can be used to add, delete user defined variables and to edit the current value of those variables.

- **Outcalls**

When selected, outgoing calls being made or scheduled to be made by the voicemail server are listed in the Voicemail Pro client's right hand pane. The list can be used to delete calls.

- **Conditions Import/Export**

Existing conditions can now be exported to a file and then imported into the configuration of another Voicemail Pro 5.0+ system.

1.2 Installing Manager

Manager is a component of the IP Office Admin suite of applications. This suite is supplied on the IP Office Administrator Applications CD and the IP Office DVD. In addition to IP Office Manager, the suite includes:

- **System Monitor**

This is a tool for system installers and maintainers. Interpreting the information output by System Monitor requires detailed data and telecoms knowledge. Note that two versions of System Monitor are provided for installation, one for pre-IP Office 4.0 systems and one for IP Office 4.0+ systems.

- **Feature Key Server**

Only install this application if the PC will be hosting the IP Office systems USB or parallel port Feature Key dongle.

- **System Status Application**

This is a Java application that can be used to monitor the status of the IP Office system such as extension, trunks and other resources. It displays current alarms and most recent historical alarms.

- **Call Status**

This application is for pre-4.0 IP Office systems. For IP Office 4.0 and higher use the **System Status Application**. IP Office Manager 6.2 is backwards compatible and can be used to manage IP Office systems running software from IP Office 2.1 upwards.

- **Voicemail Lite**

This application is for pre-5.0 IP Office systems. For IP Office 5.0 and higher it is not longer supported and may be removed from the installer options.

PC Requirements

Minimum PC Requirements	
RAM	256MB
Hard Disk Free Space	1GB*
Processor:	
- Pentium	PIII 800MHz
- Celeron	Celeron 3 800Mhz
- AMD	Athlon Opteron, Athlon64/XP
Additional Apps:	
- .NET2	Installed with Manager if not already present.

Operating System Support	
Server OS:	
2000 Server	✗
2003 Server	✓
2008 Server	✓
Client OS:	
2000 Professional	✗
XP Professional	✓
Vista Business/Enterprise	✓
Vista Ultimate	✓

*Includes disk space required for .NET2 component.

- **Language Support**

The Manager application can run in English, French, German, Brazilian Portuguese, Dutch, Italian and Latin Spanish. By default this determined by the best match to the PC's regional setting. The online help is only provided in English, French and German. To change the language used see [Changing the Manager Language](#)³⁶.

Ports

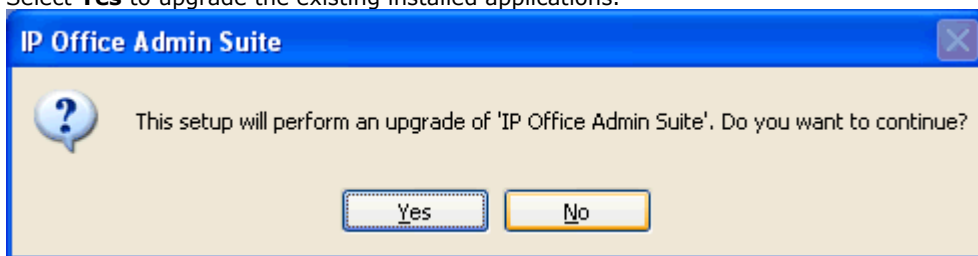
Component	Location - %ProgramFiles%\Avaya\IP Office\	Ports
IP Office Manager	Manager\manager.exe	TCP Port 50802. TCP Port 50804. TCP Port 50812. UDP Port 50798.
IP Office Upgrade Wizard	Manager\upgradewiz.exe	UDP Port 50798.

Installing Manager

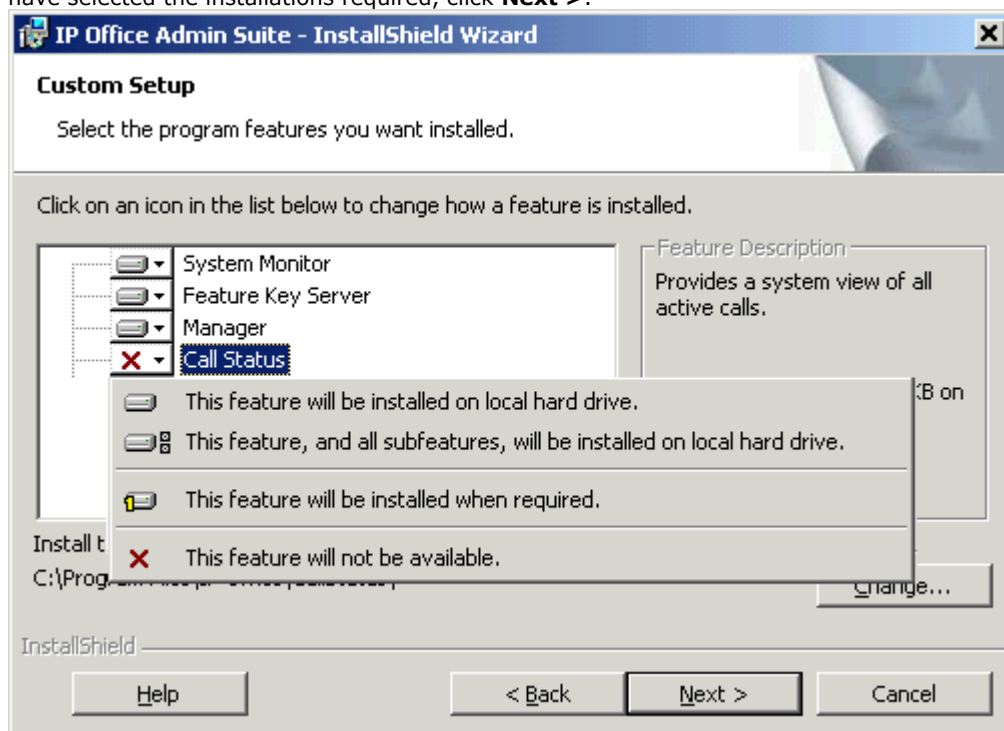
If applications in the IP Office Admin Suite other than Manager are required, we strongly recommend that you refer to the IP Office Installation Manual.

- **Note:** This installation process will install Windows .NET2 if not already present. The installation of .NET2 may require some systems to restart and the installation process to then be restarted.

1. If a pre-4.0 version of the IP Office Admin suite is installed it must be removed. This is done using the **Add or Remove Programs** option in the Windows Control Panel and selecting **IP Office Admin Suite** and then **Remove**.
2. Insert the CD. The installation process should auto start. If it does not auto start, open the CD contents and double-click **setup.exe**.
3. Select the language you want to use for the installation process. This does not affect the language used by Manager which will attempt to match the Windows regional setting. Click **Next >**.
 - If the following appears it indicates that a previous installation of the IP Office Admin suite has been detected. Select **Yes** to upgrade the existing installed applications.



4. If required select the destination to which the applications should be installed. We recommend that you accept the default destination. Click **Next >**.
5. The next screen is used to select which applications in the suite should be installed. Clicking on each will display a description of the application. Click on the ▼ next to each application to change the installation selection. When you have selected the installations required, click **Next >**.



6. The applications selected are now ready to be installed. Click **Next >**.
7. Following installation, you will be prompted whether you want to run the IP Office Admin Suite. Selecting **Yes** runs IP Office Manager.
8. On some versions of Windows, you may be required to restart the PC. Allow this to happen if required.

Changing the Installed Applications

The Add or Remove Programs option can be used to change the selection of IP Office Admin suite applications that are installed. Locate IP Office Admin Suite in the list of programs and select Change.

Adding a Manager Start Dialogue

A warning or information dialogue can be added that will be displayed every time Manager is started. The user must then select Continue to use Manager or Cancel to quit.

The file can contain content in either plain text format or RTF format, however in either case the file name must be etcissue.txt.

1. Create a file called etcissue.txt using a tool such as Windows Notepad or WordPad.
2. Add the warning or information required to the file.
3. Save the file as either plain text or RTF format. RTF format allows font style and selection options and the use of graphic files within the document.
4. Place the text file in the Manager application program directory, by default C:\Program Files\Avaya\IP Office\Manager.

1.3 Starting Manager

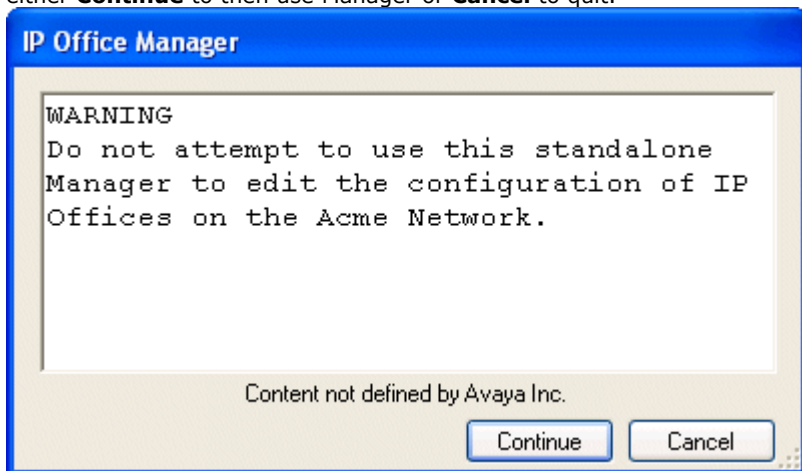
No operator name or password is required to start this version of Manager. A name and password is only required when performing an action that requires communication with an IP Office system; for example getting the configuration, send the configuration back, rebooting the system, etc.

Starting Manager

1. Select **Start** and then **Programs** or **All Programs** depending on the version of Windows.
2. Select the IP Office program group.
3. Select  **Manager**.
4. On Windows XP systems, a Windows Security Alert may appear. Select **Unblock** to allow Manager to run and provide services to IP Office systems.



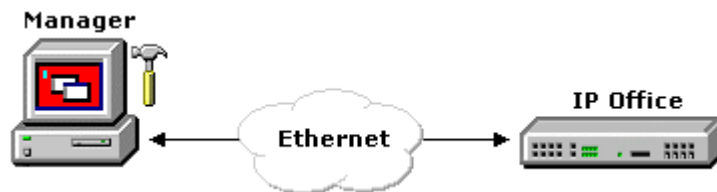
5. If an IP Office Manager dialogue appears, read the information or legal warning contained in the dialogue. Select either **Continue** to then use Manager or **Cancel** to quit.



6. The next section of this documentation describes the Manager interface and how to load and edit an IP Office's configuration settings.

1.4 Connecting Manager to IP Office

During IP Office first installation and setup, connection should always be made using a Manager PC directly connected to the IP Office.



Following IP Office installation and setup, the Manager PC can be run from a variety of locations.

IP Addresses

- The IP Office address for connections from Manager is its LAN1 IP Address. That address is set through the [System | LAN1](#) ^[153] tab within the IP Office configuration settings.
- If the IP address of the Manager PC is changed, Manager should be closed and restarted.

Discovery

The Select IP Office discovery process used by Manager to locate IP Office systems can use both UDP and TCP.

- Pre-3.2 IP Office systems respond to UDP discovery. The IP Office system listens for this type of discovery on port 69 (TFTP). TFTP is then used to send and receive configuration settings with the Manager PC.
- IP Office 3.2+ systems respond to both UDP and TCP discovery. The IP Office system listens for UDP discovery on port 69 (TFTP) and TCP discovery on port 50802. Unlike pre-3.2 IP Office systems, configuration settings are accessed using TCP.
- UDP can use broadcast addresses, however broadcasts are not forwarded by routers. TCP cannot use broadcast addresses. Manager however can specify a list of TCP addresses to check.

Configuration Access

Having discovered the available IP Office systems and selected one, configuration access can be attempted.

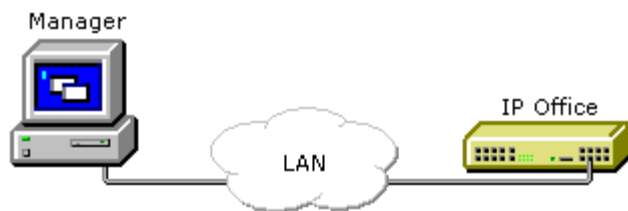
- For pre-3.2 IP Office systems, if the correct IP Office system password is entered, the configuration is transferred using TFTP.
- Access to configuration settings of an IP Office 3.2+ system, requires a valid Service User name and password. Manager does not send the name and password entered by the user to the IP Office. It sends a 'hash' of those values which are then compared against the names and passwords stored on the IP Office.
- The configuration access occurs using TCP and on port 50804 of the IP Office control unit. This port can be adjusted if required through the IP Office's security settings.

Security Settings

- Pre-3.2 IP Office systems do not have security settings that are separate from the configuration settings which include the system password.
- Access to the security settings of an IP Office 3.2 system is similar to accessing configuration settings. However, service user name and password used must have security access and the default port used is 50812.

1.4.1 Scenario 1

In this scenario, Manager's default behavior is used to connect to an IP Office system on the same LAN.



1. The user starts Manager and clicks . Select IP Office menu appears.
2. Manager does a UDP Broadcast to 255.255.255.255, port 69 (TFTP). Since this is a broadcast, it will not be forwarded beyond the LAN by any router including the IP Office system.
3. The IP Office responds with its system details including its name, IP address and software level.
4. The Select IP Office menu lists the responding IP Offices.
5. The user selects the IP Office system and clicks **OK**.
6. Manager requests the user to enter a Service User name and password.
7. Manager sends a 'hashed' version of the name and password to port 50804 at the IP Office's IP address. If valid for that IP Office system, the IP Office sends its configuration settings in the return TCP stream.

Requirements

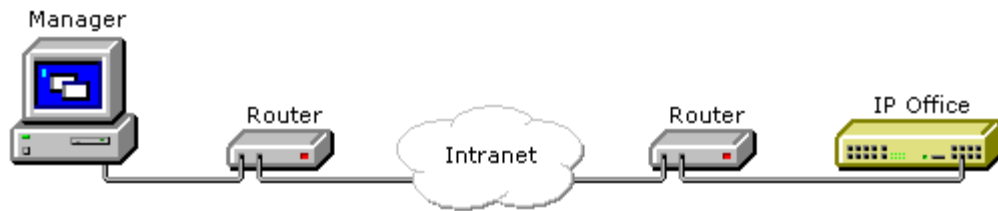
- The IP Office must be on the same subnet as the Manager PC in order to see the UDP broadcast.

Controls

- The IP Office can be disabled from responding to UDP broadcasts if required. This is done through the IP Office's security settings. Access must then be done using TCP only.

1.4.2 Scenario 2

In this scenario, the user attempts to connect to an IP Office on another LAN using the Manager with its default settings.



1. The user starts Manager and clicks . The Select IP Office menu appears.
2. Manager does a UDP broadcast to 255.255.255.255.
3. The router does not forward the UDP broadcast. This is typical router behavior and would apply to any other intermediate routers.
4. The user changes the Unit/Broadcast Address to be the IP Office's LAN1 IP address and selects Refresh.
5. Manager sends an ICMP ping (UDP) to that address.
6. The router forwards the request.
7. The IP Office responds. Manager sends a TCP discovery request port 50802.
8. The IP Office responds with its system details including its name and software level.
9. The Select IP Office menu lists the responding IP Office.
10. The user selects the IP Office system and clicks **OK**.
11. Manager requests the user to enter a Service User name and password.
12. Manager sends a 'hashed' version of the name and password to port 50804 at the IP Office's IP address. If valid for that IP Office system, the IP Office sends its configuration settings in the return TCP stream.

Requirements

- The intermediate routers must be configured to route traffic for the IP Office's LAN1 IP address to that system.
- The intermediate routers and any firewalls must be configured to allow pings.
- The intermediate routers and any firewalls must be configured to allow a session to be started at the IP Office by incoming TCP traffic on ports 50802 (Discovery) and 50804/50805 (Configuration settings access).

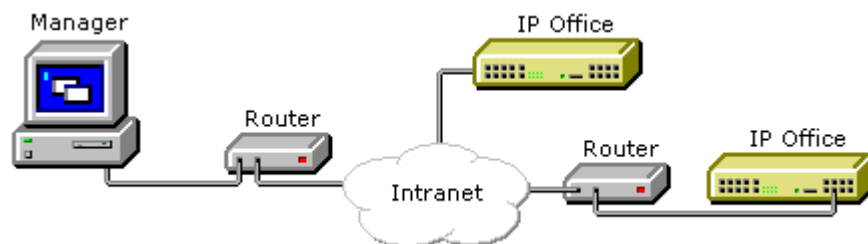
Controls

- The default port on which the IP Office system listens for TCP discovery requests from Manager (50802) cannot be changed.
- The port on which the IP Office system listens for configuration access requests (50804/50805) can be changed. This is done through the IP Office's security settings.
- The port to which Manager sends configuration access requests can be changed to match the IP Office system. Select [File | Preferences](#)^[117] and on the [Preferences](#)^[117] tab change the Services Base TCP port.
- The TCP address of the remote IP Office can be added to the default list of addresses scanned by the **Select IP Office** menu. Select [File | Preferences](#)^[117] and on the [Discovery](#)^[118] tab, enter the IP address in the **IP Search Criteria** area. See the following scenario.

1.4.3 Scenario 3

In this scenario, the user is maintaining a number of IP Office systems located on other LANs. Through Manager, it is possible to preset the addresses of these systems rather than having to change the Unit/Broadcast Address each time the Select IP Office menu appears.

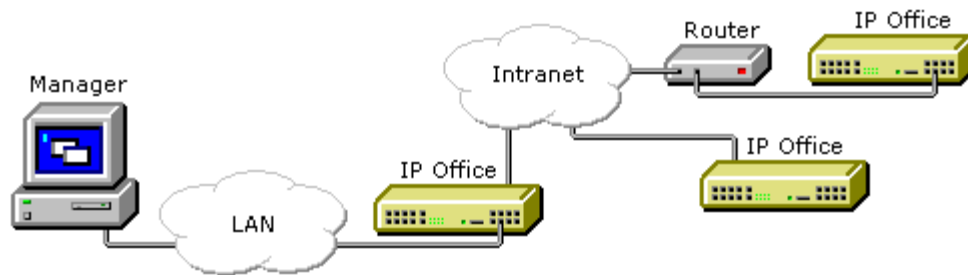
Addresses are entered through the [IP Search Criteria](#)^[118] on the [Preferences | Discovery](#)^[118] tab. On this tab, IP Office system addresses can be entered, separating each entry with a semi-colon.



1. The user starts Manager and clicks . The Select IP Office menu appears.
2. Manager does a UDP broadcast to 255.255.255.255. The router does not forward the UDP broadcast. This is typical router behavior and would apply to any other intermediate routers.
3. Manager also sends TCP discovery requests to the addresses listed in the [IP Search Criteria](#)^[118]. The requests are sent to port 50802.
4. The IP Office systems respond with their system details including their names and software levels.
5. The Select IP Office menu lists the responding IP Office.
6. The user selects the IP Office system required and clicks **OK**.
7. Manager requests the user to enter a Service User name and password.
8. Manager sends a 'hashed' version of the name and password to port 50804/50805 at the IP Office's IP address. If valid for that IP Office system, the IP Office sends its configuration settings in the return TCP stream.

1.4.4 Scenario 4

This scenario combines the previous scenarios. A UDP broadcast is used to access the users own IP Office on their LAN whilst preset TCP addresses are used to access the IP Office systems that IP Office systems that they maintain on other LAN's.



1. The user starts Manager and clicks . The Select IP Office menu appears.
2. Manager does a UDP broadcast to 255.255.255.255. The router does not forward the UDP broadcast. This is typical router behavior and would apply to any other intermediate routers.
3. Manager also sends TCP discovery requests to the addresses listed in the [IP Search Criteria](#) ^[118] on the [Preferences | Discovery](#) ^[118] tab.
4. The IP Office systems respond with their system details including their names and software levels.
5. The Select IP Office menu lists the responding IP Office.
6. The user selects the IP Office system required and clicks **OK**.
7. Manager requests the user to enter a Service User name and password.
8. Manager sends a 'hashed' version of the name and password to port 50804/50805 at the IP Office's IP address. If valid for that IP Office system, the IP Office sends its configuration settings in the return TCP stream.

1.5 Changing the Manager Language

The Manager application can run in **US English, UK English, French, German, Brazilian Portuguese, Dutch, Italian** and **Mexican Spanish**. By default it tries to use the best match to the PC's regional location settings, otherwise it will use UK English.

The process below can be used to run Manager in one of its supported languages. However it does not change the language used for help file content.

1. Create a Windows shortcut to the IP Office Manager application .exe file. By default this file is located in **C:\Program Files\Avaya\IP Office\Manager\Manager.exe**.
2. Right-click on the shortcut and select **Properties**.
3. The **Target** field can be used to specify the locale setting that Manager should use. For example, for Italian the Target should have **-locale:it-IT** added to the end.
 - For example: **"C:\Program Files\Avaya\IP Office\Manager\Manager.exe" -locale:it-IT**
4. The available locales for IP Office Manager are:

IP Office Manager Language	Shortcut Locale Setting
Brazilian Portuguese	-locale:pt-Br
Dutch	-locale:nl-NL
French	-locale:fr-FR
German	-locale:de-DE
Italian	-locale:it-IT
Mexican Spanish	-locale:es-MX
US English	-locale:en-US

5. Click **OK**.
6. The IP Office Manager application should now run in the selected language when launched using the updated shortcut.

1.6 Backward Compatibility

Manager is part of the IP Office Admin suite of programs. It is important to note that the software level of IP Office Manager application is 2 higher than the software level of the IP Office system core software with which it is released. For example IP Office Manager 6.2 was released with IP Office 4.2 core software. The IP Office Manager application can be used to manage configurations from systems running IP Office 2.1 core software.

When an IP Office 2.1 or higher configuration is loaded, Manager adjusts the settings and fields that it shows to match the core software level of the IP Office system. If you attempt to load a pre-2.1 IP Office configuration, Manager will display an error message and does not load the configuration.

- To receive a pre-3.2 IP Office configuration requires entry of an operator name and the IP Office system password.
- To receive a 3.2 or higher IP Office configuration requires entry of a service user name and password stored by that IP Office system.

For IP Office 4.2+, IP Office Manager is able display systems with software levels it does not support in the **Select IP Office** discovery menu, however those systems are indicated as not supported.

- Backwards compatibility is only supported for General Availability releases of IP Office software. It is not supported for private builds.

1.7 IP500 Standard/Professional Edition

This section is only applicable to IP500 control units running pre-IP Office 5.0 software. For IP Office 5.0+, an IP500 Upgrade Standard to Professional license is not required for any features.

For IP500 control units running pre-IP Office 5.0 software, the IP500 system unit starts operation in a mode called standard mode. In this mode, the number and range of features supported is limited. The limitations can be overridden by the addition of an **IP500 Upgrade Standard to Professional** license to the IP500 configuration. Features not detailed in the table below are not affected directly by standard or professional mode selection.

Feature	Standard	Professional
Extensions	32	272
External Expansion Modules	✗	✓
Applications		
Phone Manager (All modes) ^[1]	✓	✓
SoftConsole ^[1]	✓	✓
IP Office TAPI	✓	✓
Delta Server	✓	✓
Compact Business Center (CBC)	✓	✓
Compact Contact Center (CCC) ^[1]	✗	✓
Embedded Voicemail	✓	✓
Voicemail Lite ^[2]	✗	✓
Voicemail Pro ^[1]	✗	✓
ContactStore ^[1]	✗	✓
Conferencing Center ^[1]	✗	✓
MS-CRM	✗	✓
Meet-me Conferences	✗	✓
IP DECT Trunks	✓	✓
SIP Trunks ^[1]	✓	✓
SES Trunks ^[1]	✓	✓

1. These features also require the appropriate application licenses.

2. Voicemail Lite is not supported with IP Office 5.0 and higher.

1.8 IP500 Licenses

The full range of IP Office licenses are detailed in the IP Office Product Description and IP Office Installation manual. However the following licenses are specific to IP Office 500 systems and have a significant effect on the range of features available.

- **IP500 Upgrade Standard to Professional**

This license is required for an IP500 system to run in [IP Office Professional Edition](#) mode rather than IP Office Standard Edition mode. It is a pre-requisite for any licensed features not supported in Standard Edition mode.

- For IP Office 5.0+, this license is no longer required.

- **IP500 Voice Networking (Base 4 channels)**

For IP500 systems this license enables support for H323 IP trunks between IP Office systems and QSIG or Small Community Networking over those trunks.

- **IP500 Voice Networking (Additional channels)**

Allows an additional 4 H323 voice networking trunks.

- For IP Office 4.0+, the IP500 Voice Networking licenses were only supported in IP Office Professional Edition mode. For IP Office 4.1 they are supported in IP Office Standard and Professional Edition modes.
- For IP Office 5.0+, **IP500 Voice Networking (Additional channels)** licenses can be used without first requiring an **IP500 Voice Networking (Base 4 channels)** license.

- **IP500 PRI Trunk Channels**

Each IP500 PRI-U trunk daughter card provides 8 channels by default. Additional channels are enabled by the addition of the type of license.

1.9 Ports

Ports

As mentioned, a number of different ports are used for access to IP Office systems. The following table lists some of the ports on which the IP Office control unit listens for different types of access. ◀ Indicates a listening port on the IP Office control unit. ▶ indicates a port to which the IP Office sends, for example to a PC running an IP Office application.

* Indicates that the port and or protocol can be changed.

Port		Protocol		Function
25*	▶	SMTP	TCP	Email system alarms from the IP Office to SMTP server. For IP Office 4.2 also used for Voicemail Email on Embedded Voicemail.
37	▶	Time	UDP	Time requests from the IP Office to a Time Server (RFC868).
53	◀	DNS	UDP	Domain Name Service responses.
67	◀	BOOTP/DHCP	UDP	DHCP server operation.
68	▶	BOOTP/DHCP	UDP	DHCP client operation.
69	◀	TFTP	UDP	File requests to the IP Office.
69	▶	TFTP	UDP	File requests by the IP Office.
80	◀	HTTP	TCP	HTTP file requests to the IP Office.
161*	◀	SNMP	UDP	From SNMP applications.
162*	▶	SNMP Trap	UDP	To addresses set in the IP Office configuration.
500	◀	IKE	UDP	Key exchange for IPSec protocol.
389*	▶	LDAP	TCP	Lightweight Directory Access Protocol.
520	▶	RIP	UDP	To and from the IP Office to other RIP devices. For RIP1 and RIP2 (RIP1 compatible) the destination address is a subnet broadcast, eg. 192.168.42.255. For RIP2 Multicast the destination address is 224.0.0.9.
520	◀	RIP	UDP	
1701	◀	L2TP	UDP	Layer 2 tunneling protocol.
1718	◀	H.323	UDP	H.323 Discovery
1719	◀	H.323 RAS	UDP	H.323 Status. VoIP device registering with the IP Office.
1720	▶	H.323/H.245	UDP	H.323 Signalling. Data to a registered VoIP device.
2127	▶	(UDP)	UDP	PC Wallboard to CCC Wallboard Server.
3478	▶	SIP	UDP	Port used for STUN requests from the IP Office to the SIP provider.
5005	◀	RTCP Monitor	UDP	RTCP Monitoring information from Avaya H323 phones. (IP Office 5.0+)
5060	◀▶	SIP	UDP/TCP*	SIP Line Signalling/SIP End points.
8080	▶	HTTP	TCP	Browser access to the Delta Server application.
8089	▶	Enconf	UDP	From the IP Office to the Conferencing Center Server Service. User access to the conference center is direct via HTTP sessions.
8888	▶	HTTP	TCP	Browser access to the IP Office ContactStore (VRL) application.
49152 - 53247 *	◀▶	RTP/RTCP	UDP	Dynamically allocated ports used during VoIP calls for RTP and RTCP traffic. The port range can be adjusted through the System LAN1 VoIP ¹⁵⁶ tab.
50791	▶	IPO Voicemail	UDP	To voicemail server address.
50793	◀	IPO Solo Voicemail	UDP	From IP Office TAPI PC with Wave drive user support.
50794	◀	IPO Monitor	UDP	From the IP Office Monitor application.
50795	◀	IPO Voice Networking	UDP	Small Community Network signalling (AVRIP) and BLF updates. Each system does a broadcast every 30 seconds. BLF updates are sent required up a maximum of every 0.5 seconds.
50796	◀	IPO PCPartner	UDP	From an IP Office application (for example Phone Manager or SoftConsole). Used to initiate a session between the IP Office and the application.
50797	◀	IPO TAPI	UDP	From an IP Office TAPI user PC.
50798	▶	(UDP)	UDP	<i>BT Fusion variant. No longer used.</i>
50799	▶	IPO BLF	UDP	Broadcast to the IP Office LAN and the first 10 IP addresses registered from other subnets.
50800	▶	IPO License Dongle	UDP	To the License Server IP Address set in the IP Office configuration.
50801	◀	EConf	UDP	Conferencing Center Service to IP Office.
50802	◀	Discovery	TCP	IP Office discovery from Manager.
50804 *	◀	Service Access Protocol	TCP	IP Office configuration settings access.

Port		Protocol	Function
50805 *	◀	TCP	" TLS Secure.
50808 *	◀	TCP	IP Office system status access. Used by the IP Office System Status Application (SSA) and IP Office Small Business Center Application (CCR).
50812 *	◀	TCP	IP Office security settings access.
50813 *	◀	TCP	" TLS Secure.
50814 *	◀	TCP	IP Office Enhanced TSPI access. (<i>IP Office 5.0+</i>)

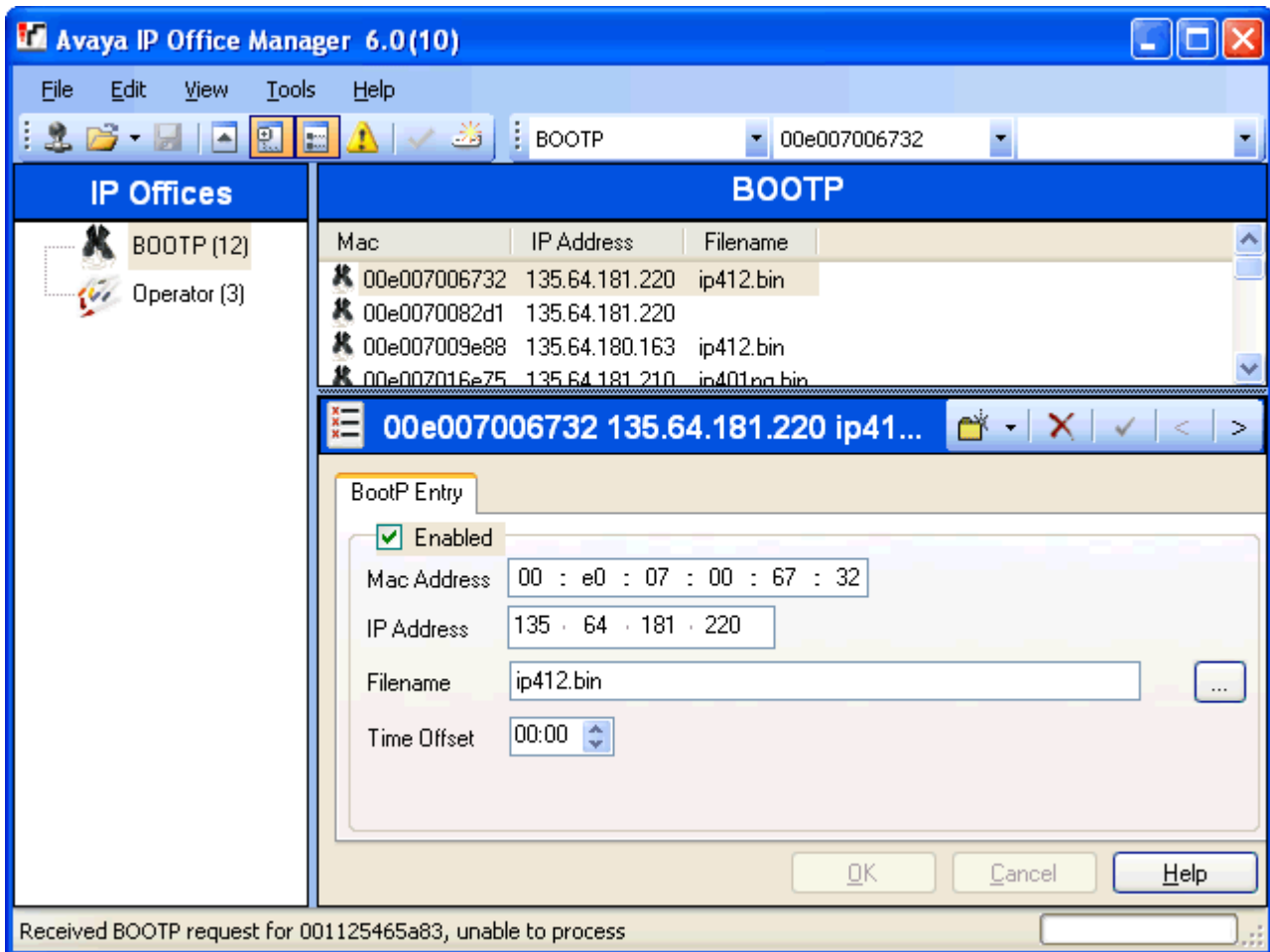
- CDR/SMDR from the IP Office is sent to the port number and IP address defined during configuration and using either TCP or UDP as selected.

Chapter 2.

Configuration Mode

2. Configuration Mode

By default Manager starts in configuration mode with no IP Office configuration settings loaded.



This section of the documentation is divided into two parts as follows.

[The Configuration Mode Interface](#)^[45]

This part details the screen elements of Manager's configuration mode interface.

- [The Menu Bar](#)^[49]
- [Toolbars](#)^[50]
- [Using the Navigation Pane](#)^[52]
- [Using the Group Pane](#)^[54]
- [Using the Details Pane](#)^[56]
- [Using the Error Pane](#)^[58]
- [Altering the Interface](#)^[59]

[Editing Configuration Settings](#)^[62]

This part details how Manager's configuration mode can be used for the following tasks.

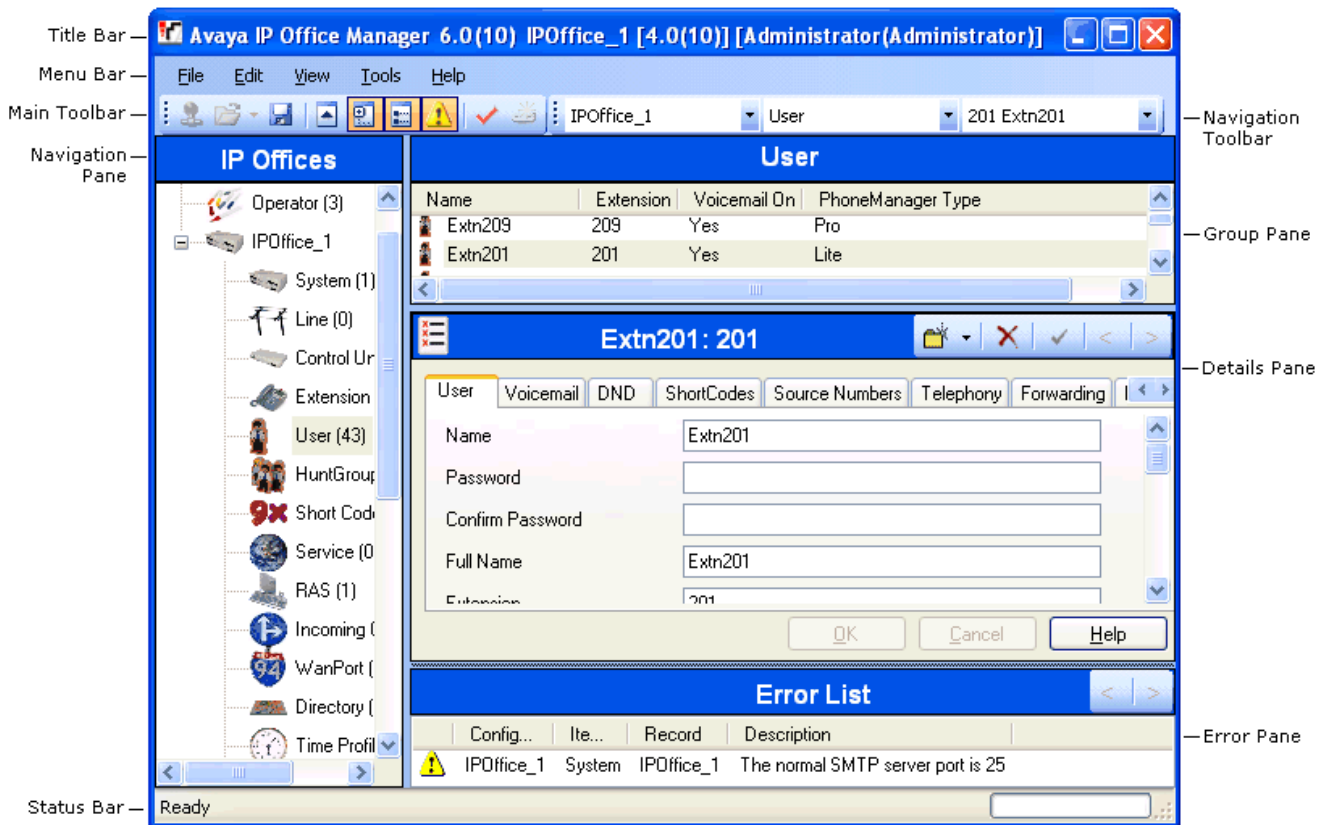
- [How the Configuration is Used](#)^[62]
- [Loading a Configuration](#)^[67]
- [Creating a New Configuration](#)^[72]
- [Importing and Exporting Settings](#)^[73]
- [Sending a Configuration](#)^[76]
- [Saving a Configuration Offline](#)^[75]
- [Erasing the IP Office Configuration](#)^[78]

Switching Manager to Configuration Mode

Though Manager starts in configuration mode; it can also run in security mode by selecting **File | Advanced | Security Settings**. To return to configuration mode from security mode, select **File | Configuration**.

2.1 The Configuration Mode Interface

When Manager is in configuration mode, the screen elements shown are available. Some of these elements can be customized, moved and hidden.

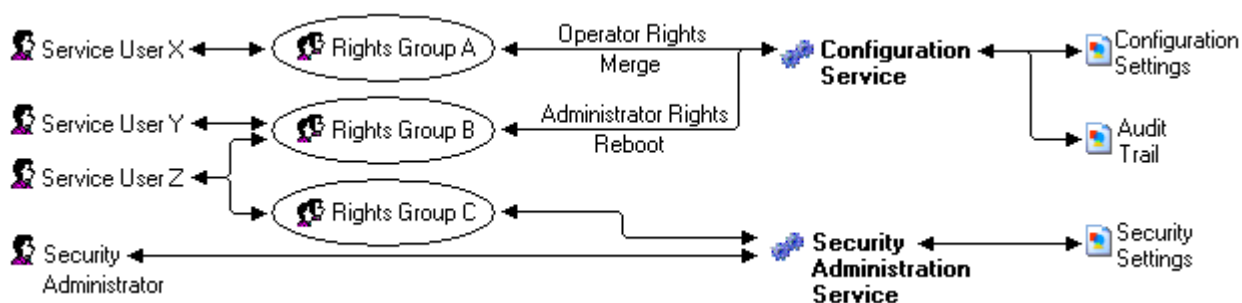


Manager Configuration Mode Screen Elements

- **Title Bar** ⁴⁸
In addition to the application name, when configuration settings are loaded from an IP Office system, the title bar displays the user name used to load the settings and the operator view applied.
- **Menu Bar** ⁴⁹
The options available with the drop down menus provided here change according to whether Manager has a set of configuration or security settings loaded or not.
- **Main Toolbar** ⁵⁰
This toolbar provides icon shortcuts to the most frequently required configuration setting actions.
- **Navigation Toolbar** ⁵⁰
This toolbar provides a set of drop downs which can be used to navigate to particular entries in the configuration settings. The selected options in the navigation pane, the group pane and the details pane are synchronized with the navigation toolbar and vice versa. This toolbar is particularly useful if you want to work with the group pane and or navigation pane hidden in order to maximize the display space for the details pane.
- **Navigation Pane** ⁵²
This pane shows icons for the different types of entry that the configuration can contain. Each type is followed by the number of entries of that type already in the configuration. Selecting an icon displays the matching entries in the group pane and navigation toolbar.
- **Group Pane** ⁵⁴
This pane lists all the entries that match the type selected in the navigation pane or navigation toolbar. The list can be sorted by clicking on column heading. Selecting an entry in this pane displays its details in the details pane.
- **Details Pane** ⁵⁶
This pane shows the configuration settings for a particular entry within the configuration. The entry is selected using the navigation toolbar or using the navigation pane and group pane.
- **Error Pane** ⁵⁸
This pane shows errors and warnings about the configuration settings. Selecting an item here loads the corresponding entry into the details pane.
- **Status Bar** ⁶¹
This bar display messages about communications between Manager and IP Office systems. It also displays the security level of the communications by the use of a padlock icon.

2.2 Security Settings

Access to IP Office 3.2+ system settings is controlled by Service Users and Rights Groups. All actions involving communications between the Manager user and the IP Office require a Service User name and password. That Service User must be a member of a Rights Group configured to perform that action.



In the example illustrated above:

- Service User X can read and write the configuration. However they can only edit Operator settings and can only make changes that can be merged.
- Service User Y can read and write the configuration, edit all settings and make changes that require reboots.
- Service User Z can read and write the configuration, edit all settings and make changes that require reboots. They can also access the security settings.
- The Security Administrator can only access the security settings.

Security Administrators

By default the security administrator is the only user who can access the IP Office's security settings using Manager's security mode.

Service Users

Each Service User has a name, a password and is a member of one or more Rights Groups.

Rights Groups

The Rights Groups to which a Service User belongs determine what actions they can perform. Actions available to Rights Groups include configuration actions, security actions and system status actions:

Configuration	Security	System Status
• Read the configuration. • Write the configuration. • Merge the configuration. • Default the configuration. • Reboot immediately. • Reboot when free. • Reboot at time of day.	• Read all security settings. • Write all security settings. • Reset all security settings. (IP Office 4.1+) • Write own password. (IP Office 4.1+)	• System Status Access. • Read All Configuration.

Where a Service User has been configured as a member of more than one Rights Group, they combine the functions available to the separate Rights Groups.

Operator Rights

Each Rights Group has a Manager Operator Rights setting. This setting controls what types of configuration entries Manager will allow members of the Rights Group to view and what actions they can perform with those types of entries.

Operator	View/Edit/ New/ Delete	Configuration Entry Types
Administrator	All	View, edit create and delete all configuration entries.
Manager	View	View all except WAN Port.
	Edit	Extension, User, Hunt Group, Short Code, Service, RAS, Incoming Call Route, Directory, Time Profile, Firewall Profile, IP Route, Least Cost Route, Account Code, ARS, E911 System.
	New	As edit except Short Code.
	Delete	As edit except Short Code.
Operator	View	View all except WAN Port.
	Edit	Extension, User, Hunt Group, Short Code, Service, RAS, Incoming Call Route, Time Profile, Firewall Profile, IP Route, Least Cost Route, Account Code, Licence, ARS, E911 System.
	New	None.
	Delete	Delete Incoming Call Route and Directory.
User & Group Edit	View	User and Hunt Group entries only.
	Edit	
	New	None
	Delete	
User & Group Admin	All	User and Hunt Group entries only.
Dir & Account Admin	All	Directory and Account Code entries only.
Time & Attendant Admin	All	Time Profile and Auto Attendant entries only.
ICR & User Rights Admin	All	Incoming Call Route and User Rights entries only.
Read Only	View	View all configuration entries.
	Edit	None.
	New	
	Delete	

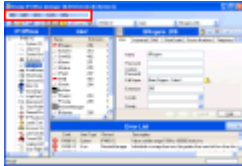
2.3 Title Bar

The IP Office Manager title bar shows several bits of information.



- The Manager application version.
- The system name of the IP Office system from which the currently loaded configuration was received.
- The software level of the IP Office system's control unit.
- For IP Office 3.2+ systems, the service user name used to receive the configuration and that user's associated operator rights view level. For pre-3.2 IP Office systems this is replaced with just the operator name.

2.4 The Menu Bar



Details of all the options that may be available within the Menu Bar drop downs are contained in the section [Menu Bar Commands](#) [114].

The commands are context sensitive. Commands are grayed out when not useable.

For some commands, an ► symbol indicates that there are sub-commands from which a selection can be made.

File	Edit	View	Tools	Help
Open Configuration... Close Configuration Save Configuration Save Configuration As... Change Working Directory... Preferences ▶ Offline ▶ Advanced ▶ Backup/Restore ▶ Import/Export... ▶ Exit				

File Menu	View Menu	Tools Menu
Open Configuration... [115] Close Configuration [115] Save Configuration [115] Save Configuration As [115] Change Working Directory... [116] Preferences [117] Offline - Create New Config [124] - Open File... [124] - Send Config... [124] - Receive Config... [124] Advanced - Erase Configuration (Default) [124] - Reboot [124] - Upgrade.. [125] - Audit Trail... [127] - Security Settings... [128] - Erase Security Settings (Default) [128] - System Status [128] - LVM Greeting Utility [129] - Embedded File Management [132] Backup/Restore - Backup Binaries and Configurations [130] - Restore Binaries and Configurations [130] Import/Export - Import [132] - Export [131] Exit [135]	Toolbars [136] Navigation Pane [136] Group Pane [136] Details Pane [136] Error Pane [136] TFTP Log [136]	Extension Renumber [137] Line Renumber [137] Busy on Held Validation [137] MSN [138] Configuration [138] Print Button Labels [139]

2.5 Toolbars



The following toolbars are described here:

- **Main Toolbar.**
- **Navigation Toolbar.**
- **Details Toolbar.**

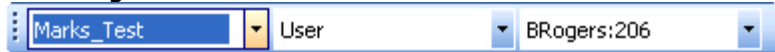
The Main Toolbar



This toolbar is also available when Manager is in security mode. However the Create New Configuration and MSN Configuration buttons are not shown, and the Show/Hide the Error Pane and Validate Configuration buttons do not function.

-  [Open Configuration from IP Office](#) ^[67]
Advertises to the address currently shown in the Manager's title bar for any available IP Office systems. A list of responding systems is then displayed. When a system is selected from this list, a valid user name and password must be entered. Equivalent to File | Open Configuration.
-  [Open Configuration File](#) ^[67]
Opens an IP Office configuration file stored on a PC. The button can be clicked to display a browse window. Alternatively the adjacent ▼ arrow can be used to drop-down a list of the last 4 previously opened configuration files. Equivalent to File | Offline | Open File.
-  [Save Configuration File](#) ^[76]
The action of this icon depends on whether the currently loaded configuration settings were received from an IP Office system or opened from a file stored on PC. If the former applies, the menu sending the configuration back to the system is displayed. In the latter case, the file changes are saved to the original file. Equivalent to File | Save Configuration.
-  [Collapse All Groups](#) ^[52]
Causes all  symbols in the navigation pane to be collapsed to  symbols.
-  [Show/Hide the Navigation Pane](#) ^[52]
-  [Show/Hide the Group Pane](#) ^[54]
-  [Show/Hide the Error Pane](#) ^[58]
-  [Validate Configuration](#) ^[58]
Runs a validation on all the currently loaded configuration settings. The results appear in the error pane. By default the configuration is automatically validated when loaded and changes are validated when made, however the validation preferences can be changed through [File | Preferences | Validation](#) ^[123].
-  [Create New Configuration](#) ^[72]
Runs a series of dialogs that create a new configuration from scratch.

The Navigation Toolbar



This toolbar provides drop down lists which can be used to navigate to particular entries in the configuration settings. The selected options in the navigation pane, group pane and the details pane are synchronized with the navigation toolbar and vice versa. This toolbar is particularly useful if you want to work with the group pane and or navigation pane hidden in order to maximize the display space for the details pane.

This toolbar is not available when Manager is in [security mode](#) ⁸⁰.

Details Toolbar



This toolbar is shown in the top-right of the details pane.

- **Create New Record**

The ▼ arrow is used to select the entry type to be created. For example; when adding an extension clicking ▼ may allow selection of a VoIP Extension or IP DECT Extension.

- **Delete Entry**

- **Validate Entry**

- **< > Show Previous/Next Entry**

Moving to the Previous or Next Entry

1. Click < or > at the top-right to move to the previous or next entry.

Altering the Toolbars

Showing or Hiding Toolbars

The different toolbars can be hidden if not required.

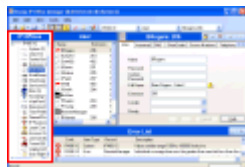
1. Select **View** and then **Toolbars**. Those toolbars currently shown are indicated by a tick mark.
2. To show or hide a toolbar, click on its name.

Moving Toolbars

The position of the Manager toolbars can be moved. Note that when moving a toolbar, the other toolbars and panes may adjust their size or position to ensure that all the toolbar icons remain visible.

1. Place the cursor over the end of the toolbar.
2. When the cursor changes to a four-way arrow, click and hold the cursor.
3. Move the toolbar to the required position and release the cursor.

2.6 Using the Navigation Pane



This pane shows icons for the different types of entry that the configuration can contain. Each type is followed by the number of entries of that type already in the configuration.

Selecting an icon displays the matching entries in the group pane and navigation toolbar.

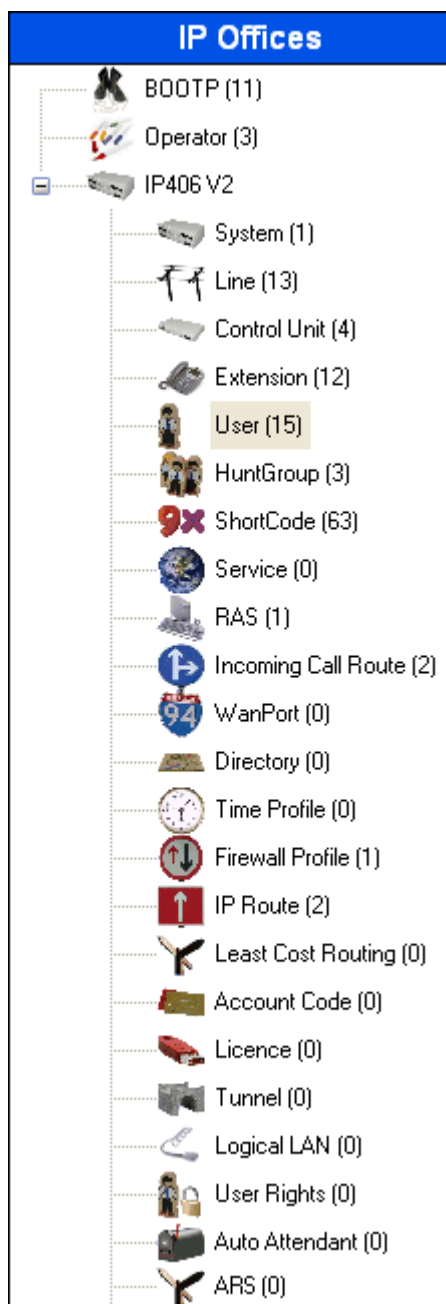
Where  or  icons appear in the pane, they allow the structure to be expanded or collapsed. When the group pane is hidden,  and  icons are shown for each entry type and allow the entry type to be expanded to display all the existing entries of that type.

The  icon in the main toolbar can also be used to collapse all the expanded entry types shown in the navigation pane.

The icons shown in this pane will vary according to the type of IP Office system loaded. For example Wireless is only shown for Small Office Edition systems. They may also vary for different locales, for example E911 is only shown in the US.

The BOOTP and Operator icons are special. They represent settings stored on the Manager PC rather than configuration settings received from an IP Office system.

When Manager is used in security mode, this pane is also used by Manager in [security mode](#)^[80] to display entries for security settings.



Navigation Pane Actions

Moving the Border Between the Panes

The border between the visible panes can be adjusted. Note that this is a proportional rather than exact position. If the whole window size is altered, the border position may also move.

1. Place the cursor over the border between two panes.
2. When the cursor changes to a double headed arrow with a bar through it, click and hold the cursor.
3. Drag the border to the required position and release the cursor.

Showing or Hiding Panes

The navigation pane can be shown or hidden. To do this use either of the following methods.

1. From the main toolbar, use the  icon.

or

1. Select **View**. Those panes currently shown are indicated by a tick mark.
2. To show or hide the navigation pane, click on its name.

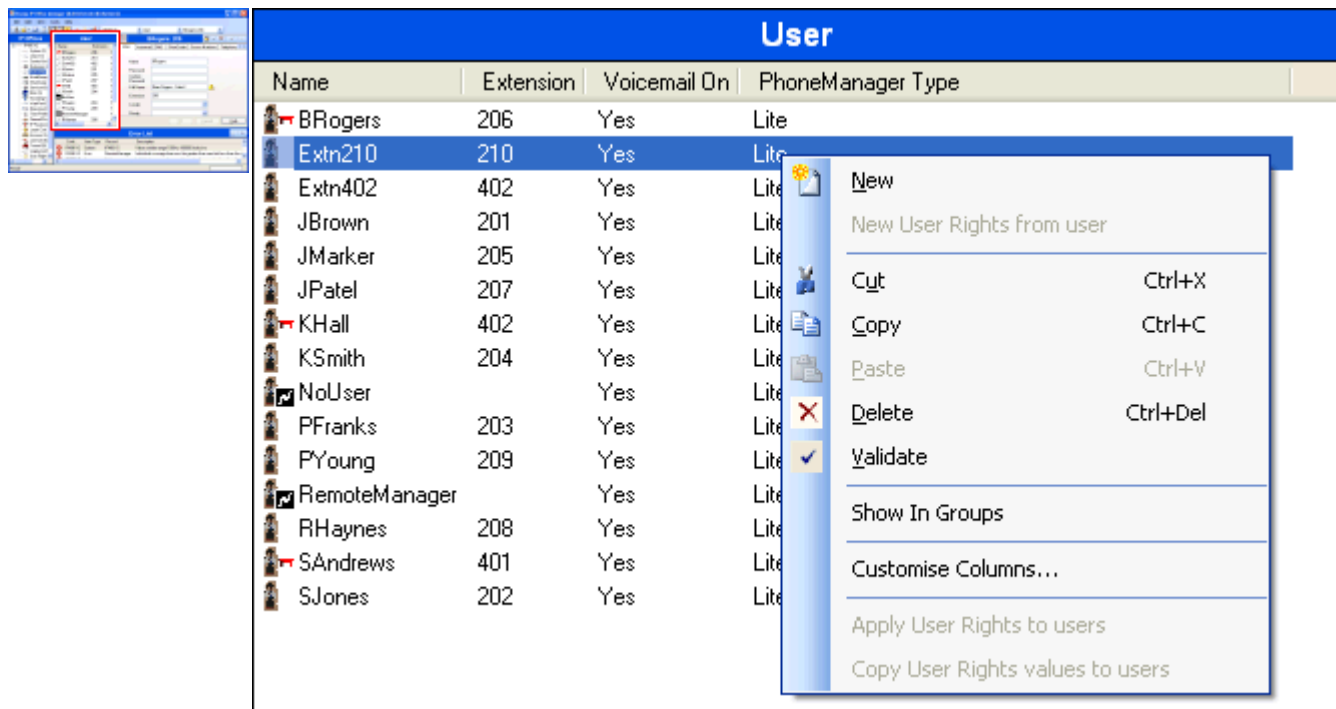
Changing the Size of Configuration Icons

The size of the icons used on the navigation pane and details pane can be adjusted.

1. Select **File** and then **Preferences**.
2. Select the **Visual Preferences** tab.
3. Select the required icon size from **Small**, **Medium** or **Large**.
4. Click **OK**.

2.7 Using the Group Pane

This pane lists all the entries that match the type selected in the navigation pane or navigation toolbar. The list can be sorted by clicking on a column heading. Selecting an entry in this pane displays its details in the details pane.



Name	Extension	Voicemail On	PhoneManager Type
BRogers	206	Yes	Lite
Extn210	210	Yes	Lite
Extn402	402	Yes	Lite
JBrown	201	Yes	Lite
JMarker	205	Yes	Lite
JPatel	207	Yes	Lite
KHall	402	Yes	Lite
KSmith	204	Yes	Lite
NoUser		Yes	Lite
PFranks	203	Yes	Lite
PYoung	209	Yes	Lite
RemoteManager		Yes	Lite
RHaynes	208	Yes	Lite
SAndrews	401	Yes	Lite
SJones	202	Yes	Lite

The icons used in the pane may vary according to the state of the entry. For example, some of the users shown in this example have been configured for hot desking. This pane is also used by Manager in [security mode](#)^[80] to display entries for security settings.

Group Pane Actions

Sorting the List

The entries shown in the group pane can be sorted using any of the columns displayed.

1. To sort the list using the details in a particular column, click on the column header.
2. Clicking on the same column header again reverses the sort order.

Customizing the Columns Displayed

For each entry type, which details are shown in the group pane can be customized. Also the order of the column can be adjusted. For details of the options available for each type of entry see Appendix D: Miscellaneous.

1. Right-click on the pane and select **Customize Columns**.
2. To add a column, select its name in the left-hand Available Columns list and click >> to move it to the right-hand **Selected Columns** list.
3. To remove a column, select its name in the right-hand **Selected Columns** list and click << to move it to the left-hand **Available Columns** list.
4. To change the order of the **Selected Columns**, click on a column name and use the ^ and v controls.
5. Click **OK**.

Changing the Column Widths

1. In the column headers, place the cursor over the border between two columns.
2. When the cursor changes to a double headed arrow with a bar through it, click and hold the cursor.
3. Drag the border to the required position and release the cursor.

Adding a New Entry

The group pane can be used to add a new entry of the type currently displayed.

1. Right-click on the pane and select **New**.
 - A ► arrow symbol next to **New** indicates that you can select a particular type of new entry to create. Click the arrow and select an option from the list.
2. Use the details pane to configure the new entry.
3. Click **OK** in the details pane.

Deleting an Entry

1. Select the entry to be deleted by clicking on it.
2. Right-click on the pane and select Delete.

Validating an Entry

1. Select the entry to be validated by clicking on it.
2. Right-click on the pane and select Validate.

Show in Groups

This command groups the items shown in the group pane. The grouping method will vary depending on the entry type being listed. For example, short codes are grouped based on short code feature type such as all forwarding short codes together.

1. Right-click on the pane and select **Show In Groups**.

Moving the Border Between the Panes

The border between the visible panes can be adjusted. Note that this is a proportional rather than exact position. If the whole window size is altered, the border position may also move.

1. Place the cursor over the border between two panes.
2. When the cursor changes to a double headed arrow with a bar through it, click and hold the cursor.
3. Drag the border to the required position and release the cursor.

Showing or Hiding Panes

The group pane can be shown or hidden. To do this use either of the following methods.

1. From the main toolbar, use the  icon.
- or
1. Select **View**. Those panes currently shown are indicated by a tick mark.
 2. To show or hide the group pane, click on its name.

Changing the Size of Configuration Icons

The size of the icons used on the navigation pane and details pane can be adjusted.

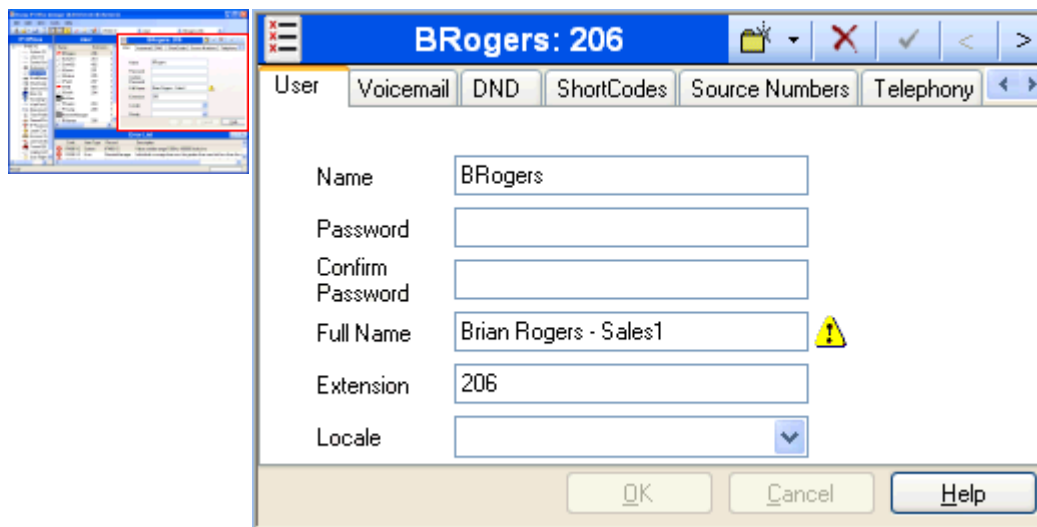
1. Select **File** and then **Preferences**.
2. Select the **Visual Preferences** tab.
3. Select the required icon size from **Small**, **Medium** or **Large**.
4. Click **OK**.

2.8 Using the Details Pane

Whenever a selection is made through the group pane or the navigation toolbar, the settings for the matching entry are shown in the details pane. This pane is also used by Manager in [security mode](#) to display entries for security settings.

The details are grouped into tabs. The tabs available may vary depending on what particular type of entry is being viewed. For example, for extension entries the Analog tab is only shown for analog extensions.

Individual settings may also be grayed out. This indicates that they are either for information only or that they cannot be used until another setting is enabled.



The top-left icon indicates the following:



Locked

Indicates that you can view the settings but cannot change them.



Editable

Indicates that you can change the settings if required.



Changed

Indicates that the settings have been changed since the tab was opened. Click OK to save the changes or Cancel to undo.

Various icons may appear adjacent to settings:



Locked Setting

The setting cannot be changed through this tab. This icon appears on user settings where the user is associated with User Rights that controls the setting.



Information

Indicates a value which does not have to be set but may be useful if set.



Warning

A warning indicates a configuration setting value that is not typical and may indicate misconfiguration.



Error

An error indicates a configuration setting value that is not supported by the IP Office. Such settings may cause the IP Office to not operate as expected.

Details Pane Actions

Editing an Entry

1. The method of entering an entry varies as different fields may use different methods. For example text entry boxes or drop down lists.
2. By default when changes are made, they are validated once another field is selected. See [File | Preferences | Validation](#).
3. Clicking on **OK** at the base of the details pane to accept the changes or click on Cancel to undo the changes.

Adding a New Entry

1. Click  at the top-right of the details pane.
2. Select the type of entry required. For example, with services you can select from **Normal**, **WAN** or **Intranet**.

Deleting an Entry

1. Click  at the top-right of the details pane.

Validating an Entry

1. Click  at the top-right of the details pane.

Moving to the Previous or Next Entry

1. Click **<** or **>** at the top-right to move to the previous or next entry.

Selecting a Tab

1. To view the detail stored on a particular tab, click on the name of that tab.
2. If the tab required is not shown, use the  controls if shown on the right to scroll through the available tabs. The tabs available may vary depending on what particular type of entry is being viewed.

Changing the Position of the Details Pane

When the group pane is visible, the details pane is shown either below it or to its right. This position can be adjusted.

1. Select **View** and then **Details Pane**.
2. The current position setting is indicated by a tick mark.
3. To select a position, click on it.

Changing How the Tabs Display

For entries with more than two tabs, you can select whether Manager should use  controls or arrange the tabs as multiple rows when necessary.

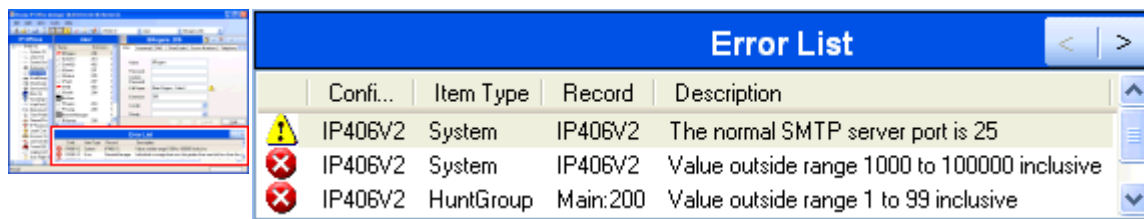
1. Select **Files | Preferences | Visual Preferences**.
2. Select **Multi-Line Tabs**.
3. Click **OK**.

2.9 Using the Error Pane

Validation is a process where Manager checks configuration entries for errors or for values for which it regards as requiring a warning. The results of this checking are shown by icons next to the field that caused the error or warning. All errors and warnings are also listed in the Error Pane.

By default validation is performed automatically whenever a configuration file is opened and when any field is edited. However, if required, the use of automatic validation can be controlled through the settings on the [File | Preference | Validation](#) ^[123] tab.

The validation process can be run manually using the  icon for the whole configuration or the  icon for a particular entry.



The icons used for errors and warnings are:



Error

An error indicates a configuration setting value that is not supported by the IP Office. Such settings are likely to cause the IP Office to not operate as expected.



Warning

A warning indicates a configuration setting value that is not typical and may indicate misconfiguration.



Information

Typically indicates a setting which may be useful to set.

Error Pane Actions

Revalidating Configuration Settings

By default, the configuration is validated when loaded and individual entries are revalidated when changed.

1. To validate the whole configuration, click  in the main toolbar.
2. For a particular entry, click  in the details pane.

Jumping to an Error or Warning

1. Clicking on an error or warning in the error pane will load the matching entry tab into the details pane.
2. The < and > can be used to move to the next error or warning in the error pane.

Showing or Hiding Panes

The error pane is automatically displayed if a configuration containing errors or warnings is loaded into Manager. However it can be manually shown or hidden using either of the following methods.

1. From the main toolbar, use the  icon.
- or
1. Select **View**. Those panes currently shown are indicated by a tick mark.
 2. To show or hide the error pane, click on its name.

2.10 Altering the Interface

The Manager configuration settings interface can be customized in a number of ways. These changes are remembered the next time Manager is started.

Resizing the Manager Window

When the Manager window is not maximized or minimized, its size can be adjusted.

1. Place the cursor over the edge of the current window.
2. When the cursor changes to a double-headed arrow, click and hold the cursor.
3. Drag the edge to the required position and then release the cursor.

Moving the Border Between the Panes

The border between the visible panes can be adjusted. Note that this is a proportional rather than exact position. If the whole window size is altered, the border position may also move.

1. Place the cursor over the border between two panes.
2. When the cursor changes to a double-headed arrow with a bar through it, click and hold the cursor.
3. Drag the border to the required position and release the cursor.

Showing or Hiding Toolbars

The different toolbars can be hidden if not required.

1. Select **View** and then **Toolbars**. Those toolbars currently shown are indicated by a tick mark.
2. To show or hide a toolbar, click on its name.

Moving Toolbars

The position of the Manager toolbars can be moved. Note that when moving a toolbar, the other toolbars and panes may adjust their size or position to ensure that all the toolbar icons remain visible.

1. Place the cursor over the end of the toolbar.
2. When the cursor changes to a four-way arrow, click and hold the cursor.
3. Move the toolbar to the required position and release the cursor.

Showing or Hiding Panes

The details pane cannot be hidden. The navigation pane, group pane and error pane can be shown or hidden. To do this use either of the following methods.

1. From the main toolbar, use the following icons:

-  **Hide/Show Navigation Pane.**
-  **Hide/Show Group Pane.**
-  **Hide/Show Error Pane.**

or

1. Select **View**. Those panes currently shown are indicated by a tick mark.
2. To show or hide a pane, click on its name.

Changing the Position of the Details Pane

When the group pane is visible, the details pane is shown either below it or to its right. This position can be adjusted.

1. Select **View** and then **Details Pane**.
2. The current position setting is indicated by a tick mark.
3. To select a position, click on it.

Changing the Size of Configuration Icons

The size of the icons used on the navigation pane and details pane can be adjusted.

1. Select **File** and then **Preferences**.
2. Select the **Visual Preferences** tab.
3. Select the required icon size from **Small**, **Medium** or **Large**.
4. Click **OK**.

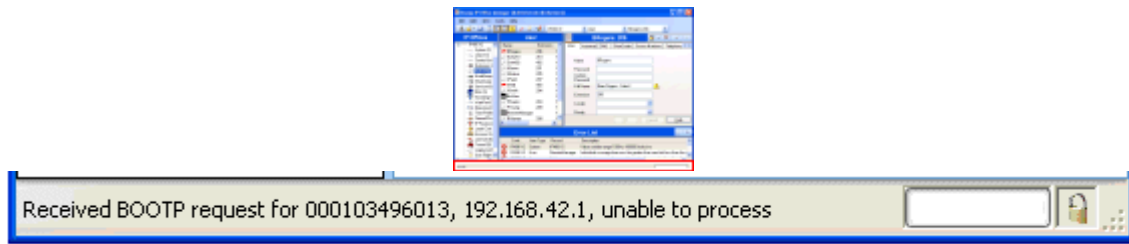
Changing How the Tabs Display

For entries with more than two tabs, you can select whether Manager should use  controls or arrange the tabs as multiple rows when necessary.

1. Select **Files | Preferences | Visual Preferences**.
2. Select **Multi-Line Tabs**.
3. Click **OK**.

2.11 The Status Bar

The status bar at the base of the Manager screen is used to display icons and messages about communications between Manager and IP Office systems. If the IP Office Manager is also acting as a BOOTP and TFTP server it will also show BOOTP and TFTP messages.



A padlock icon is displayed whenever the Manager communications settings are set to secure. This indicates all attempted configuration and security settings exchanged will be attempted over a secure TLS link:



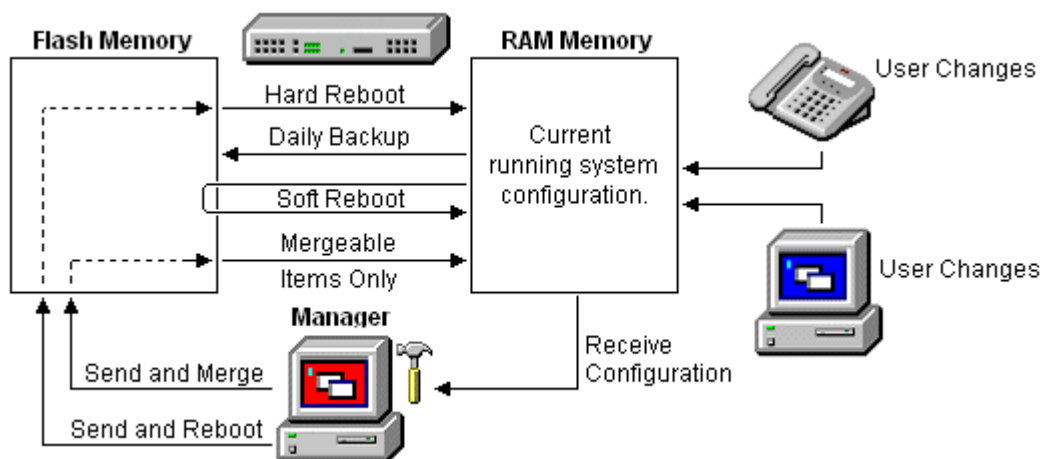
Status bar messages display information about communications the Manager application receives. Some typical status bar messages are listed below.

- **Ready**
This message is normally seen when Manager has just started and no configuration has been received.
- **Received BOOTP request for 001125465ab2, unable to process**
Manager is acting as a BOOTP server. It has received a BOOTP request that does not match an IP Office system listed in its BOOTP entries. The cause may be a device or application, other than an IP Office, that also uses BOOTP.
- **TFTP: Received TFTP Error "NotFound" from 192.168.42.1**
An attempt to receive settings from or send settings to the IP Office failed. The most probable cause is a name or password error.
- **TFTP: Received 17408 bytes for Marks_Test**
Manager has received configuration settings from the named system using TFTP.
- **Sent 100% of C:\Program Files\Avaya\IP Office\Manager\b10d01b2_3.bin**
Manager has sent the indicated file in response to a BOOTP request.

2.12 Editing Configuration Settings

Before editing the IP Office configuration settings, it is important to understand how those settings are stored and used by the IP Office system.

- The IP Office control unit holds copies of its configuration in both Flash and RAM memory.
- The copy in Flash memory is retained even if power to the control unit is removed.
- During power up, the configuration in Flash memory is copied to the RAM memory.
- The copy in RAM memory is then used to control the IP Office system's operation.
- Users actions such as changing their forward destinations or mailbox passcode using their phone or Phone Manager are written to the configuration in RAM memory.
- Between 00:00 and 00:30, a daily backup occurs which copies the configuration in RAM back into Flash memory.



When using Manager to edit the configuration settings, the following need to be remembered:

- Manager receives the current configuration settings from RAM memory. Therefore the settings include any changes made by users up to that time.
- When sending the configuration settings back to the IP Office, Manager allows two choices, reboot or merge.
 - Reboot sends the configuration to the IP Office's Flash memory along with an instruction to reboot. Following the reboot, the new configuration in Flash memory is copied to the RAM memory and used.
 - Merge sends the configuration to the IP Office's Flash memory without rebooting. The IP Office then copies those changes that are mergeable into the RAM memory. A key point here is that not all configuration settings are mergeable, see the Reboot/Merge Configuration List that follows.

As a result of the above, it is important to bear the follow scenarios in mind:

- Changes made by users after a configuration is received by Manager may be lost when the configuration is sent back from Manager.
- If a merge is attempted with non-mergeable items, those items will be written to Flash memory but will not be copied to RAM memory. If a daily backup occurs, they will then be overwritten by the RAM. If a power loss reboot occurs, they will be written to RAM memory.

2.12.1 Mergeable Settings

The table below shows the configuration entries for which changes can be merged and those that require a system reboot. The Send Configuration menu shown when sending a configuration to the IP Office automatically indicates when the configuration is mergeable.

Mergeable	3.2+	Pre-3.2
 System ^[148]	—	—
- System ^[149]	✓*1	✗
- LAN1/LAN2 ^[152]	✗	✗
- DNS ^[163]	✗	✗
- Voicemail ^[164]	✓*2	✗
- Telephony ^[166]	✓*3	✗
- VoIP	✗	✗
- LDAP ^[175]	✗	✗
- System Events ^[181]	✗	✗
- CDR/SMDR ^[187]	✓	✗
- Twining ^[188]	✓	—
 Line ^[193]	✗	✗
 Control Unit ^[253]	✗	✗
 Extension ^[255]	✗	✗*4
 User ^[266]	✓	✓
 Hunt Group ^[307]	✓	✓
 Short Code ^[331]	✓	✓
 Service ^[332]	✓	✓
 RAS ^[341]	✓	✓
 Incoming Call Route ^[343]	✓	✓

Mergeable	3.2+	Pre-3.2
 WAN Port ^[351]	✗	✗
 Directory ^[359]	✓	✓
 Time Profile ^[361]	✓	✗
 Firewall Profile ^[363]	✓	✓
 IP Route ^[365]	✓	✓
 Least Cost Route ^[371]	✓	✓
 Account Code ^[376]	✓	✓
 License ^[378]	✓	✓
 Tunnel ^[380]	✗	✗
 Logical LAN ^[385]	✗	✗
 Wireless ^[386]	✗	✗
 User Rights ^[389]	✓	✓
 Auto Attendant ^[406]	✓	✗
 Authorization Code ^[403]	✓	✗
 ARS ^[406]	✓	—
 E911 System ^[420]	✗	✗

- ***1 - 3.2+ | System | System**
Changes to Locale, License Server IP Address and Favor RIP Routes over Static require a reboot.
- ***2 - 3.2+ | System | Voicemail**
Changes to Voicemail Type require a reboot.
- ***3 - 3.2+ | System | Telephony**
Changes to Companding LAW and Busy Tone Detection require a reboot.
- ***4 - 4.1+ | Extension**
For IP Office 4.1+, Base Extension and Disable Speakerphone are mergeable.

2.12.2 Configuration Sizes

There are maximum size limits to the configuration file that can be loaded into an IP Office control unit. They are:

Control Unit	Maximum Configuration File Size
Small Office Edition	192KB
IP403	192KB
IP406 V1	192KB
IP406 V2	384KB
IP412	1.0MB
IP500	1.0MB

- **Configuration Size Restriction Controls**

Previously if a configuration that was too large was sent to an IP Office control unit, the control unit would need to be reset to default using its DTE port. For IP Office 5.0 a number of changes have been made:

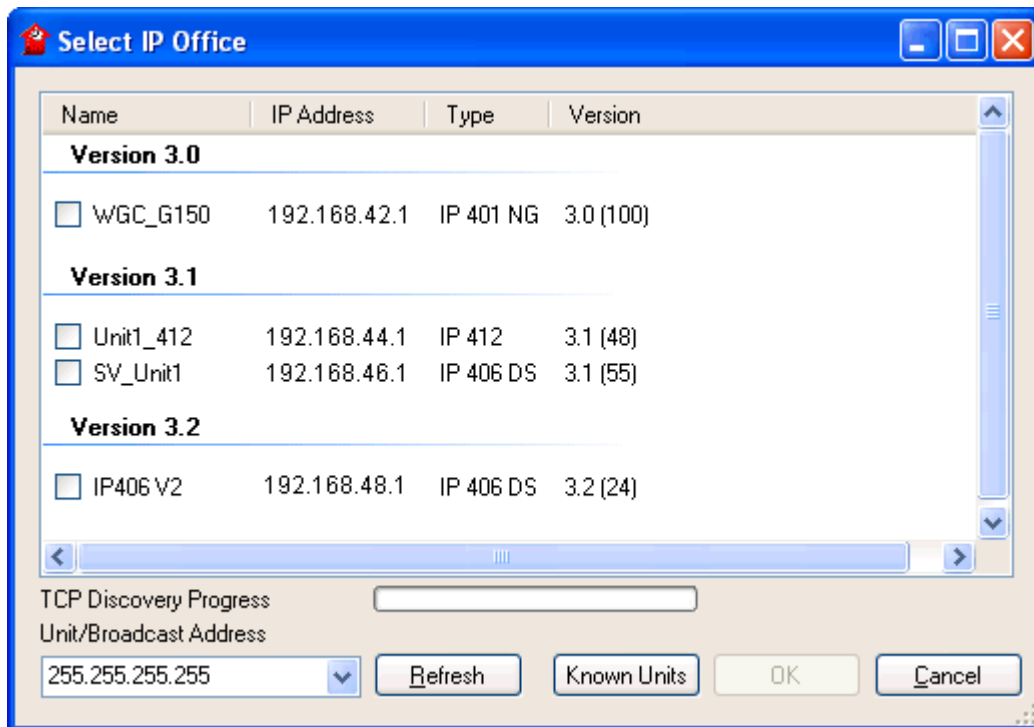
- For IP Office Manager R5, when you attempt to save a configuration that is too large, you will be prompted and the save is canceled.
- During normal operation, additional configuration entries can be added to the configuration without using Manager (for example call log entries and directory entries made from phones). If, during the overnight [backup to Flash memory](#) , the configuration is found to be too large, entries will be removed until the configuration is sufficiently small to be backed up. The entries removed are call log records, system directory records and then personal directory in that order. Note that those entries will still exist in the configuration running the IP Office in its RAM memory, however if the IP Office is restarted they will disappear as the configuration is reloaded from the Flash memory.

Figures for all individual entries in the configuration cannot be given as they vary between software releases. The list below gives typical values, in bytes, for common entries:

Physical Extension: 70.	WAN Service: 400.	IP Route (Static): 30.
IP Extension: 70.	RAS Service: 110.	License Key: 40.
User: 170.	Incoming Call Route: 30.	Account Code: 40.
User Short Code: 40.	WAN Port (PPP): 70.	Logical LAN: 60.
DSS Button: 20.	WAN Port (FR): 120.	Tunnel (L2TP): 200.
Hunt Group: 100.	Directory Entry: 70.	Tunnel (IPSec): 110.
Hunt Group member: 10.	Time Profile: 40.	
System Short Code: 10.	Time Profile Entry: 20.	
Normal Service: 220.	Firewall Profile: 40.	
Intranet Service: 240.	Custom Firewall Entry: 80.	

2.12.3 Setting the Discovery Addresses

By default, when  or **File | Open configuration** is selected, Manager's **Select IP Office** menu appears. It performs a UDP broadcast to the address 255.255.255.255. This broadcast will only locate IP Office systems that are on the same network subnet as the PC running IP Office Manager.



The process above is called discovery. A UDP broadcast will not be routed to other networks and subnets. Therefore to find IP Office systems not located on the same subnet as the Manager PC, the following other options are supported.

- **Specific Addressing**

The Unit/Broadcast Address shown on the Select IP Office menu can be changed to the specific IP address of the required system. A single address is routable and so can be used to discover an IP Office system on another subnet.

- **TCP Discovery Address Ranges**

IP Office 3.2+ systems support discovery by TCP as well as UDP. To support this, a set of TCP addresses and address ranges can be specified for use by the Select IP Office discovery process.

- **Known IP Office System Discovery**

The IP Office 4.0 Q2 2007 maintenance release adds supports for a system whereby IP Office Manager can write the details of systems it discovers to a file. The list of systems in that file can then be used for access to those systems. See [Known IP Office Discovery](#) ^[70].

- **DNS Lookup**

IP Office Manager 6.2 can be configured to locate IP Office systems using DNS name lookup. This requires the IP Office systems on a customer network to be added as names on the customer's DNS server and the Manager PC to be configured to use that server for DNS name resolution. The use of DNS is configured through [File | Preferences | Discovery](#) ^[118].

Changing the Initial Discovery Settings

The Discovery tab of the Manager Preferences menu can be used to set the UDP and TCP addresses used by the discovery process run by the Select IP Office menu.

1. Select **File | Preferences** menu.
2. Select the **Discovery** tab.

The screenshot shows the 'Discovery' tab of the Manager Preferences menu. It contains two main sections: 'TCP Discovery' and 'UDP Discovery'. The 'TCP Discovery' section is active and contains a table with columns 'NIC IP', 'NIC Subnet', 'Lower IP Range', and 'Upper IP Range'. The table has one row with the values '192.168.42.203', '255.255.255.0', '192.168.42.1', and '192.168.42.254'. Below the table is a text box labeled 'IP Search Criteria' containing the text '192.168.42.1 - 192.168.42.254; 192.168.44.1; 192.168.46.1'. The 'UDP Discovery' section is below the TCP section and contains a text box labeled 'Enter Broadcast IP Address' with the value '255 . 255 . 255 . 255'. At the bottom of the tab is a checkbox labeled 'Use DNS' which is currently unchecked.

NIC IP	NIC Subnet	Lower IP Range	Upper IP Range
192.168.42.203	255.255.255.0	192.168.42.1	192.168.42.254

IP Search Criteria
192.168.42.1 - 192.168.42.254; 192.168.44.1; 192.168.46.1

Enter Broadcast IP Address 255 . 255 . 255 . 255

☐ Use DNS

3. Under **UDP Discovery** you can enter the default UDP broadcast address to be used by the discovery process.
4. In the **IP Search Criteria** box you can enter IP addresses and IP address ranges for TCP discovery. Addresses are should be separated by semi-colons, ranges by - dashes.

2.12.4 Loading a Configuration

Manager can be used to load configuration settings directly from a running IP Office system or from a configuration file previously saved on the PC.

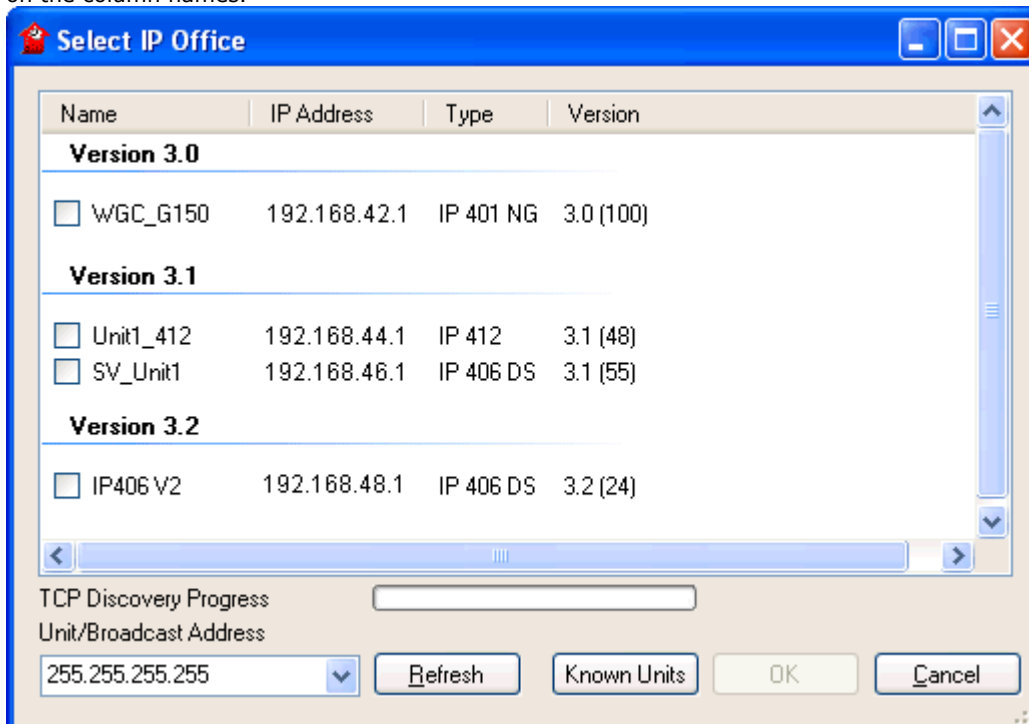
An important change for IP Office 4.1 is to optionally secure the link between the IP Office system and Manager for configuration and security settings exchanges. By default Manager and the IP Office will always attempt to use the original, unsecured link. The control of which mechanism is used by Manager is determined through Manager preferences ([File | Preferences | Security | Secure Communications](#)^[12h]).

When secure communications mode is selected a  padlock icon is present on the Manager status bar.

Loading the Current Configuration from an IP Office

The initial address ranges in which Manager searches for IP Office systems are set through the Manager preferences ([File | Preferences | Discovery](#)^[118]). The security mechanism used for configuration transfer between Manager and an IP Office are set through the Secure Communications attribute of Manager preferences ([File | Preferences | Security](#)^[12h]).

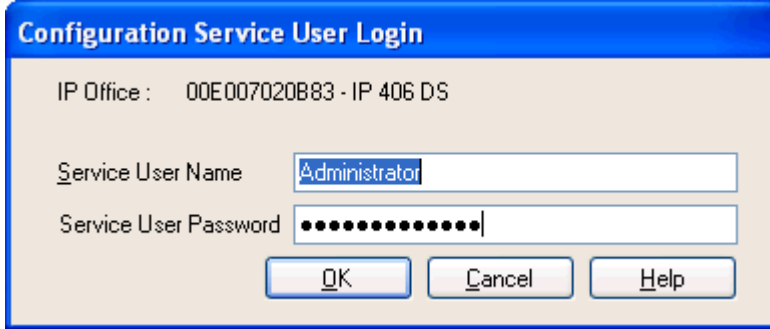
1. Click  in the main toolbar or select **File | Open Configuration** from the menu bar.
2. The **Select IP Office** window appears, listing those IP Office systems that responded. The list can be sorted by clicking on the column names.



- If the system required was not found, the address used for the search can be changed. Enter or select the required address in the **Unit/Broadcast Address** field and then click **Refresh** to perform a new search.
 - **Known Units** is not available unless configured, see [Known IP Office Discovery](#)^[70].
 - The **Unit/Broadcast Address** field is replaced by a **Enter Unit DNS Name or IP Address** field if Manager has been configured to **Use DNS**. See [File | Preferences | Discovery](#)^[118] for more details.
 - For IP Office 4.2+, the **Select IP Office** menu also displays IP Office systems which are not supported by the version of IP Office Manager being used. For example those with a core software level higher than the one with which the version of Manager being used was released. Those systems are listed as **Not Supported**.
3. When the system required is located, check the box next to the system and click **OK**.
 4. The name and password request is displayed. Enter the required details and click **OK**.

- **IP Office 3.2 and higher Systems:**

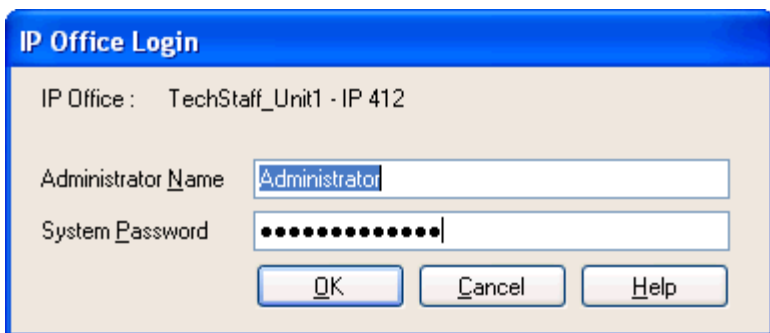
The name and password used must match a Service User configured within the IP Office system's security settings.



The dialog box is titled "Configuration Service User Login". It displays "IP Office : 00E007020B83 - IP 406 DS". Below this, there are two input fields: "Service User Name" with the text "Administrator" and "Service User Password" with masked characters. At the bottom are three buttons: "OK", "Cancel", and "Help".

- **Pre-3.2 IP Office Systems:**

The name must match a Manager operator and the password must match the IP Office system's system password. If the name does not match a Manager operator, the config will still be loaded by using the Guest (read-only) operator.



The dialog box is titled "IP Office Login". It displays "IP Office : TechStaff_Unit1 - IP 412". Below this, there are two input fields: "Administrator Name" with the text "Administrator" and "System Password" with masked characters. At the bottom are three buttons: "OK", "Cancel", and "Help".

5. If the configuration is not loaded it may be for various reasons:

- **Access Denied**

This is displayed as the cause if the service user name/password were incorrect, or the service user has insufficient rights to read the configuration. The Retry option can be used to log in again but multiple rejections in a 10 minute period may trigger events, such as locking the user account, set by the Password Reject Limit and Password Reject Action options in the IP Offices security settings.

- **Failed to communicate with IP Office**

This is displayed as the cause if the network link fails, or the secure communication mode is incorrect (for example Manager is set to unsecured, but the IP Office is set to secure only).

- **Account Locked**

The account of the Service User name and password being used is locked. This can be caused by a number of actions, for example too many incorrect password attempts, passing a fixed expiry date, etc. The account lock may be temporary (10 minutes) or permanent until manually unlocked. An account can be enabled again through the IP Office's security settings.

6. Following a successful log in, addition messages may also appear before the configuration is loaded, such as:

- **Your service user account will expire in X days**

This message indicates that an Account Expiry date has been set on the IP Office service user account and that date is approaching. Someone with access to the IP Office's security settings will be required unlock the account and set a new expiry date.

- **Your password will expire in X days. Do you wish to change it now?**

This message indicates that password ageing has been configured in the IP Office's security settings. If your password expires, someone with access to the IP Office's security settings will be required to unlock the account.

- **Change password**

Through the IP Office's security settings, a service user account can be required to change their password when logging in. The menu provides fields for entering the old password and new password.

- **Contact Information Check - This configuration is under Integrated Management control**

This message will appear if you use a standalone copy of IP Office Manager to load the configuration from an IP Office system that is being managed through the Avaya Integrated Management (AIM) suite. Normally such as system should only be accessed using the tools included in AIM. The options available are:

- **Cancel**

Select this option to close the configuration without making any changes.

- **Set configuration alteration flag**

Select this option if the configuration is being opened because some urgent maintenance action. When the configuration is next opened, the fact that it has been altered will be indicated on the [System | System](#) ¹⁴⁹ tab.

- **Delete Contact Information**

Select this option if the IP Office system is being permanently taken outside of management using AIM.

- **Contact Information Check - This configuration is under special control**

This message will appear if a Manager user with administrator rights has entered their contact information into the configuration. For example to indicate that they do not want the configuration altered while a possible problem is being diagnosed. The options available are:

- **Cancel**

Select this option to close the configuration without making any changes.

- **Set configuration alteration flag**

Select this option if the configuration is being opened because some urgent maintenance action. When the configuration is next opened, the fact that it has been altered will be indicated on the [System | System](#) ^[149] tab.

- **Delete Contact Information**

Select this option to take the IP Office system out of special control.

- **Leave contact information and flags unchanged (*Administrators only*)**

This option is only available to service users logging in with administrator rights.

Loading a Configuration Stored on PC

A configuration file previously saved on the PC can be reopened in Manager. This method of access does not require entry of a Service User name and password. All parts of the configuration are visible. In order to send a configuration opened this way to an IP Office 3.2 system, you must use a service user name with the Administrator operator rights view and rights to write with a reboot.

Use either of the following processes to load a saved configuration file:

1. If the file is one that has previously been opened offline, click the ▼ symbol next to  in the main toolbar. From the list of files displayed select the file required.

or

1. Click  the main toolbar or select **File | Offline | Open File** from the menu bar.
2. An **Open configuration file** window appears. Use this to browse to the required configuration file.
3. Select the file and click **Open**.

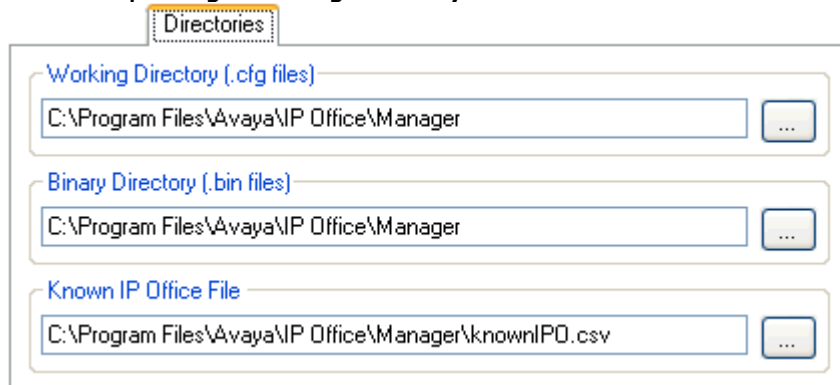
2.12.5 Known IP Office Discovery

When  or **File | Open Configuration** is used, Manager displays the Select IP Office screen. This displays the IP Office systems discovered by either UDP broadcast and or TCP requests (see [Setting the Discovery Addresses](#)⁶⁵). The IP Office 4.0 Q2 2007 maintenance release adds a additional method which is to record details of discovered units and then display a list of those previously discovered ('known') IP Office systems.

Configuring Manager for Known System Discovery

Use of known systems discovery is not enabled by default. The IP Office Manager must be configured for the feature with a file location to which it can store and retrieve know system details.

1. Select **File | Change Working Directory**.

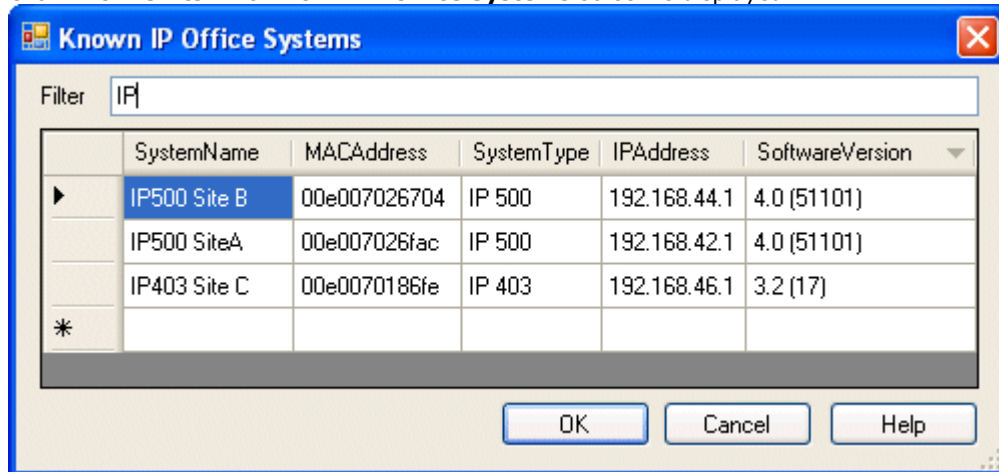


2. In the Known IP Office File field, enter the directory path and file name for a CSV file into which Manager can write details of the IP Office systems it discovers. If the file specified does not exist it will be created the next time IP Office system discovery is performed from Manager.
3. Click **OK**.

4. When  or **File | Open Configuration** is used, a **Known Units** button is now available on the Select IP Office screen.

Using Know System Discovery

1. Select  or **File | Open Configuration**.
2. The **Select IP Office** screen is displayed.
3. Click **Known Units**. The **Known IP Office Systems** screen is displayed.



	SystemName	MACAddress	SystemType	IPAddress	SoftwareVersion
▶	IP500 Site B	00e007026704	IP 500	192.168.44.1	4.0 (51101)
	IP500 SiteA	00e007026fac	IP 500	192.168.42.1	4.0 (51101)
	IP403 Site C	00e0070186fe	IP 403	192.168.46.1	3.2 (17)
*					

4. The screen displays the list of IP Office systems previously discovered and stored in the CSV file.
 - To select an IP Office control unit, highlight the row containing unit data and click OK. The selected unit will appear in the discovery list of the Select IP Office window. See [Loading a Configuration](#)⁶⁷.
 - To filter displayed units, type the first few characters of the unit name in the Filter field. Any unit whose name does not match the filter from left to right will be temporarily hidden.
 - Each discovery appends data to the known unit list. It is possible that details of some entries in the list may be out of date. Right clicking on the leftmost (grey) column of any row will bring up a floating menu offering the options of Refresh and Delete.

- A new entry may be manually added without having to access the system first through normal discovery. Enter the IP address of the new system in the IP Address column of the blank row shown with a * and select Refresh from the floating menu. This will update the Known Units file with data relating to the unit with the specified address.
- Selecting the Cancel button will terminate the selection operation. It will not revert any manually created entries.

Note:

- The key used by the Known Systems CSV file is the IP address. The file cannot contain entries for separate systems that use the same IP address for access.
- The file can be made read only. In that case any attempts using Manager to update the file will be ignored.

2.12.6 Creating a New Configuration

Manager can be used to create a new configuration without connecting to an IP Office system. During the process, you can specify the locale of the system, what type of trunk cards it uses and what type of control unit and expansion modules to include.

This allows the creation of a configuration prior to installation of the real system and so can be used to speed up installation.

- The configuration created must match the physical equipment in the IP Office system onto which the configuration will be loaded. Doing otherwise may cause the IP Office system to reset and experience other problems.
- The **Create Configuration** tool includes all control units, external expansion modules and trunk cards supported by IP Office. It is your responsibility to confirm what IP Office equipment is supported in your locale.

Creating a New Configuration

1. Click  in the main toolbar or select **File | Offline | Create New Config** from the menu bar.
2. Select the **Locale** for the system. This defines a range of features such as default telephony settings. Click **Next**.
3. **Fixed Length Numbering** is supported for IP Office 4.1+. The value can be **None** or **3** to **9**. Click **Next**.
 - If a value is selected, all default extension, user and hunt group extension numbers created by Manager will be that length. In addition Manager will display a warning if an extension number of a different length is entered when editing the configuration.
4. Select the type of IP Office control unit. Click **Next**.
5. Select the additional cards to include in the control unit. The number and type of cards selectable will depend on the control unit type. Click **Next**.
6. For IP400 and IP500 control units, select the external expansion modules, excluding WAN3, to also include in the system. Click **Next**.
7. Click **Finish**.
8. The configuration is created and loaded into Manager.
9. Once this configuration has been edited as required it can be saved on the PC. In order to send it to the matching IP Office system, **File | Offline | Send Configuration** has to be used.

2.12.7 Importing and Exporting Settings

Manager can import configuration settings created elsewhere. This can be useful when setting up a new system or sharing common settings such as a directory between systems.

- IP Office Office also supports [LDAP](#)^[175] ([System | Directory Services | LDAP](#)^[175]) for automatic importation of directory records. IP Office 5.0+ also support the [HTTP](#)^[176] ([System | Directory Services HTTP](#)^[176]) for automatic importation of directory records.

Settings are imported and exported in the following formats:

- **Binary Files (.exp)**

These are non-editable files. During import and export it is possible to select what types of entries should be included in the file. During import the whole file is imported.

- **Comma Separated Variable Text Files (.csv)**

These are plain text files. In addition to being exported from an IP Office system these files can be created and edited using programs such as WordPad or Excel.

- When opening a .csv file in Excel it will alter the way some data is displayed, automatically changing the display format of dates and long numbers such as phone numbers.

- **UTF-8 Character Encoding**

Manager imports and exports CSV files using UTF-8 character encoding which uses a multiple bytes to support characters with diacritic marks such as **ä**. Other applications, such as Excel, may, depending on the user PC settings, use different encoding which will cause such characters to be removed or corrupted. Care should be taken to ensure that any tool used to create or edit the CSV supports all the characters expected and uses UTF-8 format.

- **Importing into Manager from Excel**

From Excel save the file as a .csv. This file will use ANSI character encoding. Open the file in Notepad and use the **Save As** option to rename the file and select UTF-8 encoding. Import the UTF-8 version of the file into Manager.

- **Exporting from Manager into Excel**

Do not double-click on the file exported from Manager. Start Excel and use **File | Open** to select the file. Excel will recognize that the file uses UTF-8 encoding and will start its text file importation wizard. Follow the wizard instructions and select comma as the field delimiter.

CSV File Formats

The format is CSV using commas as field separator, no text delimiters and no header row. The simplest way to check the required format for a CSV file prior to import, is to export a file from an existing system configuration.

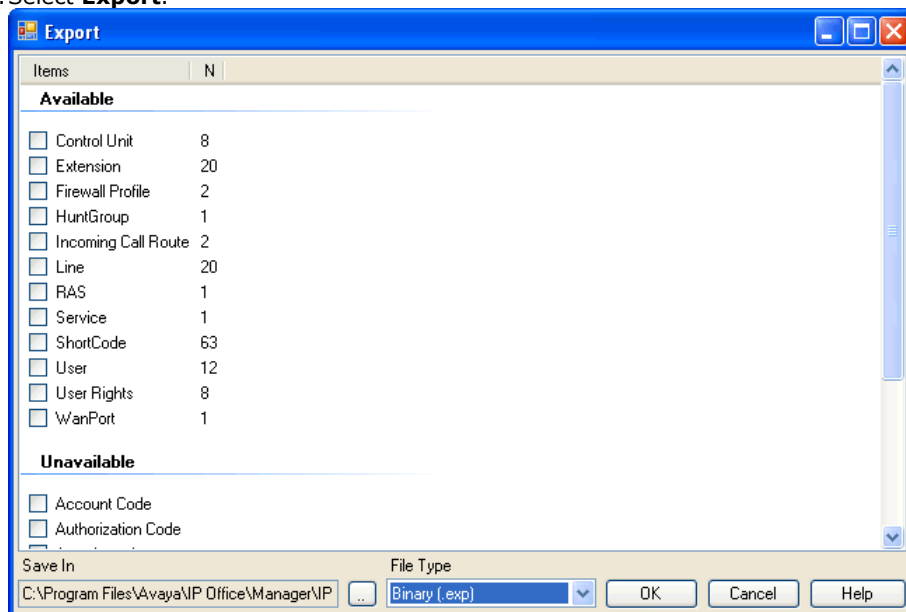
File Name	Fields in Order
Directory	Name, Number.
Hunt Group	Name, Extension, Group, Hunt, Rotary, Longest Waiting, Queuing On, Voicemail On, Broadcast, Voicemail Email.
License	License (<i>ignored on import</i>), License Key
Short Code	Code, Telephone Number, Feature.
User	Name, Extension, User Restriction/Rights, Voicemail Email address, Full Name (<i>IP Office 5.0+</i>).
Configuration	Proprietary format. Note that this does not contain all configuration fields.

Notes:

- **Hunt Group:** Apart from Name, Extension and Voicemail Email, the fields use a 1 or 0 value for on or off.
- **License:**
 - The License field is for information only and is ignored during import.
 - Following import the License name will appear as invalid with Manager. To resolve this save and then reload the configuration file.
- The format of the system CSV is too complex to be described. It is a full export of all the IP Office system's configuration settings. This file format should only be used for export and import between systems and not for any offline editing.

Exporting Settings

1. Select **File | Import/Export...** from the menu bar.
2. Select **Export**.

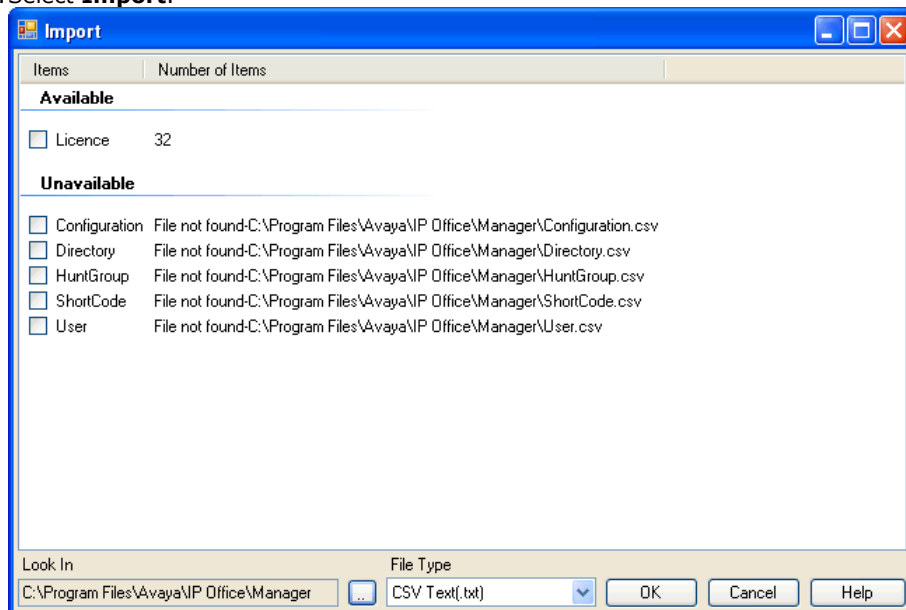


3. Select the type of file. The list of exportable entry types will change to match the file type.
4. Select the types of items that should be exported.
5. Use the Save In path to select the location for the exported files. The default location used is sub-directory of the Manager application directory based on system name of the currently loaded IP Office system.
6. Click **OK**.

Importing Settings

Importing settings will overwrite any existing entries that match an entry being imported.

1. Select **File | Import/Export...** from the menu bar.
2. Select **Import**.



3. Select the type of file. The list of items will change to match the type of file selected and whether a matching file or files is found in the current file path.
4. Use **Look In** to adjust the file path. The default location used is sub-directory of the Manager application directory based on system name of the currently loaded IP Office system.
5. Select the types of items that should be imported.
6. Click **OK**.

2.12.8 Copying and Pasting

IP Office Manager supports the normal Windows methods of cutting, copying, pasting and deleting entries and settings. These can be accessed through the **Edit** menu in the menu bar or using the standard Windows keyboard shortcuts for those actions. They can also be accessed by selecting an entry or text field and then right-clicking.

Copy and paste can be used with the navigation and group panes to create a new entry with the same settings as the original. The copy will be renamed as **Copy of ...** to avoid conflicting with the original.

When using copy and paste between individual settings fields, whether on the same entry or a different entry, care should be taken to ensure that the fields use the same type of data. Similarly copying an entry in the navigation or group pane and then pasting it into the details pane will prompt Manager to paste the copied entries data into the first field of the current entry in the details pane. As a general rule, cut and paste actions should be used with the same pane and within similar entry types.

For users and user rights, a number of controls have been provided to copy settings between a user and a user right or vice versa. See [User Rights Overview](#) ^[389] in the Configuration Settings section.

2.12.9 Saving a Configuration Offline

The IP Office system configuration settings shown within Manager can be saved as a .cfg file on the Manager PC. These files can be used as backups or sent to other persons to aid problem diagnostics. Note however that an offline configuration file does not include the Audit Trail records for the IP Office system.

Automatically Saving Sent Configurations

By default, Manager creates a file copy of the configuration before it is sent to the IP Office. This copy is stored in Manager's Working Directory using the IP Office's system name and .cfg. This behavior is controlled by the [Backup File on Send \(File | Preferences | Security\)](#) ^[121] option.

For IP Office 4.2+, the number of backups of each systems configuration can be limited to a set number of the most recent copies.

Saving a Configuration Received from an IP Office

1. Select **File | Save Configuration** as from the menu bar.

Saving a Configuration opened on the PC

1. Click  in the main toolbar or select **File | Save Configuration** from the menu bar.

2.12.10 Sending a Configuration

The current configuration settings open within Manager can be sent to the IP Office system.

Sending a Configuration to an IP Office

1. The first steps of this process depend on whether you are sending a configuration received from the IP Office system or sending one opened offline/created new.

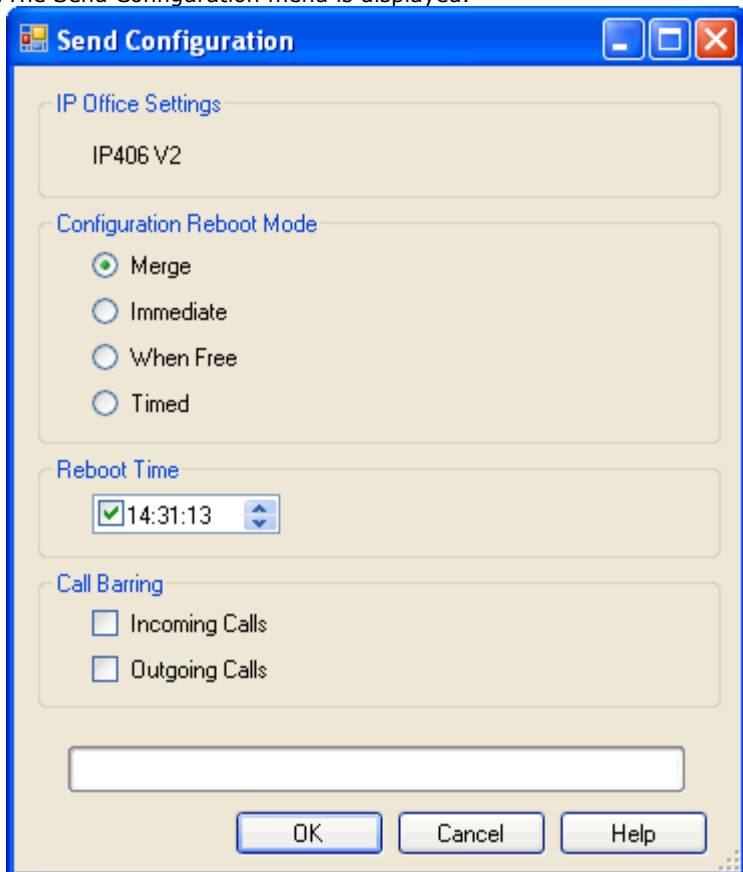
- **Received Configuration**

Click  in the main toolbar or select **File | Save Configuration** from the menu bar.

- **Opened Offline/Newly Created Configuration**

Select **File | Offline | Send Config** from the menu bar.

2. The Send Configuration menu is displayed.



The 'Send Configuration' dialog box is shown. It has a title bar with standard Windows window controls. The main area is divided into four sections: 'IP Office Settings' with a text field containing 'IP406 V2'; 'Configuration Reboot Mode' with four radio button options: 'Merge' (selected), 'Immediate', 'When Free', and 'Timed'; 'Reboot Time' with a checkbox (checked) and a time selection field showing '14:31:13'; and 'Call Barring' with two checkboxes: 'Incoming Calls' and 'Outgoing Calls'. At the bottom is a large empty text field and three buttons: 'OK', 'Cancel', and 'Help'.

- **Password - Pre-3.2 Systems Only**

This field appears for pre-3.2 IP Office system. The system password should be entered. If sending the configuration to an IP Office 3.2 system, a Service User name and password are requested when OK is clicked.

- **Configuration Reboot Mode**

If Manager thinks the changes made to the configuration settings are mergeable, it will select Merge by default, otherwise it will select Immediate.

- **Merge**

Send the configuration settings without rebooting the IP Office. This mode should only be used with settings that are mergeable. Refer to [Mergeable Settings](#) ⁶³.

- **Immediate**

Send the configuration and then reboot the IP Office.

- **When Free**

Send the configuration and reboot the IP Office when there are no calls in progress. This mode can be combined with the **Call Barring** options.

- **Timed**

The same as When Free but waits for a specific time after which it then wait for there to be no calls in progress. The time is specified by the **Reboot Time**. This mode can be combined with the **Call Barring** options.

- **Reboot Time**

This setting is used when the reboot mode **Timed** is selected. It sets the time for the IP Office reboot. If the time is after midnight, the IP Office's normal daily backup is canceled.

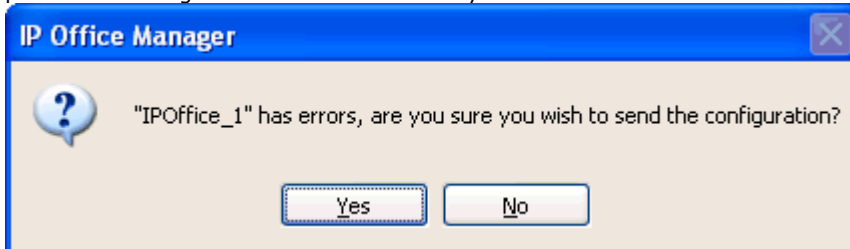
- **Call Barring**

These settings can be used when the reboot mode When Free is selected. They bar the sending or receiving of any new calls.

3. Click **OK**. For IP Office 3.2 systems a Service User name and password will be requested.

- If the service user name or password used do not have a match on the IP Office, **"Access Denied"** is displayed.
- If the service user name used does not have rights to send a configuration or to request a reboot or merge, "Insufficient service user rights" is displayed.
- If the service user name used does not have operator rights to make the changes that have been made to the configuration, **"Insufficient operator rights. Operator cannot modify xxxx records"** is displayed.

4. The following warning will appear if the configuration being sent contain any errors indicated by a  icon in the error pane. The configuration can still be sent by selected **Yes**.



2.12.11 Erasing the IP Office Configuration

The configuration settings on an IP Office can be erased. During this process the IP Office is rebooted and starts with a set of [default settings](#)^[78].

This process does not erase the security settings of the IP Office system. Those can only be reset by a separate process detailed in the IP Office Installation Manual.

Erasing the Configuration

This action returns the IP Office system to its [default settings](#)^[78].

1. Select **File | Advanced | Erase Configuration (Default)**.
2. Enter a valid user name and password.
3. The IP Office system will be rebooted.

2.12.12 Default Settings

The following applies to new IP Office control units and those defaulted using the [Erase Configuration](#)^[78] command. It also applies to IP500 control units defaulted using the reset button on the rear of the unit (refer to the IP Office Installation manual for details of using the reset button).

Default Short Codes

IP400 control units are manufactured as either A-Law or U-Law variants. For IP500 control units, A-Law or U-Law variant operation is determined by the IP500 Smart Card installed. Depending on the variant, different sets of short codes are created for the default configuration. See the [Default System Short Code List](#)^[435].

Default Data Settings

When a defaulted IP Office control unit is switched on, it requests IP address information from a DHCP Server on the network. This operation will occur whether the LAN cable is plugged in or not.

- If a DHCP server responds within approximately 10 seconds, the control unit defaults to being a DHCP client and uses the IP address information supplied by the DHCP server.
- If no DHCP Server responds, the control unit defaults to being the DHCP server for the LAN using the following settings:
 - For its LAN1 it allocates the IP address 192.168.42.1 and IP Mask 255.255.255.0. It supports 200 DHCP clients using the addresses range 192.168.42.2 and 192.168.42.201, the IP Mask 255.255.255.0 and default gateway address 192.168.42.1 (the Control Unit's LAN1 address).
 - For its LAN2 if supported, it allocates the IP address 192.168.43.1 and IP Mask 255.255.255.0.
 - Note that the IP Office does not check that these addresses are valid and or available on the network.

This mode of operation will persist for subsequent power ups, until a config save occurs due to one of the following

- The unit performs its automatic midnight backup.
- A configuration is merged using IP Office Manager.
- A soft reboot is performed using IP Office Manager.
- A software upgrade is performed.

Chapter 3.

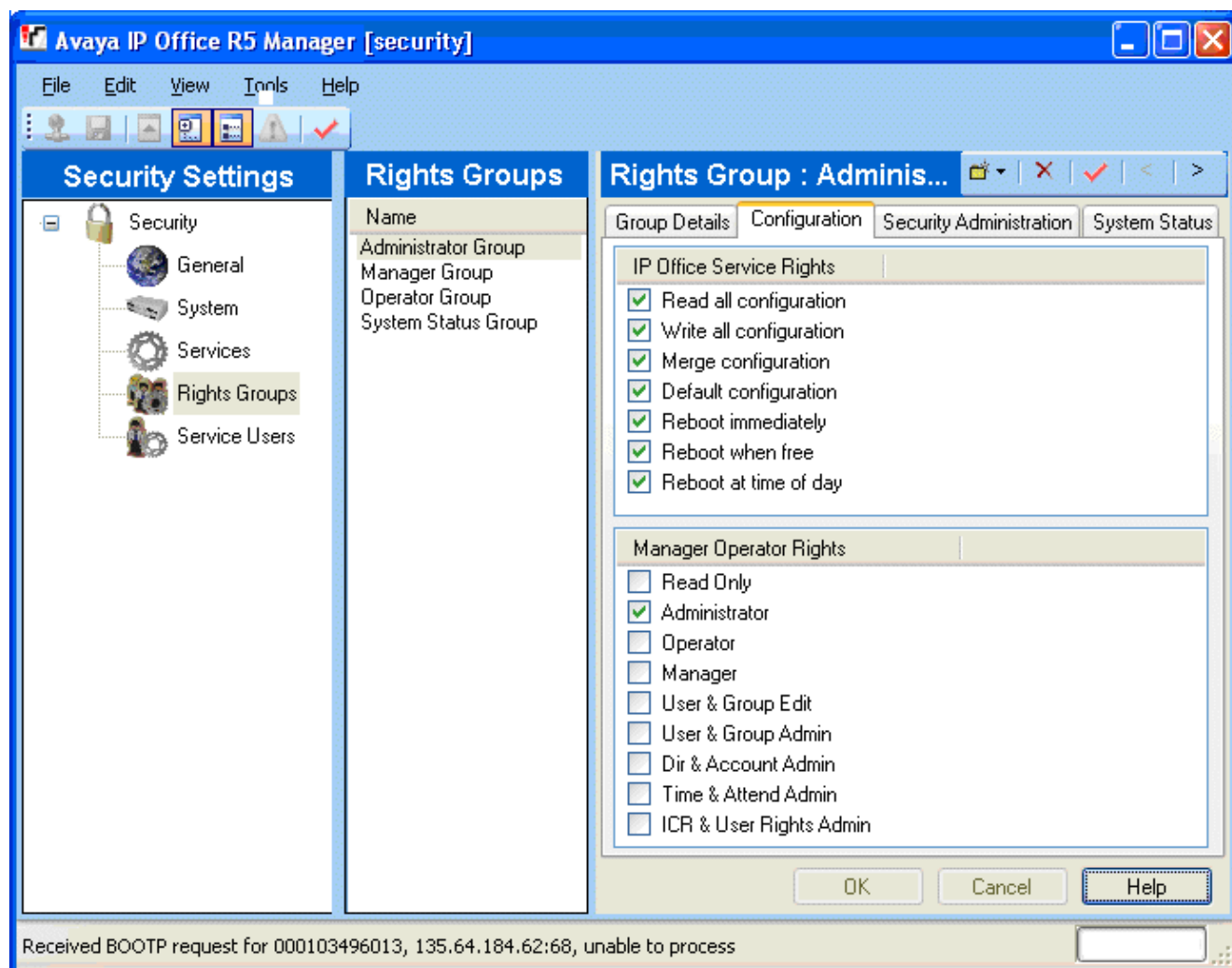
Security Mode

3. Security Mode

Security settings are used to control who can access the configuration settings of an IP Office system and what they are able to do with that access. They also control which applications are able to access the configuration settings.

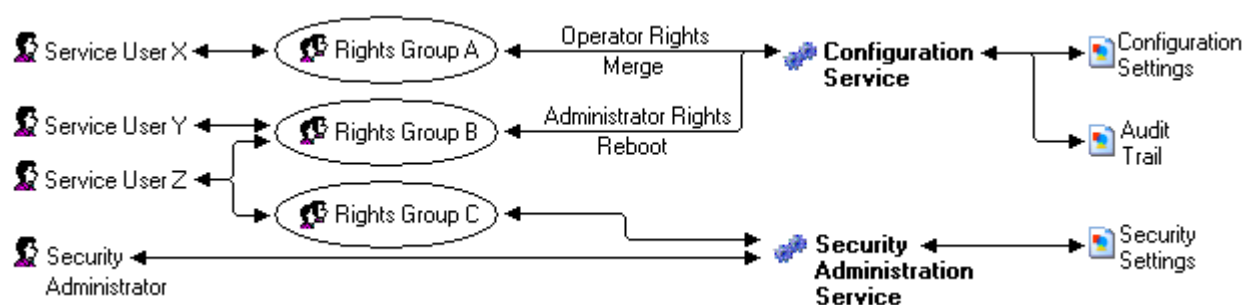
The security settings are stored on the IP Office system and are separate from the system's configuration settings.

To change a system's security settings, Manager must first be switched to security mode by selecting **File | Advanced | Security Settings** from the menu bar.



3.1 Security Settings

Access to IP Office 3.2+ system settings is controlled by Service Users and Rights Groups. All actions involving communications between the Manager user and the IP Office require a Service User name and password. That Service User must be a member of a Rights Group configured to perform that action.



In the example illustrated above:

- Service User X can read and write the configuration. However they can only edit Operator settings and can only make changes that can be merged.
- Service User Y can read and write the configuration, edit all settings and make changes that require reboots.
- Service User Z can read and write the configuration, edit all settings and make changes that require reboots. They can also access the security settings.
- The Security Administrator can only access the security settings.

Security Administrators

By default the security administrator is the only user who can access the IP Office's security settings using Manager's security mode.

Service Users

Each Service User has a name, a password and is a member of one or more Rights Groups.

Rights Groups

The Rights Groups to which a Service User belongs determine what actions they can perform. Actions available to Rights Groups include configuration actions, security actions and system status actions:

Configuration	Security	System Status
• Read the configuration. • Write the configuration. • Merge the configuration. • Default the configuration. • Reboot immediately. • Reboot when free. • Reboot at time of day.	• Read all security settings. • Write all security settings. • Reset all security settings. (IP Office 4.1+) • Write own password. (IP Office 4.1+)	• System Status Access. • Read All Configuration.

Where a Service User has been configured as a member of more than one Rights Group, they combine the functions available to the separate Rights Groups.

Operator Rights

Each Rights Group has a Manager Operator Rights setting. This setting controls what types of configuration entries Manager will allow members of the Rights Group to view and what actions they can perform with those types of entries.

Operator	View/Edit/ New/ Delete	Configuration Entry Types
Administrator	All	View, edit create and delete all configuration entries.
Manager	View	View all except WAN Port.
	Edit	Extension, User, Hunt Group, Short Code, Service, RAS, Incoming Call Route, Directory, Time Profile, Firewall Profile, IP Route, Least Cost Route, Account Code, ARS, E911 System.
	New	As edit except Short Code.
	Delete	As edit except Short Code.
Operator	View	View all except WAN Port.
	Edit	Extension, User, Hunt Group, Short Code, Service, RAS, Incoming Call Route, Time Profile, Firewall Profile, IP Route, Least Cost Route, Account Code, Licence, ARS, E911 System.
	New	None.
	Delete	Delete Incoming Call Route and Directory.
User & Group Edit	View	User and Hunt Group entries only.
	Edit	
	New	None
	Delete	
User & Group Admin	All	User and Hunt Group entries only.
Dir & Account Admin	All	Directory and Account Code entries only.
Time & Attendant Admin	All	Time Profile and Auto Attendant entries only.
ICR & User Rights Admin	All	Incoming Call Route and User Rights entries only.
Read Only	View	View all configuration entries.
	Edit	None.
	New	
	Delete	

3.2 Default Security Users

This section lists the default Rights Groups and Service Users for IP Office 4.0+ systems.

- ⚠ WARNING: Change Passwords**

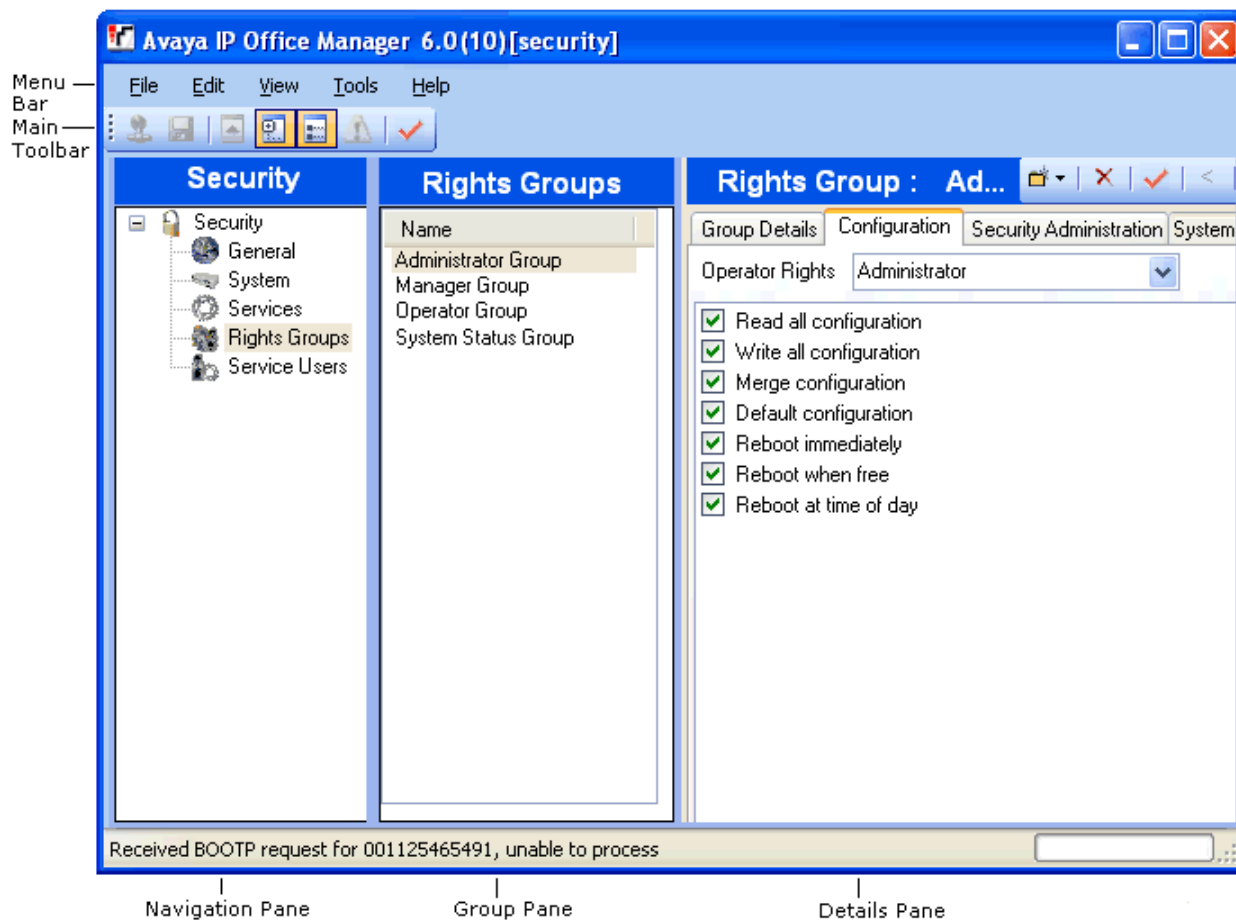
New IP Office systems and systems upgraded from pre-IP Office 3.2 use default security settings. These settings must be changed to make the system secure. At minimum you must change the default passwords of the Security Administrator and the default Service Users. Failure to do so will render the IP Office system unsecure.

Unique Security Control Unit				
Enabled	✔			
Name	security			
Password	securitypwd			
Default Service Users				
Name	Administrator	Manager	Operator	EnhTcpaService
Password	Administrator	Manager	Operator	EnhTcpaPwd1
Rights Group Membership				
- Administrator Group	✔	✘	✘	✘
- Manager Group	✘	✔	✘	✘
- Operator Group	✘	✘	✔	✘
- System Status Group	✔	✔	✔	✘
- TCPA Group	✘	✘	✘	✔

Default Rights Groups		Administrator Group	Manager Group	Operator Group	System Status Group	TCPA Group
Operator Rights	Operator View	Administrator	Manager	Operator	-	-
Service Rights	Read Configuration	✓	✓	✓	✗	✗
	Write Configuration	✓	✓	✓	✗	✗
	Default Configuration	✓	✓	✓	✗	✗
	Merge	✓	✓	✓	✗	✗
	Reboot Immediately	✓	✓	✓	✗	✗
	Reboot When Free	✓	✓	✓	✗	✗
	Reboot at Time of Day	✓	✓	✓	✗	✗
Security Administration	Read All Security Settings	✗	✗	✗	✗	✗
	Write All Security Settings	✗	✗	✗	✗	✗
	Reset All Security Settings (IP Office 4.1+)	✗	✗	✗	✗	✗
	Write own service user password (IP Office 4.1+)	✗	✗	✗	✗	✗
System Status (IP Office 4.0+)	System Status Access	✗	✗	✗	✓	✗
	Read all configuration	✗	✗	✗	✓	✗
Enhanced TSPI (IP Office 5.0+)	Enhanced TSPI Access	✗	✗	✗	✗	✓

3.3 The Security Mode Interface

Manager can be switched to security mode. This mode it is used to load and edit the security settings of an IP Office 3.2 system. How the controls operate is the same as for Manager in configuration mode.



Switching Manager to Security Mode

1. Select **File | Advanced | Security Settings**.

Switching Manager Back to Configuration Mode

1. Select **File | Configuration**.

Manager Security Mode Screen Elements

- **Menu Bar**

Provides commands for loading and saving security settings. See the [Menu Bar Commands](#)^[114] section.

- **Main Toolbar**

The toolbar icons perform the following actions:

-  **Get the Security Settings.**
-  **Save the Security Settings.**
-  **Not Used in security mode.**
-  **Show/Hide the Navigation Pane.**
-  **Show/Hide the Group Pane.**
-  **Not used in security mode.**
-  **Not used in security mode.**

- **Security Settings Pane**

This pane is used to select the type of security entries that should be displayed in the group pane or details pane.

-  **General**
Defines general security controls for the IP Office system. When selected, the settings are displayed in the details pane.
-  **System**
Defines security settings for the IP Office such as application access. When selected, the settings are displayed in the details pane.
-  **Services**
Secure services supported by the IP Office. Currently these are access to security settings and access to configuration settings.
-  **Rights Groups**
Create groups with different access rights. When selected, the existing Rights Groups are displayed in the group pane.
-  **Service Users**
Sets the name and password for an administrator. Also allows selection of the Rights Groups to which the user belongs. When selected, the existing Service Users are displayed in the group pane.
- **Group Pane**
This pane is used to display the existing Right Groups or Service Users when those options are selected in the security settings pane.
- **Details Pane**
This pane shows the settings selected in the security settings pane or the group pane.
- **Status Bar**
This bar display messages about communications between Manager and IP Office systems. It also displays the security level of the communications by the use of a padlock icon.

3.4 Security Administration

This appendix covers the background to administrating IP Office 4.1+ in a secure environment, including policy considerations and implementation choices. This section also covers a basic introduction to security principles and the security mechanisms on IP Office.

- **NOTE:** If IP Office administration security is of no concern, the default settings allow modification of all IP Office features without restriction. It is recommended as a minimum that default passwords are changed.

1. Introduction

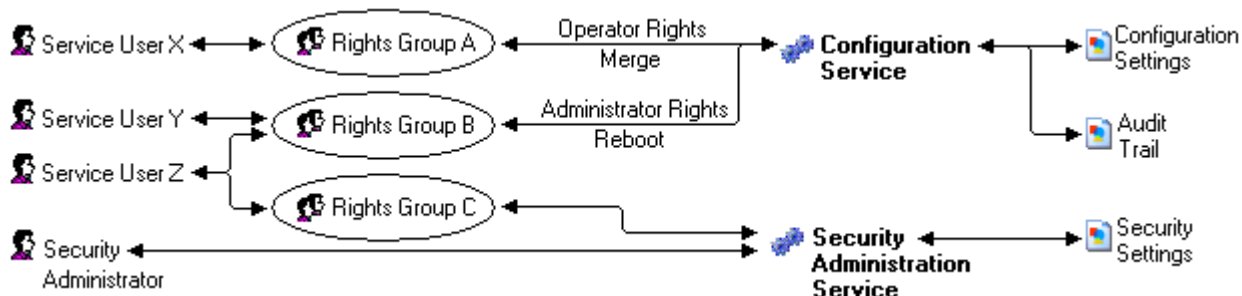
Administration security on IP Office is achieved using a number of optional cryptographic elements:

- Access control to prevent unauthorized use. Supported in version 3.2+.
- Encryption to guarantee data remains private. Supported in version 4.1+.
- Message Authentication ensures data has not been tampered with. Supported in version 4.1+.
- Identity assures the source of the data. Supported in version 4.1+.

2. Access Control

Access to configuration, security settings and SSA on IP Office 3.2+ are controlled by the use of Service Users, passwords and Rights Groups.

All actions involving communications between the Manager user and the IP Office require a Service User name and password. That Service User must be a member of a Rights Group configured to perform that action.



In the example illustrated above:

- Service User X can read and write the configuration. However they can only edit Operator settings and can only make changes that can be merged.
- Service User Y can read and write the configuration, edit all settings and make changes that require reboots.
- Service User Z can read and write the configuration, edit all settings and make changes that require reboots. They can also access the security settings.
- The Security Administrator can only access the security settings.

Security Administrator

By default the security administrator is the only user who can access the IP Office's security settings using Manager's security mode.

Service Users

Each Service User has a name, a password and is a member of one or more Rights Groups.

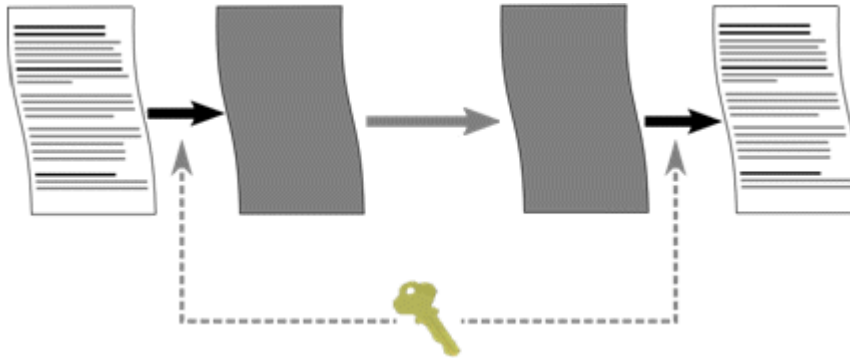
Rights Groups

The Rights Groups to which a Service User belongs determine what actions they can perform. Actions available to Rights Groups include configuration actions, security actions and system status actions.

Where a Service User has been configured as a member of more than one Rights Group, they combine the functions available to the separate Rights Groups.

3. Encryption

Encryption ensures that all data sent by either IP Office or Manager cannot be 'read' by anyone else, even another copy of Manager or IP Office. Encryption is the application of a complex mathematical process at the originating end, and a reverse process at the receiving end. The process at each end uses the same 'key' to encrypt and decrypt the data:



On IP Office 4.1+, any data sent may be optionally encrypted using a number of well known and cryptographically secure algorithms:

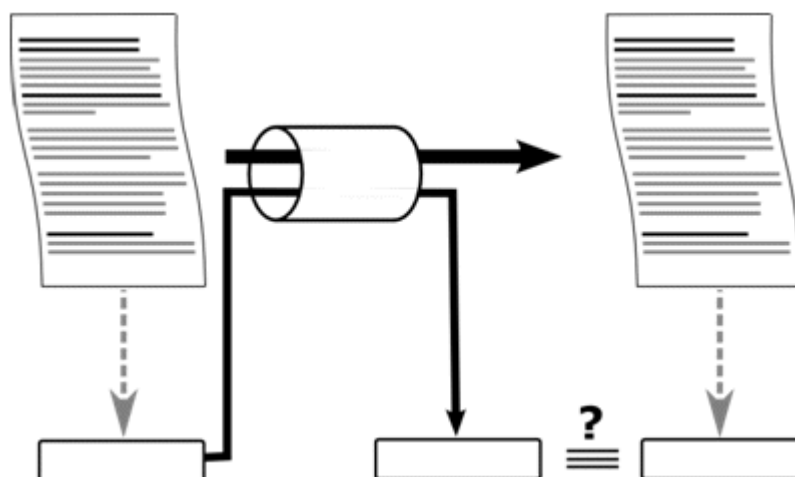
Algorithm	Effective key size (bits)	Use
DES-40	40	Not recommended.
DES-56	56	'Minimal' security.
3DES	112	'Strong' security.
RC4-128	128	'Strong' security.
AES-128	128	'Very strong' security.
AES-256	256	'Very strong' security.

In general the larger the key size, the more secure the encryption. However smaller key sizes usually incur less processing.

IP Office supports encryption using the Transport Layer Security (TLS) v1.0 protocol. In addition, many cryptographic components of the TLS module have been FIPS 140-2 certified, indicating the accuracy of implementation.

4. Message Authentication

Message authentication ensures that all data sent by either IP Office or Manager cannot be tempered with (or substituted) by anyone else without detection. This involves the originator of the data producing a signature (termed a hash) of the data sent, and sending that as well. The receiver gets the data and the signature and check both match.



On IP Office 4.1+, any data sent may be optionally authenticated using a number of well known and cryptographically secure algorithms:

Algorithm	Effective hash size (bits)	Use
MD5	128	'Minimal' security.
SHA-1	160	'Strong' security.

In general the larger the hash size, the more secure the signature. However smaller hash sizes usually incur less processing.

IP Office supports message authentication using the Transport Layer Security (TLS) v1.0 protocol. In addition, many cryptographic components of the TLS module have been FIPS 140-2 certified, indicating the accuracy of implementation.

5. Identity

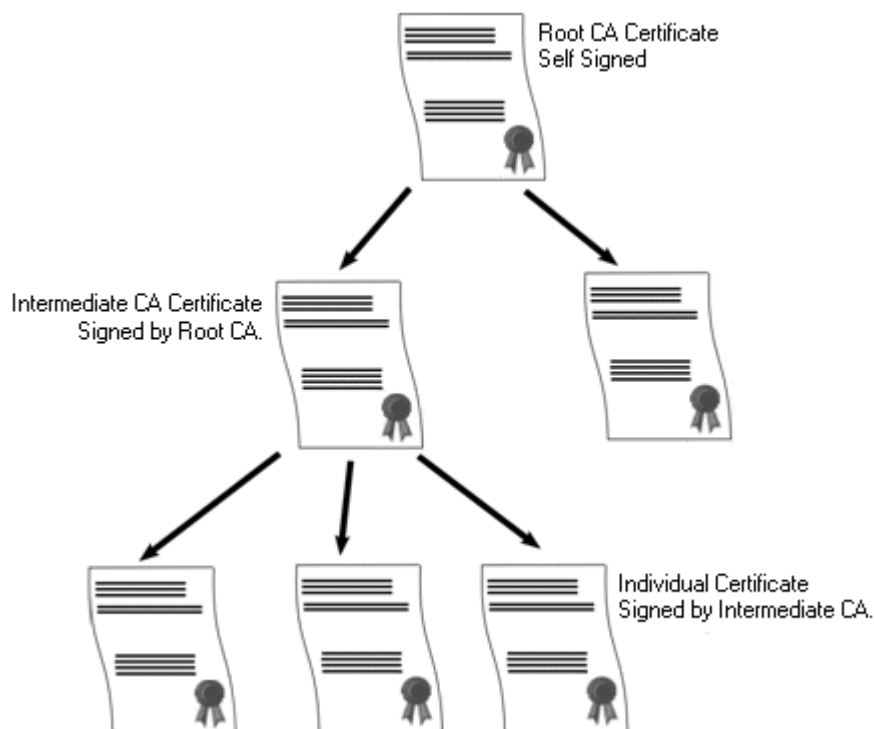
The identity of the equipment or person at each end of the link is achieved by the use of digital certificates – more specifically X.509 v3 certificates. Digital certificates are the preferred mechanism for the majority of internet-based applications including e-commerce and email, and can be thought of as a credential, just like a passport or driver's license.

A digital certificate contains at least three things:

- A public key.
- Certificate information (Identity information about the user, such as name, user ID, and so on.)
- One or more digital signatures

The purpose of the digital signature on a certificate is to state that the certificate information has been verified to by some other person or entity. The digital signature does not verify authenticity of the certificate as a whole; it vouches only that the signed identity information goes along with, or is bound to, the public key: A certificate essentially is a public key with one or two forms of ID attached, plus a stamp of approval from some other 'trusted individual'.

Trusted individuals (also termed Certificate Authorities) themselves have publicly available certificates, which can contain signatures from their trusted authorities. These can be verified all the way up to a 'self-signed' root certificate from a root certificate authority.



Examples of root certificate authorities' certificates can be found in every web browsers' certificate store.

6. Windows Certificate Store Usage

The certificate store that is used by the IP Office Manager to save X509 certificates to and retrieve certificates from is the default one provided by the Windows operating system. This may be accessed for maintenance purposes by a user with sufficient permission via the use of a 'snap-in'.

- **WARNING**

Avaya accept no responsibility for changes made by users to the Windows operating system. Users are responsible for ensure that they have read all relevant documentation and are sufficiently trained for the task being performed.

If not installed already, the Microsoft Management Console (MMC) Certificates snap-in can be installed by following the relevant instructions. Both 'user account' and 'computer' options should be installed.

- **For Windows XP Professional:**

http://www.microsoft.com/resources/documentation/windows/xp/all/proddocs/en-us/sag_cm_addsnap.mspx

- **For Windows Server 2003:**

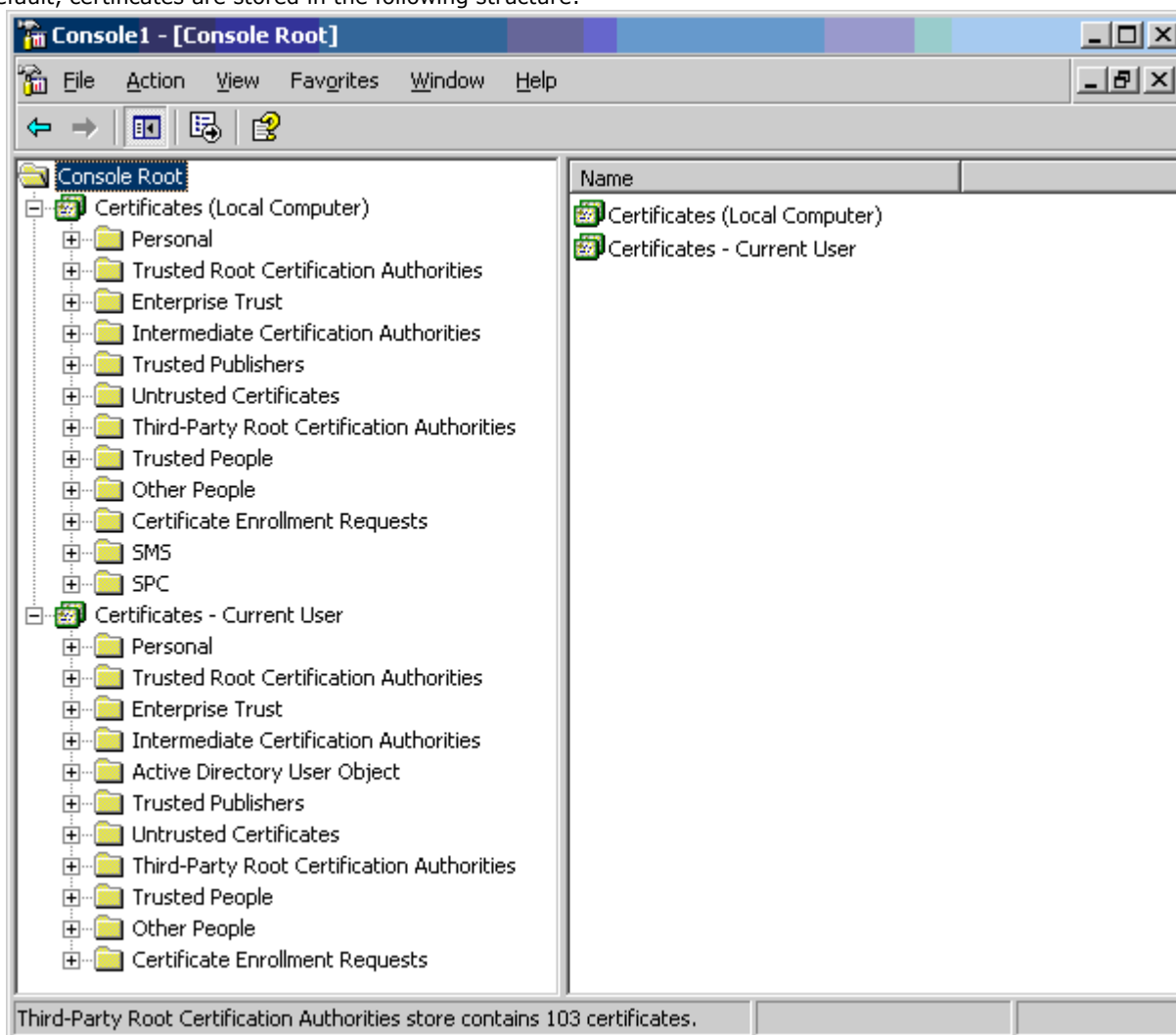
<http://technet2.microsoft.com/windowsserver/en/library/4fa4568e-16de-4a64-b65e-12ee14b31dc21033.mspx?mfr=true>

- **For Windows Vista:**

<http://technet2.microsoft.com/WindowsVista/f/?en/library/a8b21b9b-d102-4045-9f36-e4b3430d2f381033.mspx>

7. Windows Certificate Store Organization

By default, certificates are stored in the following structure:



Each of the sub folders has differing usage. The Certificates - Current User area changes with the currently logged-in windows user. The Certificate(Local Computer) area does not change with the currently logged-in windows user.

IP Office Manager only accesses some of the certificate sub folder:

Certificates (Local Computer) Folder	IP Office Manager Use
Personal Certificates	- Folder searched by Manager 1st for matching certificate to send to IP Office when requested. Certificate matched by the subject name contained in File Preferences Security Certificate offered to IP Office. - Folder accessed whenever 'Local Machine certificate store' used for Security Settings. - Folder searched by Manager for matching certificate when certificate received from IP Office, and File Preferences Security Manager Certificate Checks = Medium or High.
Trusted Root Certification Authorities Certificates	Folder searched by Manager for matching parent certificates when non-self signed certificate received from IP Office, and File Preferences Security Manager Certificate Checks = Medium or High.

Certificates – Current User Folder	IP Office Manager Use
Personal Certificates	- Folder searched by Manager 2nd for matching certificate (subject name) to send to IP Office when requested. Certificate matched by the subject name contained in File Preferences Security Certificate offered to IP Office. - Folder accessed whenever 'Current User certificate store' used for Security Settings. - Folder searched by Manager for matching certificate when certificate received from IP Office, and File Preferences Security Manager Certificate Checks = Medium or High.
Trusted Root Certification Authorities Certificates	Folder searched by Manager for matching parent certificates when non-self signed certificate received from IP Office, and File Preferences Security Manager Certificate Checks = Medium or High.
Other People Certificates	Folder searched by Manager for matching parent certificates when non-self signed certificate received from IP Office, and File Preferences Security Manager Certificate Checks = Medium or High.

8. Windows Certificate Store Import

In order to use certificates – either for IP Office security settings or Manager operation – they must be present in the windows certificate store. Certificates may be placed in the store by the Certificate Import Wizard or the Certificate MMC snap-in

The Certificate Import Wizard can be used whenever a certificate is viewed. In order for Manager to subsequently access this certificate the Place all certificate in the following store option must be selected:

- If the certificate is to subsequently identify the IP Office, the Other People folder should be used.
- If the certificate is to subsequently identify the Manager, the Personal folder should be used, and the associated private key saved as well.

If the saved certificate is to be used by other windows users, the MMC certificate snap-in must be used to move it to the Certificates (Local Computer) folder.

9. Certificate Store Export

Any certificate required outside of the Manager PC required to be first saved in the Certificate store, then exported using the MMC snap-in.

If the certificate is to be used for identity checking (i.e. to check the far entity of a link) the certificate alone is sufficient, and should be saved in PEM or DER format.

If the certificate is to be used for identification (i.e. to identify the near end of a link) the certificate and private key is required, and should be saved in PKCS#12 format, along with a password to access the resultant .pfx file.

10. Implementing IP Office Administration Security

This section suggests IP Office security settings that could implement possible security requirements. This section does not cover the general aspects of security policy analysis or definition, or how IP Office administration security interacts with other security mechanism.

10.1. Negligible Security

If all Manager and IP Office security settings are left at default, no security mechanisms are active, other than the use of default service user names and passwords. In addition, all legacy interfaces are active, and all configuration and security data is sent unencrypted.

It is recommended that at the very least, the default service user passwords are changed.

10.2. Minimum Security

A minimum security scenario could be where configuration data is open, but the security settings are constrained: Any individual with the correct service user name and password can access the configuration from any PC installation of Manager, no logging of access: Passwords can be simple, and will never age.

- Change all default passwords of all service users and Security Administrator
- Set IP Office Security Administration service security level to Secure, Low.
- Set IP Office Service User Password Reject Action to None.
- Set IP Office Client Certificate Checks level to None (default).
- Set IP Office Minimum Password Complexity to Low (default).
- Set IP Office Previous Password Limit to zero (default).
- Set IP Office Password Change Period to zero (default).
- Set IP Office Account Idle Time to zero (default).
- Set certificate check level to low in Manager Security Preferences (default).

In addition, any PC installation of Manager can manage any IP Office.

10.3. Medium Security

A medium security scenario could be where both configuration and security settings are constrained and a level of logging is required: Any individual with the correct service user name and password can access the configuration from any PC installation of Manager: Passwords cannot be simple, and will age.

- Change all default passwords of all service users and Security Administrator
- Set IP Office Security Administration service security level to Secure, Medium.
- Set IP Office Configuration service security level to Secure, Medium.
- Set IP Office Service User Password Reject Action to Log to Audit Trail (default).
- Set IP Office Client Certificate Checks level to None (default).
- Set IP Office Minimum Password Complexity to Medium.
- Set IP Office Previous Password Limit to non zero.
- Set IP Office Password Change Period to non zero.
- Set IP Office Account Idle Time to zero (default).
- Disable all IP Office Unsecured Interfaces.
- Set certificate check level to low in Manager Security Preferences (default).

10.4. Maximum Security

A maximum security scenario could be where both configuration and security settings are constrained and a full level of logging is required: Certified individuals with the correct service user name and password can access the configuration from specific PC installations of Manager: Passwords cannot be simple, and will age: Manager can managed specific IP Office systems.

- Change all default passwords of all service users and Security Administrator
- Set IP Office Security Administration service security level to Secure, High.
- Set IP Office Configuration service security level to Secure, High.
- Set IP Office Service User Password Reject Action to Log and Disable Account.
- Set IP Office Client Certificate Checks level to High.
- Set IP Office Minimum Password Complexity to High.
- Set IP Office Minimum Password Length to >8.
- Set IP Office Previous Password Limit to non zero (>5).
- Set IP Office Password Change Period to non zero.
- Set IP Office Account Idle Time to non zero.
- Set IP Office Session ID Cache to zero.
- Install valid, 1024 bits+, non self signed certificates (+private key) in all IP Office server certificates, derived from a trusted certificate authority.
- Install the corresponding trusted CA certificate in each of the Manager's windows certificate stores.
- Install valid, 1024 bits+, non self signed certificate (+ private key) in all Manager Certificate Stores.
- Install the corresponding certificates in all IP Office Certificate Stores of all permissible Manager entities, and the trusted CA certificate.
- Disable all IP Office Unsecured Interfaces.
- Set Manager Certificate Checks level to high in Manager Security Preferences.
- Set Certificate offered to IP Office in Manager Security Preferences.

The above essentially locks the IP Office systems and corresponding Managers together. Only recognised (by strong certificate) entities may communicate successfully on the service interfaces. All services use strong encryption and message authentication.

The use of intermediate CA certificates can be used to overcome the limit of 6 maximum certificates in each IP Office Certificate Store.

3.5 Editing Security Settings

Security settings can only be loaded directly from an IP Office system. These settings cannot be saved as a file on the local PC, nor do they appear as a temporary file at any time.

An important change for IP Office 4.1 is to optionally secure the link between the IP Office system and Manager for configuration and security settings exchanges. By default Manager (and IP Office) will always attempt to use the original, unsecured link. The control of which mechanism is used by Manager is determined Manager preferences.

When secure communications mode is selected a  padlock icon is present on the Manager status bar.

Loading an IP Office's Security Settings

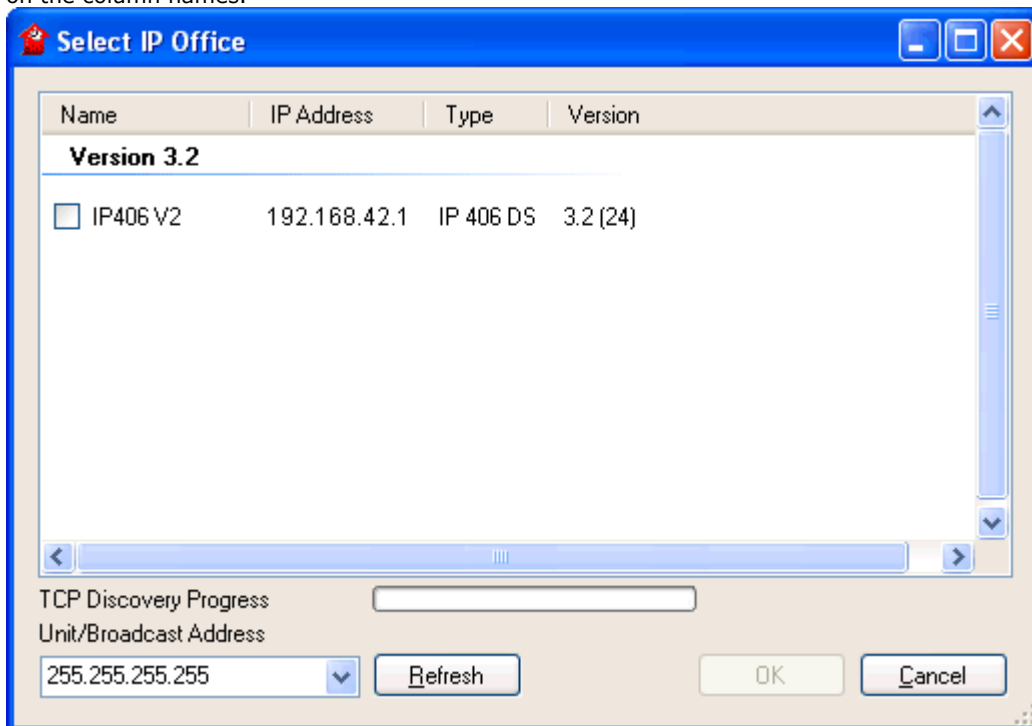
The address ranges in which Manager searches for IP Office systems are set through the Manager preferences ([File | Preferences | Discovery](#)⁽¹¹⁷⁾). The security mechanism used for security settings transfer between Manager and an IP Office are set through the Secure Communications attribute of Manager preferences ([File | Preferences | Security](#)).

1. If not already done, switch Manager to security mode by selecting **File | Advanced | Security Settings**.

- Note: If the IP Office system's configuration settings have already been loaded using a Service User name and Password that also has security access, then the security settings are automatically loaded when Manager is switched to security mode.

2. If already in security mode, click  in the main toolbar or select **File | Open Security Settings** from the menu bar.

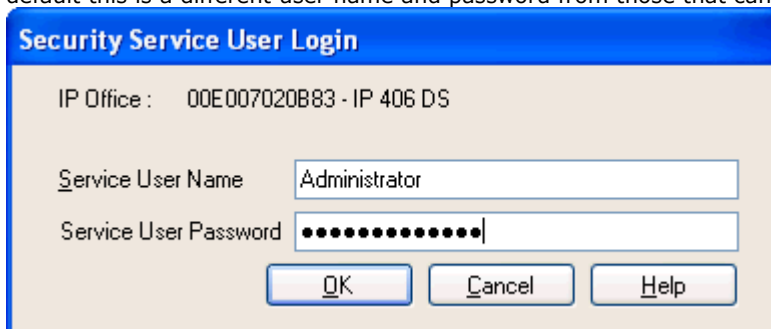
3. The Select IP Office window appears, listing those IP Office systems that responded. The list can be sorted by clicking on the column names.



4. If the system required was not found, the address used for the search can be changed. Enter or select the required address in the Unit/Broadcast Address field and then click Refresh to perform a new search.

5. When the system required is located, check the box next to the system and click OK.

6. The user name and password request for the system is then displayed. Enter the required details and click OK. By default this is a different user name and password from those that can be used for configuration access.



7. If the security settings are received successfully, they appear within Manager.

-
- If the service user name/password is incorrect, or the service user has insufficient rights to read the security settings, "**Access Denied**" is displayed.
 - If the network link fails, or the secure communication mode is incorrect (for example Manager is set to unsecured, but the IP Office is set to secure only), "**Failed to communicate with IP Office**" is displayed.

Editing Security Settings

Editing security settings differ from editing configuration settings in a number of ways:

1. Editing of security settings may only be done online to an IP Office. No offline saving or editing is allowed for security purposes.
2. No errors in the security settings are allowed to persist. This prevents the IP Office becoming inaccessible through operator error.
3. Sets of changes to security objects may be made without the need for the OK button to be selected every time. This allows a coordinated set of changes to be accepted or canceled by the operator.

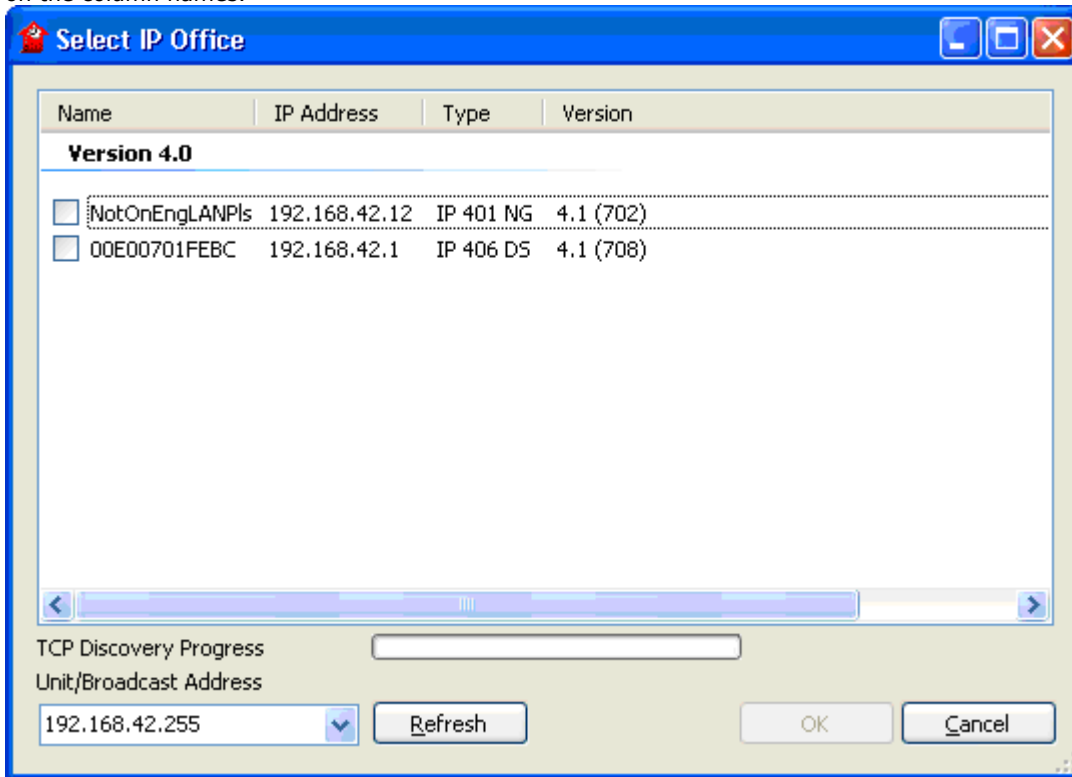
Saving Security Settings

1. Click  in the **Main Toolbar** or select **File | Save Security Settings** from the menu bar. These options are only available when some change has been made.
2. The user name and password request for the system is then displayed. Enter the required details and click **OK**. By default this is a different user name and password from those that can be used for configuration access.

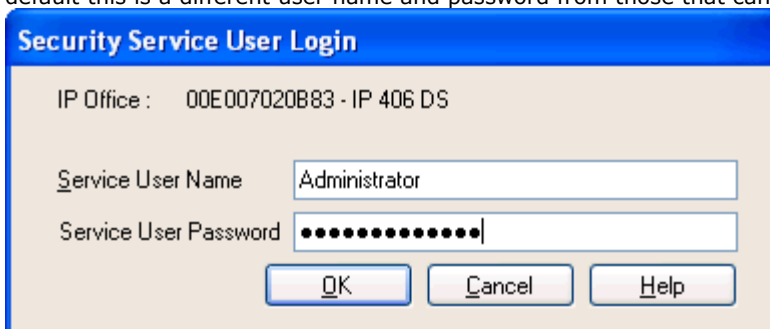
Resetting An IP Office's Security Settings

This option is only supported by IP Office 4.1 and higher systems. For other systems the method of resetting security settings requires is through the IP Office's DTE port, refer to the IP Office Installation manual for details.

1. Select **File | Reset Security Settings** (if in security mode), or **File | Advanced | Erase Security Settings** (if in configuration mode).
2. The **Select IP Office** window appears, listing those IP Office systems that responded. The list can be sorted by clicking on the column names.



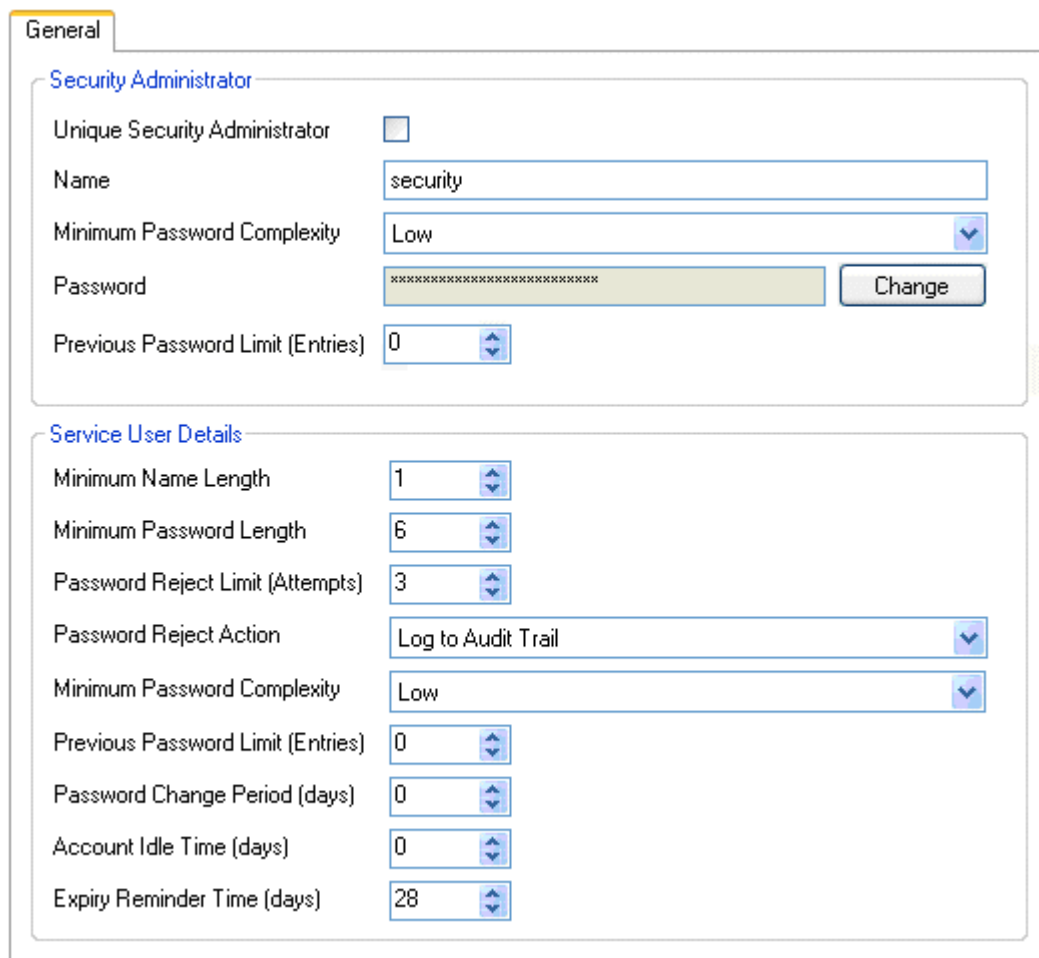
3. When the system required is located, check the box next to the system and click **OK**.
4. The user name and password request for the system is then displayed. Enter the required details and click **OK**. By default this is a different user name and password from those that can be used for configuration access.



5. Manager will indicate if the security settings are reset successfully.

3.5.1 General Settings

These settings are displayed when  **General** is selected in the navigation pane.



General

Security Administrator

Unique Security Administrator ☐

Name

Minimum Password Complexity

Password

Previous Password Limit (Entries)

Service User Details

Minimum Name Length

Minimum Password Length

Password Reject Limit (Attempts)

Password Reject Action

Minimum Password Complexity

Previous Password Limit (Entries)

Password Change Period (days)

Account Idle Time (days)

Expiry Reminder Time (days)

- **Security Administrator**

The Security Administrator is a special Service User who does not belong to any Rights Groups. The Administrator is able to access the IP Office system's security settings but cannot access its configuration settings. By default it is the only Service User able to access the security settings.

- **Unique Security Administrator:** *Default = Off*

When selected, only the Security Administrator is able to access the IP Office system's security settings. When this is selected, the security options for Rights Groups are disabled. When not selected, the ability to access security settings can also be assigned to Rights Groups.

- **Name:** *Default = 'security'. Range = 6 to 31 characters.*

The name for the Security Administrator.

- **Minimum Password Complexity:** *Default = Low, Software level = 4.1+.*

The password complexity requirements for the Security Administrator. This setting is active for attempted password changes on both Security Manager and IP Office.

- **Low**

Any password characters may be used without constraint.

- **Medium**

The password characters used must include characters from at least 2 of the 'code point sets' listed below. For example a mix of lower case and upper case. In addition, there should not be any adjacent repeated characters of any type.

1. Lower case alphabetic characters.
2. Upper case alphabetical character.
3. Numeric characters.
4. Non-alphanumeric characters, for example # or *.

- **High**

The password characters used must include characters from at least 3 of the 'code point sets' listed above. For example a mix of lower case, upper case and numbers. In addition, there should not be any adjacent repeated characters of any type.

- **Password:** *Default = 'securitypwd'. Range = 6 to 31 characters.*

The password for the Security Administrator. In order to change the Security Administrator password, the current password must be known.

- **Previous Password Limit:** *Default = 0. Range = 0 (Off) to 10 entries, Software level = 4.1+.*

The number of previous passwords to check for duplicates against when changing the password. When set to **0**, no checking of previous passwords takes place. This setting is active for attempted password changes on both Security Manager and IP Office.

• Service User Details

These settings control Service User names and password/account policies.

- **Minimum Name Length:** *Default = 6, Range 1 to 31 characters.*

This field sets the minimum name length for Service User names.

- **Minimum Password Length:** *Default = 6, Range 1 to 31 characters.*

This field sets the minimum password length for Service User passwords.

- **Password Reject Limit:** *Default = 3, Range 0 to 255 failures.*

Sets how many times an invalid name or password is allowed within a 10 minute period before the Password Reject Action is performed. Selecting 0 indicates never perform the **Password Reject Action**.

- **Password Reject Action:** *Default = Log to Audit Trail*

The action performed when a user reaches the **Password Reject Limit**. Current options are:

- **No Action**

- **Log to Audit Trail**

Log to Audit Trail creates an entry indicating the service user account name and time of last failure.

- **Log and Disable Account:** *Software level = 4.1+.*

Log and Disable Account creates an audit trail entry and additionally permanently disables the service user account. This account may only be enabled using the Security Manager Service User settings.

- **Log and Temporary Disable:** *Software level = 4.1+.*

Log and Temporary Disable creates an audit trail entry and additionally temporarily disables the service user account for 10 minutes. This account may additionally be enabled using the Security Manager Service User settings.

- **Minimum Password Complexity:** *Default = Low, Software level = 4.1+.*

The password complexity requirements for all Service Users. This setting is active for attempted password changes on both Security Manager and IP Office.

- **Low**

Any password characters may be used without constraint.

- **Medium**

The password characters used must cover two 'code point sets'. For example lower case and upper case. In addition, Medium and High do not allow more than 2 repeated characters of any type.

- **High**

The password characters used must cover three 'code point sets'. For example lower case plus upper case and numbers.

- **Password Change Period:** *Default = 0 (Off), Range 0 to 999 days, Software level = 4.1+.*

Sets how many days a newly changed password is valid. Selecting 0 indicates any password is valid forever. This setting is active for password changes through this form or prompted by IP Office Manager. Note that the user must be a member of a Rights Group that has the [Security Administration](#)^[10b] option **Write own service user password** enabled. If this timer expires, the service user account is locked. The account may only be re-enabled using the [Service User Settings](#)^[11b]. To prompt the user a number of days before the account is locked set a Expiry Reminder Time (see below).

- Whenever this setting is changed and the OK button is clicked, the Security Manager recalculates all existing service user password timers.

- **Account Idle Time:** *Default = 0 (Off), Range 0 to 999 days, Software level = 4.1+.*

Sets how many days a service user account may be inactive before it becomes disabled. Selecting 0 indicates an account may be idle forever. If this timer expires, the service user account is permanently disabled. The account may only be re-enabled using the [Service User Settings](#)^[11b]. The idle timer is reset whenever a service user successfully logs in.

- Whenever this setting is changed and the OK button is clicked, the Security Manager recalculates all existing service user idle timers.

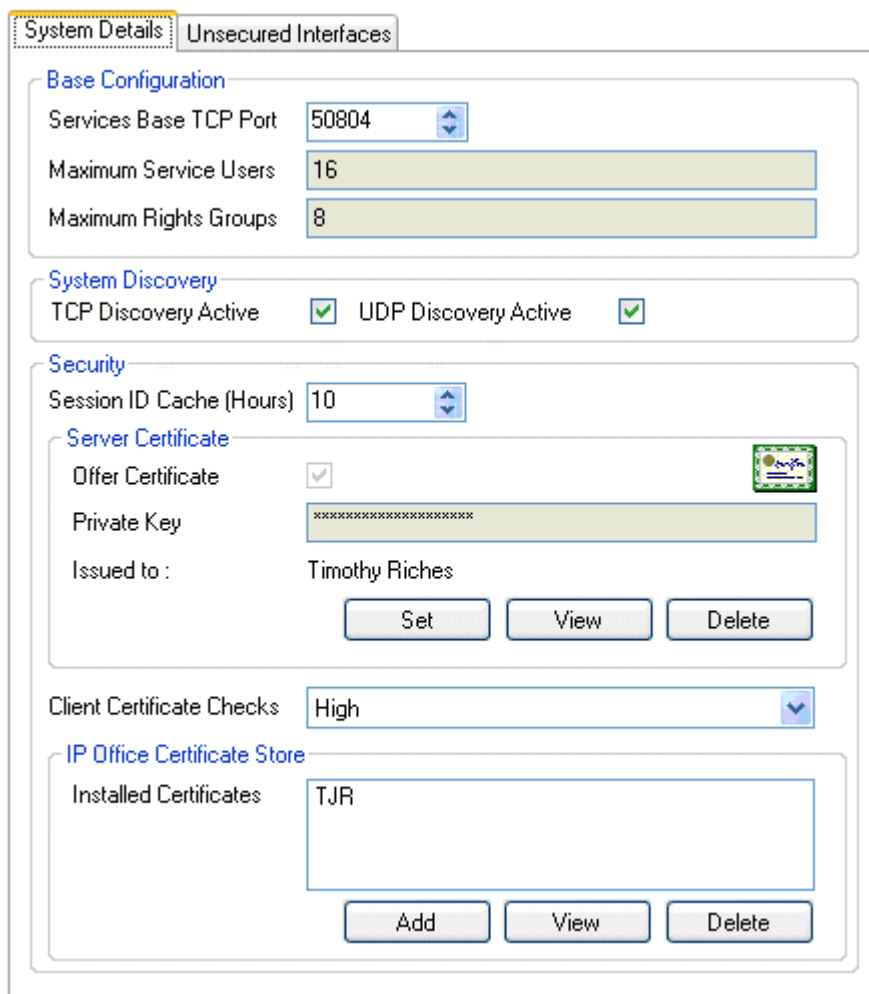
- **Expiry Reminder Time:** *Default = 28, Range 0 (Off) to 999 days, Software level = 4.1+.*

Sets the period before password or account expiry during which a reminder indication if the service user logs in. Selecting 0 prevents any reminders. Reminders are sent, for password expiry due to the Password Change Period (above) or due to the Account Expiry date (see [Service User](#)^[11b] setting) – whichever is the sooner. It is up to the IP Office application to display this reminder. Currently IP Office Manager displays reminders but SSA does not.

3.5.2 System

3.5.2.1 System Details

This tab is accessible when  **System** is selected in the navigation pane.



• Base Configuration

- **Base TCP Port:** *Default = 50804, Range = 49152 to 65526.*

This is the base TCP port for services provided by IP Office 3.2+ systems. It sets the ports on which the IP Office listens for requests to access those services, using its LAN1 IP address. Each service uses a port offset from the base port value. If this value is changed from its default, the Manager application must be set to the same Base TCP Port through its Services Base TCP Port setting ([File | Preferences](#)^[117]).

Service	Method	Port Used	Default	IP Office
Configuration	Unsecured	Base TCP Port	50804	3.2+
	Secured	Base TCP Port plus 1.	50805	4.1+
System Status Interface	Unsecured	Base TCP Port plus 4.	50808	4.0+
Security Administration	Unsecured	Base TCP Port plus 8.	50812	3.2+
	Secured	Base TCP Port plus 9.	50813	4.1+
Enhanced TSPI	Unsecured	Base TCP Port plus 8.	50814	5.0+

- When changing the base port, exercise caution that the selected port and those offset from it do not conflict with any ports already in use by other applications.
- **Maximum Service Users:** *Default = 16.*
This is a fixed value for indication purposes only. This value is the maximum number of Service Users that can be stored in an IP Office system's security settings.
- **Maximum Rights Groups:** *Default = 8.*
This is a fixed value for indication purposes only. This value is the maximum number of Rights Groups that can be stored in an IP Office system's security settings.

• System Discovery

System discovery is the processes used by IP Office applications to locate and list available IP Office systems. The IP Office can be disabled from responding to this process if required. If this is done, access to the IP Office requires its specific IP address to be used.

• TCP Discovery Active: *Default = On.*

TCP is the discovery method supported by Manager 5.2+ and IP Office 3.2+ systems. Selecting TCP Discovery Active allows the IP Office system to respond to those requests.

• UDP Discovery Active: *Default = On.*

UDP is the discovery method used by previous versions of Manager and by other IP Office applications. Selecting UDP Discovery Active allows the IP Office system to respond to those requests.

• Security: *Software level = 4.1+.*

These settings cover the per-system security aspects, primarily TLS settings.

• Session ID Cache: *Default = 10 hours, Range 0 to 100 hours.*

This sets how long a TLS session ID is retained by the IP Office. If retained, the session ID may be used to quickly restart TLS communications between the IP Office and a re-connecting IP Office application. When set to **0**, no caching takes place and each TLS connection must be renegotiated.

• Offer Server Certificate: *Default = On.*

This is a fixed value for indication purposes only. This sets whether the IP Office will offer a certificate in the TLS exchange when the IP Office is acting as a TLS server, which occurs when accessing a secured service.

• Server Private Key: *Default = None.*

This is a fixed value for indication purposes only. This indicate whether the IP Office has a private key associated with the Server Certificate.

• Server Certificate: *Default = None.*

The **Server Certificate** is an X.509v3 certificate that identifies the IP Office system to a connecting client device (usually a PC running an IP Office application). This certificate is offered in the TLS exchange when the IP Office is acting as a TLS server, which occurs when accessing a secured service. By default the IP Office's own self-generated certificate is used (see note below), but set can be used to replace this with another certificate.

- The Server Certificate may be generated by the IP Office itself, and can take up to 5 minutes to generate. This occurs when any of the [Service Security Level](#) ⁽¹⁰⁵⁾ is to a value other than Unsecured Only. During this time normal IP Office operation is suspended.

• Set

Sets the current Server Certificate and associated private key. The certificate and key must be a matching pair, valid. The source may be:

- Current User Certificate Store
- Local Machine Certificate Store
- File in PKCS#12 (.pfx), DER (.cer), or password protected DER (.cer) format
- Pasted from clipboard in PEM format, including header and footer text.

• View

View the current Server Certificate. The certificate (not the private key) may also be installed into the local PC certificate store for export or later use when running the manager in secured mode.

• Delete

Delete the current Server Certificate. When sent to the IP Office will generate a new Server Certificate when next required. This can take up to 5 minutes to generate. During this time normal IP Office operation is suspended.

• Client Certificate Checks: *Default = None.*

When a Service Security Level is set to **High**, a certificate is requested of Manager. For general information on security policy and application see Appendix: IP Office Secure Administration. The received certificate is tested according to the Client Certificate Checks level:

• None

No extra checks are made (The certificate must be in date).

• Low

Certificate minimum key size 512 bits, in date.

• Medium

Certificate minimum key size 1024 bits, in date, match to store, no reflected.

• High

Certificate minimum key size 1024 bits, in date, match to store, no self signed, no reflected.

• Client IP Office Certificate Store: *Default = Empty.*

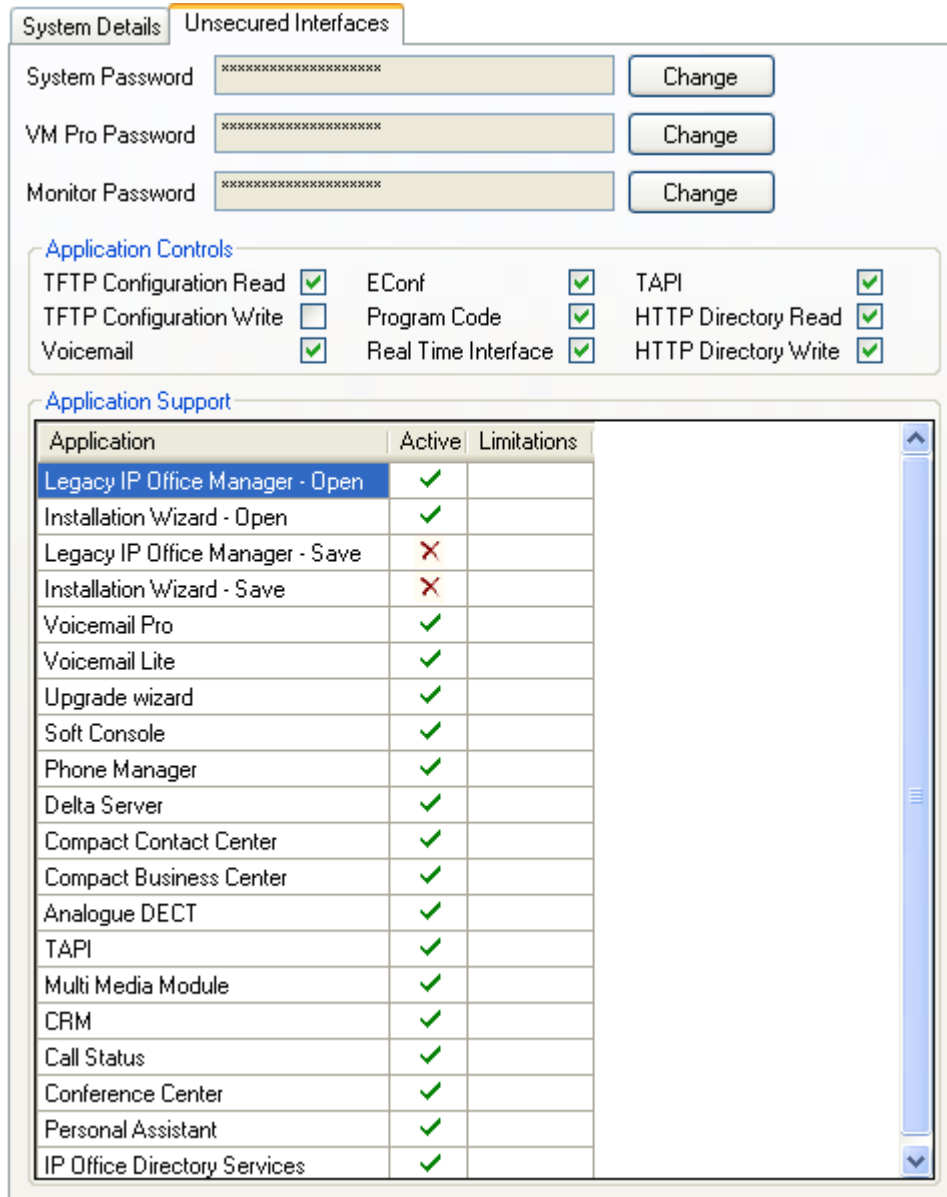
The certificate store contains a set of trusted certificates used to evaluate received client (IP Office Manager) certificates. Up to six X.509v3 certificates may be installed. The source may be:

- Current User Certificate Store.
- Local Machine Certificate Store.

-
- File in PKCS#12 (.pfx), DER (.cer), or password protected DER (.cer) format.
 - Pasted from clipboard in PEM format, including header and footer text.

3.5.2.2 Unsecured Interfaces

This tab is accessible when  **System** is selected in the navigation pane. These features relate to IP Office applications that also access the IP Office configuration settings but still use the pre-IP Office 3.2 security methods. Currently this includes all 3.2+ applications except Manager and System Status Application.



System Details | **Unsecured Interfaces**

System Password: [XXXXXXXXXXXX]

VM Pro Password: [XXXXXXXXXXXX]

Monitor Password: [XXXXXXXXXXXX]

Application Controls

TFTP Configuration Read	☒	EConf	☒	TAPI	☒
TFTP Configuration Write	☐	Program Code	☒	HTTP Directory Read	☒
Voicemail	☒	Real Time Interface	☒	HTTP Directory Write	☒

Application Support

Application	Active	Limitations
Legacy IP Office Manager - Open	✓	
Installation Wizard - Open	✓	
Legacy IP Office Manager - Save	✗	
Installation Wizard - Save	✗	
Voicemail Pro	✓	
Voicemail Lite	✓	
Upgrade wizard	✓	
Soft Console	✓	
Phone Manager	✓	
Delta Server	✓	
Compact Contact Center	✓	
Compact Business Center	✓	
Analogue DECT	✓	
TAPI	✓	
Multi Media Module	✓	
CRM	✓	
Call Status	✓	
Conference Center	✓	
Personal Assistant	✓	
IP Office Directory Services	✓	

- System Password:** Default = 'password', Range = 0 to 31 characters.
 This password is required by some legacy applications such as Monitor and Call Status. It is also used for IP Office control unit software upgrades.
- VM Pro Password:** Default = "", Range = 0 to 31 characters.
 This password is required if a matching password is also set through the Voicemail Pro client application. Typically no password is set.
- Monitor Password:** Default = "", Range = 0 to 31 characters.
 This password, if set, is used by the IP Office Monitor and Call Status applications. If this password is not set, those applications use the system password.
- Applications Controls:** Default = All selected except TFTP Configuration Write.
 These check boxes control which actions the IP Office will support for legacy applications. Different combinations are used by the different applications. A summary of the applications affected by changes is listed in the Application Support list.
 - TFTP Configuration Read:** Default = On.
 - TFTP Configuration Write:** Default = Off.
 - Voicemail:** Default = On.
 - EConf:** Default = On.

-
- **Program Code:** *Default = On.*
 - **Real Time Interface:** *Default = On.*
If disabled, IP Office Delta Server and related applications cannot change the status of agents.
 - **TAPI:** *Default = On.*
 - **HTTP Directory Read:** *Default = On, Software level = 5.0+.*
Allow the system's current directory records to be accessed using HTTP.
 - **HTTP Directory Write:** *Default = On, Software level = 5.0+.*
Allow [HTTP import](#)¹⁷⁹ to be used to place temporary directory entries into the directory.
 - **Application Support**
This panel is shown for information only. It indicates the effect on various IP Office applications of the Application Controls selections.

3.5.3 Services Settings

This tab is accessible when  **Service** is selected in the navigation pane. It shows details of the services that the IP Office runs to which Service Users can communicate. Currently three services exist. The Configuration service is used for accessing IP Office configuration settings. The Security Administration service is used for accessing IP Office security settings. The System Status Interface service is used by the System Status Application.

Service Details

Name	Configuration
Host System	00E00701FEB C
Service TCP Port	50804
Service Security Level	Unsecure Only 

- **Name**

The name of the service. This is a fixed value for indication purposes only.

- **Host System**

This field shows the IP Office system's name. This is a fixed value for indication purposes only.

- **TCP Base Port**

This is the TCP port on which the IP Office system listens for attempts to access the service. The routing of traffic to this port may need to be enabled on firewalls and network devices between the Service Users and the IP Office. The TCP Base Port for each service is offset by a fixed amount from the Base TCP Port set in System Settings.

Service	Method	Port Used	Default	IP Office
Configuration	Unsecured	Base TCP Port	50804	3.2+
	Secured	Base TCP Port plus 1.	50805	4.1+
System Status Interface	Unsecured	Base TCP Port plus 4.	50808	4.0+
Security Administration	Unsecured	Base TCP Port plus 8.	50812	3.2+
	Secured	Base TCP Port plus 9.	50813	4.1+

- **Service Security Level:** *Default = 'Unsecure Only', Software level = 4.1+.*

Sets the minimum security level the service will support. See [File | Preferences | Security](#)^[12] for the corresponding Manager application setting, which must be changed to match the appropriate service access security settings.

- **WARNING**

If the IP Office system does not already have an X509 security certificate, selecting a setting other than **Unsecure Only** will cause the IP Office system to stop responding for a period while the IP Office generates its own unique security certificate. On Small Office Edition systems this may take up to 5 minutes, on IP500 systems 30 seconds.

- **Unsecure Only**

This option allows only unsecured access to the service. The service's secure TCP port is disabled.

- **Unsecure + Secure**

This option allows both unsecured and secure (Low) access. In addition, TLS connections are accepted without encryption, just authentication.

- **Secure, Low**

This option allows secure access to that service using TLS, and demands weak (for example DES_40 + MD5) encryption and authentication, or higher. The service's unsecured TCP port is disabled.

- **Secure, Medium**

This option allows secure access to that service using TLS, and demands moderate (for example DES_56 + SHA-1) encryption and authentication, or higher. The service's unsecured TCP port is disabled.

- **Secure, High**

This option allows secure access to that service using TLS and demands strong (for example 3DES + SHA-1) encryption and authentication, or higher. In addition a certificate is required of the client (usually Manager). See [System Details | Client Certificate Checks](#)^[10] for tests made on the received certificate. The service's unsecured TCP port is disabled.

3.5.4 Rights Groups

The Rights Groups to which a service user belongs define what the service user is able to do after that login to the IP Office system.

Default Rights Groups		Administrator Group	Manager Group	Operator Group	System Status Group	TCPA Group
Operator Rights	Operator View	Administrator	Manager	Operator	–	–
Service Rights	Read Configuration	✓	✓	✓	✗	✗
	Write Configuration	✓	✓	✓	✗	✗
	Default Configuration	✓	✓	✓	✗	✗
	Merge	✓	✓	✓	✗	✗
	Reboot Immediately	✓	✓	✓	✗	✗
	Reboot When Free	✓	✓	✓	✗	✗
	Reboot at Time of Day	✓	✓	✓	✗	✗
Security Administration	Read All Security Settings	✗	✗	✗	✗	✗
	Write All Security Settings	✗	✗	✗	✗	✗
	Reset All Security Settings (IP Office 4.1+)	✗	✗	✗	✗	✗
	Write own service user password (IP Office 4.1+)	✗	✗	✗	✗	✗
System Status (IP Office 4.0+)	System Status Access	✗	✗	✗	✓	✗
	Read all configuration	✗	✗	✗	✓	✗
Enhanced TSPI (IP Office 5.0+)	Enhanced TSPI Access	✗	✗	✗	✗	✓

3.5.4.1 Group Details

These settings are displayed when  **Rights Groups** is selected in the navigation pane. This tab sets the name of the Rights Group.

Group Details
Configuration
Security Administration
System Status

Name

- **Name:** Range = Up to 31 characters
The name for the Rights Group should be unique.

3.5.4.2 Configuration

These settings are displayed when  **Rights Groups** is selected in the navigation pane. This tab sets the configuration settings access for Service User's who are members of this Rights Group.

Group Details	Configuration	Security Administration	System Status

IP Office Service Rights ☒ Read all configuration ☒ Write all configuration ☒ Merge configuration ☒ Default configuration ☒ Reboot immediately ☒ Reboot when free ☒ Reboot at time of day	Manager Operator Rights ☐ Read Only ☒ Administrator ☐ Operator ☐ Manager ☐ User & Group Edit ☐ User & Group Admin ☐ Dir & Account Admin ☐ Time & Attend Admin ☐ ICR & User Rights Admin

- IP Office Service Rights**

This setting controls what action on the IP Office system can be performed by members of the Rights Group.

- Manager Operator Rights**

This setting controls what types of configuration entries Manager will allow members of the Rights Group to viewed and what actions they can perform with those types of entries.

Operator	View/ Edit/New/ Delete	Configuration Entry Types
Administrator	All	View, edit create and delete all configuration entries.
Manager	View	View all except WAN Port.
	Edit	Extension, User, Hunt Group, Short Code, Service, RAS, Incoming Call Route, Directory, Time Profile, Firewall Profile, IP Route, Least Cost Route, Account Code, ARS, E911 System.
	New	As edit except Short Code.
	Delete	As edit except Short Code.
Operator	View	View all except WAN Port.
	Edit	Extension, User, Hunt Group, Short Code, Service, RAS, Incoming Call Route, Time Profile, Firewall Profile, IP Route, Least Cost Route, Account Code, Licence, ARS, E911 System.
	New	None.
	Delete	Delete Incoming Call Route and Directory.
User & Group Edit	View	User and Hunt Group entries only.
	Edit	
	New	None
	Delete	
User & Group Admin	All	User and Hunt Group entries only.
Dir & Account Admin	All	Directory and Account Code entries only.
Time & Attendant Admin	All	Time Profile and Auto Attendant entries only.
ICR & User Rights Admin	All	Incoming Call Route and User Rights entries only.
Read Only	View	View all configuration entries.
	Edit	None.
	New	
	Delete	

3.5.4.3 Security Administration

These settings are displayed when  **Rights Groups** is selected in the navigation pane. This tab sets the security settings access for Service user's who are members of this Rights Group. These settings are ignored and greyed out if a Unique Security Administrator has been enabled in [General Settings](#)^[98].



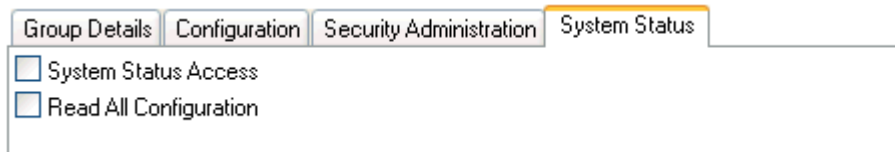
Group Details Configuration **Security Administration** System Status

- ☐ Read all security settings
- ☐ Write all security settings
- ☐ Reset all security settings
- ☐ Write own service user password

- **Read all security settings**
Members of the Rights Group can view the IP Office system's security settings.
- **Write all security settings**
Members of the Rights Group can edit and return changes to the IP Office system's security settings.
- **Reset all security settings**
For systems prior to IP Office 4.1 this option was not used. For IP Office 4.1+, if selected, members of the Rights Group can reset the security settings to default values.
- **Write own service user password:** *Software level = 4.1+.*
If selected, members of the Rights Group can change their own password when requested to do so by the IP Office. That request may be the result of a [Password Change Period](#)^[98], [Force new password](#)^[110] or [Account Expiry](#)^[110]. The new password change is requested automatically at login time.

3.5.4.4 System Status

These settings are displayed when  **Rights Groups** is selected in the navigation pane. This tab sets whether members of the group can access the IP Office system using the IP Office System Status Application (SSA). That application is only supported by IP Office 4.0 and higher systems.



Group Details	Configuration	Security Administration	System Status
☐ System Status Access			
☐ Read All Configuration			

- **System Status Access**

If selected, members of the Rights Group can view the IP Office system's current status and resources using the System Status Application (SSA).

- **Read all configuration**

The System Status application includes tools to take a snapshot of the system for use by Avaya for diagnostics. That snapshot can include a full copy of the IP Offices configuration settings. This setting must be enabled for the SSA user to include a copy of the configuration in the snapshot.

3.5.4.5 Enhanced TSPI

These settings are displayed when  **Rights Groups** is selected in the navigation pane. This tab sets whether members of the group can access the IP Office system using the Enhanced TSPI application interface. This interface is only supported by IP Office 5.0 and higher systems.



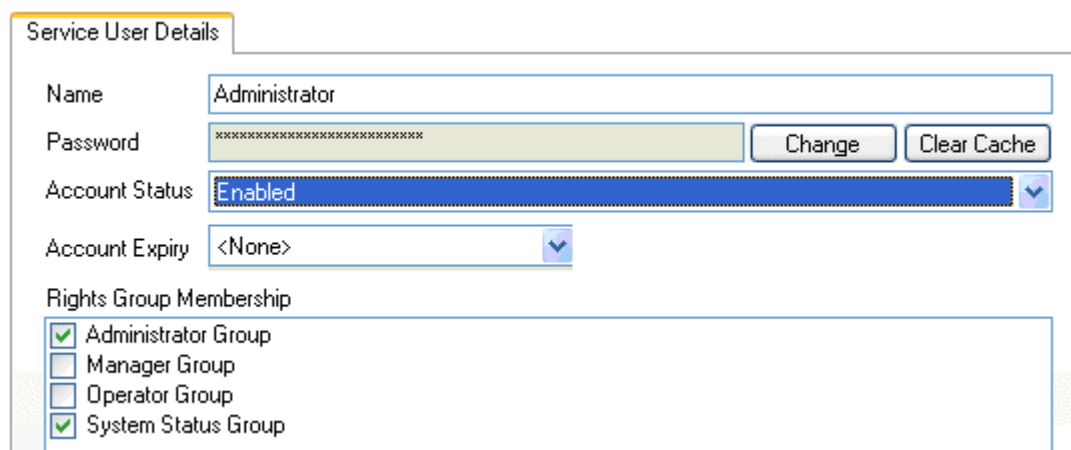
- **Enhanced TSPI Access**

If selected, applications in this rights group are able to use the IP Office's Enhanced TSPI interface. This interface is currently used by the one-X Portal for IP Office application server for its connection to the IP Office.

3.5.5 Service User Settings

These settings are displayed when  **Service Users** is selected in the navigation pane and a particular Service User is selected in the group pane.

Users can be created and deleted using the  and  icons at the top-right of the details pane. The maximum number of Service Users is 16.



- **Name:** Range = Up to 31 characters.

Sets the Service User's name. The minimum name length is controlled through  [General settings](#) ^[98].

- Note: If changing the user name and/or password of the current service user used to load the security settings, after saving the changes Manager should be closed. Not closing Manager will cause error warnings when attempting to send any further changes.

- **Password:** Range = Up to 31 characters.

Sets the Service User's password. The minimum password length and complexity is controlled through  [General settings](#) ^[98].

- **Account Status:** Default = 'Enabled', Software level = 4.1+.

Displays the current service user account status (correct at the time of reading from the IP Office).

- **Enabled**

This status is the normal non-error state of a service user account. This setting can be selected manually to re-enable an account that has been disabled or locked. Note that re-enabling a locked account will reset all timers relating to the account such as **Account Idle Time**.

- **Force New Password**

This status can be selected manually. The service user is then required to change the account password when they next log in. Until a password change is successful, no service access is allowed. Note that the user must be a member of a Rights Group that has the [Security Administration](#) ^[108] option **Write own service user password** enabled.

- **Disabled**

This status prevents all service access. This setting can be selected manually. The account can be enabled manually by setting the **Account Status** back to **Enabled**.

- **Locked – Password Error**
This status indicates the account has been locked by the **Password Reject Action** option **Log and Disable Account** on the security [General Settings](#) ^[98] tab. The account can be enabled manually by setting the **Account Status** back to **Enabled**.
- **Locked - Temporary**
This status indicates the account is currently locked temporarily by the **Password Reject Action** option **Log and Temporary Disable** on the security [General Settings](#) ^[98] tab. The account can be enabled manually by setting the **Account Status** back to **Enabled**, otherwise the service user must wait for the 10 minute period to expire.
- **Locked - Idle**
This status indicates the account has been locked by passing the number of days set for the Account Idle Time on the security [General Settings](#) ^[98] tab without being used. The account can be enabled manually by setting the **Account Status** back to **Enabled**.
- **Locked - Expired**
This status indicates the account has been locked after passing the Account Expiry date set below. The account can be enabled manually by setting **Account Status** back to **Enabled**, and resetting the **Account Expiry** date to a future date or to **No Account Expiry**.
- **Locked – Password Expired**
This status indicates the account has been locked after having not been changed within the number of days set by the Password Change Period option on the security [General Settings](#) ^[98] tab. The account can be enabled manually by setting the **Account Status** back to **Enabled**.
- **Account Expiry:** *Default = <None> (No Expiry), Software level = 4.1+.*
This option can be used to set a calendar date after which the account will become locked. The actual expiry time is 23:59:59 on the selected day. To prompt the user a number of days before the expiry date, set an Expiry Reminder Time on the security [General Settings](#) ^[98] tab.
- **Rights Group Membership**
The check boxes are used to set the **Rights Groups** to which the user belongs. The user's rights will be a combination of the rights assigned to the groups to which they belong.

Chapter 4.

Menu Bar Commands

4. Menu Bar Commands

The commands available through the Manager's menu bar change according to whether Manager is running in configuration or security mode. Commands may also be grayed out if not useable. The following sections outline the functions of each command. The **Edit** and **Help** menus are not included.

Configuration Mode

File Menu	View Menu	Tools Menu
Open Configuration... ^[115] Close Configuration ^[115] Save Configuration ^[115] Save Configuration As ^[115] Change Working Directory... ^[116] Preferences ^[117] Offline - Create New Config ^[124] - Open File... ^[124] - Send Config... ^[124] - Receive Config... ^[124] Advanced - Erase Configuration (Default) ^[124] - Reboot ^[124] - Upgrade.. ^[125] - Audit Trail... ^[127] - Security Settings... ^[128] - Erase Security Settings (Default) ^[128] - System Status ^[128] - LVM Greeting Utility ^[129] - Embedded File Management ^[132] Backup/Restore - Backup Binaries and Configurations ^[130] - Restore Binaries and Configurations ^[130] Import/Export - Import ^[132] - Export ^[131] Exit ^[135]	Toolbars ^[136] Navigation Pane ^[136] Group Pane ^[136] Details Pane ^[136] Error Pane ^[136] TFTP Log ^[136]	Extension Renumber ^[137] Line Renumber ^[137] Busy on Held Validation ^[137] MSN ^[138] Configuration ^[138] Print Button Labels ^[139]

Security Mode

File Menu	View Menu
Open Security Settings ^[141] Close Security Settings ^[141] Save Security Settings ^[141] Reset Security Settings ^[141] Preferences ^[141] Configuration ^[141] Exit ^[141]	Toolbars ^[136] Navigation Pane ^[136] Group Pane ^[136] Details Pane ^[136]

Embedded File Management Mode

File Menu	View Menu
Open File Settings ^[132] Close File Settings ^[132] Upload File ^[132] Preferences ^[117] Configuration ^[115] Exit ^[135]	Toolbars ^[136] Tiles ^[132] Icons ^[132] List ^[132] Details ^[132]

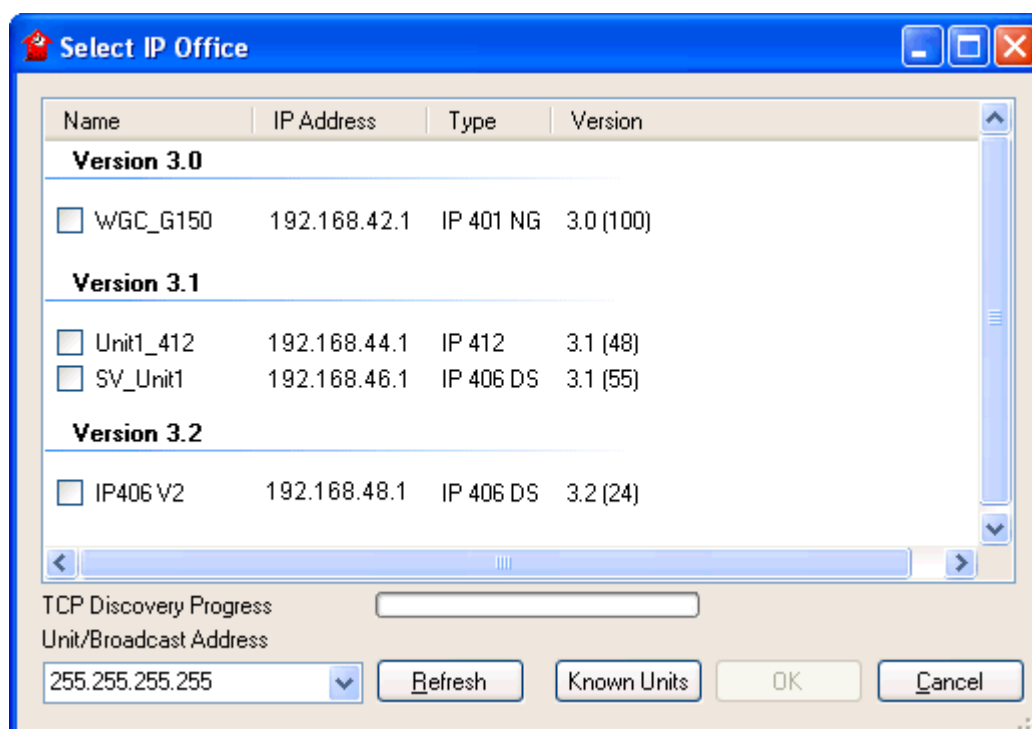
4.1 Configuration Mode

4.1.1 File Menu

4.1.1.1 Open Configuration

This command displays the Select IP Office menu used to receive an IP Office systems configuration settings. See [Loading a Configuration](#) ^[67].

The same action is performed by the  icon in the Main Toolbar.



The Select IP Office menu is also used for other actions such as reboot and sending a configuration. If the unit required is not found, the Unit/Broadcast Address can be changed and then Refresh clicked. To change the TCP addresses scanned, select **File | Preferences | Discovery** ^[117] and enter the required addresses in the IP Search Criteria.

Known Units is not available unless configured, see [Known IP Office Discovery](#) ^[70].

4.1.1.2 Close Configuration

This command closes the currently loaded configuration without saving it.

4.1.1.3 Save Configuration

The **File | Save** command saves the amended configuration.

If the configuration has been received from an IP Office, the Send Config menu is displayed. See [Sending a Configuration](#) ^[76].

If the configuration file has been opened offline or created from new, the file is saved to disk only.

4.1.1.4 Save Configuration As

The **File | Save As** command allows you to save a configuration offline. The command displays the **Save File As** dialog box. You can enter the new file name, including the drive and directory.

Configurations saved onto the PC in this way can be reopened using the  icon or the **File | Offline | Open File** command.

Note that dynamic configuration data, for example advertised hunt groups, is not included in a configuration file saved onto PC and then reopened.

4.1.1.5 Change Working Directory

This command allows you to change the default locations where Manager looks for and saves offline configuration (.cfg) files and IP Office equipment binary (.bin) files.

The screenshot shows a dialog box titled "Directories". It contains three sections, each with a label, a text input field, and a browse button ("...").

- Working Directory (.cfg files)**: The text field contains "C:\Program Files\Avaya\IP Office\Manager".
- Binary Directory (.bin files)**: The text field contains "C:\Program Files\Avaya\IP Office\Manager".
- Known IP Office File**: The text field contains "C:\Program Files\Avaya\IP Office\Manager\knownIPO.csv".

- **Working Directory (.cfg files)**
Sets the directory into which Manager saves .cfg files. By default this is the Manager application's program directory.
- **Binary Directory (.bin files)**
Sets the directory in which the Manager upgrade, TFTP and BOOTP functions look for .bin files. By default this is the Manager application's program directory.
- **Known IP Office File:** *Software level = 4.0 Q2 2007 maintenance release+.*
Sets the file and directory into which Manager can record details of the IP Office systems it has discovered. Once a file location has been specified, a **Known Units** button becomes available on the discovery menu used for loading IP Office configuration. Pressing that button displays the known units file as a list from which the required IP Office system can be selected. It also allows sorting of the list and entries to be removed.

4.1.1.6 Preferences

This command displays a menu for configuring various aspects of Manager's operation. The menu is divided into a number of tabs.

- [Preferences](#) ^[117]
- [Directories](#) ^[118]
- [Visual Preferences](#) ^[120]
- [Discovery](#) ^[118]
- [Validation](#) ^[123]
- [Security](#) ^[124]

4.1.1.6.1 Preferences

This tab is accessed through **File | Preferences** and then selecting the **Preferences** sub-tab.

- **Note:** For IP Office Manager 6.1+, a number of option have been moved from this sub-tab to the [Security](#) ^[124] sub-tab. Those options are Request Login on Save, Close Configuration/Security Settings After Send, Save Configuration File After Load, Backup Files on Send.

The screenshot shows the 'Preferences' dialog box with the following settings:

- ☒ Edit Services Base TCP Port
 - Services Base TCP Port: 50804
- ☒ Enable Time Server
- ☒ Enable BootP and TFTP Servers
- ☒ Enable Port For Serial Communication
 - Enter Port Number To Be Used For Serial Communication: 2

- **Edit Services Base TCP Port:** *Default = On.*
This field shows or hides the Service Base TCP Port setting.
 - **Service Base TCP Port:** *Default = 50804*
Access to the configuration and security settings on an IP Office 3.2+ system requires Manager to send its requests to specific ports. This setting allows the TCP Base Port used by Manager to be set to match the TCP Base Port setting of the IP Office system. The IP Office system's TCP Base Port is set through its security settings.
- **Enable Time Server:** *Default = On.*
This setting allows Manager to respond to time requests from IP Office systems.
- **Enable BootP and TFTP Servers:** *Default = On.*
This setting allows Manager to respond to BOOTP request from IP Office systems for which it also has a matching BOOTP entry. It also allows the IP Office to respond to TFTP requests for files.
- **Enable Port for Serial Communication**
Not used. This is a legacy feature for some older control units that were managed via the serial port rather than the LAN.
 - **Enter Port Number to be used for Serial Communication**
Used with the setting above to indicate which serial port Manager should use.

4.1.1.6.2 Directories

This tab is accessed through **File | Preferences** and then selecting the **Directories** sub-tab.

These fields set the default location where Manager will look for and save files. This tab is also accessed by the **File | Change Working Directory** command.

The screenshot shows the 'Directories' tab with the following settings:

- Working Directory (.cfg files):** C:\Program Files\Avaya\IP Office\Manager
- Binary Directory (.bin files):** C:\Program Files\Avaya\IP Office\Manager
- Known IP Office File:** C:\Program Files\Avaya\IP Office\Manager\knownIPO.csv

- **Working Directory (.cfg files)**

Sets the directory into which Manager saves .cfg files. By default this is the Manager application's program directory.

- **Binary Directory (.bin files)**

Sets the directory in which the Manager upgrade wizard, HTTP, TFTP and BOOTP functions look for firmware files requested by phones, expansion module, control units and other hardware components. That includes .bin file, .scr files and .txt files. By default this is the Manager application's program directory.

- Note that in the [Upgrade Wizard](#)^[125], right-clicking and selecting **Change Directory** also changes this setting.

- **Known IP Office File:** *Software level = 4.0 Q2 2007 maintenance release+.*

Sets the file and directory into which Manager can record details of the IP Office systems it has discovered. Once a file location has been specified, a [Known Units](#)^[70] button becomes available on the discovery menu used for loading IP Office configuration. Pressing that button displays the known units file as a list from which the required IP Office system can be selected. It also allows sorting of the list and entries to be removed.

4.1.1.6.3 Discovery

This tab is accessed through **File | Preferences** and then selecting the **Discovery** sub-tab.

When  is clicked, the **Select IP Office** form appears and Manager attempts to discovery any IP Office systems. Within **Preferences**, the **Discovery** tab sets the IP addresses and methods used for the discovery process.

By default IP Office 3.2 systems respond to both UDP and TCP discovery. Pre-3.2 IP Office systems only support UDP discovery.

The screenshot shows the 'Discovery' tab with the following settings:

- ☒ **TCP Discovery**
- Table with 4 columns: NIC IP, NIC Subnet, Lower IP Range, Upper IP Range.

NIC IP	NIC Subnet	Lower IP Range	Upper IP Range
192.168.42.203	255.255.255.0	192.168.42.1	192.168.42.254
- IP Search Criteria: 192.168.42.1 - 192.168.42.254; 192.168.44.1; 192.168.46.1
- ☒ **UDP Discovery**
- Enter Broadcast IP Address: 255 . 255 . 255 . 255
- ☐ **Use DNS**

- **TCP Discovery:** *Default = On*

This setting controls whether Manager uses TCP to discover IP Office systems. Only IP Office 3.2 and higher systems can respond to TCP discovery. The addresses used for TCP discovery are set through the IP Search Criteria field below.

- **NIC IP/NIC Subnet**

This area is for information only. It shows the IP address settings of the LAN network interface cards (NIC) in the PC running Manager. Double-click on a particular NIC to add the address range it is part of to the IP Search Criteria. Note that if the address of any of the Manager PC's NIC cards is changed, the Manager application should be closed and restarted.

- **IP Search Criteria**

This tab is used to enter TCP addresses to be used for the discovery process. Individual addresses can be entered separated by semi-colons, for example 135.164.180.170; 135.164.180.175. Address ranges can be specified using dashes, for example 135.64.180.170 - 135.64.180.175.

- **UDP Discovery:** *Default = On*

This settings controls whether Manager uses UDP to discover IP Office systems. Pre-3.2 IP Office systems only respond to UDP discovery. By default IP Office 3.2 and higher systems also respond to UDP discovery but that can be disabled through the IP Office system's security settings.

- **Enter Broadcast IP Address:** *Default = 255.255.255.255*

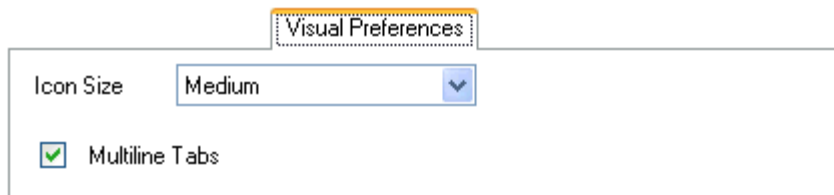
The broadcast IP address range that Manager should used during UDP discovery. Since UDP broadcast is not routable, it will not locate IP Office systems that are on different subnets from the Manager PC unless a specific address is entered.

- **Use DNS:** *Software level = IP Office Manager 6.2+.*

Selecting this option allows IP Office Manager to use DNS name (or IP address) lookup to locate an IP Office system. Note that this overrides the use of the TCP Discovery and UDP Discovery options above. This option requires the IP Office IP address to be assigned as a name on the users DNS server. When selected the **Unit/Discovery Address** field on the [Select IP Office](#)  dialogue is replaced by a **Enter Unit DNS Name or IP Address** field.

4.1.1.6.4 Visual Preferences

This tab is accessed through **File | Preferences** and then selecting the **Visual Preferences** sub-tab.



- **Icon size**

Sets the size for the icons in the navigation pane between **Small**, **Medium** or **Large**.

- **Multiline Tabs:** *Default = Off.*

In the details pane, for entry types with more than two tabs, Manager can either use  buttons to scroll the tabs horizontally or arrange the tabs into multiple rows. This setting allows selection of which method Manager uses.

4.1.1.6.5 Security

This tab is accessed through **File | Preferences** and then selecting the **Security** sub-tab.

Controls the various security settings of Manager. To control the security settings of the IP Office, see [Security Mode](#)^[80].

All settings, except **Secure Communications**, can only be changed when a configuration has been opened using a user name and password with Administrator rights or security administration rights.

- **Request Login on Save:** *Default = On*
By default a valid user name and password is required to receive a configuration from an IP Office and also to send that same configuration back to the IP Office. Deselecting this setting allows Manager to send the configuration back without having to reenter user name and password details. This does not apply to a configuration that has been saved on PC and then reopened. This setting can only be changed when a configuration has been opened using a user name and password with Administrator rights or security administration rights.
- **Close Configuration/Security Settings After Send:** *Default = On.*
When selected, the open configuration file or security settings are closed after being sent back to the IP Office system.
- **Save Configuration File After Load:** *Default = On.*
When selected, a copy of the configuration is saved to Manager's [working directory](#)^[118]. The file is named using the IP Office's system name and the suffix **.cfg**. This setting can only be changed when a configuration has been opened using a user name and password with Administrator rights or security administration rights.
- **Backup Files on Send:** *Default = On.*
If selected, whenever a copy of a configuration is sent to an IP Office system, a backup copy is saved in IP Office Manager's [working directory](#)^[118]. The file is saved using the system name, date and a version number followed by the **Backup File Extension** as set below. This setting can only be changed when a configuration has been opened using a user name and password with Administrator rights or security administration rights.
- **Backup File Extension:** *Default = .BAK*
Sets the file extension to use for backup copies of system configurations generated by the **Backup Files on Send** option above.
- **Number of Backup Files to keep:** *Default = Unlimited, Software level = 4.2+.*
This option allows the number of backup files kept for each system to be limited. If set to a value other than **Unlimited**, when that limit would be exceeded, the file with the oldest backup file is deleted.
- **Enable Application Idle Timer (5 minutes):** *Default = Off, Software level = 4.1+.*
When enabled, no keyboard or mouse activity for 5 minutes will cause the Manager to grey out the application and re-request the current service user password. This setting can only be changed when a configuration has been opened using a user name and password with Administrator rights or security administration rights.
- **Secure Communications:** *Default = Off, Software level = 4.1+.*
When selected, any service communication from Manager to IP Office uses the TLS protocol. This will use the ports set for secure configuration and secure security access. It also requires the configuration and or security service within the IP Office's security configuration settings to have been set to support secure access. Depending on the level of that secure access selected, it may be necessary for the Manager Certificate Checks below to be configured to match those expected by the IP Office configuration and or security service. See [Security Administration](#)^[86].
 - When **Secure Communications** is set to **On**, a padlock icon is displayed at all times in the lower right Manager status field.
- **Manager Certificate Checks:** *Software level = 4.1+.*
When the Secure Communications option above is used, Manager will process and check the certificate received from the IP Office. This setting can only be changed when a configuration has been opened using a user name and password with Administrator rights or security administration rights.

- **Low**

Any certificate sent by IP Office certificate is accepted without question.

- **Medium**

Any certificate sent by IP Office is accepted if it has previously been previously saved in the Windows' certificate store. If the certificate has not been previously saved, the user has the option to review and either accept or reject the certificate.

- **High**

Any certificate sent by IP Office is accepted if it has previously been previously saved in the Windows' certificate store. Any other certificate cause a log in failure.

- **Certificate Offered to IP Office:** *Default = none*

Specifies the certificate used to identify Manager when the **Secure Communications** option is used and IP Office requests a certificate. Use the **Set** button to change the selected certificate. Any certificate selected must have an associated private key held within the store:

- Select from Current User certificate store - Display certificates currently in the currently logged-in user store.
- Select from Local Machine certificate store.
- Remove Selection – do not offer a Manager certificate.

Security – Registry Settings

- **WARNING: Changing Windows Registry Settings**

Avaya accept no liability for any issues arising from the editing of a PC's registry settings. If you are in any doubt about how to perform this process you should not proceed. It is your responsibility to ensure that the registry is correctly backed up before any changes are made.

NOTE: Before manually editing any registry entry, the following Microsoft support articles should be read:

- <http://support.microsoft.com/kb/256986>
- http://www.microsoft.com/resources/documentation/windows/xp/all/proddocs/en-us/regedit_permit_key.mspx

Manager stores it's security preferences in the Windows Registry. The following key affects manager security operation; it's values may only be changed by a configuration or security administrator:

- **HKEY_CURRENT_USER\Software\Avaya\IP400\Manager\Security**

In order to prevent circumvention by manual editing of the Windows Registry, Regedt32.exe, the native registry editor, allows an operator user (with Full Control permissions) to edit permissions on a per key basis.

To prevent a user from manually editing the security preferences, the HKEY_USERS\User GUID\Software\Avaya\IP400\Manager\Security key permission should be set to 'Read' only for that user. Ensure that all child object permissions are replaced as well by using the 'Advanced' button.

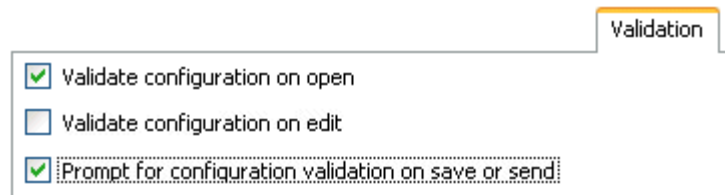
To allows the security policy of all local PC users to be fixed, a set of values in the key HKEY_CURRENT_USER\Software\Avaya\IP400\Manager\Security\ may be created. This is tested and used in preference to any value found under HKEY_CURRENT_USER\Software\Avaya\IP400\Manager\Security\.

This key is not created by the manager application.

4.1.1.6.6 Validation

This tab is accessed through **File | Preferences** and then selecting the **Validation** sub-tab.

By default Manager validates the whole configuration when it is loaded and individual fields whenever they are edited. This tab allows selection of when automatic validation should be applied to configuration files loaded into Manager.



- **Validate configuration on open**

Automatically validate configuration files when they are opened in Manager.

- **Validate configuration on edit**

Validate the whole configuration when **OK** is clicked after editing a record. For large configurations, disabling this option removes the delay caused by validating the configuration after every edit.

- **Prompt for configuration validation on save or send**

If selected, when saving or sending a configuration, a prompt is displayed asking whether the configuration should be validated. If validation is selected and error are found, the send or save process is canceled. This option is disabled if Validate configuration on edit is selected.

4.1.1.7 Offline

4.1.1.7.1 Create New Config

This command starts a dialog that allows you to create a default offline configuration by specifying the system locales, the type of IP Office control unit and expansion modules and the trunk cards fitted. See [Creating a New Configuration](#) ⁷².

The same action is performed by the  icon in the Main Toolbar.

4.1.1.7.2 Open File

This command allows a configuration file stored on PC to be opened in Manager.

4.1.1.7.3 Send Config

This command is used to send an offline configuration to an IP Office system. See [Sending a Configuration](#) ⁷⁶.

4.1.1.7.4 Receive Config

This command displays the **Select IP Office** menu used to receive an IP Office systems configuration settings. See [Loading a Configuration](#) ⁶⁷.

Once the configuration has been received, you are prompted to save it on the PC.

4.1.1.8 Advanced

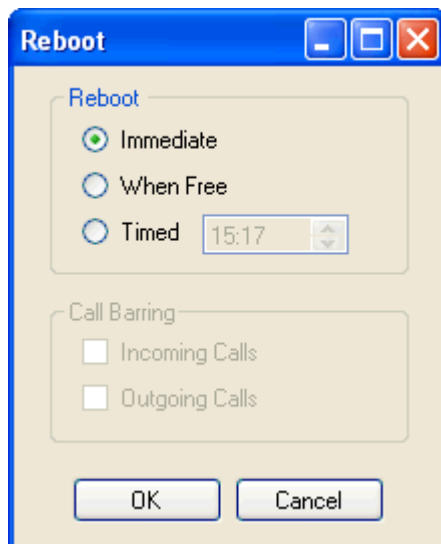
4.1.1.8.1 Advanced | Erase Configuration

This command returns the configuration settings of an IP Office system back to their [default values](#) ⁷⁸. This action does not affect the IP Office system's security settings or audit trail record.

When this command is used, the **Select IP Office** menu is displayed. Once an IP Office system is selected, a valid user name and password are required to complete the action.

4.1.1.8.2 Reboot

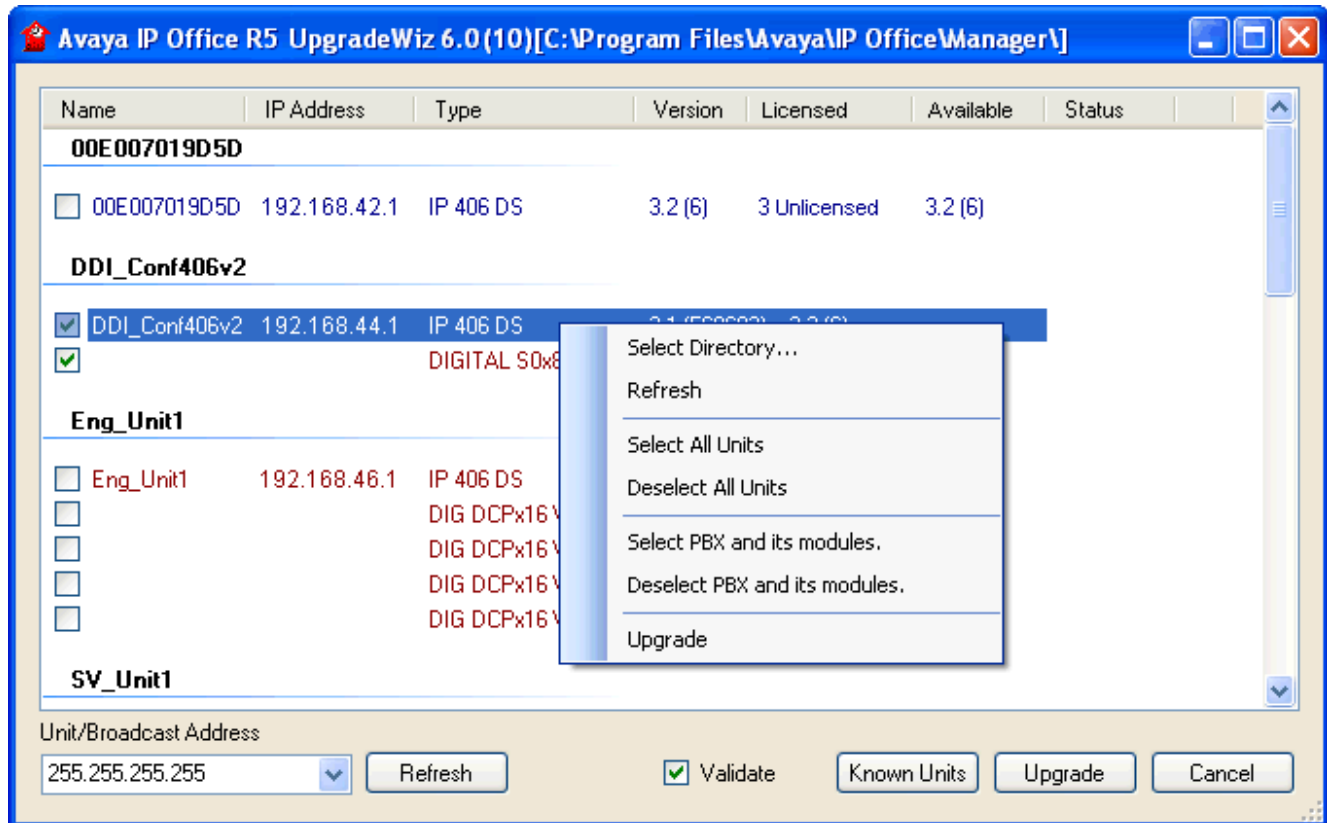
When this command is used, the **Select IP Office** menu is displayed. Once an IP Office system is selected, a valid user name and password are required. The type of reboot can then be selected.



4.1.1.8.3 Upgrade

This command starts the **Upgrade Wizard** tool. This tool is used to compare the software level of the control unit and expansion modules within IP Office systems against the software level of the .bin binary files Manager has available. The Upgrade Wizard can then be used to select which units to upgrade.

- **WARNING**
Incorrect use of the upgrade command can halt IP Office operation and render units in the system unusable. You must refer to the IP Office Technical Bulletins for a specific release for full details of performing software upgrades to that release.
- Performing any other actions on a system during an upgrade or closing the upgrade wizard and Manager during an upgrade may render systems unusable.
- During an upgrade the IP Office system may restrict calls and services. It will reboot and disconnect all current calls and services.
- The **Validate** option must remain selected wherever possible. Use of unvalidated upgrades is subject to a number of conditions outlined in the IP Office Installation Manual and Technical Bulletins.



The list area shows details of IP Office systems found by the Upgrade Wizard. The Version column details the current software each unit in the systems is running whilst the Available column shows the version of .bin file Manager has available for that type of unit (a – indicates no file available).

The check boxes are used to select which units should be upgraded. Upgrading will require entry of a valid name and password for the selected IP Office system.

The Validate option should remain selected wherever possible. When selected, the upgrade process is divided as follows: transfer new software, confirm transfer, delete old software, restart with new software. If Validate is not selected, the old software is deleted before the new software is transferred.

Sorting the List

1. To sort list of IP Office systems click on the Name or IP Address column headings.

Search for Particular Systems

The default address used by the Upgrade Wizard is the address shown in the Manager title bar, which is selected through [File | Preferences](#)^[118]. If the unit required is not found, the address used can be changed.

1. Enter or select the required address in the **Unit/Broadcast Address** field.
2. Click **Refresh** to perform a new search.

Changing the .bin File Directory Used

The directory in which the Upgrade Wizard looks for .bin files is set through Manager's Binary Directory setting. This can be changed using [Files | Change Working Directory](#)^[116] or [File | Preferences | Directories](#)^[116]. It can also be changed directly from the Upgrade Wizard as follows.

1. Right-click on the list area.
2. Select **Select Directory**.
3. Browse to and highlight the folder containing the .bin files. Click **OK**.
4. The list in the Available column will be updated to show the .bin files in the selected directory that match IP Office units or modules listed.

4.1.1.8.4 Audit Trail

The audit trail lists the last 16 actions performed on the system from which the configuration loaded into Manager was received. It includes actions by Service Users such as getting the configuration, sending a configuration back, reboots, upgrades and default the system. The audit trail is not available for systems running pre-3.2 IP Office software.

For IP Office 4.1+ systems, audit trail events can be output to a Syslog server through the IP Office's [System | System Events](#) ^[18] settings.

The last failed action is always recorded and shown in red. It is kept even if there have been 16 subsequent successful actions.

- **Note:** The Audit Trail is part of the IP Office configuration file received from the IP Office system. If the configuration is kept open between send and reboot operations (ie. if [Close Configuration/Security Setting After Send](#) ^[12] is not selected), the Audit Trail will not show details of those operations. It will only show details of operations since the configuration was received if the configuration is closed and then a new copy of the configuration is received from the IP Office.

Date And Time Of Access	Security User	AccessType	Outcome
30 March 2006 12:41:24	Administrator	Write With Merge	Success (clean)
30 March 2006 12:45:41	Administrator	Write With Merge	Success (clean)
30 March 2006 12:47:43	Administrator	Write With Merge	Success (clean)
03 April 2006 10:29:49	Administrator	Write With Merge	Success (clean)
03 April 2006 10:33:29	Administrator	Write With Merge	Success (clean)
03 April 2006 13:11:33	Administrator	Write With Merge	Success (clean)
04 April 2006 09:32:14	System Reboot	Warm Start	Success
04 April 2006 10:09:42	Administrator	Write With Merge	Success (Warning)
04 April 2006 10:12:20	Administrator	Write With Merge	Success (Warning)
04 April 2006 12:52:05	Administrator	Write With Merge	Success (Warning)
04 April 2006 12:55:59	Administrator	Write With Merge	Success (Warning)
06 April 2006 15:32:23	Administrator	Security Login	Failure

Audit Details	
Security User	Administrator
Date and Time of Access	04 April 2006 12:52:05
PC Login	Avaya123
PC IP Address	192 . 168 . 42 . 203
PC MAC Address	00 : 13 : d3 : a7 : 7a : 06
Access Type	Write With Merge
Outcome	Success (Warning)

Items Changed	
Item Type	Item Name
User	Extn207
Account Code	Account Code

- **Audit Details**

When a specific access event is selected from the list, the following information is shown in the Audit Details section:

- The **Security User** shows the service user name used for the access action.
- The **Data and Time of Access** indicate the local IP Office time when the recorded event occurred.
- The **PC Login** is the computer name of the PC used for the access.
- The **PC IP Address** and **PC MAC Address** are the IP address and MAC address of the PC used for access.
- The **Access Type** details the type of action that was performed.
- The **Outcome** shows the IP Office's response to the access. The outcome **Success (Warning)** refers to the sending of a configuration that contains fields marked as errors or warnings by Manager's validation function. **Success (Clean)** refers to the sending of a configuration that does not contain any validation errors or warnings.

- **Items Changed**

The Items Changed area summarizes the changes contained in a sent configuration. Where changes to a single entry of a particular type are made, the Item Name field lists the individual entry changed. Where changes are made to several entries of the same type, the Item Name field displays Multiple items.

4.1.1.8.5 Security Settings

This command is used to switch the Manager application to security mode. In that mode, Manager is used to edit the security settings of an IP Office system (3.2 or higher only). Refer to the section [Security Mode](#)⁸⁰.

4.1.1.8.6 Erase Security Settings (Default)

Added in IP Office Manager 6.1 and supported for IP Office 4.1+ systems.

This command returns the security settings of an IP Office system back to their default values. This action does not affect the IP Office system's configuration or audit trail record.

When this command is used, the Select IP Office menu is displayed. Once an IP Office system is selected, a valid user name and password are required to complete the action.

4.1.1.8.7 System Status

IP Office System Status is an application that can be used to monitor and report on the status of an IP Office system. This application is supported by IP Office systems running IP Office 4.0 or higher.

IP Office System Status 4.0(011003)

AVAYA IP Office System Status

Help Snapshot LogOff Exit About Stats On This System: 00E007020B7F (192.168.42.1)

Alarms for Line: 5 Slot: B Port: 1

Alarms 24 Hour Performance History

Last Date Of Error	Occurrences	Error Description
26 July 2006 14:03:48	1	Loss of Signal
26 July 2006 14:03:48	1	Trunk out of Service
26 July 2006 14:03:48	1	Blue Alarm

Clear Clear All Print... Save As...

13:10:27 Online

This is a separate application from IP Office Manager but if installed on the same PC, it can be started using the **File | Advanced | System Status** link within Manager. Use of the application requires a service user name and password configured on the IP Office system for System Status Access within the IP Office's security settings.

4.1.1.8.8 LVM Greeting Utility

This command launches a utility that can be used to convert .wav files to the formats used by embedded voicemail (**.c23** for Small Office Edition and **.c11** for others). The source file must be in the standard format used for all IP Office applications: PCM, 8kHz 16-bit, mono.

The resulting named greeting files can then be transferred to the embedded voicemail memory card and selected as auto attendant greetings in the [Recording Name](#) ^[40] field on the [Auto Attendant | Auto Attendant](#) ^[40] tab. The same named greeting file can be used in several auto attendants.

The utility can be run separately using the file **LVMGreeting.exe** found in the **LVMGreeting** sub-folder of the Manager application.

4.1.1.9 Backup/Restore

4.1.1.9.1 Backup Binaries and Configuration

This command copies of all configuration files (.cfg) and software files (.bin) stored in Manager's working directory to a selected folder.

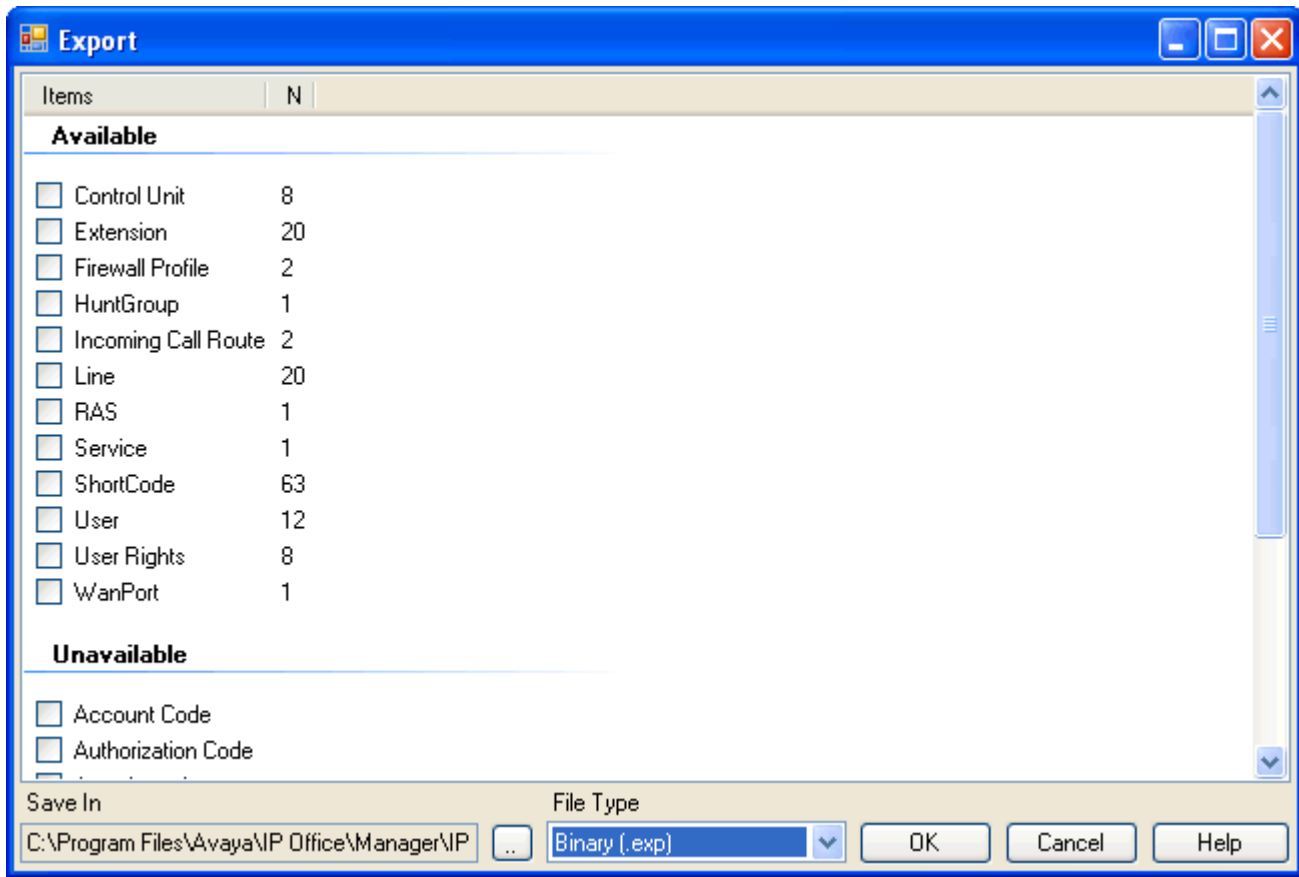
4.1.1.9.2 Restore Binaries and Configuration

This command copies all configuration files (.cfg) and software files (.bin) stored in a selected folder to the Manager's working directory.

4.1.1.10 Import/Export

4.1.1.10.1 Export

This command allows you to export the selected parts of the configuration to either a set of CSV text files (.csv) or a single binary file (.exp). See [Importing and Exporting Settings](#).

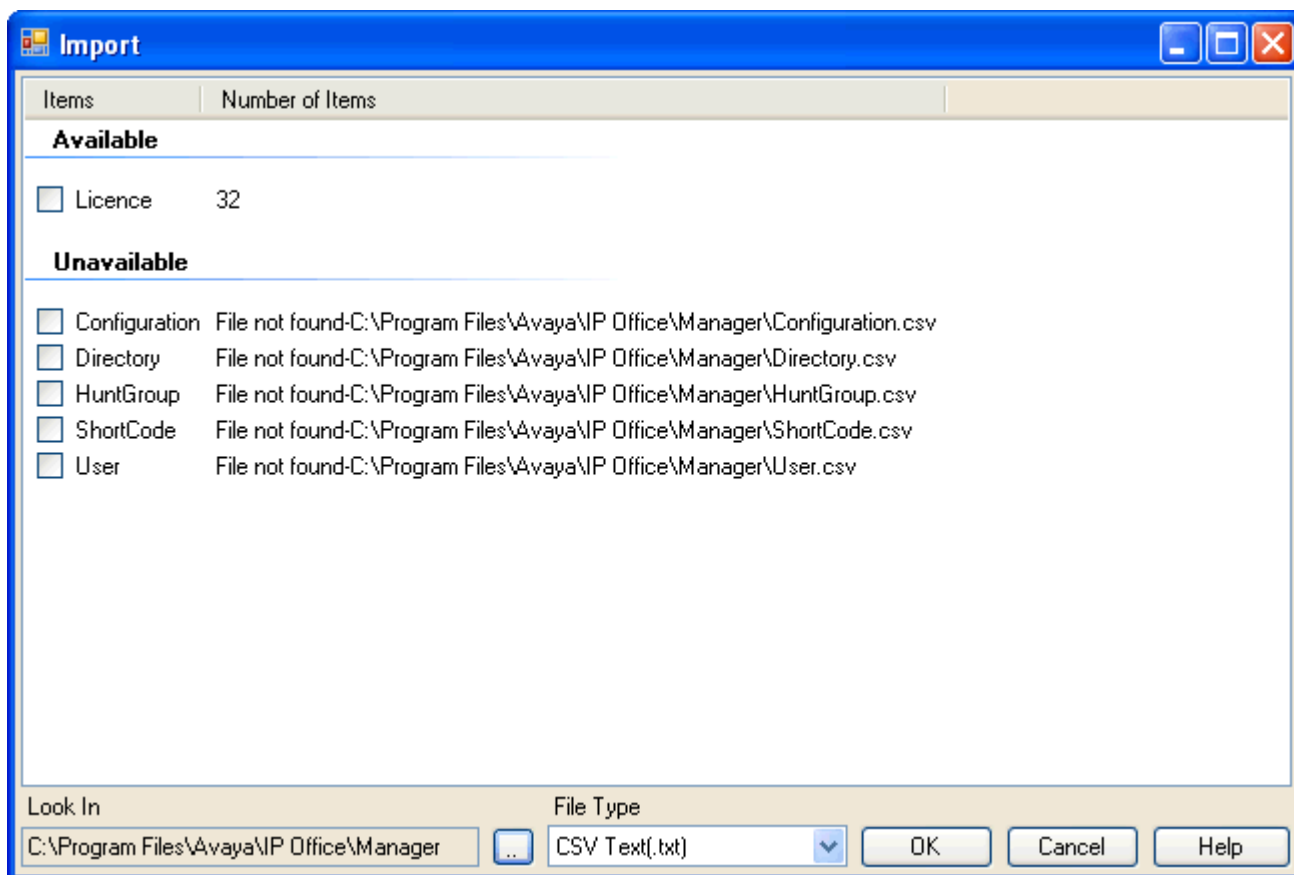


The display shows those exportable entry types for which the configuration contains entries. The File Type and the Save In path can be selected at the base. The default location used is sub-directory of the Manager application directory based on system name of the currently loaded IP Office system.

Manager imports and exports CSV files using UTF8 character encoding which uses a double byte to support characters with diacritic marks such as ä. Other applications such as Excel, depending on the user PC settings, may use different single-byte encoding which will cause such characters to be removed. Care should be taken to ensure that any tool used to create or edit a CSV supports all the characters expected and is compatible with UTF8.

4.1.1.10.2 Import

This command allows you to import configuration settings. Two formats are supported. Binary files (.exp) are settings previously exported from an IP Office system using [File | Import / Export | Export](#)^[13]. CSV text files (.csv) can also be exported from an IP Office system or can be created using a plain text editor. See [Importing and Exporting Settings](#)^[73].

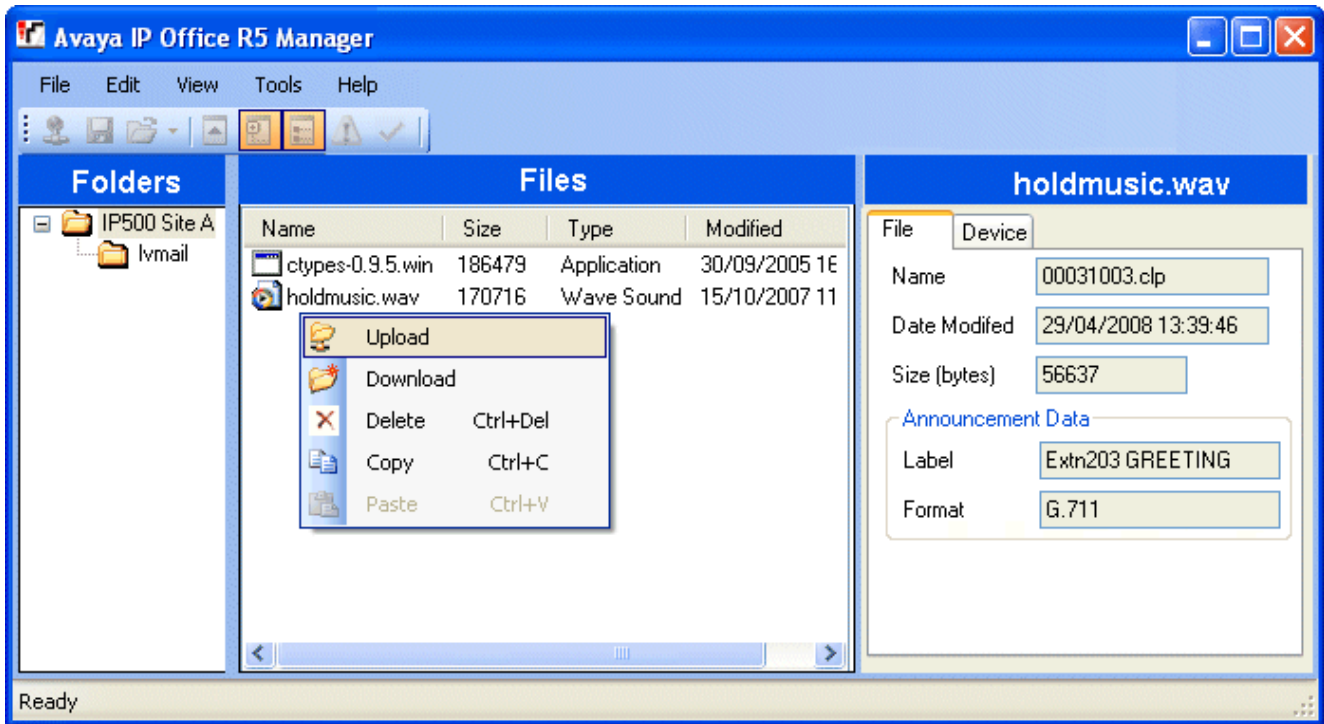


For the selected File Type and the Look In path, the window displays the file or files found. The default location used is sub-directory of the Manager application directory based on system name of the currently loaded IP Office system.

Manager imports and exports CSV files using UTF8 character encoding which uses a double byte to support characters with diacritic marks such as ä. Other applications such as Excel, depending on the user PC settings, may use different single-byte encoding which will cause such characters to be removed. Care should be taken to ensure that any tool used to create or edit a CSV supports all the characters expected and is compatible with UTF8.

4.1.1.11 Embedded File Management

For IP Office 4.2+ control units (except Small Office Edition) with an Embedded Voicemail memory card installed the contents of the card can be viewed through Manager. This view can also be used to add and remove files from the card. This may be useful when the memory card is being used to store Music on Hold or IP phone firmware files.



- **Embedded Voicemail Files**

When viewing the memory card, the files related to Embedded Voicemail are visible, however these files are greyed out (ie. cannot be deleted, downloaded or overwritten).

- Mailbox greetings and messages are shown as **.clp** files.
- The language prompts for Embedded Voicemail functions are stored in separate language sub-folders of **lvmail**. These are either **.c11** (IP500 and IP406 V2) or **.c23** (Small Office Edition) files.
- Named prompt files for use by Embedded Voicemail auto attendants are stored in the **lvmail\AAG** folder and use the same **.c11** or **.c23** file formats as the language prompts. These files can be created from standard .wav files before being downloaded to the memory card by using the [LVM Greeting Utility](#) ^[129].
- For IP Office 5.0, the Manager menu option **File | Upload Voicemail Files** will automatically select and transfer all Embedded Voicemail language prompts onto the card.

- **Avaya IP Phone Files**

The memory card can be used as the source of files requested by IP Phones when rebooting. For phones using IP Office DHCP, once the files are loaded onto the card, the [TFTP Server IP Address](#) ^[149] and [HTTP Server IP Address](#) ^[149] on the [System | System](#) ^[149] tab must be set to match the IP Office's LAN address.

- For IP Office 5.0, the Manager menu option **File | Upload Phone Files** will automatically select and transfer all DS phone, H323 phone and IP DECT binary files from the Manager folder to the embedded memory card.

- **Viewing a Memory Card**

When **Advanced | Embedded File Management** is selected, the IP Office Manager will go through normal system discovery but will only allow selection of systems which can support a memory card and are running IP Office 4.2+. When a system is selected, a valid service user name and password for configuration access to that system is requested. If the system selected does not have a memory card installed, the files view remains blank and the message **TFTP:Received TFTP Error "Not Found"** appears in Manager's status bar.

- **Changing the Files View**

The type of display used in the **Files** pane can be changed by selecting from the **View** menu in the toolbar.

- **Adding Files**

Files can be added to the card by dragging and dropping or by right-clicking on the Files pane and selecting **Upload** or by using **File | Upload File....** The IP Office will ask for confirmation if the file already exists on the memory card. The progress of the file upload is then indicated.

- The IP Office Manager [TFTP Log](#)^[136] shows the activity for files sent to and received from the memory card. It can be displayed by clicking on the **TFTP Log** button shown on the file upload/download dialog or by selecting **View | TFTP Log**.

- **Deleting Files**

Existing files can be deleted by right-clicking on them and selecting **Delete**.

- **Downloading Files**

Files can also be copied from the card by right-clicking on the file and selecting **Download**. Manager will prompt for the download location. Existing files are overwritten if present.

- To exit this mode of Manager back to normal configuration operation, select **File | Configuration** from the menu bar. Alternatively to view the card in another system, select **File | Close File Settings** and then **File | Open File Settings**.

4.1.1.12 Exit

The **File | Exit** command exits the Manager application.

4.1.2 View

4.1.2.1 Toolbars

This command allows selection of which toolbars should be shown or hidden in configuration mode. A tick mark is displayed next to the name of those toolbars that are currently shown.

4.1.2.2 Navigation Pane

This command shows or hides the Navigation Pane. A tick mark appears next to the command when the pane is shown.

4.1.2.3 Group Pane

This command shows or hides the Group Pane. A tick mark appears next to the command when the pane is shown.

4.1.2.4 Details Pane

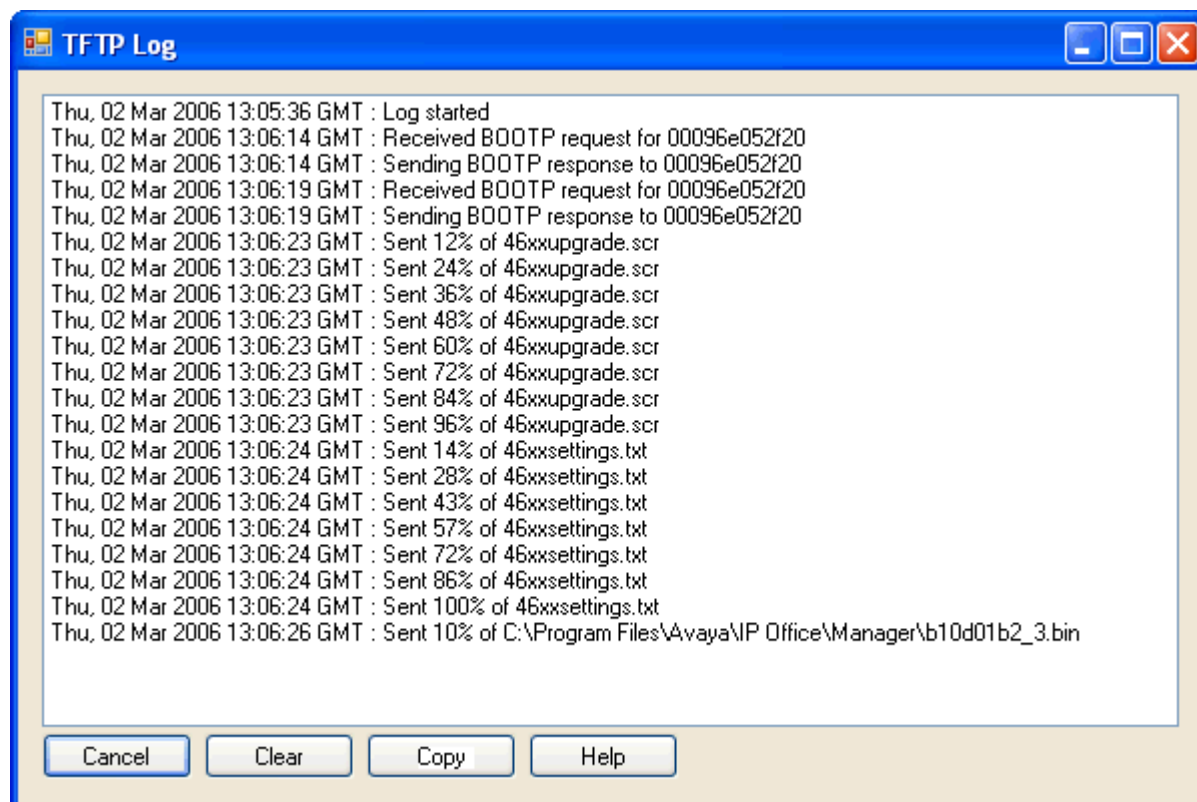
This command set the location of the Details Pane when the Group Pane is also shown. The Details Pane can be placed either below or to the right of the Group Pane.

4.1.2.5 Error Pane

This command shows or hides the Error Pane. A tick mark appears next to the command when the pane is shown.

4.1.2.6 TFTP Log

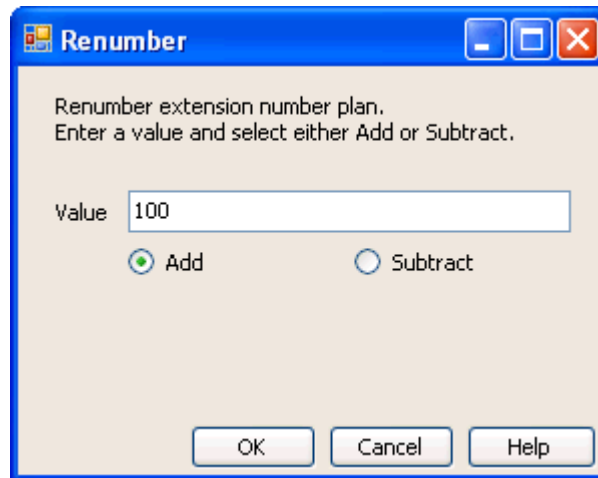
This command displays the TFTP Log window. This window shows TFTP traffic between Manager and devices that uses TFTP to send and receive files. For example, the TFTP Log below shows an Avaya IP phone requesting and then being sent its software files.



4.1.3 Tools Menu

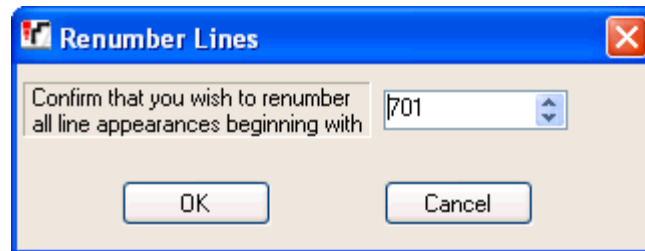
4.1.3.1 Extension Renumber

This command allows the extension numbering of user extensions to be raised or lowered by a specified amount. The command does not alter the extension number used for hunt groups but does adjust the extension numbers of hunt group members.



4.1.3.2 Line Renumber

On external trunks Line appearance ID numbers can be assigned to each channel supported in order to allow that channel or line to be associated with a Line Appearance button on phones that support button programming. By default all lines are automatically numbered from 701 upwards when added to the IP Office system. This command allows the lines to be renumbered from a different starting point.



4.1.3.3 Busy on Held Validation

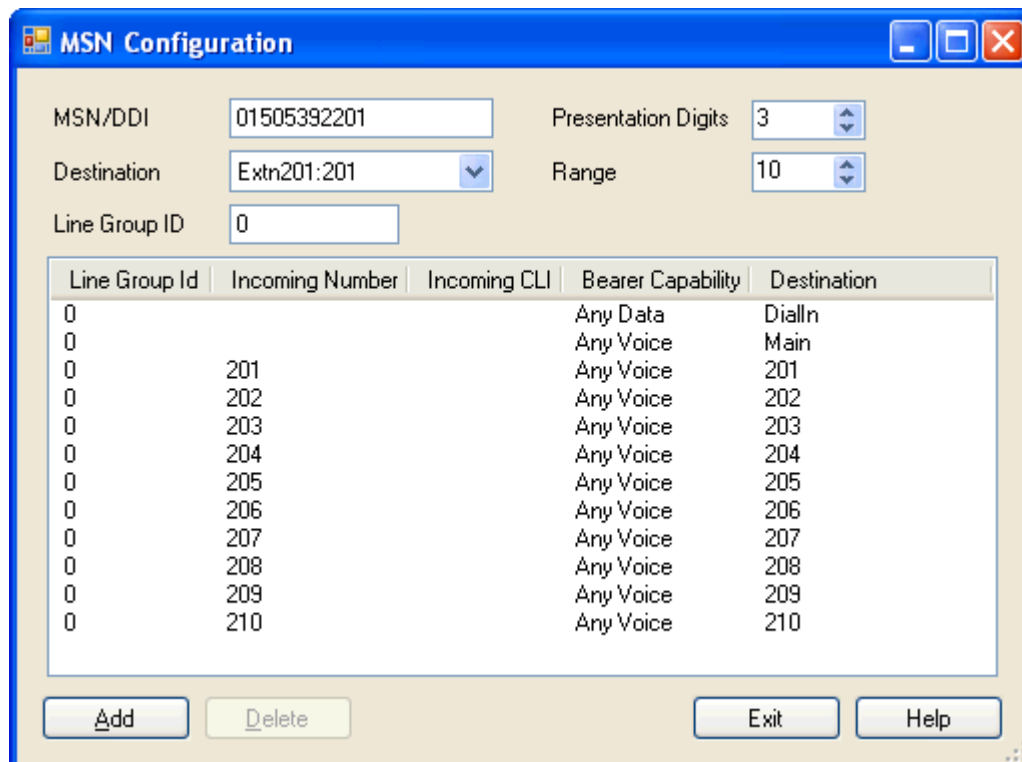
Busy on Held is a user feature where, when the user has a call on hold, the system indicate the user as being busy to any further calls.

The use of **Busy on Held** in conjunction with multiple call appearance buttons is deprecated. This command can be used to identify those users who have multiple call appearance buttons and for whom Busy on Held is currently set.

When run, it shows a list of the users affected and if selected their Busy on Held setting will be switched off.

4.1.3.4 MSN/DID Configuration

This menu can be used to populate the [Incoming Call Route](#) ^[343] table with a range of MSN or DID numbers.



The MSN Configuration dialog box is shown with the following fields and values:

- MSN/DDI: 01505392201
- Presentation Digits: 3
- Destination: Extn201:201
- Range: 10
- Line Group ID: 0

The table below represents the data shown in the dialog's table:

Line Group Id	Incoming Number	Incoming CLI	Bearer Capability	Destination
0			Any Data	DialIn
0			Any Voice	Main
0	201		Any Voice	201
0	202		Any Voice	202
0	203		Any Voice	203
0	204		Any Voice	204
0	205		Any Voice	205
0	206		Any Voice	206
0	207		Any Voice	207
0	208		Any Voice	208
0	209		Any Voice	209
0	210		Any Voice	210

Buttons at the bottom: Add, Delete, Exit, Help.

In the example above, the customer has ten DID numbers starting at 01505392201 with the central office exchange passing through 3 digits for each. Having selected the number of presentation digits (3), set the range (10) and selected the first destination (201); clicking Add created the ten incoming call routes (201 to 210).

- **MSN/DID**

The first number in the set of MSN numbers for which you have subscribed. Note: If you require to find an exact match between the MSN numbers and the destination numbers, enter a minus (-) sign before the first MSN number.

- **Destination**

Where incoming calls with matching digits should be routed. The drop-down list contains the extensions and groups on the IP Office system.

- **Line Group ID**

Specifies the incoming line group ID of the trunks to which the DID routing is applied.

- **Presentation Digits**

Set to match the number of digits from the MSN/DID number that the central office exchange will actually present to the IP Office system.

- **Range**

How many MSN or DID number routes to create in sequence using the selected MSN/DID and Destination as start points. Only routing to user extensions is supported when creating a range of entries.

- **Add**

Adds the appropriate entries to the Incoming Call Route table using the value entered above.

- **Delete**

Removes a specific entry.

4.1.3.5 Print Button Labels

This option is only enabled if a version of DESI software is also installed on the same PC as IP Office Manager. It can then be used when an IP Office configuration is loaded in Manager.

DESI software can be obtained from the Avaya support web site (<http://support.avaya.com>) or from DESI (<http://www.desi.com>). Currently, though all IP Office users are shown, only 1600 Series IP Office phones are supported by DESI templates.

The text used on the labels:

- If a text label has been added in the user's Button Programming settings, that text label is passed to the DESI application.
- Note that the DESI application cannot import non-ASCII characters and may render them incorrectly.
- Manager will display a warning if it estimates that the user's current text for some buttons may exceed the label space of the phone type.
- If no text label has been set, the default label for the action currently assigned to the button is passed to the DESI application.
- Once the labels are shown in the DESI application, the label text can be changed.

1. Load the configuration of the IP Office system for which you want to print button labels.

2. Select **Tools** and then **Print Button Labels**.

Name	Extn	Phone Type	Expansion Modules	Print Extn	Print BM1	Print BM2	Print BM3
Extn201	201	Avaya 1616	BM32x3	☒	☒	☐	☐
Extn202	202	Avaya 5621	EU24x2	☐	☐	☐	☐
Extn203	203	Unknown digital handset		☐	☐	☐	☐
Extn204	204	Unknown digital handset		☐	☐	☐	☐
Extn205	205	Unknown digital handset		☐	☐	☐	☐
Extn206	206	Unknown digital handset		☐	☐	☐	☐
Extn207	207	Unknown digital handset		☐	☐	☐	☐
Extn208	208	Unknown digital handset		☐	☐	☐	☐
Extn209	209	Unknown digital handset		☐	☐	☐	☐
Extn210	210	Unknown digital handset		☐	☐	☐	☐
Extn211	211	Unknown digital handset		☐	☐	☐	☐
Extn212	212	Unknown digital handset		☐	☐	☐	☐
Extn213	213	Unknown digital handset		☐	☐	☐	☐
Extn214	214	Unknown digital handset		☐	☐	☐	☐
Extn215	215	Unknown digital handset		☐	☐	☐	☐
Extn216	216	Unknown digital handset		☐	☐	☐	☐

Print DESI Cancel

- **Name / Extn**
These are the user name and extension number details of the users in the IP Office configuration currently loaded in Manager.
- **Phone Type**
This field shows the type of phone, if known, that the user is currently associated with. The drop down can be used to change the selection if required.
- **Expansion Modules**
If the phone type supports additional button modules, this drop down can be used to select the type and number of button modules.
- **Print Extn**
This check box is used to select whether the phone button details should be included in the output passed to the DESI software. These button will only be selectable if the user's current **Phone Type** is set to a 1500 Series or 1600 Series phones.
- **Print BM1 / Print BM2 / Print BM3**
These check boxes are used to select whether button module button details should be included in the output passed to the DESI software. These button will only be selectable if the user's **Expansion Modules** is set to the number of BM32 modules.

3.

4. Click **Print DESI** to transfer the information to the DESI application. Within DESI, edit the labels as required and then print the labels.

4.2 Security Mode

4.2.1 Open Security Settings

This command displays the Select IP Office menu to select and load a system's security settings. This requires entry of a user name and password with rights to access security settings of the selected system.

This behavior changes when configuration settings have already be received from a system using a Service User name and password that also has security access rights for that system. In that case, the system's security settings are automatically loaded without requiring name and password entry.

4.2.2 Close Security Settings

Close the currently open set of security settings received from an IP Office system without saving those settings.

4.2.3 Save Security Settings

Send edited security settings back to the IP Office. Requires re-entry of a Service User name and password with access rights for security settings.

4.2.4 Reset Security Settings

Added in IP Office Manager 6.1 and supported for IP Office 4.1+ systems.

Reset the security settings of the selected IP Office to defaults. Requires entry of a Service User name and password with access rights for resetting the security settings. This option is not useable while a set of security configuration settings is loaded.

The command [File | Advanced | Erase Security Settings \(Default\)](#)^[128] performs the same action from IP Office Manager configuration mode.

4.2.5 Preferences

See [Preferences](#)^[117] in the Menu Bar Commands | Configuration Mode | File Menu section.

4.2.6 Exit

This command closes Manager.

4.2.7 Configuration

This command returns the Manager application to configuration mode.

Chapter 5.

Configuration Settings

5. Configuration Settings

This following sections detail the various configuration settings provided for different entry types within the IP Office configuration.

Depending on the type and locale of the IP Office some settings and tabs may be hidden as they are not applicable. Other settings may be grayed out. This indicates that the setting is either for information only or that another setting needs to be enabled first.

The different entry types are:

-  **BOOTP** ^[146]
Manager settings for the support of IP Office systems requesting software.
-  **Operator** ^[147]
Manager settings for the editing of configuration settings from pre-3.2 IP Office systems.
-  **System** ^[148]
Overall settings for the data and telephony operation of the IP Office system.
-  **Line** ^[193]
Settings for trunks and trunk channels within the IP Office including IP trunks.
-  **Control Unit** ^[253]
Information summary of the control and expansion units in the IP Office system.
-  **Extension** ^[255]
Settings for extension ports including IP extensions.
-  **User** ^[266]
Settings for IP Office users. They may or may not be associated with an extension.
-  **Hunt Group** ^[307]
Collections of users to which calls can be directed for answer by any one of those users.
-  **Short Code** ^[337]
These are numbers which when dialed trigger specific IP Office features or are translated for external dialing.
-  **Service** ^[332]
Configuration settings such as user names and passwords needed for connections to data services such as the Internet.
-  **RAS** ^[347]
Remote Access Service settings for connecting incoming data calls.
-  **Incoming Call Route** ^[345]
Entries here are used to match incoming call details to destinations on the IP Office system.
-  **WAN Port** ^[352]
Configuration settings for the WAN ports provided on some IP Office units.
-  **Directory** ^[359]
External names and numbers. Used for matching names to incoming calls and for dialing from IP Office user applications.
-  **Time Profile** ^[367]
Used to control when various IP Office functions are active.
-  **Firewall Profile** ^[364]
Use to control the types of data traffic that can cross into or out of the IP Office.
-  **IP Route** ^[369]
These entries are used to determine where data traffic on the IP Office LAN and WAN interfaces should be routed.

-  **[Least Cost Routing](#)** ^[374]
On pre-4.0 IP Office systems LCR is used to rerouted or block outgoing external calls. For IP Office 4.0+ this has been replace by ARS.
-  **[Account Code](#)** ^[376]
Used for call logging and to control the dialing of certain numbers.
-  **[License](#)** ^[378]
License keys are used to enable IP Office features and applications.
-  **[Tunnel](#)** ^[380]
Used to created IPSec and L2TP data tunnels.
-  **[Logical LAN](#)** ^[385]
Used to allow two subnets to be run and routed on the same physical LAN.
-  **[Wireless](#)** ^[386]
Used to provide wireless services on the Small Office Edition.
-  **[Auto Attendant](#)** ^[400]
Used when an Embedded Voicemail card is installed on a Small Office Edition, IP406 V2 or IP500 systems.
-  **[User Rights](#)** ^[389]
Provide templates to control which settings users can change.
-  **[ARS](#)** ^[406]
Automatic Route Selection is used by IP Office 4.0+ to control outgoing external calls. It replaces Least Cost Routes.
-  **[Authorization Codes](#)** ^[403]
Authorization codes are similar to account codes. However, unlike account codes which are useable by any user, each authorization code is only useable by a specific user or users associated with a specific set of user rights.
-  **[E911 System](#)** ^[426]
Available of US systems to support E911 services.

5.1 BOOTP



BOOTP is protocol used by devices to request software when restarting. For IP Office, it is used when upgrading the control unit within a system or when the core software within the control unit has been erased. When running, Manager can respond to BOOTP requests and, if it finds a matching BOOTP entry for the system, provide the software file indicated by that entry.

BOOTP entries are not part of an IP Office system's configuration settings; instead they are saved on the Manager PC. Normally Manager automatically creates a BOOTP entry for each system with which it has communicated, up to a maximum of 50 entries. However BOOTP entries can be added and edited manually when necessary.

- **File Location**

The location from which Manager provides files in response to BOOTP is its binaries directory. This can be changed using [File | Change Working Directory](#)^[116] or [File | Preferences | Directories](#)^[116]. This directory is also the directory used by Manager when providing files by TFTP.

- **Disabling BOOTP**

Manager can be disabled from providing BOOTP support for any systems. Select [File | Preferences | Preferences | Enable BOOTP and TFTP Server](#)^[117].

Settings

- **Enabled:** *Default = Enabled*

If unticked, BOOTP support for the matching IP Office system from this Manager PC is disabled.

- **System Name**

This field is not changeable. It shows the IP Office's system name.

- **MAC Address**

The MAC address of the IP Office system's control unit. The address can be obtained and or verified in a number of ways:

- When a system's configuration settings are loaded into Manager, it is shown as the Serial Number on the [Unit](#)^[253] form. On defaulted systems, it is also used as the system name.
- If the system is requesting software, the MAC address is shown as part of the request in the status bar at the base of the Manager screen.
- If the system can be pinged, it may be possible to obtain its MAC address using the command **arp -a <ip address>**.

- **IP Address**

The IP address of the IP Office system's LAN1.

- **Filename**

The name of the .bin software file used by that type of control unit. For full details refer to the IP Office Installation Manual. To be transferred to the system this file must exist in the Manager applications Working Directory.

- **Time Offset:** *Default = 0.*

In addition to performing BOOTP support for IP Office systems the Manager application can also act as a time server (RFC868). This field sets the offset between the time on the PC running Manager and the time sent to the IP Office system in response to its time requests. The field is not used if a specific Time Server IP Address is set through the System form in the IP Office's configuration settings.

- Manager can be disabled from acting as an Internet Time (RFC868) server. Select [File | Preferences | Preferences](#)^[117] and untick **Enable time server**.

5.2 Operator



Operator entries are not part of an IP Office system's configuration settings. They are used when a pre-3.2 IP Office configuration is loaded to control what parts of a configuration can be edited.

The table below lists the settings for the default operators provided.

Operator	View	Edit	New	Delete	Configuration Entry Types
Administrator	✓	✓	✓	✓	All configuration entries.
Manager	✓	✓	✓	✓	View all. Other actions Extension, User, Hunt Group, Short Code, Service, RAS, Incoming Call Route, Directory, Time Profile, Firewall Profile, IP Route, Least Cost Route, Account Code, ARS.
Operator	✓	✓	✗	✗	View all configuration entries. Edit all except System, Line, Control Unit and Authorization Codes.

If when receiving a configuration from a pre-3.2 IP Office system an invalid operator is specified, the settings will be loaded using the Guest operator. This additional operator allows a read-only view.

5.3 System



There is only one System entry for each IP Office system.

The following tabs are part of the System form:

- [System](#) ^[149]
General settings for the IP Office system.
- [LAN1](#) ^[152]
Network settings for the main RJ45 Ethernet ports on the IP Office control unit. Includes DHCP and RIP settings.
- [LAN2](#) ^[162]
LAN2 is not supported by all IP Office control units.
 - On the Small Office Edition and IP500 control units the LAN2 settings are used for the RJ45 Ethernet port labeled WAN.
 - On the IP412 control units LAN2 settings are used for the RJ45 ethernet port labeled LAN2.
 - For IP406 V2 control units running IP Office 4.1+, the RJ45 LAN port 8 can be selected to act be LAN2 if required.
- [DNS](#) ^[163]
Specify the Domain Name Server addresses to use for address resolution.
- [Voicemail](#) ^[164]
Details the type and location of the IP Office's voicemail server.
- [Telephony](#) ^[166]
System-wide telephony settings.
- **H.323 Gatekeeper**
Settings used for VoIP end points registering with IP Office and for DiffServ QoS settings applied to VoIP traffic. This tab is only shown on pre-4.0 IP Office systems. For IP Office 4.0+, separate LAN1 and LAN2 VoIP settings are shown on the LAN1 and LAN2 tabs respectively.
- [LDAP](#) ^[175]
Settings to allow the IP Office to include Lightweight Directory Access Protocol database records in its directory.
- [System Events](#) ^[181]
Simple Network Management Protocol (SNMP), email (SMTP), and Syslog settings for the sending of IP Office events.
- [Twinning](#) ^[185]
System wide controls for the use of Mobile Twinning.
- [CDR](#) ^[187]
Call Detail Record settings for the sending of call detail records to a specified IP address.
- [VCM](#) ^[189]
This form allows adjustment of the echo control applied by VCM cards.
- [CCR](#) ^[192]
This form is used for settings specific to the IP Office Customer Call Reporter (CCR) application.

5.3.1 System

System System	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓ Changes to Locale, License Server IP Address and Favor RIP Routes over Static Routes require a reboot..

- **Name:** *Default:* = System MAC Address.

A name to identify this system. This is typically used to identify the configuration by the location or customer's company name. Some features such as Gatekeeper require the system to have a name. This field is case sensitive and within any network of IP Offices must be unique. Do not use punctuation characters such as #, ?, /, -, . and ,.

- **Contact Information:** *Default* = Blank, *Software level* = 4.1+.

This field is only be edited by service user with administrator rights. If Contact Information is entered, it will set the IP Office system under 'special control'.

- If the contact information is set using Avaya Integrated Management (AIM), warnings that "This configuration is under Integrated Management Control" are given if the configuration is opened using a standalone version of IP Office Manager. See [Loading a Configuration](#) ^[67].
- If the contact information is set using a standalone version of Manager, warnings that "This configuration is under special control" are given when the configuration is opened again. This can be used to warn other users of Manager that the IP Office system is being monitored for some specific reason and provide them with contact details of the person doing that monitoring. See [Loading a Configuration](#) ^[67].

- **Locale**

This setting sets default telephony and language settings based on the selection. It also sets various external line settings and so must be set correctly to ensure correct operation of the IP Office system. See [Supported Country and Locale Settings](#) ^[80]. For individual users the system settings can be overridden through their own locale setting (**User | User | Locale**). If this option is selected, it is the installers responsibility to ensure that the settings selected match those required by the line providers.

- When the IP Office routes a call to the voicemail server it indicates the locale for which matching prompts should be provided if available. The locale sent to the voicemail server by the IP Office is determined as follows:

Locale Source	Usage
Short Code	The short code locale, if set, is used if the call is routed to voicemail using the short code.
System	If no user or incoming call route locale is set system locale is used unless overridden by a short code locale.
Incoming Call Route	The incoming call route locale, if set, is used if caller is external.
User	The user locale, if set, is used if the caller is internal.

- **Customize Locale Settings:** *Software level* = IP Office 4.0 Q2 2007 Maintenance Release +
The Customize locale matches the [Saudi Arabia](#) ^[83] locale but with the following additional controls:
 - **Tone Plan:** *Default* = Tone Plan 1
The tone plan control tones and ringing patterns. The options are:
 - **Tone Plan 1:** [United States](#) ^[84].
 - **Tone Plan 2:** [United Kingdom](#) ^[84].
 - **Tone Plan 3:** [France](#) ^[81].
 - **Tone Plan 4:** [Germany](#) ^[81].
 - **Tone Plan 5:** [Spain](#) ^[83].
 - **CLI Type:** *Default* = FSK V23
This should match the method CLI signalling being received by the IP Office.
 - **Busy Tone Detection:** *Default* = Off.
Enables or disables the use of busy tone detection for call clearing. This is a system wide setting.
- **Password:** *Default* = password, *Software level* = 2.1 to 3.1.
A password for controlling access to the operation of the Control Unit. This is required to upgrade and reboot and to send or receive configurations from the Control Unit. This is a required option and a prompt is given if left blank. For IP Office 3.2+ systems this setting has become part of the security settings.
- **Monitor Password:** *Default* = blank, *Software level* = 2.1 to 3.1.
This password is used by the Monitor and Call Status applications to allow communication with the main unit. If left blank these applications will use the System Password above. For IP Office 3.2+ systems this setting has become part of the security settings.

- **Time Offset:** *Default = 00:00*

This setting can be used if the IP Office is in a different time zone from its time server. For example, if the IP Office is 5 hours behind the time server, this field should be configured with -5:00 to make the adjustment. The time offset can be adjusted in 15 minute increments. Note: If the time server is a Manager PC, the adjustment can also be done through the Manager BOOTP entry for the system.

- **TFTP Server IP Address:** *Default = 0.0.0.0 (Broadcast)*

For Avaya IP phones using IP Office DHCP, the address set here is used for their TFTP requests for software and settings files.

- While running, IP Office Manager can act as a TFTP server and provides files from its configured [binaries directory](#) ^[118]. IP Office Manager can be disabled from doing TFTP through the [Enable BootP and TFTP Servers](#) ^[117] command.
- On systems that support an Embedded Voicemail memory card (Small Office Edition, IP406 V2 and IP500), the LAN1 IP Address can be entered to specify that memory card as the TFTP file source. The files required for download must be transferred onto the card using either TFTP from the PC command line (see **File Writer IP Address** below) or for IP Office 4.2+ through [Embedded File Management](#) ^[132].
- 1600 Series IP phones do not support TFTP and require an HTTP Server IP Address (see below) to be specified.
- For IP Office 5.0+, this address is used in DHCP responses if the **Phone File Server Type** is set to **Custom**.

- **HTTP Server IP Address:** *Default = 0.0.0.0 (Disabled), Software level = 4.2+.*

If an address is entered here, Avaya IP phones using IP Office DHCP will use that address to request software and settings files. The files for download should be placed in the HTTP server's root directory.

- For IP Office 4.2, using the Embedded Voicemail memory card is also supported for HTTP file requests for up to 50 IP phones. This is done by setting the **TFTP Server IP Address** and **HTTP Server IP Address** to match the control unit IP address. This is supported for up to 50 IP phones total.
- For the IP Office 4.2 Q4 2008 maintenance release, HTTP-TFTP Relay is support using [IP Office Manager](#) as the TFTP server. This is done by setting the **TFTP Server IP Address** to the address of the Manager PC and the **HTTP Server IP Address** to the control unit IP address. This method is supported for up to 5 IP phones total.
- For IP Office 5.0+, this address is used in DHCP responses if the **Phone File Server Type** is set to **Custom**.

- **Avaya HTTP Clients Only:** *Default = On. Software level = 5.0+.*

If selected, the IP Office will only respond to HTTP requests from sources it identifies as another IP Office, an Avaya phone or an IP Office application.

- **Phone File Server Type:** *Default = Custom, Software level = 5.0+.*

For H323 phones using the IP Office as their DHCP server, the IP Office's DHCP response can include the address a file server from which the phone should request files. Depending The setting on this field control which address is used in the DHCP response.

- **Custom**
The IP Office will respond to all HTTP file requests from H323 phones. The H323 phone DHCP response contains the TFTP Address from the **TFTP Server IP Address** above and the HTTP Address from the **HTTP Server IP Address** above.
- **Memory Card**
The IP Office will respond to all HTTP file requests from H323 phones using files from the systems embedded memory card. The DHCP response for H323 phones contains the LAN address of the IP Office for both TFTP and HTTP Address.
- **Manager**
The IP Office will forward any H323 phone file request to the configured Manager PC IP address below. HTTP-TFTP relay is used for HTTP requests. The DHCP response for H323 phones contains the LAN address of the IP Office for the HTTP Address.

Phone File Server Type	DHCP Response uses...	
	HTTP Source	TFTP Source
Custom	HTTP Server IP Address	TFTP Server IP Address
Memory Card	LAN IP Address	LAN IP Address
Manager	Manager PC IP Address	Manager PC IP Address

- **Manager PC IP Address:** *Default = 0.0.0.0 (Broadcast), Software level = 5.0+.*

This address is used when the Phone File Server Type is set to **Manager**.

- **Branch Prefix:** *Default = Blank, Range = 0 to 999999999, Software level = 4.1+.*

Used to identify the IP Office system within an Avaya SIP for Branch network linked via an SES server. The branch prefixes of each IP Offices within the network must unique and must not overlap. For example 85, 861 and 862 are okay, but 86 and 861 overlap.

- **Local Number Length:** *Default = Blank (Off), Range = Blank (Off) or 3 to 9, Software level = 4.1+.*
Set the default length for extension numbers for extensions, users and hunt groups. Entry of an extension number of a different length will cause an error warning within IP Office Manager. This field is intended for IP Office systems being used in an Avaya SIP for Branch network linked via an SES server, where fixed extension lengths must be used. Note that the Branch Prefix and the Local Number Length must not exceed 15 digits.
- **Time Server IP Address:** *Default = 0.0.0.0 (Default)*
The IP Office control unit contains a battery backed clock used to maintain system time during normal operation and when mains power is removed. The time is obtained using Internet Time protocol (RFC868) requests. Entering 0.0.0.1 disables time server updates.
 - 0.0.0.0 means default operation. In this mode, following a reboot the IP Office control unit will send out a time request on its LAN interfaces. It first makes the request to the Voicemail Server IP address in its configuration and, if it receives no reply, it then makes broadcast requests.
 - The Voicemail Pro service and the Manager program can all act as time servers for the IP Office, giving the time as set on their host PC.
 - If you are running Manager when the voicemail server starts, voicemail does not start as a time server. It is therefore recommended that you have no copy of Manager running when you start or restart the voicemail server. Manager can be disabled from acting as a time server by deselecting the Enable Time Server option (**File | Preferences | Edit | Preferences**).
- **File Writer IP Address:** *Default = 0.0.0.0 (Disabled)*
For Small Office Edition, IP406 V2 and IP500 control units only. This field sets the address of the PC allowed to send files to the memory card in their PCMCIA or CF TII slot.
- **License Server IP Address:** *Default = 255.255.255.255*
This is the IP address of the server providing license key validation for the IP Office. The serial number of the Feature Key dongle at that address must match the serial number used to generate the licenses in the IP Office system's configuration. See [License](#)^[378] for more details.
 - For parallel and USB Feature Key dongles this address should be the IP address of a PC running the IP Office Feature Key server software. Note that separate IP Offices cannot use the same Feature Key server for license validation, nor can an IP Office validate its licenses against more than one address.
 - For a serial port Feature Key dongle, the address should be set to 0.0.0.0.
 - For IP500 systems this field is hidden as those systems must use a smart card Feature Key dongle inserted into the control unit.
- **Dongle Serial Number**
This field is for information only. It shows the serial number of the feature key dongle against which the IP Office system last validated its licenses. **Local** is shown for a serial port or Smart Card feature key plugged directly into the control unit. **Remote** is shown for a parallel or USB feature key connected to a feature Key Server PC.
- **AVPP IP Address:** *Default = 0.0.0.0 (Disabled)*
Where Avaya 3600 Series SpectraLink wireless handsets are being used with the IP Office, this field is used to specify the IP address of the Avaya Voice Priority Processor (AVPP).
- **Conferencing Center URL:** *Default = Blank (Disabled).*
This is the root URL of the web server being used to support Conferencing Center, for example <http://server/>. This address is then used by the Phone Manager and SoftConsole applications to launch Conferencing Center functions. For Phone Manager, setting this value enables use of the join conference controls.
- **DSS Status:**
This setting has been moved to the [System | Telephony | Telephony](#)^[166] sub-tab.
- **Beep on Listen:** *Default = On (USA)/On (Rest of World)*
This setting has been moved to the [System | Telephony | Tones & Music](#)^[169] sub-tab.
- **Hide auto record:** *Default = On (USA)/Off (Rest of World)*
During call recording by Voicemail Pro, some Avaya phones display REC or similar to show that the call is being recorded. When on, Hide auto record suppresses this recording indication.
- **Favour RIP Routes over Static Routes:** *Default = Off*
[RIP](#)^[378] can be enabled on the IP Office [LAN1](#)^[152] and [LAN2](#)^[162] interfaces, and on specific [Services](#)^[332]. When this setting is on, the RIP route to a destination overrides any static route to the same destination in the IP Office's [IP Routes](#)^[369], regardless of the RIP route's metric. The only exception is RIP routes with a metric of 16 which are always ignored. Note: If a previously learnt RIP route fails, the IP Office applies a metric of 16 five minutes after the failure. When off, any RIP route to a destination for which a static route has been configured is ignored.

5.3.2 LAN1

This tab is used to configure the behavior of the services provided by the IP Office LAN's. Depending in the IP Office control unit, up to 2 LAN's (LAN1 and LAN2) can be configured.

Depending on the type of IP Office control unit, the relationship between the physical RJ45 Ethernet ports and LAN1 and LAN2 within the IP Office configuration varies as follows:

- **IP Office 500**

This unit has 2 RJ45 Ethernet ports, marked as LAN and WAN. These form a full-duplex managed layer-3 switch. Within the IP Office configuration, the physical LAN port is LAN1, the physical WAN port is LAN2.

- **IP460 V2**

This unit has 8 RJ45 Ethernet ports marked as LAN 1 to 8. These form a full-duplex unmanaged layer-2 LAN switch. Ports are auto-MDI/MDIX. Within the IP Office configuration the physical LAN ports are LAN1.

- For IP Office 4.1+, port 8 can be configured to act as LAN2 using the Use Port 8 as LAN2 option on the LAN1 LAN Settings tab.

- **IP412**

This unit has 2 RJ45 Ethernet ports marked as LAN 1 to 2. These form a half-duplex managed layer-3 switch. Both ports are fixed MDI crossover ports. Within the IP Office configuration, physical port 1 is LAN1, physical port 2 is LAN2.

- **Small Office Edition**

This unit has 4 RJ45 Ethernet ports marked LAN 1 to 4. These form a full-duplex unmanaged layer-2 switch. An addition RJ45 Ethernet socket marked as WAN exists. With the LAN ports this acts as a managed layer-3 switch. Within the IP Office configuration, the physical LAN ports are LAN1, the physical WAN port is LAN2.

5.3.2.1 LAN Settings

System LAN1 LAN Settings	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **IP Address:** *Default = 192.168.42.1 or DHCP client. See [Default Settings](#) [78].*
This is the IP address of the Control Unit on LAN1. If the control unit is also acting as a DHCP server on LAN1 then this address is the starting address of the DHCP address range. For a new powered up control unit the default
- **IP Mask:** *Default = 255.255.255.0 or DHCP client. See [Default Settings](#) [78].*
This is the IP subnet mask used with the IP address.
- **Use Port 8 as LAN2:** *Default = Off, Software level = 4.1+.*
This option is provided for IP406 V2 control units with IP Office 4.1 or higher software only. When selected, LAN port 8 on the control unit acts as [LAN2](#) [162] for the IP Office control unit. Note that this setting is retained by the IP Office even if the system is defaulted. To change the setting, the value in the configuration should be changed and the configuration sent back to the system for an immediate reboot.
- **Primary Trans. IP Address:** *Default = 0.0.0.0 (Disabled)*
This setting is only available on control units that support a LAN2. Any incoming IP packets without a service or session are translated to this address if set.
- **RIP Mode:** *Default = None*
[Routing Information Protocol \(RIP\)](#) [370] is a method by which network routers can exchange information about device locations and routes. Routes learnt using RIP are known as 'dynamic routes'. The IP Office also supports 'static routes' though its [IP Route](#) [368] entries.
 - **None**
The LAN does not listen to or send RIP messages.
 - **Listen Only (Passive)**
Listen to RIP-1 and RIP-2 messages in order to learn RIP routes on the network.
 - **RIP1**
Listen to RIP-1 and RIP-2 messages and send RIP-1 responses as a sub-network broadcast.
 - **RIP2 Broadcast (RIP1 Compatibility)**
Listen to RIP-1 and RIP-2 messages and send RIP-2 responses as a sub-network broadcast.
 - **RIP2 Multicast**
Listen to RIP-1 and RIP-2 messages and send RIP-2 responses to the RIP-2 multicast address.
- **Enable NAT:** *Default = Off*
This setting is only available on Small Office Edition, IP412 and IP500 systems. It controls whether [NAT](#) [780] should be used for IP traffic from LAN1 to LAN2. This setting should not be used on the same LAN interface as a connected WAN3 expansion module.
- **Number of DHCP IP Addresses:** *Default = 200 or DHCP client. See [Default Settings](#) [78], Range = 1 to 999.*
This defines the number of sequential IP addresses available for DHCP clients.
- **DHCP Mode:** *Default = See [Default Settings](#) [78].*
This controls the control unit's DHCP mode for LAN1. When doing DHCP; LAN devices are allocated addresses from the bottom of the available address range upwards, Dial In users are allocated addresses from the top of the available range downwards. If the control unit is acting as a DHCP server on LAN1 and LAN2, Dial in users are allocated their address from the LAN1 pool of addresses first.
 - For a new control unit or one with an erased configuration, the default mode depend on whether the IP Office detects another DHCP server when powered up. See [Default Settings](#) [78] for details.
 - **Server**
When this option is selected, the IP Office will act as a DHCP Server on LAN1, allocating address to other devices on the network and to PPP Dial in users.
 - **Disabled**
When this option is selected, the IP Office will not use DHCP. It will not act as a DHCP server and it will not request an IP address from a DHCP server on this LAN.
 - **Dial In**
When this option is selected, the IP Office will allocate DHCP addresses to PPP Dial In users only. On IP500 systems using DHCP pools, only addresses from a pool on the same subnet as the IP Office's own LAN address will be used.
 - **Client**
When this option is selected, the IP Office will request its IP Address and IP Mask from a DHCP server on the LAN.

-
- **Advanced:** *Software level = 4.2+ (IP500 only).*

IP500 control units with IP Office 4.2+ software can be configured with a number of DHCP pools from which the IP Office can then issue addresses. See [DHCP Pools](#).

5.3.2.2 VoIP

These settings are only shown on IP Office 4.0+ systems. On pre-4.0 IP Office systems the H.323 settings were located on a separate System | H.323 Gatekeeper tab for the whole system.

System LAN1 VoIP	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	4.0+.
Mergeable	Pre-3.2 ✗, 3.2+ ✗.

- **H323 Gatekeeper Enable:** *Default = On*
This settings enables IP Office gatekeeper operation.
- **SIP Trunks Enable:** *Default = On*
This settings enables support of SIP trunks. It also requires entry of **SIP Trunk Channels** licenses.
- **SIP Registrar Enable:** *Default = On, Software level = 5.0+.*
This setting enables support for SIP extensions. These are also require **IP End Point** license. When selected, the [SIP Endpoints](#)^[16] tab if visible.
- **VoIP Auto-create Extn:** *Default = On*
When this option is on, an extension entry is automatically created for H.323 phones registering themselves with the IP Office as their gatekeeper. SIP Extensions use a separate setting on the [SIP Endpoints](#)^[16] tab.
- **VoIP Auto-create User:** *Default = Off*
When this option is on and H323 Auto-create Extn is also on, when a new H.323 extension is created a matching user record is also created.
- **Enable RTCP Monitor On Port 5005:** *Default = On, Software level = 5.0+.*
For 4600, 5600 and 1600 Series H323 phones, the IP Office can collect VoIP QoS (Quality of Service) data from the phones. For other phones, including non-IP phones, it can collect QoS data for calls if they use a VCM channel. The QoS data collected by the IP Office is displayed by the IP Office System Status Application.
 - This setting is mergeable. However it only affects H323 phones when the register with the IP Office. therefore any change to this setting requires H323 phones that have already been registered to be rebooted. Avaya H323 phones can be remotely rebooted using the System Status Application.
 - The QoS data collected includes: RTP IP Address, Codec, Connection Type, Round Trip Delay, Receive Jitter, Receive Packet Loss.
 - This setting is not the same as the RTCPMON option within Avaya H323 phone settings. The IP Office does not support the RTCPMON option.
- **RTP Port Number Range:** *Software level = 3.0+.*
For each VoIP call, a receive port for incoming Real Time Protocol (RTP) traffic is selected from a defined range of possible ports, using the even numbers in that range. The Real Time Control Protocol (RTCP) traffic for the same call uses the RTP port number plus 1, that is the odd numbers. For IP Office control units and Avaya H.323 IP phones, the default port range used is 49152 to 53246. On some installations, it may be a requirement to change or restrict the port range used. It is recommended that only port numbers between 49152 and 65535 are used, that being the range defined by the Internet Assigned Numbers Authority (IANA) for dynamic usage.
 - **Port Range (minimum):** *Default = 49152. Range = 1024 to 64510.*
This sets the lower limit for the RTP port numbers used by the IP Office.
 - **Port Range (maximum):** *Default = 53246. Range = 2048 to 65534.*
This sets the upper limit for the RTP port numbers used by the IP Office. The gap between the minimum and the maximum must be at least 1024.
- **DiffServ Settings**
When transporting voice over low speed links it is possible for normal data packets (1500 byte packets) to prevent or delay voice packets (typically 67 or 31 bytes) from getting across the link. This can cause unacceptable speech quality. Therefore it is important that all traffic routers and switches in a network to have some form of Quality of Service mechanism (QoS). QoS routers are essential to ensure low speech latency and to maintain sufficient audible quality.
 - IP Office supports the DiffServ (RFC2474) QoS mechanism. This uses a Type of Service (ToS) field in the IP packet header. The IP Office uses this field to prioritize voice and voice signaling packets on its WAN interfaces. Note that the IP Office does not perform QoS for its Ethernet ports including the WAN Ethernet port on the Small Office Edition.
 - The hex and decimal entry fields for the following values are linked, the hex value being equal to the decimal multiplied by 4.
- **DSCP (Hex):** *Default = B8 (Hex)/46 (decimal), Range = 00 to FC (Hex)/0 to 63 (decimal)*
The DiffServ Code Point (DSCP) setting applied to VoIP calls. For correct operation, especially over WAN links, the same value should be set at both ends.
- **DSCP Mask (Hex):** *Default = FC (Hex)/63 (decimal), Range = 00 to FC (Hex)/0 to 63 (decimal)*
Allows a mask to be applied to packets for the DSCP value.

- **SIG DSCP (Hex):** *Default = 88 (Hex)/34 (decimal), Range = 00 to FC (Hex)/0 to 63 (decimal)*
This setting is used to prioritize VoIP call signaling.
- **Primary Site Specific Option Number (SSON):** *Default = 176, Range = 128 to 254.*
A site specific option number (SSON) is used as part of DHCP to request additional information. For IP Office it is used by Avaya IP Phones being supported by IP Office DHCP. 176 is the default SSON used by 4600 Series and 5600 Series IP phones.
- **Secondary Site Specific Option Number (SSON):** *Default = 242, Range = 128 to 254.*
Similar to the primary SSON. 242 is the default SSON used by 1600 Series IP phones requesting installation settings via DHCP.
- **VLAN:** *Default = Not present, Software level = IP Office 5.0+.*
This option is applied to H323 phones using the IP Office for DHCP support. If set to **Disabled**, the L2Q value indicated to phones in the DHCP response is 2 (disabled). If set to **Not Present**, no L2Q value is included in the DHCP response.

5.3.2.3 Network Topology

These settings are used for SIP trunk connections from the LAN. Use of SIP requires entry of SIP Trunk Channels licenses. For further details of IP Office SIP operation refer to the [SIP Line](#)^[246] section.

STUN (Simple Traversal of UDP through NAT) is a mechanism used with UDP SIP to overcome the effect of NAT firewalls. Test SIP packets are sent to a STUN server. The STUN server replies and includes copies of the packets it received in the reply. By comparing the packet sent to the STUN server and the copies of the packets it received, it is possible to determine the type of NAT firewall and to then modify future SIP packets to overcome negative effects of NAT.

The use of STUN is unnecessary if the SIP ITSP uses a Session Border Controller (SBC).

System LAN1 Network Topology Settings	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	4.0+.
Mergeable	Pre-3.2 ✗, 3.2+ ✗.

The following fields can be completed either manually or the IP Office can attempt to automatically discover the appropriate values. To complete the fields automatically, only the STUN Server IP Address is required. STUN operation is then tested by clicking Run STUN. If successful the remaining fields are filled with the results.

- **STUN Server IP Address:** *Default = 69.90.168.13*

This is the IP address of the SIP ITSP's STUN server. The IP Office will send basic SIP messages to this destination and from data inserted into the replies can try to determine the type NAT changes being applied by any firewall between it and the ITSP.

- **STUN Port:** *Default = 3478, Software level = 4.1+.*

Defines the port to which STUN requests are sent if STUN is used.

- **Firewall/NAT Type:** *Default = Unknown*

The settings here reflect different types of network firewalls. Options include Blocking Firewall, Symmetric Firewall, Open Internet, Symmetric NAT, Full Cone NAT, Restricted Cone NAT, Port Restricted Cone NAT and Unknown.

- **Open Internet**

No action required. If this mode is selected, STUN lookups are not performed.

- **Symmetric Firewall**

SIP packets are unchanged but ports need to be opened and kept open with keep-alives. If this type of NAT is detected or manually selected, a warning 'Communication is not possible unless the STUN server is supported on same IP address as the ITSP' will be displayed as part of the manager validation.

- **Full Cone NAT**

A full cone NAT is one where all requests from the same internal IP address and port are mapped to the same external IP address and port. Furthermore, any external host can send a packet to the internal host, by sending a packet to the mapped external address. SIP packets need to be mapped to NAT address and Port; any Host in the internet can call in on the open port, that is the local info in the SDP will apply to multiple ITSP Hosts. No warning will be displayed for this type of NAT because the IP Office has sufficient information to make the connection).

- **Symmetric NAT**

A symmetric NAT is one where all requests from the same internal IP address and port, to a specific destination IP address and port, are mapped to the same external IP address and port. If the same host sends a packet with the same source address and port, but to a different destination, a different mapping is used. Furthermore, only the external host that receives a packet can send a UDP packet back to the internal host. SIP Packets need to be mapped but STUN will not provide the correct information unless the IP address on the STUN server is the same as the ITSP Host. If this type of NAT/Firewall is detected or manually selected, a warning 'Communication is not possible unless the STUN server is supported on same IP address as the ITSP' will be displayed as part of the manager validation.

- **Restricted Cone NAT**

A restricted cone NAT is one where all requests from the same internal IP address and port are mapped to the same external IP address and port. Unlike a full cone NAT, an external host (with IP address X) can send a packet to the internal host only if the internal host had previously sent a packet to IP address X. SIP packets needs to be mapped. Responses from hosts are restricted to those that a packet has been sent to. So if multiple ITSP hosts are to be supported, a keep alive will need to be sent to each host. If this type of NAT/Firewall is detected or manually selected, no warning will be displayed for this type of NAT.

- **Port Restricted Cone NAT**

A port restricted cone NAT is like a restricted cone NAT, but the restriction includes port numbers. Specifically, an external host can send a packet, with source IP address X and source port P, to the internal host only if the internal host had previously sent a packet to IP address X and port P. SIP packets needs to be mapped. Keep-alives must be sent to all ports that will be the source of a packet for each ITSP host IP address. If this type of NAT/Firewall is detected or manually selected, no warning will be displayed for this type of NAT. However, some Port Restricted NAT's have been found to be more symmetric in behavior, creating a separate binding for each opened Port, if this is the case the manager will display a warning 'Communication is not possible unless the STUN server is supported on same IP address as the ITSP' as part of the manager validation.

- **Static Port Block:** *Software level = 4.1+.*
Use the RTP Port Number Range specified on the [VoIP](#) ¹⁵⁶ tab without STUN translation. Those ports must be fixed as open on any NAT firewall involved.
- **Binding Refresh Time (seconds):** *Default = 0 (Never), Range = 0 to 3600 seconds.*
Having established which TCP/UDP port number to use, through either automatic or manual configuration, the IP Office can send recurring 'SIP Options requests' to the remote proxy terminating the trunk. Those requests will keep the port open through the firewall. Requests are sent every x seconds as configured by this field.
 - **Note:** If a binding refresh time has not been set you may experience problems receiving inbound SIP calls as they are unable to get through the Firewall. In these circumstances make sure that this value has been configured.
- **Public IP Address:** *Default = 0.0.0.0*
This value is either entered manually or discovered by the Run STUN process. If no address is set, the IP Office LAN1 address is used.
- **Public Port:** *Default = 0*
This value is either entered manually or discovered by the Run STUN process.
- **Run STUN**
This button tests STUN operation between the IP Office LAN and the STUN Server IP Address set above. If successful the results are used to automatically fill the remaining fields with appropriate values discovered by the IP Office. Before using Run STUN the SIP trunk must be configured.
 - When this option is used, a  information icon is shown against the fields to indicate that the values were automatically discovered rather than manually entered.
- **Run STUN on startup:** *Default = Off*
This option is used in conjunction with values automatically discovered using Run STUN. When selected, the IP Office will rerun STUN discovery whenever the IP Office is rebooted or connection failure to the SIP server occurs.

5.3.2.4 DHCP Pools

Supported on IP500 systems running IP Office 4.2+ software. DHCP pools allows the configuration of up to 8 ranges of IP addresses for allocation by the IP Office when acting as a DHCP server. By default the DHCP settings (IP Address, IP Mask and Number of DHCP IP Addresses) set on the [LAN Settings](#)^[153] tab are reflected by the first pool here.

- For support of PPP Dial In address requests, at least one of the pools must be on the same subnet as the IP Office's LAN. Only addresses from a pool on the same subnet as the IP Office's own LAN address will be used for PPP Dial In.

System LAN1 DHCP Pools	
Control Unit	SOE ✗, IP403 ✗, IP406 V1 ✗, IP406 V2 ✗, IP412 ✗, IP500 ✓.
Software Level	4.2+.
Mergeable	✗.

- Apply to Avaya IP Phones Only:** *Default = Off.*

If this option is selected, the DHCP addresses are only used for requests from Avaya IP phones. Other devices connected to the IP Office LAN will have to use static addresses or obtain their address from another DHCP server.

- In addition to the above control, Avaya IP phones will only complete DHCP against a DHCP server configured to supports a Site Specific Option Number (SSON) that matches that set on the phone. The SSON numbers supported by the IP Office DHCP are set on the [VoIP](#)^[156] sub-tab.

- DHCP Pool**

Up to 8 pools can be added. The first pool matches the IP Address, IP Mask and Number of DHCP IP Addresses on the [LAN Settings](#)^[153] sub-tab. When adding or editing pools, IP Office Manager will attempt to warn about overlaps and conflicts between pools.

- Start Address**

Sets the first address in the pool.

- Subnet Mask:** *Default = 255.255255.0*

Sets the subnet mask for addresses issued from the pool.

- Default Router:** *Default = 0.0.0.0*

For pools issuing IP addresses on the same subnet as the IP Office LAN's, **0.0.0.0** instructs the IP Office to determined the actual default router address to issue by matching the IP address/subnet mask being issued in the [IP Routing](#)^[369] table. This matches the default behaviour used by IP Office's systems without multiple pools. For pools issuing addresses not on the same subnet as the IP Office LAN's, the default router should be set to the correct value for devices on that subnet.

- Pool Size:** *Default = 0*

Set the number of DHCP client addresses available in the pool.

5.3.2.5 SIP Registrar

IP Office 5.0+ supports SIP endpoint devices including SIP phones. This tab is used to set the system parameters for the IP Office acting as a SIP Registrar to which SIP endpoint devices can register. Separate SIP registrars can be configured on LAN1 and LAN2.

Registration of a SIP endpoint requires an available **IP Endpoints** license. SIP endpoints are also still subject to the extension capacity limits of the IP Office system.

System LAN1 SIP Endpoints	
Control Unit	SOE  , IP403  , IP406 V1  , IP406 V2  , IP412  , IP500  .
Software Level	5.0+.
Mergeable	 .

- **Domain Name:** *Default = Blank*

This is the local SIP registrar domain name that will be needed by SIP endpoints in order to register with the IP Office. If this field is left blank, registration is against the LAN IP address.

- **Layer 4 Protocol:** *Default = Both TCP & UDP.*

Both TCP and UDP SIP endpoints are supported. This field can be used to restrict the IP Office to just TCP or UDP if required.

- **TCP Port:** *Default = 5060.*

The port to use for TCP support.

- **UDP Port:** *Default = 5060.*

The port to use for UDP support.

- **Challenge Expiry Time (secs):** *Default = 10.*

The challenge expiry time is used during SIP extension registration. When a device registers, the IP Office SIP Registrar will send a challenge back to the device and waits for an appropriate response. If the response is not received within this timeout the registration is failed.

- **Auto-create Extn/User:** *Default = On.*

If on, a new extension and user entries are created by the registration of a new SIP endpoint. If off, SIP endpoint can only register against existing configuration entries.

5.3.3 LAN2

LAN2 is not supported by all IP Office control units.

- On the Small Office Edition and IP500 control units the LAN2 settings are used for the RJ45 Ethernet port labeled WAN.
- On the IP412 control units LAN2 settings are used for the RJ45 ethernet port labelled LAN2.
- For IP406 V2 control units running IP Office 4.1+, the RJ45 LAN port 8 can be selected to act be LAN2 if required. This is done using the **Use Port 8 as LAN2** option on the [LAN1 | LAN Settings](#) ⁽¹⁵³⁾ tab.

System LAN2	
Control Unit	SOE  , IP403  , IP406 V1  , IP406 V2  *, IP412  , IP500  .
Software Level	1.0+.
Mergeable	 .

*Optional on IP Office 4.1+.

The fields available for LAN2 are the same as for [LAN1](#) ⁽¹⁵²⁾ except for the following additional field:

- **Firewall:** *Default = <None> (No firewall)*
Allows the selection of an IP Office firewall to be applied to traffic routed from LAN2 to LAN1.

5.3.4 DNS

DNS is a mechanism through which the URL's requested by users, such as www.avaya.com, are resolved into IP addresses. These requests are sent to a Domain Name Server (DNS) server, which converts the URL to an IP address. Typically the internet service provider (ISP) will specify the address of the DNS server their customers should use.

WINS (Windows Internet Name Service) is a similar mechanism used within a Windows network to convert PC and server names to IP addresses via a WINS server.

If the IP Office is acting as a DHCP server, in addition to providing clients with their own IP address settings for [LAN1](#)^[152] or [LAN2](#)^[162] it can also provide them with their DNS and WINS settings if requested by the client

System DNS	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- DNS Service IP Address:** *Default = 0.0.0.0 (Do not provide DNS/Use DNS forwarding)*
 This is the IP address of an DNS Server. Your Internet service provider or network administrator provides this information. If this field is left blank, the IP office uses its own address as the DNS server for DHCP client and forward DNS requests to the service provider when Request DNS is selected in the service being used ([Service | IP](#)^[336]).
- Backup DNS Server IP Address:** *Default = 0.0.0.0 (No backup)*
- DNS Domain:** *Default = Blank (No domain)*
 This is the domain name for your IP address. Your Internet service provider or network administrator provides this. Typically this field is left blank.
- WINS Server IP Address:** *Default = 0.0.0.0 (Do not provide WINS)*
 This is the IP address of your local WINS server. This is only used by Windows PCs, and normally points to an NT server nominated by your network administrator as your WINS server. Setting a value will result in also sending a mode of "hybrid".
- Backup WINS Server IP Address:** *Default = 0.0.0.0 (No backup)*
- WINS Scope:** *Default = Blank (no scope)*
 This is provided by your network administrator or left blank.

5.3.5 Voicemail

The following settings are used to set the IP Office's voicemail server type and location. The fields are enabled or grayed out as appropriate to the selected voicemail type.

System Voicemail	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	Pre-3.2 ✗, 3.2+ ✓*Changes to Voicemail Type require a reboot.

- **Voicemail Type:** *Default = Voicemail Lite/Pro*
Sets the type of voicemail system being used.
 - **None**
No voicemail operation.
 - **Centralized Voicemail**
Select this option when using a Voicemail Pro system installed and licensed on another IP Office in an IP Office Small Community Network. The outgoing line group for connection to the system with the Voicemail Pro should be entered as the **Voicemail Destination**.
 - **Embedded Voicemail**
Small Office Edition, IP406 V2 and IP500 control units only. Select this option to run embedded voicemail which stores messages and prompts on an Avaya memory card inserted into the control unit.
 - **Group Voicemail**
This option is used to support third-party voicemail systems attached by extension ports in the group specified as the **Voicemail Destination**.
 - **Remote Audix Voicemail**
Select this option if using a remote Avaya Intuity Audix or MultiMessage voicemail system. Requires entry of an **Audix Voicemail** license in [Licenses](#)^[378].
 - **Voicemail Lite/Pro**
Select this option when using Voicemail Lite or Voicemail Pro. The IP address of the PC being used should be set as the Voicemail IP Address. Use of Voicemail Pro requires entry of a **Voicemail Pro (4 ports)** license in [Licenses](#)^[378]. Not that Voicemail Lite is not supported with IP Office 5.0+.
- **Voicemail Destination:** *Default = blank*
This setting is used when the Voicemail Type is set to Remote Audix Voicemail or Centralized Voicemail. It is used to enter the outgoing line group of the lines configured for connection to the remote voicemail system. It is also used for Group Voicemail to specify the group connected to the voicemail system.
- **Voicemail IP Address:** *Default = 255.255.255.255*
This setting is used when the **Voicemail Type** is set to **Voicemail Lite/Pro**. It is the IP address of the PC running the voicemail server software. If set as 255.255.255.255, the control unit broadcasts on the LAN for a response from a voicemail server. If set to a specific IP address, the system connects only to the voicemail server running at that specific address.
- **Messages Button Goes to Visual Voice:** *Default = On, Software level = 4.2+*
Visual Voice allows phone users to check their voicemail mailboxes and perform action such as play, delete and forward messages through menus displayed on their phone. By default, on phones with a **MESSAGES** button, the navigation is via spoken prompts. This option allows that to be replaced by Visual Voice on phones that support Visual Voice menus. For further details see [Visual Voice](#)^[651].
- **Voicemail Password :** *Default = blank, Software level = 2.1 to 3.1.*
This password is used by the main unit to confirm connection has been made to the correct Voicemail Pro Server. The password entered must correspond to the password set on the Voicemail Pro server. This entry should be left blank when using the any other voicemail server application. For IP Office 3.2 and higher this value is set through the IP Office security settings.
- **Audix UDP**
Available if the voicemail type Remote Audix Voicemail is selected. Needs to be completed with a four digit number from the Universal Dial Plan of the Avaya Communication Manager system.
- **Maximum Record Time:** *Default = 120 seconds, Range = 30 to 180 seconds, Software level = 3.0+.*
This field is only available when Embedded Voicemail is selected as the Voicemail Type. The value sets the maximum record time for messages and prompts.
- **Voicemail Channel Reservation:** *Software level = 4.0+*
These settings allow the channels between the IP Office and Voicemail Pro to be reserved for particular functions. Unreserved channels can be used for any function but reserved channels cannot be used for any function other than that indicated. These settings are not available unless the configuration includes validated licenses for the total number of voicemail channels.

- Note that the voicemail server also restricts the maximum number of channels that can be used for some services that would be taken from the **Unreserved Channels** pool. Alarms and callbacks are each limited to up to 2 channels at any time. Outcalling and conference invites are each limited to up to 5 channels at any time.

- **Unreserved Channels**

This setting cannot be changed and by default will show the total number of licensed voicemail channels. This number will decrease as channels are reserved for the following functions.

- **Mailbox Access:** *Default = 0*

This setting sets the number of channels reserved for users accessing mailboxes to collect messages.

- **Auto-Attendant:** *Default = 0*

This setting sets the number of channels reserved for users directed to Voicemail Pro short code and module start points.

- **Voice Recording:** *Default = 0*

This setting sets the number of channels reserved for voice recording other than mandatory voice recording (see below). If no channels are available recording does not occur though recording progress may be indicated.

- **Mandatory Voice Recording:** *Default = 0*

This setting sets the number of channels reserved for mandatory voice recording. When no channels are available for a call set to mandatory recording, the call is barred and the caller hears busy tone.

- **Announcements:** *Default = 0*

This setting sets the number of channels reserved for announcements. When no channels are available calls continue without announcements.

- **DTMF Breakout:** *Software level = IP Office 5.0+*

Previous breakout numbers for a user mailbox were set through the [user voicemail settings](#)^[270]. IP Office 5.0+ allows system defaults to be set. These are then applied to all user mailboxes unless the users own settings differ.

- **Reception / Breakout (DTMF 0)**

The number to which a caller is transferred if they press **0** while listening to the mailbox greeting rather than leaving a message (***0** on embedded voicemail).

- For systems set to Intuity emulation mode, the mailbox user can also access this option when collecting their messages by dialing ***0**.
- If the mailbox has been reached through a call flow containing a **Leave Mail** action, the option provided when **0** is pressed are:
 - For IP Office mode, the call follows the **Leave Mail** action's **Failure** or **Success** results connections depending on whether the caller pressed **0** before or after the record tone.
 - For Intuity mode, pressing **0** always follows the **Reception / Breakout (DTMF 0)** setting.

- **Breakout (DTMF 2)**

The number to which a caller is transferred if they press **2** while listening to the mailbox greeting rather than leaving a message (***2** on embedded voicemail). Pre-IP Office 5.0 this option is not support for Voicemail Pro running in IP Office mailbox mode.

- **Breakout (DTMF 3)**

The number to which a caller is transferred if they press **3** while listening to the mailbox greeting rather than leaving a message (***3** on embedded voicemail). Pre-IP Office 5.0 this option is not support for Voicemail Pro running in IP Office mailbox mode.

5.3.6 Telephony

This tab is used to set the default telephony operation of the IP Office. Some settings shown here can be overridden for individual users through their [User | Telephony](#)^[277] tab. The settings are split into a number of sub-tabs.

5.3.6.1 Telephony

System Telephony Telephony	
Control Unit	SOE  , IP403  , IP406 V1  , IP406 V2  , IP412  , IP500  .
Software Level	1.0+.
Mergeable	Pre-3.2  , 3.2+ 

*Changes to **Companding LAW** and **Automatic Codec Preference** require a reboot.

- **Default Outside Call Sequence:** *Default = Normal*

This setting is only used with analog extensions. It sets the ringing pattern used for incoming external calls. For details of the ring types see [Ring Tones](#)^[745] in the Telephone Features section. This setting can be overridden by a user's [User | Telephony | Call Settings | Outside Call Sequence](#)^[277] setting. Note that changing the pattern may cause fax and modem device extensions to not recognize and answer calls.

- **Default Inside Call Sequence:** *Default = Ring Type 1*

This setting is only used with analog extensions. It sets the ringing pattern used for incoming internal calls. For details of the ring types see [Ring Tones](#)^[745] in the Telephone Features section. This setting can be overridden by a user's [User | Telephony | Call Settings | Inside Call Sequence](#)^[277] setting.

- **Default Ring Back Sequence:** *Default = Ring Type 2*

This setting is only used with analog extensions. It sets the ringing pattern used for ringback calls such as hold return, park return, voicemail ringback, and Ring Back when Free. For details of the ring types see [Ring Tones](#)^[745] in the Telephone Features section. This setting can be overridden by a user's [User | Telephony | Call Settings | Ringback Call Sequence](#)^[277] setting.

- **Dial Delay Time (secs):** *Default = 4 (USA/Japan) or 1 (ROW), Range = 1 to 99 seconds.*

This setting sets the time the system waits following a dialed digit before it starts looking for a short code match. In situations where there are potential short codes matches but not exact match, it also sets the delay following the dialing of a digit before dialing complete is assumed. See the [Short Codes](#)^[424] section.

- **Dial Delay Count:** *Default = 0 digits (USA/Japan) or 4 digits (ROW), Range = 0 to 30 digits.*

This setting sets the number of digits dialed after which the IP Office starts looking for a short code match regardless of the Dial Delay Time.

- **Default No Answer Time (secs):** *Default = 15 seconds, Range = 6 to 99999 seconds.*

This setting controls the amount of time before an alerting call is considered as unanswered. How the call is treated when this time expires depends on the call type.

- For calls to a user, the call follows the user's Forward on No Answer settings if enabled. If no forward is set, the call will go to voicemail if available or else continues to ring. This timer is also used to control the duration of call forwarding if the forward destination does not answer. It also controls the duration of ringback call alerting. This setting is overridden by the [User | Telephony | Call Settings | No Answer Time](#)^[277] setting for a particular user if different.

- For calls to hunt groups, this setting controls the time before the call is presented to the next available hunt group member. This setting is overridden by the [Hunt Group | Hunt Group | No Answer Time](#)^[309] setting for a particular hunt group if different.

- **Hold Timeout (secs):** *Default = 120 (US) or 15 (Rest of World), Range = 0 (Off) to 99999 seconds.*

This setting controls how long calls remain on hold before recalling to the user who held the call. Note that the recall only occurs if the user has no other connected call. Recalled calls will continue ringing and do not follow forwards or go to voicemail.

- **Park Timeout (secs):** *Default = 300 seconds, Range 0 (Off) to 99999 seconds.*

This setting controls how long calls remain parked before recalling to the user who parked the call. Note that the recall only occurs if the user has no other connected call. Recalled calls will continue ringing and do not follow forwards or go to voicemail.

- **Ring Delay:** *Default = 5 seconds, Range = 0 to 98 seconds, Software level = 3.2+.*

This setting is used when any of the user's programmed appearance buttons is set to Delayed ringing. Calls received on that button will initially only alert visually. Audible alerting will only occur after the ring delay has expired. This setting can be overridden by a ring delay set for an individual user ([User | Telephony | Multi-line Options | Ring Delay](#)^[281]).

- **Call Priority Promotion Time (secs):** *Default = Disabled, Range = Disabled, 10 to 999 seconds, Software level = 4.2+.*
When calls are queued for a hunt group, higher priority calls are placed ahead of lower priority calls, with calls of the same priority sort by time in queue. External calls are assigned a priority (**1-Low**, **2-Medium** or **3-High**) by the Incoming Call Route that routed the call. Internal calls are assigned a priority of **1-Low**. This option can be used to increase the priority of a call each time it has remained queued for longer than this value. The calls priority is increased by 1 each time until it reaches 3-High.
 - In situations where calls are queued, high priority calls are placed before calls of a lower priority. This has a number of effects:
 - Mixing calls of different priority is not recommended for destinations where Voicemail Pro is being used to provided queue ETA and queue position messages to callers since those values will no longer be accurate when a higher priority call is placed into the queue. Note also that Voicemail Pro will not allow a value already announced to an existing caller to increase.
 - If the addition of a higher priority call causes the queue length to exceed the hunt group's [Queue Length Limit](#)^[319], the limit is temporarily raised by 1. This means that calls already queued are not rerouted by the addition of a higher priority call into the queue.
- **Companding LAW**
These settings should not normally be changed for their defaults. They should only be used where 4400 Series phones (U-Law) are installed on systems which have A-Law digital trunks. Note that **U-Law** is also called **Mu-Law** or **μ-Law**. Most IP Office IP400 control units are available in either A-Law and U-Law models. Typically U-Law models are supplied to North American locales, A-Law models are supplied to the rest of the world. IP500 control units are set to default A-Law or U-Law by the licence key inserted into the unit.
- **Default Currency:** *Default = [Locale specific](#)^[800], Software level = 4.0+.*
This setting is used with ISDN Advice of Charge (AOC) services. Note that changing the currency clears all call costs stored by the IP Office except those already logged through Delta Server. The currency is displayed in Phone Manager Pro and included in the IP Office SMDR output.
- **DSS Status:** *Default = Off*
This setting affects Avaya display phones with programmable buttons. It controls whether pressing a DSS key set to another user who has a call ringing will display details of the caller. When off, no caller information is displayed.
- **Auto Hold:** *Default = On, Software level = 3.0+.*
Used for users with multiple appearance buttons. When on, if a user presses another appearance button during a call, their current call is placed on hold. When off, if a users presses another appearance button during a call, their current call is disconnected.
- **Dial By Name:** *Default = On*
When on, allows the directory features on various phones to match the dialing of full names. When off, the directory features use the pre-IP Office 1.4 method of first character match only. See [User Directory Access](#)^[713]. For IP Office 5.0+ this option is fixed as **On** and is not adjustable.
- **Show Account Code:** *Default = On*
This setting controls the display and listing of system account codes:
 - **When on:**
 - When entering account codes through Phone Manager, users can select from a drop-down list of available account codes.
 - When entering account codes through a phone, the account code digits are shown while being dialed.
 - **When off:**
 - Within Phone Manager the drop-down list of available account codes is not useable, instead account codes must be entered using the Phone Managers PIN Code features.
 - When entering account codes through a phone, the account code digits are replaced by s characters on the display.
- **Allow Outgoing Transfer:** *Default = Off, Software level = 3.0 to 3.2.*
When not enabled, users are only able to transfer or forward off-switch incoming external calls. When enabled, users can forward both incoming and outgoing external calls. For pre-3.0 IP Office system the default behaviour is to bar outgoing transfers. For IP Office 4.0 and higher the default behaviour is to always allow outgoing transfers.
- **Inhibit Off-Switch Forward/Transfer:** *Default = Off (Italy = On)*
When enabled, this setting stops any user from transferring or forwarding calls externally. See [Off-Switch Transfer Restrictions](#)^[765].
- **Restrict Network Interconnect:** *Default = Off, Software Level = 4.2+.*
When this option is enabled, each trunk is provided with a **Network Type** option that can be configured as either **Public** or **Private**. The IP Office will not allow calls on a public trunk to be connected to a private trunk and vice versa, returning number unobtainable indication instead.
 - Due to the nature of this feature, its use is not recommended on systems also using any of the following other IP Office features: [Small Community Networks](#)^[792], VPNremote, Phone Manager telecommuter mode.
- **WAN Mode Override:** *Default = Off, Software level = 3.2/4.0 Q2 2007 Maintenance Release.*
Alters the configuration of the WAN interface from the default to that required for BT X25 link inter-working. Used with IP406 V2 systems only.

- **Automatic Codec Preference:** *Default = G.729(a) 8K CS-ACELP, Software level = 5.0+.*

This setting is used by all IP lines and extensions where the **Compression Mode** has been set to **Automatic Select**. The codec selected here will be the first codec the line or extension uses codec negotiation. Note that the G.711 codecs are treated as a pair, so if one is selected as the first preference, the other will be second in the list.

Setting	Preference Order
G.729	G729(a) 8K CS-ACELP / G711 U-Law 64K / G711 A-Law 64K / G723.1 6K3 MP-MLQ.
G.723	G723.1 6K3 MP-MLQ / G729(a) 8K CS-ACELP / G711 U-Law 64K / G711 A-Law 64K.
G.711 U-Law	G711 U-Law 64K / G711 A-Law 64K / G729(a) 8K CS-ACELP / G723.1 6K3 MP-MLQ.
G.711 A-Law	G711 A-Law 64K / G711 U-Law 64K / G729(a) 8K CS-ACELP / G723.1 6K3 MP-MLQ.

- **Drop External Only Impromptu Conference:** *Default = Off, Software level = 5.0+.*

If selected, when the last remaining internal user in a conference exits the conference, the conference is ended, regardless of whether it contains any external callers. The **Inhibit Off-Switch Forward/Transfer** option above is no longer applied to conference calls. If not selected, the conference is automatically end when the last internal party or trunk that supports reliable disconnect exits the conference.

- **Visually Differentiate External Call:** *Default = Off, Software level = 5.0+.*

This setting is applied to the lamp flashing rate used for bridged appearance and call coverage appearance buttons on 1600 Series phones and on BM32 button modules. When selected, external calls alerting on those buttons will use a slow flash (200ms on/50ms off). If not selected or if the call is internal, normal flashing (500ms on/500ms off) is used.

5.3.6.2 Tones and Music

System Telephony Tones and Music	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	2.1+.
Mergeable	Pre-3.2 ✗, 3.2+ ✓*

*Changes to **Busy Tone Detection** and the hold music **System Source** requires a reboot. Deleting any of the hold music **Alternate Sources** also requires a reboot.

- **Conferencing Tone:** *Default = Entry & Exit Tones.*
This settings controls how conference tones are used. It can be set to either **Entry & Exit Tones** or **Repeating Tone**. With **Entry & Exit Tones** a single tone is heard when a new party joins a conference and double-tone is heard when a party leaves the conference. With **Repeating Tone** a conference tone is heard every 10 seconds by all conference parties.
- **Disconnect Tone:** *Default = Default (Use locale setting^[802]), Software level = 4.0+.*
For digital and IP phones, when the IP Office detects that the far end of a call has disconnected, it can make the near end either go idle or play disconnect tone. By default the chosen behaviour depends on the [system locale](#)^[808]. This field can be used to override the locale's default action and force either disconnect tone or go idle.
 - **Default:** Use the system locale specific action for disconnected calls.
 - **On:** Play disconnect tone when far end disconnection is detected.
 - **Off:** Go idle when far end disconnection is detected.
- **Local Dial Tone:** *Default = On*
For all normal operation this setting should be left enabled as it allows the system to provide dial tone to users (essential for MSN working).
- **Local Busy Tone:** *Default = Off*
This setting should only be used when the local exchange gives a busy signal via Q.931 but does not provide busy tone.
- **Beep on Listen:** *Default = On (USA)/On (Rest of World)*
This setting controls whether call parties hear a repeating tone when their call is monitored by another party using the [Call Listen](#)^[443] feature.
- **GSM Silence Suppression:** *Default = Off, Software level = 3.0+.*
This setting should only be selected if voice quality problems are experienced with calls to voicemail or while recording calls. When on, the IP Office signals silence by generating silence data packets in periods when the voicemail system is not playing prompts. Note that use of this option may cause some timeout routing options in voicemail to no longer work.
- **Busy Tone Detection:** *Default = System Frequency (Tone defined by system locale)*
Allows configuration of the IP Office's busy tone detection settings. These are on lines that do not provide reliable disconnect signalling. In that case the IP Office will uses tone disconnect clearing to disconnect such lines after 6 seconds of continuous tone. The default tone (frequency and on/off cadence) detection used is defined by the [system locale](#)^[808]. The settings should not be adjusted unless advised by Avaya Technical Support. Changes to this setting require a reboot rather than a merge when the new configuration is sent to the IP Office.
- **Hold Music**
This section is used to define the source for the IP Office's music on hold source. You must ensure that any MOH source you use complies with copyright, performing rights and other local and national legal requirements.
 - **System Source:** *Default = WAV File.*
Selects the default hold music source for most uses of music on hold. Changes to this setting require a reboot rather than a merge when the new configuration is sent to the IP Office.
 - **WAV File**
Use the WAV file **holdmusic.wav**. This file is loaded via TFTP, see [Music on Hold](#)^[748].
 - **External:** *Software level = 3.1+.*
Previous the presence of a **holdmusic.wav** file loaded onto the IP Office automatically overrode the use of the IP Office control units external source. For IP Office 3.1+, External can be selected as the source. This causes the IP Office to not load the **holdmusic.wav** file via TFTP when rebooted
 - **Tone:** *Software level = 4.2+.*
The use of a double beep tone (425Hz, 02./0.2/0.2/3.4 seconds on/off) can be selected as the system source.
 - For IP Office 4.0+ the hold music tone is automatically used if the system source is set to **WAV File** but the **holdmusic.wav** file has not been successfully downloaded.

-
- **Alternate Source:** *Software level = 4.2+ (Not Small Office Edition).*

Up to three additional hold music source can be specified. These are wav files loaded and stored in the same way as **holdmusic.wav**. Note that adding and changing a source can be done using a merge but deleting a source requires a reboot.

- **Number**

Assigned automatically by the IP Office. The alternate sources are numbered 2, 3 and 4.

- **Name:** *Up to 31 characters*

This field is used to associate a name with the alternate source. That name is then used in the Hold Music Source field on Incoming Call Routes and Hunt Groups.

- **Source:** *Up to 31 characters*

Defines the name of the wav file that the IP Office should download to use as the alternate source. Prefix the file name with **WAV:**, for example for the file **holdmusic2.wav** enter **WAV:holdmusic2.wav** in IP Office Manager. This defines the file that the IP Office will automatically attempt to load via TFTP following a reboot.

5.3.6.3 Call Log

For IP Office 5.0+, the IP Office can store a [centralized call log](#)^[728] for users.

Each users' centralized call log can contain up to 30 call records for user calls (10 on IP412 and IP406 V2 systems). When this limit is reached, new call records replace the oldest record.

That call log is can be displayed on the phone, by pressing **Call Log**, when the user is using a 1608 or 1616 Series phone. The user can use the call log to make calls or to store as a personal speed dial. They can also edit the call log to remove records.

The centralized call log moves with the user if they log on and off from different phones, including if they hot desk within a Small Community Network.

System Telephony Call Log	
Control Unit	SOE  , IP403  , IP406 V1  , IP406 V2  , IP412  , IP500  .
Software Level	5.0+.
Mergeable	

- **Default Centralized Call Log On:** *Default = On.*

When selected, each IP Office user is defaulted to have the IP Office store a call log of their calls. This call log will be displayed on the phone when the user is using a 1600 Series phone. The use of centralized call logging can be enabled/disabled on a per user basis using the [Centralized Call Log](#)^[283] user setting ([User | Telephony | Call Log](#)^[283]).

- **Logged Missed Calls Answered at Coverage:** *Default = Off.*

This setting controls how calls to a user, that are answered by a covering user should be logged in the centralized call log. This option applies for calls answered elsewhere (covered) by pickup, call coverage ([call coverage](#)^[669]) buttons or [coverage group](#)^[731], bridged appearance button, user BLF, voicemail, etc.

Setting	Targeted User	Covering User
Off (Default)	Nothing	Answered Call
On	Missed Call	Answered Call

- **Log Missed Hunt Group Calls:** *Default = Off.*

By default, hunt group calls are not included in any user's centralized call log unless answered by the user. If this option is selected, a separate call log is kept for each hunt group of calls that are not answered by anyone. It includes hunt group calls that go to voicemail.

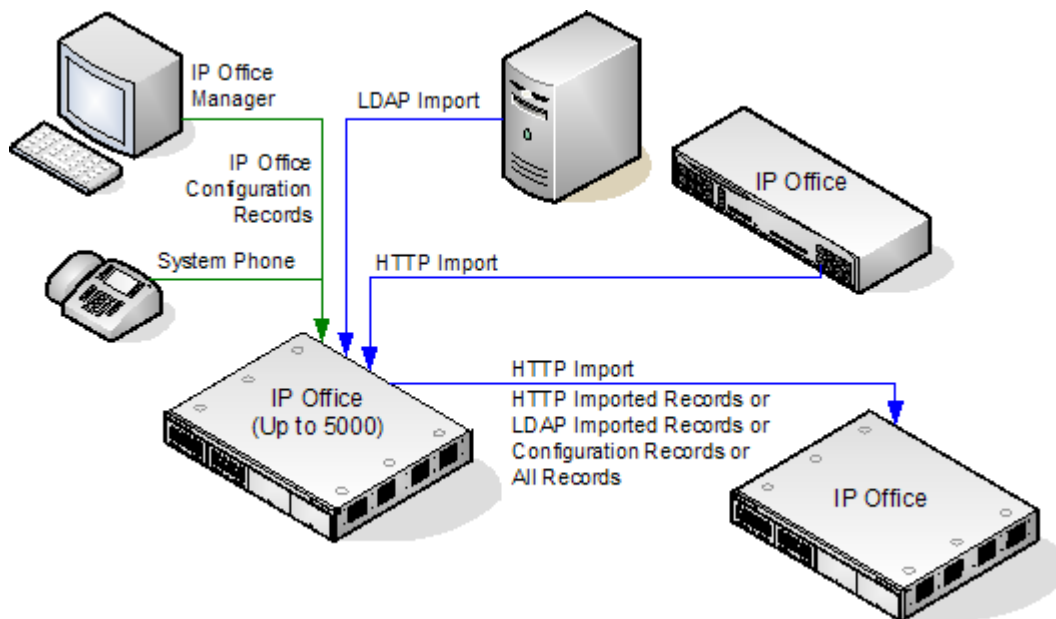
- If missed hunt group calls are also being logged, the IP Office stores up to 10 call records for each hunt group. When this limit is reached, new call records replace the oldest record.
- Within the user call log setting ([User | Telephony | Call Log](#)^[283]) the list of hunt groups allows selection of which hunt groups' missed call records should be displayed as part of the centralized call log when a user is using a 1608 or 1616 phone.

5.3.7 Directory Services

Directory services can be used to import directory entries (names and numbers) from external sources. These sets of entries are regularly re-imported.

For IP Office 5.0+, the following changes have been made:

- **LDAP Import** ^[179]
For IP500 systems,
 - The number of directory records that can be imported using LDAP has increased from 500 records to up to 5000 records. LDAP import is configured through the [System | Directory Services | LDAP](#) ^[179] form.
 - LDAP records are now included in the directory listed by phones rather than just the within IP Office user applications.
- **HTTP Import** ^[179]
IP Office systems are able to import the directory entries from another IP Office using HTTP. This is supported within an SCN or over IP connections. HTTP import is configured through the [System | Directory Services | HTTP](#) ^[179] form. The records imported can be any or all of the following: LDAP imported entries, HTTP imported entries, configuration entries.
- **System Directory Records** ^[359]
These records are entered directly into the IP Office system configuration and are permanently stored as part of the configuration. System directory records override LDAP/HTTP imported records.
 - The number of directory records that can be configured with the IP Offices own configuration using Manager has increased from 1000 to 2500. These are entered through the [Directory](#) ^[359] section.
 - 1608/1616 Phone user's with **System Phone** privileges, can add, delete and edit the system directory records of the system at which they are logged in. They cannot edit LDAP and/or HTTP imported entries.
- **NoUser Settings**
The options **ExtendDirectLimit** and **ExtendLDAPDirectLimit** are no longer supported.



IP Office	Number of Directory Records			Total Number of Directory Records
	IP Office Configuration	LDAP Import	HTTP Import	
IP500	2500	5000	5000	5000
IP412	2500	2500	2500	2500
IP406 V2	2500	2500	2500	2500

Directory entries are used for two types of function:

- **Directory Dialing**
Directory numbers are displayed by IP Office user applications such as Phone Manager and SoftConsole. Directory numbers are also viewable through the [Dir](#) ^[598] function on many IP Office phones. In both cases they allow the user to select the number to dial by name. In this usage, the directory will also contain the names and numbers of users and hunt groups on the IP Office system.

- The **Dir** function groups directory entries shown to the phone user into the following categories. In some scenarios, the categories displayed may be limited to those supported for the function being performed by the user:
 - **External**
Directory entries from the IP Office configuration. For IP Office 5.0 this includes HTTP and LDAP imported entries.
 - **Groups**
Groups on the IP Office system. If the system is in a Small Community Network it will also include groups on other IP Office systems in the network (For pre-IP Office 5.0 systems, this feature requires the IP Offices to have **Advanced Small Community Networking** licenses).
 - **Users or Index**
Users on the IP Office system. If the system is in a Small Community Network it will also include users on other IP Office systems in the network (For pre-IP Office 5.0 systems, this feature requires the IP Offices to have **Advanced Small Community Networking** licenses).
 - **Personal**
Available for T3 phones, T3 IP phones and 1600 Series phones (IP Office 5.0+). These are the user's personal directory entries stored within the IP Office system configuration.
- **Name Matching**
Directory entries are also used to associate a name with the dialed number on outgoing calls or the received CLI on incoming calls. When name matching is being done, a match in the users personal directory overrides any match in the system directory. Note that some IP Office user applications also have their own user directory.
 - The IP Office Phone Manager and SoftConsole applications have their own user directories which are also used by the applications name matching. Matches in the application directory may lead to the application displaying a different name from that shown on the phone.
 - Name matching is not performed when a name is supplied with the incoming call, for example QSIG trunks.

For IP Office 5.0, the following characters are supported in directory entries. They are supported in both system configuration entries and in HTTP/LDAP imported entries.

- **? = Any Digit**
Directory entries containing a **?** are only used for name matching against the dialed or received digits on outgoing or incoming. They are not included in the directory of numbers to dial available to users through IP Office phones or applications. The wildcard can be used in any position but typically would be used at the end of the number.
 - In the following example, any calls where the dialed or received number is 10 digits long and starts 732555 will have the display name Holmdel associated with them.
 - **Name:** Holmdel
 - **Number:** 9732555????
- **(and) brackets = Optional Digits**
These brackets are frequently used to enclose an optional portion of a number, typically the area code. Only one pair of brackets are supported in a number. Entries containing digits inside () brackets are used for both name matching or user dialling. When used for name matching, the dialed or received digits are compared to the directory number with and without the () enclosed digits. When used for dialling from a phone or application directory, the full string is dialed with the () brackets removed.
 - The following example is a local number. When dialed by users they are likely to dial just the local number. However on incoming calls, for the CLI the telephony provider includes the full area code. Using the () to enclose the area code digits, it is possible for the single directory entry to be used for both incoming and outgoing calls.
 - **Name:** Raj Garden
 - **Number:** 9(01707)373386
- **Space and - Characters**
Directory entries can also contain spaces and - characters. These will be ignored during name matching and dialling from the directory.

Imported Records

- Imported directory records are temporary until the next import refresh. They are not added to the IP Office system's configuration.
- They cannot be viewed or edited using IP Office Manager or edited by a System Phone user.
- The temporary records are lost if IP Office is restarted. However the IP Office will request a new set of imported directory records after an IP Office restart.

- The temporary records are lost if an IP Office configuration containing Directory changes is merged. The IP Office will then import a new set of temporary records without waiting for the **Resync Interval**.
- If an configuration record is edited by a System Phone user to match the name or number of a temporary record, the matching temporary record is discarded.

Importation Rules

When a set of directory records is imported by HTTP or LDAP, the following rules are applied to the new records:

- Imported records with a blank name or number are discarded.
- Imported records that match the name or number of any existing record are discarded.
- When the total number of directory records has reached the system limit, any further imported records are discarded.

IP Office	Number of Directory Records			Total Number of Directory Records
	IP Office Configuration	LDAP Import	HTTP Import	
IP500	2500	5000	5000	5000
IP412	2500	2500	2500	2500
IP406 V2	2500	2500	2500	2500

5.3.7.1 LDAP

LDAP (Lightweight Directory Access Protocol) is a software protocol for enabling anyone to locate organizations, individuals, and other resources such as files and devices in a network, whether on the Internet or on a corporate intranet. LDAP is a "lightweight" (smaller amount of code) version of DAP (Directory Access Protocol), which is part of X.500, a standard for directory services in a network. LDAP is lighter because in its initial version, it did not include security features.

- IP Office 5.0 supports the import of directory records from one IP Office to another using HTTP. That includes using HTTP to import records that another system has learnt using LDAP. [HTTP import](#)^[179], which is simpler to configure, can be used to relay LDAP records with LDAP configured on just one system.
- LDAP records can contain several telephone numbers. Each will be treated as a separate directory entry when imported into the IP Office directory.
- The NoUser source number setting **ExtendLDAPDirectLimit** usable with IP Office 4.1-4.2 systems is no longer supported for IP Office 5.0+.

Imported Records

- Imported directory records are temporary until the next import refresh. They are not added to the IP Office system's configuration.
- They cannot be viewed or edited using IP Office Manager or edited by a System Phone user.
- The temporary records are lost if IP Office is restarted. However the IP Office will request a new set of imported directory records after an IP Office restart.
- The temporary records are lost if an IP Office configuration containing Directory changes is merged. The IP Office will then import a new set of temporary records without waiting for the **Resync Interval**.
- If an configuration record is edited by a System Phone user to match the name or number of a temporary record, the matching temporary record is discarded.

Importation Rules

When a set of directory records is imported by HTTP or LDAP, the following rules are applied to the new records:

- Imported records with a blank name or number are discarded.
- Imported records that match the name or number of any existing record are discarded.
- When the total number of directory records has reached the system limit, any further imported records are discarded.

IP Office	Number of Directory Records			Total Number of Directory Records
	IP Office Configuration	LDAP Import	HTTP Import	
IP500	2500	5000	5000	5000
IP412	2500	2500	2500	2500
IP406 V2	2500	2500	2500	2500

In a network, a directory tells you where in the network something is located. On TCP/IP networks, including the Internet, the Domain Name System (DNS) is the directory system used to relate the domain name to a specific network address. However, you may not know the domain name. LDAP allows you to search for an individual without knowing where they're located (although additional information will help with the search).

An LDAP directory is organized in a simple "tree" hierarchy consisting of the following levels:

- The "root" directory (the starting place or the source of the tree), which branches out to
- Countries, each of which branches out to
- Organizations, which branch out to
- Organizational units (divisions, departments, and so forth), which branches out to (includes an entry for)
- Individuals (which includes people, files, and shared resources such as printers)

An LDAP directory can be distributed among many servers. Each server can have a replicated version of the total directory that is synchronized periodically. An LDAP server is called a Directory System Agent (DSA). An LDAP server that receives a request from a user takes responsibility for the request, passing it to other DSA's as necessary, but ensuring a single coordinated response for the user.

LDAP Directory Synchronization allows the telephone number Directory held in the Control Unit to be synchronized with the information on an LDAP server. The feature can be configured to interoperate with any server that supports LDAP version 2 or higher.

System Directory Services LDAP	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **LDAP Enabled:** *Default = Off*
This option turns LDAP support on or off.
- **User Name:** *Default = blank*
Enter the user name to authenticate connection with the LDAP database. To determine the domain-name of a particular Windows 2000 user look on the "Account" tab of the user's properties under "Active Directory Users and Computers". Note that this means that the user name required is not necessarily the same as the name of the Active Directory entry. There should be a built-in account in Active Directory for anonymous Internet access, with prefix "IUSR_" and suffix server_name (whatever was chosen at the Windows 2000 installation). Thus, for example, the user name entered in this field might be: IUSR_CORPSERV@example.com
- **Password:** *Default = blank*
Enter the password to be used to authenticate connection with the LDAP database. Enter the password that has been configured under Active Directory for the above user. Alternatively an Active Directory object may be made available for anonymous read access. This is configured on the server as follows:
 - In "Active Directory Users and Computers" enable "Advanced Features" under the "View" menu. Open the properties of the object to be published and select the "Security" tab. Click "Add" and select "ANONYMOUS LOGON", click "Add", click "OK", click "Advanced" and select "ANONYMOUS LOGON", click "View/Edit", change "Apply onto" to "This object and all child objects", click "OK", "OK", "OK".

Once this has been done on the server, any entry can be made in the User Name field in the System configuration form (however this field cannot be left blank) and the Password field left blank. Other non-Active Directory LDAP servers may allow totally anonymous access, in which case neither User Name nor Password need be configured.
- **Server IP Address:** *Default = blank*
Enter the IP address of the server storing the database.
- **Server Port:** *Default = 389*
This setting is used to indicate the listening port on the LDAP server.
- **Authentication Method:** *Default = Simple*
Select the authentication method to be used.
 - **Simple:** clear text authentication
 - **Kerberos:** Kerberos 4 LDAP and Kerberos 4 DSA encrypted authentication (for future use).
- **Resync Interval (secs):** *Default = 3600 seconds, Range = 1 to 99999 seconds.*
The frequency at which the IP Office should resynchronize the directory with the server. This value also affects some aspects of the internal operation.
 - The LDAP search inquiry contains a field specifying a time limit for the search operation and this is set to 1/16th of the resync interval. So by default a server should terminate a search request if it has not completed within 225 seconds (3600/16).
 - The client end will terminate the LDAP operation if the TCP connection has been up for more than 1/8th of the resync interval (default 450 seconds). This time is also the interval at which a change in state of the "LDAP Enabled" configuration item is checked.
- **Search Base / Search Filter:** *Default = blank*
These 2 fields are used together to refine the extraction of directory entries. Basically the Base specifies the point in the tree to start searching and the Filter specifies which objects under the base are of interest. The search base is a distinguished name in string form (as defined in RFC1779).

The Filter deals with the attributes of the objects found under the Base and has its format defined in RFC2254 (except that extensible matching is not supported).

If the Search Filter field is left blank the filter defaults to "(objectClass=*)", this will match all objects under the Search Base.

The following are some examples applicable to an Active Directory database:
 - To get all the user phone numbers in a domain:
 Search Base: cn=users,dc=acme,dc=com
 Search Filter: (telephonenumber=*)
 - To restrict the search to a particular Organizational Unit (eg office) and get cell phone numbers also:
 Search Base: ou=holmdel,ou=nj,DC=acme,DC=com
 Search Filter: (&(|(telephonenumber=*)(mobile=*))
 - To get the members of distribution list "group1":
 Search Base: cn=users,dc=acme,dc=com
 Search Filter: (&(memberof=cn=group1,cn=users,dc=acme,dc=com)(telephonenumber=*))

- **Number Attributes:** *Default = see below*

Enter the number attributes the server should return for each entry that matches the Search Base and Search Filter. Other entries could be ipPhone, otherIpPhone, facsimileTelephoneNumber, otherfacsimileTelephoneNumber, pager or otherPager. The attribute names are not case sensitive. Other LDAP servers may use different attributes.

- By default the entry is "telephoneNumber,otherTelephone,homePhone=H,otherHomePhone=H,mobile=M,otherMobile=M", as used by Windows 2000 Server Active Directory for Contacts.
- The optional "=string" sub-fields define how that type of number is tagged in the directory. Thus, for example, a cell phone number would appear in the directory as: John Birbeck M 7325551234

5.3.7.2 HTTP

IP Office 5.0+ systems can use HTTP to import the directory records held by another IP Office system.

Imported Records

- Imported directory records are temporary until the next import refresh. They are not added to the IP Office system's configuration.
- They cannot be viewed or edited using IP Office Manager or edited by a System Phone user.
- The temporary records are lost if IP Office is restarted. However the IP Office will request a new set of imported directory records after an IP Office restart.
- The temporary records are lost if an IP Office configuration containing Directory changes is merged. The IP Office will then import a new set of temporary records without waiting for the **Resync Interval**.
- If an configuration record is edited by a System Phone user to match the name or number of a temporary record, the matching temporary record is discarded.

Importation Rules

When a set of directory records is imported by HTTP or LDAP, the following rules are applied to the new records:

- Imported records with a blank name or number are discarded.
- Imported records that match the name or number of any existing record are discarded.
- When the total number of directory records has reached the system limit, any further imported records are discarded.

IP Office	Number of Directory Records			Total Number of Directory Records
	IP Office Configuration	LDAP Import	HTTP Import	
IP500	2500	5000	5000	5000
IP412	2500	2500	2500	2500
IP406 V2	2500	2500	2500	2500

Note that support for HTTP can be disabled. The [Avaya HTTP Clients Only](#) ⁽¹⁴⁹⁾ setting ([System | System](#) ⁽¹⁴⁹⁾) can restrict an IP Office system from responding to HTTP requests. The IP Office system's [Unsecured Interface](#) ⁽¹⁰³⁾ security settings also included controls for HTTP access (**HTTP Directory Read** and **HTTP Directory Write**).

System Directory Services HTTP	
Control Unit	SOE ✗, IP403 ✗, IP406 V1 ✗, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	5.0+.
Mergeable	✗.

- Directory Type:** *Default = None (No HTTP import)*
Set whether HTTP import should be used and the method of importation.
 - None**
Do not use HTTP import.
 - IP Office**
Import from the IP Office at the IP address set in the **Source** field.
 - IP Office SCN**
Import from an IP Office in a Small Community network. The **Source** field is used to select the **Outgoing Line ID** that matches the H323 SCN line to the remote IP Office.
- Source:** *Default = Blank*
The form of this field changes according to the Directory Type selection above.
- List:** *Default = All*
This field sets what types of directory record should be imported.
 - All**
Import the full set of directory records from the remote IP Office.
 - Config Only**
Import just directory records that are part of the remote IP Office's configuration. Note that these will be treated as imported records and will not be added to the local systems own configuration records.

-
- **LDAP Only**
Import just directory records that the remote IP Office has obtained as the result of its own LDAP import. This allows LDAP directory records to be relayed from one IP Office to another.
 - **HTTP Only**
Import just directory records that the remote IP Office has obtained as the result of its own HTTP import. This allows HTTP directory records to be relayed from one IP Office to another.
 - **URI:** *Default = /system/dir/complete_dir_list*
This field is for information only and cannot be adjusted. The path shown changes to match the **List** setting above.
 - **Resync Interval (secs):** *Default = 3600 seconds.*
Set how often the IP Office should request an updated import. When a new import is received, all previously imported records are discarded and the newly imported records are processed.

5.3.8 System Events

The IP Office supports a number of methods by which events occurring on the system can be reported. These are in addition to the real-time and historical reports available through the IP Office System Status Application (SSA).

- **SNMP Reporting (IP Office 2.1+)**

Simple Network Management Protocol (SNMP) allows SNMP clients and servers to exchange information. SNMP clients are built into devices such as network routers, server PC's, etc. SNMP servers are typically PC application which receive and/or request SNMP information. The IP Office SNMP client allows the IP Office system to respond to SNMP polling and to send alarm information to SNMP servers.

- In order for an SNMP server application to interact with an IP Office, the IP Office MIB files, provided on the IP Office Admin CD, must be compiled into the SNMP server's applications database. For full details, refer to the IP Office Installation Manual.

- **SMTP Email Reporting (IP Office 3.2+)**

IP Office 3.2+ can also send alarms to an SMTP email server. Using SMTP requires details of a valid SMTP email account user name and password and server address. If SMTP email alarms are configured but for some reason the IP Office cannot connect with the SMTP server, only the last 10 alarms are stored for sending when connection is successful.

- Use of SMTP alarms requires the SMTP server details to be entered in the [SMTP](#) ¹⁸⁵ tab.

- **Syslog Reporting (IP Office 4.1+)**

IP Office 4.1+ can also send alarms to a Syslog server (RFC 3164) without needing to configure an SNMP server. In addition Syslog output can include IP Office audit trail events.

Multiple event destinations can be created, each specifying which events and alarms to include, the method of reporting to use (SNMP, Syslog or Email) and where to send the events. Up to 2 alarm destinations can be configured for SNMP, 2 for Syslog and 3 for SMTP email.

Enabling SNMP Alarms

1. Select  **System**.
2. Select the **System Events** tab.
3. Select **SNMP Enabled**.
4. Complete the information in the SNMP Info section by entering the SNMP port and community details to match those expected by your SNMP server. Details of installing the MIB files required for SNMP are included in the IP Office Installation manual.
5. Click **OK**.

Editing Alarm Destinations

The Alarms section of the System Events tab displays the currently created alarm traps. It shows the event destinations and the types of alarms that will trigger the send of event reports. Up to 2 alarm destinations can be configured for SNMP, 2 for Syslog and 3 for SMTP email.

1. Select the **Alarms** sub-tab.
2. Use the **Add**, **Remove** and **Edit** controls to alter the traps.
3. Click **Add** or select the alarm to alter and then click **Edit**.
4. For a new alarm, set the **Destination** to either **Trap (SNMP)** or **Syslog** or **Email (SMTP)**. Note that once a destination has been saved by clicking **OK** it cannot be changed to another sending mode.
5. The remaining details will indicate the required destination information and allow selection of the alarm events to include.
6. When completed, click **OK**.
7. Click **OK** again.

5.3.8.1 Configuration

System System Events Configuration	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	2.0+.
Mergeable	✗.

- **SNMP Enabled:** *Default = Off*

Enables support for SNMP. This option is not required if using SMTP or Syslog.

- **Community (Read-only):** *Default = public*
The SNMP community name to which the IP Office belongs.
- **SNMP Port:** *Default = 161, Range = 0 to 65534.*
The port on which the IP Office system listens for SNMP polling.
- **Device ID**
This is a text field used to add additional information to alarms.
- **Contact**
This is a text field used to add additional information to alarms.
- **Location**
This is a text field used to add additional information to alarms.

- **QoS Parameters:** *Software level = 5.0+.*

These parameters are used if [Enable RTCP Monitor on Port 5005](#)^[156] is selected ([Systems | LAN1 | VoIP](#)^[156]). They are used as alarm thresholds for the QoS data collected by the IP Office for calls made by Avaya H323 phones and for phones using VCM channels. If a monitored call exceeds any of the threshold an alarm is sent to the IP Office System Status application. Quality of Service alarms can also be sent from the IP Office using [Alarms](#)^[183].

- The alarm occurs at the end of a call. If a call is held or parked and then retrieved, an alarm can occur for each segment of the call that exceeded a threshold.
- Where a call is between two extensions on the system, it is possible that both extensions will generate an alarm for the call.
- An alarm will not be triggered for the QoS parameters recorded during the first 5 seconds of a call.
- **Round Trip Delay (msec):** *Default = 350.*
Less than 160ms is high quality. Less than 350ms is good quality. Any higher delay will be noticeable by those involved in the call. Note that, depending on the compression codec being used, some delay stems from the signal processing and cannot be removed: G711 = 40ms, G723a = 160ms, G729 = 80ms.
- **Jitter (msec):** *Default = 20.*
Jitter is a measure of the variance in the time for different voice packets in the same call to reach the destination. Excessive jitter will become audible as echo.
- **Packet Loss (%):** *Default = 0.5.*
Excessive packet loss will be audible as clipped words and may also cause call setup delays.

Round Trip Delay	Good Quality	High Quality
Round Trip Delay	< 350ms	< 160ms
Jitter	< 20ms	< 20ms
Packet Loss	< 3%	< 1%

5.3.8.2 Alarms

This form is used to configure what can cause alarms to be sent using the different alarm methods.

- Up to 2 alarm traps can be configured for use with the SNMP settings on the [System | System Events | Configuration](#) ^[182] tab.
- Up to 3 email alarms can be configured for the sending using the IP Office systems [System | SMTP](#) ^[185] settings. The email destination is set as part of the alarm configuration below.
- Up to 2 alarms can be configured for sending to a Syslog destination that is included in the alarm settings.

System System Events Alarms	
Control Unit	SOE  , IP403  , IP406 V1  , IP406 V2  , IP412  , IP500  .
Software Level	2.0+.
Mergeable	 .

• Events

This section is used to show and edit the alarm.

• Destination

The options are **Trap (SNMP)**, **Syslog** or **Email (SMTP)**. To use SNMP or Email the appropriate settings must be configured on the Configuration sub-tab. Note that the Destination type will also be grayed out if the maximum number of configurable alarms destinations of that type has been reached. Up to 2 alarm destinations can be configured for SNMP, 2 for Syslog and 3 for SMTP email.

• Trap:

If selected, the details required in addition to the selected Events are:

- IP Address:** *Default = 0.0.0.0*

The IP address of the SNMP server to which trap information is sent.

- Port:** *Default = 162, Range = 0 to 65534.*

The SNMP transmit port

- Community:** *Default = Blank*

The SNMP community for the transmitted traps. Must be matched by the receiving SNMP server.

- Email:** *Software level = 3.2+.*

If selected, the details required in addition to the selected Events are:

• Email:

The destination email address.

- Syslog:** *Software level = 4.1+.*

If selected, the details required in addition to the selected Events are:

- IP Address:** *Default = 0.0.0.0*

The IP address of the Syslog server to which trap information is sent.

- Port:** *Default = 516, Range = 0 to 65534.*

The Syslog destination port.

- **Events:** *Default = None*

Sets which types of IP Office events should be collected and sent. The table below lists the alarms associated with each type of event. Text in *italics* in the messages is replaced with the appropriate data. Items in `[]` brackets are included in the message if appropriate. The subject line of SMTP email alarms takes the form "System name: IP address - System Alarm".

Type	Events	Event State	Message
Entity	Application	Voicemail operation	The Voicemail server is now operational.
		Voicemail Failure	The Voicemail server is down.
		Voicemail Event - storage OK	The Voicemail server storage is OK.
		Voicemail Event - storage nearly full	The Voicemail server storage is nearly full.
		Voicemail Event - storage full	The Voicemail server storage is full.
		Delta Server Operational	The Delta server is now operational.
		Delta Server Failure	The Delta server is down.
	Compact Flash Card	Change	The PC card in <i>name</i> has changed.
	Expansion Module	Operational	Expansion module <i>name</i> link is up.
		Failure	Expansion module <i>name</i> link is down.
		Error	Expansion module <i>name</i> link has a link error.
		Change	Expansion module <i>name</i> link has changed.
	Trunk	Operational	Trunk <i>number (name)</i> [on expansion module <i>number</i>] is now operational.
		Failure	Trunk <i>number (name)</i> [on expansion module <i>number</i>] is down.
	VCM	Operational	VCM module <i>name</i> is now operational.
		Failure	VCM module <i>name</i> has failed.
Generic	Generic	Network link failure	Network Interface <i>name (ip address)</i> has been disconnected.
		Network link operational	Network Interface <i>name (ip address)</i> has been connected.
		System warm start	System has been restarted (warm start).
		System cold start	System has restarted from power fail (cold start).
		SNMP Invalid community	Invalid community specified in SNMP request.
Licence	Licence	Server operational	The license server is now operational.
		Server failure	The license server is no longer operational.
Loopback	Loopback	Near end line loopback	Trunk <i>number (name)</i> [on expansion module <i>number</i>] is in near end loopback.
		Near end payload loopback	Trunk <i>number (name)</i> [on expansion module <i>number</i>] is in near end loopback with payload.
		Loopback off	Trunk <i>number (name)</i> [on expansion module <i>number</i>] has no loopback.
Phone Change	Phone Change	Phone has been unplugged	The phone with id <i>n</i> has been removed from extension <i>extension (unit, port number)</i> .
		Phone has been plugged in	The phone with type <i>type (id number)</i> has been plugged in for extension <i>extension (unit, port number)</i> .
Quality of Service	QoS Monitoring	If Enable RTCP Monitor on Port 5005 ^[156] is selected, any monitored calls that exceeds the set QoS Parameters ^[182] will cause an alarm.	
Audit Trail	Basic Audit	Events as written to the IP Office Audit Trail (Syslog output only).	

Notes:

- **Voicemail Pro Storage Alarms**

The alarm threshold is adjustable through the Voicemail Pro client.

- **Embedded Voicemail Storage Alarms**

A disk full alarm is generated when the embedded voicemail memory card reaches 90% full. In addition a critical space alarm is generated at 99% full (98% for the Small Office) and an OK alarm is generated when the disk space returns to below 90% full.

- **Loopback**

This type of alarm is only available for systems with a United States locale.

5.3.9 SMTP

For IP Office Manager 6.2, the configuration settings for the IP Office control units SMTP function have been moved from the **System | System Events** tab to this separate tab. This reflects the fact that SMTP can be used for IP Office functions other than just system events reporting.

- For IP Office 3.2+, SMTP can be used as the method of sending system alarms. The email destination is set as part of the email alarms configured in [System | System Events | Alarms](#)^[183].
- For IP Office 4.2+, SMTP can be used with Embedded Voicemail for [Voicemail Email](#)^[276]. The voicemail destination is set by the user's [Voicemail Email](#)^[276] address.

System System Events SMTP Configuration	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.2+.
Mergeable	✗

- IP Address:** *Default = 0.0.0.0*
 This field sets the IP address of the SMTP server being used to forward SNMP alarms sent by email.
- Port:** *Default = 25, Range = 0 to 65534.*
 This field set the destination port on the SMTP server.
- Email From Address:** *Default = Blank*
 This field set the sender address to be used with mailed alarms. Depending of the authentication requirements of the SMTP server this may need to be a valid email address hosted by that server. Otherwise the SMTP email server may need to be configured to support SMTP relay.
- Server Requires Authentication:** *Default = On*
 This field should be selected if the SMTP server being used requires authentication to allow the sending of emails. When selected, the User Name and Password fields become available.
 - User Name:** *Default = Blank*
 This field sets the user name to be used for SMTP server authentication.
 - Password:** *Default = Blank*
 This field sets the password to be used for SMTP server authentication.
 - Use Challenge Response Authentication (CRAM-MD5):** *Default = Off.*
 This field should be selected if the SMTP uses CRAM-MD5.

5.3.10 Twinning

These settings are used with Mobile Twinning, see the [User | Mobility](#)^[297] tab for further details. The use of mobile twinning requires entry of a **Mobility Features** license.

- Outgoing CLI Warning**
 Changing the outgoing CLI for calls requires the line provider to support that function. You must consult with your line provider before attempting to change the outgoing CLI, failure to do so may result in loss of service. If changing the outgoing CLI is allowed, most line providers required that the outgoing CLI used matches a number valid for return calls on the same trunks. Use of any other number may cause calls to be dropped or the outgoing CLI to be replaced with a valid number.
- Changing the outgoing CLI on calls using SIP trunks is not supported.
- On mobile twinned calls, if the original party information is used or a specific calling party information CLI is set, that number overrides setting the outgoing CLI using short codes.

System Twinning	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.2+.
Mergeable	✓.

- Send Original Party Information for Mobile Twinning:** *Default = On*
 When on, the IP Office will attempt to send the ICLID information provided with the incoming call to the twinning destination.

-
- **Calling Party Information for Mobile Twinning:** *Default = Blank (Disabled), Range = Up to 32 digits.*

This field is useable when **Send Original Party Information for Mobile Twinning** is off. Note that the number entered here for use as the CLI must be a valid number for return calls to the same site. Some line providers may reject calls that use a number that is not valid for return calls to the same site. In addition depending on the line type and line provider settings the maximum number of digits may be limited.

5.3.11 SMDR

Using a specified IP address, the IP Office can send a Call Detail Record (CDR) for each completed call. For IP Office 4.2+, the system can be configured to send SMDR call log records rather than CDR records. This removes the need to have a the IP Office Delta Server application installed on a PC.

System CDR	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.1 to 4.2.
Mergeable	Pre-3.2 ✗, 3.2+ ✓.

- **Output:** *Default = No Output.*
Select the type of call record that the IP Office should output via IP.

- **No Output**
- **CDR Only:** *Software level = 3.2 to 4.2 only.*
Send call records using the CDR setting below.
- **SMDR Only:** *Software level = 4.2+.*
Send call records using the SMDR settings below.

SMDR Settings

These settings are shown if SMDR Only is selected as the Output. For further details refer to [Appendix: SMDR](#)^[844].

- **IP Address:** *Default = 0.0.0.0 (Listen).*
The destination IP address for SMDR records.
 - The address 0.0.0.0 puts the IP Office control unit in listen mode on the specified TCP port. When a connection is made on that port, all SMDR records in the buffer are provided.
- **TCP Port:** *Default = 0.*
The destination IP port for SMDR records.
- **Records to Buffer:** *Default = 500, Range = 10 to 3000.*
The IP Office can cache up to 1500 SMDR records if it detects a communications failure with destination address. If the cache is full, the IP Office will begin discarding the oldest records for each new record. For IP Office 4.2+ the maximum number of records that can be buffered has been increased to 3000 for all systems other than the Small Office Edition.
- **Call Splitting for Diverts:** *Default = Off.*
When enabled, for calls forwarded off-switch using an external trunk, the SMDR produces separate initial call and forwarded call records. This applies for calls forwarded by forward unconditional, forward on no answer, forward on busy, DND or mobile twinning. It also applies to calls forwarded off-switch by an incoming call route. The two sets of records will have the same Call ID. The call time fields of the forward call record are reset from the moment of forwarding on the external trunk. For full details see [SMDR Call Records](#)^[844].

CDR Settings

These settings are shown if **CDR Only** is selected as the **Output**. CDR is not supported for IP Office Release 5 and higher.

A number of different CDR formats can be selected to match the requirements of the call logging/accounting software being used at the destination address. For further details refer to [Appendix: CDR Records](#)^[866].

- **Enable intra-switch CDRs:** *Default = Off.*
When on, includes CDR records for internal calls.
- **Formatting Options**
These fields are used to select the format and type of CDR records required. They must match the records expected by the call logging application receiving the CDR records.
 - **Record Format:** *Default = Unformatted.*
Allows selection from a number of common [CDR record formats](#)^[866].
 - **Record Options:** *Default = Enhanced.*
Sets the options to include in the CDR record.
 - **Date Format:** *Default = Day\Month.*
Sets the date format used in the CDR records.
- **Call Detail Recorder Communications**
This section sets the destination and method for sending of the CDR data.
- **IP Address:** *Default = 0.0.0.0.*
The destination IP address for CDR records.

-
- **IP Port:** *Default = 0.*

The destination IP port for CDR records.

- **Max CDRs:** *Default = 500. Range = 0 to 1500.*

The IP Office can cache up to 1500 CDR records if it detects a communications failure with destination address. If the cache is full, the IP Office will begin discarding the oldest records for each new record. For IP Office 4.2+ the maximum number of records that can be buffered has been increased to 3000 for all systems other than the Small Office Edition.

- **Use UDP:** *Default = Off (Use TCP)*

When selected, this field switches the sending of CDR record packets to use UDP instead of TCP.

- If **off**, TCP is used. In this mode the IP Office will resend missed or corrupted records using the standard TCP protocol. Records are buffered until successfully sent.
- If **on**, UDP is used. In this mode the IP Office will not resend missed or corrupt records. Also when using UDP, the IP Office is less likely to detect a communications failure which would triggered record caching.

5.3.12 VCM

This form allows adjustment of the operation of Voice Compression Modules (VCM's) installed in the IP Office control unit.

- The options for IP400 VCM controls are supported on IP400 systems from the IP Office 3.2/4.0 Q2 2007 Maintenance Releases onwards.
 - The same controls are supported for IP400 VCM cards in IP500 systems from IP Office 4.1 Q1 2008 Maintenance Release onwards.
- The options for IP500 VCM controls are supported from IP Office 4.2 onwards.

Calls to and from IP devices can require conversion to the audio codec format being used by the IP device. For IP Office systems this conversion is done by voice compression channels. These support the common IP audio codecs G711, G723 and G729a.

For IP400 control units channels can be added by fitting IP400 Voice Compression Modules (VCMs). For the IP500 control units, channels can be added using IP500 VCM cards and licenses or IP400 Voice Compression Modules.

When are Voice Compression Channels Used

The voice compression channels are used as follows.

- **IP Device to Non-IP Device**
These calls require a voice compression channel for the duration of the call. If no channel is available, busy indication is returned to the caller.
- **IP Device to IP Device**
 - Call progress tones (for example dial tone, secondary dial tone, etc) do not require voice compression channels with the following exceptions:
 - Short code confirmation, ARS camp on and account code entry tones require a voice compression channel.
 - Devices using G723 require a voice compression channel for all tones except call waiting.
 - When a call is connected:
 - If the IP devices use the same audio codec no voice compression channel is used.
 - If the devices use differing audio codecs, a voice compression channel is required for each.
- **Non-IP Device to Non-IP Device**
No voice compression channels are required except for Small Office Edition Embedded Voicemail access.
- **Music on Hold**
This is provided from the IP Office's TDM bus and therefore requires a voice compression channel when played to an IP device.
- **Conference Resources and IP Devices**
Conferencing resources are managed by the conference chip which is on the IP Office's TDM bus. Therefore, a voice compression channel is required for each IP device involved in a conference. This includes services that use conference resources such as call listen, intrusion, call recording and silent monitoring.
- **Page Calls to IP Device**
Page calls require 1 voice compression channel per audio codec being used by any IP devices involved. IP Office 4.0 and higher only uses G729a for page calls, therefore only requiring one channel but also only supporting pages to G729a capable devices.
- **Voicemail Services and IP Devices**
Calls to the IP Office voicemail servers are treated as data calls from the TDM bus. Therefore calls from an IP device to voicemail require a voice compression channel.
 - On the Small Office Edition, embedded voicemail uses voice compression channels for audio conversion. Therefore all calls to Small Office Edition embedded voicemail require a voice compression channel and calls from IP devices require two voice compression channels.
- **Fax Calls**
These are voice calls but with a slightly wider frequency range than spoken voice calls. IP Office only supports fax across IP between IP Office systems with the Fax Transport option selected. It does not currently support T38.
- **SIP Calls**
 - **SIP Line Call to/from Non-IP Devices**
Voice compression channel required.
 - **Outgoing SIP Line Call from IP Device**
No voice compression channel required.

- **Incoming SIP Line Call to IP Device**

Voice compression channel reserved until call connected.

- **T38 Fax Calls**

IP Office 5.0+ supports T38 fax on SIP trunks and SIP extensions. Each T38 fax call uses a VCM channel.

- Within a Small Community Network, an T38 fax call can be converted to a call across across an H323 SCN lines using the IP Office **Fax Transport Support** protocol. This conversion uses 2 VCM channels.
- In order use T38 Fax connection, the **Equipment Classification** of an analog extension connected to a fax machine can be set **Fax Machine**. Additionally, a new short code feature **Dial Fax** is available.

Note: T3 IP devices must be configured to 20ms packet size for the above conditions to apply. If left configured for 10ms packet size, a voice compression channel is needed for all tones and for non-direct media calls.

Measuring Channel Usage

The IP Office System Status Application can be used to display voice compression channel usage. Within the Resources section it displays the number of channel in use. It also displays how often there have been insufficient channels available and the last time such an event occurred.

These settings should only be adjusted under the guidance of Avaya support.

System VCM	
Control Unit	SOE  , IP403  , IP406 V1  , IP406 V2  , IP412  , IP500  .
Software Level	3.2+ (IP Office 3.2/4.0 Q2 2007 Maintenance Releases).
Mergeable	 .

Echo

Echoes are typically generated by impedance mismatches when a signal is converted from one circuit type to another, most notably from analog to IP. To resolve this issue, an estimated echo signal can be created from one output and then subtracted from the input to hopefully remove any echo of the output.

- **Echo Return Loss (dB):** *Default = 6dB, IP400 and IP500 VCM's.*
IP400 and IP500 VCM's. This control allows adjustment of expected echo loss that should be used for the echo cancellation process. The options are **0dB**, **3dB**, **6dB** and **9dB** (IP400 VCM only).

Comfort Noise/NLP

A low level of comfort noise is required on digital lines during periods where there would normally be just silence. This is necessary to reassure users that the call is still connected. These controls allow adjustment of the comfort noise generated by the nonlinear processor (NLP) component of the VCM.

- **Nonlinear Processor Mode:** *Default = Adaptive, IP400 and IP500 VCM's.*
Allows selection of one of the following options:
 - **Adaptive**
Adaptive means the comfort noise generated by the NLP will try to match background noise.
 - **Silence**
Silence means the NLP will not generate comfort noise at all
 - **Disabled**
Nonlinear processing is not applied, in which case some residual echo may be heard.
- **NLP Comfort Noise Attenuation:** *Default = -9dB, IP500 VCM's only.*
Options are **-3dB**, **-6dB** and **-9dB**.
- **NLP Comfort Noise Ceiling:** *Default = -30dB, IP500 VCM's only.*
Options are **-30dB** and **-55dB**.

Modem: *Software level = 5.0+, IP500 VCM only.*

IP Office 5.0 support T38 fax relay on IP500 systems with an IP500 VCM card. These settings allow adjustment of the TDM side operation applied to fax calls using VCM channels.

- **Tx Level (dB):** *Default = -9dB, Range = 0 to -13dB.*
- **CD Threshold:** *Default = -43dB, Options = -26dB, -31dB or -43dB.*
- **No Activity Timeout (secs):** *Default = 30 seconds, Range = 10 to 600 seconds.*

5.3.13 CCR

IP Office Customer Call Reporter (CCR) is an IP Office application that collects and displays information on the current status of hunt groups and users that have been configured for IP Office Customer Call Reporter operation.

System CCR	
Control Unit	SOE  , IP403  , IP406 V1  , IP406 V2  , IP412  , IP500  .
Software Level	4.2+.
Mergeable	 .

- **Busy Not Available Reason Codes**

Agents who indicate that they are in a 'busy not available' state can be prompted to also indicate the reason for being in that state. This menu allows descriptions for the possible reasons to be entered. The descriptions are then used in menus from which the Agent's make selections when setting themselves into busy not available state and in reports on Agent status.

- **Code/Reason**

Rows 1 to 8 can be used to contain descriptions of up to 31 characters each. Rows **0** and **9** are fixed as **Unsupported** and **Busy Not Available**.

- **Default After Call Work Time (seconds):** *Default = 10, Range = 10 to 999 seconds.*

If an agent goes into the After Call Work (ACW) state, either automatically or manually, this field sets the duration of that state after which it is automatically cleared. This duration can be overridden by the Agent's own setting ([User | Telephony | Supervisor Settings | After Call Work Time](#)^[279]). During ACW state, hunt group calls are not presented to the user.

5.4 Line Settings



The line settings shown in the IP Office configuration will change according to the types of trunk cards installed in the IP Office control unit or added using external expansion modules. Some models of IP Office Small Office Edition control units include up to 4 integral analog trunk ports.

- **⚠ WARNING: Changing Trunk Cards**

Changing the trunk card installed in an IP Office control unit will result in line settings for both the previous trunk card and the currently installed trunk card. In order to change the trunk card type in a particular card slot, the configuration must be defaulted. This does not apply if replacing an existing card with one of a higher capacity or fitting a trunk card into a previously unused slot.

General Line Operation

The following are general principles for line operation with an IP Office system. Some particular line types may operate differently.

- **Routing Calls to/from Lines - Line Groups**

Each trunk channel belongs to an Incoming Line Group and an Outgoing Line Group. These are used as follows:

-  **Incoming Call Routes - Routing Incoming Calls** ^[34]
Within the IP Office configuration, Incoming Call Routes are used to determine where calls should be presented. The route used is determined by matching information received with the call such as incoming number, ICLID, call type and the Incoming Line Group of the line on which the call arrived.

-  **Short Codes - Routing Outgoing Calls** ^[33]
Short codes are used in several areas of the IP Office configuration to match digits dialed. Short codes that result in a number to be dialed includes a Line Group setting. This can specify a matching Outgoing Line Group from which a line should be seized if available or for IP Office 4.0 and higher an ARS form.

-  **ARS (Alternate Route Selection)** ^[40]
Calls can be routed to ARS forms. These forms for scenarios where different lines are used at different times or where no line in the outgoing line group is available.

- **Clock Quality**

Calls between systems using digital trunks (for example E1, E1R2, T1 PRI and BRI) require a common clock signal. The IP Office will try to obtain this clock signal from an exchange through one of its digital trunks. This is done by setting the Clock Quality setting of that Line to Network. If there are multiple trunks to public exchanges, another trunk can be set as Fallback should the primary clock signal fail. Other trunks should be set as Unsuitable.

- **Removing Unused Trunks**

In cases where a trunk is not connected, it is important to ensure that the trunk is set as being Out of Service within the configuration. Failure to do this may cause the IP Office to attempt to present outgoing calls to that trunk. Similarly, where the number of channels subscribed is less than those supportable by the trunk type, the unsubscribed channels should be disabled. On E1 and BRI trunks this can be done by setting the Number of Channels correctly. On all trunk types it can also be done by setting the Direction of the unsubscribed channels to Incoming.

5.4.1 Analog Line



Analog trunks can be provided within the IP Office systems in the following ways. In all cases the physical ports are labeled as Analog. For full details of installation refer to the IP Office Installation manual.

- **Using ICLID**

The IP Office can route incoming calls using the ICLID received with the call. However ICLID is not sent instantaneously. On analog trunks set to Loop Start ICLID, there will be a short delay while the IP Office waits for any ICLID digits before it can determine where to present the call.

- **Line Status**

Analog line do not indicate call status other than whether the line is free or in use. Some IP Office features, for example retrieving unanswered forwards and making twinned calls make use of the call status indicated by digital lines. This is not possible with analog lines. Once an analog line has been seized the IP Office has to assume that the call is connected and treats it as having been answered.

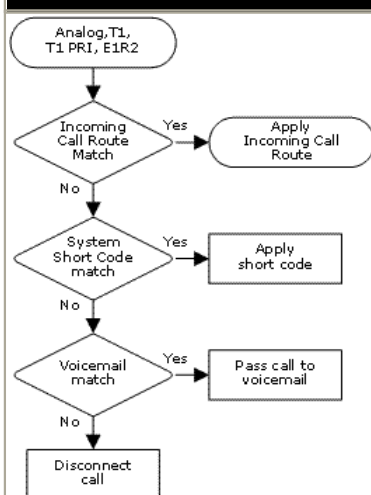
- **Dialing Complete**

The majority of North-American telephony services use en-bloc dialing. Therefore the use of a ; is recommended at the end of all dialing short codes that use an N. This is also recommended for all dialing where secondary dial tone short codes are being used.

- **Ground Start**

This type of analog trunk is only supported through the Analog Trunk external expansion module.

Incoming Call Routing: Analog, BRI, T1, T1 ISDN and E1R2 Trunks



The following options are used to route incoming calls received on this type of trunk.

1. **Incoming Call Route**

Based on matching the Incoming Line Group plus if set the incoming number and or ICLID.

2. **System Short Code**

The IP Office checks for a short code match based on the incoming number.

3. **Voicemail Match**

The IP Office checks for a call flow start point name matching the incoming number.

5.4.1.1 Line

This tab covers general settings for a line being used with IP Office.

Line Line (Analog)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **Line Number**

This parameter is not configurable, it is allocated by the system.

- **Card/Module:** *Software level = 4.1+.*

Indicates the card slot or expansion module being used for the trunk device providing the line.

- For IP400 control units, SLOT A on the control unit is shown as 1, SLOT B is shown as 2. Expansion modules are numbered from 4 upwards, for example trunks on the module in Expansion Port 1 are shown as 4.

- For IP Office 500 control units, 1 to 4 match the slots on the front of the control unit from left to right. Expansion modules are numbered from 5 upwards, for example trunks on the module in Expansion Port 1 are shown as 5.

- **Port:** *Software level = 4.1+.*

Indicates the port on the Card/Module above to which the configuration settings relate.

- **Network Type:** *Default = Public, Software level = 4.2+.*

This option is available if [Restrict Network Interconnect](#)^[166] ([System | Telephony | Telephony](#)^[166]) is enabled. It allows the trunk to be set as either **Public** or **Private**. The IP Office will return number unobtainable indication to any attempt to connect a call on a **Private** trunk to a **Public** trunk or vice versa. This restriction includes transfers, forwarding and conference calls.

- Due to the nature of this feature, its use is not recommended on systems also using any of the following other IP Office features: [Small Community Networks](#)^[792], VPNremote, Phone Manager telecommuter mode.

- **Telephone Number**

Used to remember the external telephone number of this line to assist with loop-back testing. For information only.

- **Incoming Group ID:** *Default = 0, Range 0 to 99999.*

The Incoming Group ID to which a line belongs is used to match it to incoming call routes in the IP Office configuration. The matching incoming call route is then used to route incoming calls. The same ID can be used for multiple lines.

- **Outgoing Group ID:** *Default = 0, Range 0 to 99999.*

Short codes that specify a number to dial also specify the line group to be used. The IP Office will then seize a line with a matching Outgoing Group ID. The same ID can be used for multiple lines.

- **Outgoing Channels:** *Default = 1 (not changeable)*

- **Voice Channels:** *Default = 1 (not changeable)*

- **Prefix:** *Default = Blank*

Enter the number to prefix to all incoming numbers for callback. This is useful if all users must dial a prefix to access an outside line. The prefix is automatically placed in front of all incoming numbers so that users can dial the number back.

- For outgoing calls: For IP Office 3.2 and lower, when a outgoing call is presented to the line with a leading digit to dial that matches the Prefix, that digit is stripped from the number. IP Office 4.0 and higher does not strip the prefix, therefore any prefixes not suitable for external line presentation should be stripped using short codes.

- **National Prefix:** *Default = 0 (not changeable)*

- **Line Appearance ID:** *Default = Auto-assigned, Range = 2 to 9 digits, Software level = 3.0+.*

Allows a number to be assigned to the line to identify it. On phone's that support call appearance buttons, a Line Appearance button with the same number will show the status of the line and can be used to answer calls on the line. For full details refer to the IP Office Key & Lamp Manual. The line appearance ID must be unique and not match any extension number.

5.4.1.2 Analog Options

This tab covers analog line specific settings.

Line Analog Options	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **Channel:**
Set by the system. Shown for information only.
- **Trunk Type:** *Default = Loop Start*
Sets the analog line type (**Ground Start**, **Loop Start**, **Loop Start ICLID**, **Out of Service**).
 - **Ground Start**
Ground Start is only supported on trunks provided by the Analog Trunk 16 expansion module. It requires that the module and the IP Office control unit are grounded. Refer to the IP Office installation manual.
 - **Delay Waiting for Caller ID Information.**
As the IP Office can use ICLID to route incoming calls, on analog Loop Start ICLID trunks there is a few seconds delay while ICLID is received before the call routing can be determined.
- **Signaling Type:** *Default = DTMF Dialing*
Sets the signaling method used on the line (DTMF Dialing or Pulse Dialing).
- **Direction:** *Default = Both Directions*
Sets the allowed direction of operation of the line (Incoming, Outgoing or Both Directions).
- **Bearer:** *Default = Any*
Sets the type of traffic carried by the line (Voice, Data or Any).
- **Impedance**
Set the impedance used for the line. This field is only available for certain system locales. The range of values available will depend on the system locale. The value used for **Default** is set by the system **Locale**.
 - **Brazil:** *Default = 900R*
Adjustable between 600R and 900R as required by the line provider.
 - **Korea:** *Default = Default, Software level = 3.2 and 4.0 Q2 2007+.*
In addition to the default impedance settings, and alternate set of impedance values can be selected.
 - **United States:** *Default = Default, Software level = 3.2 and 4.0 Q2 2007+.*
In addition to the default impedance setting, one of two alternate sets of impedance values **Alternate1**, **Alternate2** and **Alternate3** can be selected.
 - For IP500 systems running IP Office 4.2+, the range of selectable analog impedance settings has been expanded. The additional options are 600+2150nF, 600, 900+2150nF, 900, 220+820||115nF, 370+620||310nF, 270+750||250nF, 320+1050||230nF, 350+1000||210nF, 800+100||210nF. These settings are also used by the **Automatic Balance Impedance Matching** option.
- **Quiet Line:** *IP500, North American Locales only, Default = Off, Software level = 4.2+.*
This setting may be required to compensate for signal loss on long lines.
- **Automatic Balance Impedance Match:** *IP500, North American Locales only, Software level = 4.2+.*
These controls can be used to test the impedance of a line and to then display the best match resulting from the test. Testing should be performed with the line connected but the IP Office system otherwise idle. To start testing click Start. The IP Office will then send a series of signals to the line and monitor the response, repeating this at each possible impedance setting. Testing can be stopped at any time by clicking Stop. When testing is complete, Manager will display the best match and ask whether that match should be used for the line. If **Yes** is selected, Manager will also ask whether the that match should be applied to all other analog lines provided by the same analog trunk card or module.
- **Allow Analog Trunk to Trunk Connect:** *Default = Not selected (Off).*
When not enabled, users cannot transfer or forward external calls back off-switch using an analog trunk if the calls was originally made or received on another analog trunk. This prevents transfers to trunks that do not support disconnect clear.
- **BCC:** *Default = Not selected [Brazil locale only]*
A collect call is a call at the receiver's expense and by his permission. If supported by the line provider, BCC (Block Collect Call) can be used to bar collect calls.
- **Secondary Dial Tone:** *Default = Off*
Configures the use of secondary dial tone on analog lines. This is a different mechanism from secondary dial tone using short codes. This method is used mainly within the Russian locale. When selected, the following additional settings are accessible:
 - **Await time:** *Default = 3000ms, Range = 0 to 25500ms.*
Used when secondary dial tone (above) is selected. Sets the delay.

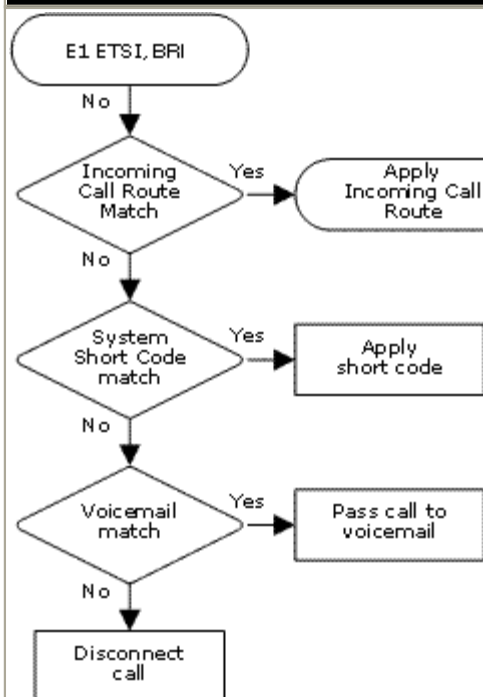
- **After n Digits:** *Default = 1, Range = 0 to 10.*
Sets where in the dialing string, the delay for secondary dial tone, should occur.
- **Matching Digit:** *Default = 8, Range = 0 to 9.*
The digit which, when first matched in the dialing string, will cause secondary dial tone delay.
- **Long CLI Line:** *Default = Off*
The CLI signal on some long analog lines can become degraded and is not then correctly detected. If you are sure that CLI is being provided but not detected, selecting this option may resolve the problem.
- **Modem Enabled:** *Default = Off*
The first analog trunk on Small Office Edition controls units, IP400 ATM4 trunk cards and IP500 Analog Trunk cards can be set to modem operation (V32 with V42 error correction). This allows the trunk to answer incoming modem calls and be used for system maintenance. When on, the trunk can only be used for analog modem calls. The default system short code *9000* can be used to toggle this setting. For the Small Office Edition control unit, when on, the control unit status LED flashes alternate red/green.
- **Ring Persistency:** *Default = Set according to system locale, Range = 0 to 2550ms.*
The minimum duration of signal required to be recognized.
- **Ring Off Maximum:** *Default = Set according to system locale, Range = 0 to 25500ms.*
The time required before signaling is regarded as ended.
- **Flash Pulse Width:** *Default = 500ms, Range = 0 to 2550ms.*
Set the time interval for the flash pulse width.
- **DTMF Mark:** *Default = 80 (80ms), Range = 0 to 255.*
Interval when DTMF signal is kept active during transmission of DTMF signals.
- **DTMF Space:** *Default = 80 (80ms), Range = 0 to 255.*
Interval of silence between DTMF signal transmissions.
- **Intermediate Digit Pause:** *Default = 500ms, Range = 0 to 2550ms.*
Intermediated pause between digits transmitted to the line.
- **Voice Recording:** *Default = Low*
Used to adjust the volume level of calls recorded by voicemail. Options are Low, Medium and High.
- **Disconnect Clear**
Disconnect clear (also known as Line Break or Reliable Disconnect) is a method used to signal from the line provider that the call has cleared. The IP Office also uses Tone Disconnect, which clears an analog call after 6 seconds of continuous busy or NU tone, configured through the [Busy Tone Detection](#) ⁽¹⁶⁹⁾ ([System | Telephony | Tones & Music](#) ⁽¹⁶⁹⁾) settings.
 - **Enable:** *Default = On*
Enables the use of disconnect clear.
 - **Units:** *Default = 500ms, Range = 0 to 2550ms.*
This time must be less than the actual disconnect time period used by the line provider by at least 150ms.
- **Pulse Width On:** *Default = 40ms, Range = 0 to 255ms.*
The width of the on pulses generated during pulse dialing.
- **Pulse Width Off:** *Default = 60ms, Range = 0 to 255ms.*
The width of the off pulses generated during pulse dialing.
- **Await Dial Tone:** *Default = 3000ms, Range = 0 to 25500ms.*
Sets how long the system should wait before dialing out.
- **BCC Flash Pulse Width:** *[Brazil locale only] Default = 100 (1000ms), Range = 0 to 255.*
Sets the BCC (Block collect call) flash pulse width.
- **Gains:**
These settings should not be adjusted without guidance from the line provider.
 - **A -> D:** *Default = 0dB*
Sets the analog to digital gain. Range -4.0dB to +3.5dB in 0.5dB steps.
 - **D -> A:** *Default = 0dB*
Sets the digital to analog gain. Range -4.0dB to +3.5dB in 0.5dB steps.
- **Echo Cancellation:** *Default = 16ms.*
Only useable with the IP400 ATM4 Universal and IP500 Analog trunk card. Allows settings of **Off**, **8**, **16**, **32**, **64** and **128** milliseconds. The echo cancellation should only be adjusted as high as required to remove echo problems. Setting it to a higher value than necessary can cause other distortions.
- **Mains Hum Filter:** *Default = Off, Software level = IP500 4.2+.*
If mains hum interference on the lines is detected or suspected, this settings can be used to attempt to remove that interference. Useable with ATM16 trunks and IP500 ATM4U trunks. Options are **Off**, **50Hz** or **60Hz**.

5.4.2 BRI Line



BRI trunks are provided by the installation of a BRI trunk card into the IP Office control unit. The cards are available in different variants with either 2 or 4 physical ports. Each port supports 2 B-channels for calls. For full details of installation refer to the IP Office Installation manual.

Incoming Call Routing: E1 ETSI, BRI



The following options are used to route incoming calls received on this type of trunk.

1. Incoming Call Route

The IP Office checks for a match to the Incoming Line Group plus, if set, the incoming number and or ICLID.

2. System Short Code

The IP Office checks for a short code match based on the incoming number.

3. Voicemail Match

The IP Office checks for a call flow start point name matching the incoming number.

Point-to-Point or Multipoint

BRI lines can be used in either Point-to-Point or Point-to-Multipoint mode. Point-to-Point lines are used when only one device terminates a line in a customer's office. Point-to-Multipoint lines are used when more than one device may be used on the line at the customer's premises. There are major benefits in using Point-to-Point lines:-

1. The exchange knows when the line/terminal equipment is down/dead, thus it will not offer calls down that line. If the lines are Point-to-Multipoint, calls are always offered down the line and fail if there is no response from the terminal equipment. So if you have two Point-to-Multipoint lines and one is faulty 50% of incoming calls fail.
2. You get a green LED on the Control Unit when the line is connected. With Point-to-Multipoint lines some exchanges will drop layer 1/2 signals when the line is idle for a period.
3. The timing clock is locked to the exchange. If layer 1/2 signals disappear on a line then the Control Unit will switch to another line, however this may result in some audible click when the switchover occurs.

The IP Office's default Terminal Equipment Identifier (TEI) will normally allow it to work on Point-to-Point or Point-to-Multipoint lines. However if you intend to connect multiple devices simultaneously to an BRI line, then the TEI should be set to 127. With a TEI of 127, the IP Office control unit will ask the exchange to allocate a TEI for operation.

Note: When connected to some manufactures equipment, which provides an S0 interface (BRI), a defaulted Control Unit will not bring up the ISDN line. Configuring the Control Unit to a TEI of 127 for that line will usually resolve this.

5.4.2.1 BRI Line

Settings

Line BRI Line	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **Card/Module:** *Software level = 4.1+.*
Indicates the card slot or expansion module being used for the trunk device providing the line.
 - For IP400 control units, SLOT A on the control unit is shown as 1, SLOT B is shown as 2. Expansion modules are numbered from 4 upwards, for example trunks on the module in Expansion Port 1 are shown as 4.
 - For IP Office 500 control units, 1 to 4 match the slots on the front of the control unit from left to right. Expansion modules are numbered from 5 upwards, for example trunks on the module in Expansion Port 1 are shown as 5.
- **Port:** *Software level = 4.1+.*
Indicates the port on the Card/Module above to which the configuration settings relate.
- **Line Number**
This parameter is not configurable; it is allocated by the system.
- **Line Sub Type:** *Default = ETSI*
Select to match the particular line type provided by the line provider.
 - **S-Bus:** *Software level = 4.2+ (IP500 BRI daughter card only).*
IP500 BRI daughter cards can be configured for So (S-Bus) operation for connection to ISDN terminal devices. Note that this requires the addition of terminating resistors at both the IP Office and remote ends, and the use of a suitable cross-over cable. For full details refer to the IP Office Installation manual.
- **Network Type:** *Default = Public, Software level = 4.2+.*
This option is available if [Restrict Network Interconnect](#)^[166] ([System | Telephony | Telephony](#)^[166]) is enabled. It allows the trunk to be set as either **Public** or **Private**. The IP Office will return number unobtainable indication to any attempt to connect a call on a **Private** trunk to a **Public** trunk or vice versa. This restriction includes transfers, forwarding and conference calls.
 - Due to the nature of this feature, its use is not recommended on systems also using any of the following other IP Office features: [Small Community Networks](#)^[792], VPNremote, Phone Manager telecommuter mode.
- **Telephone Number:**
Used to remember the external telephone number of this line to assist with loop-back testing. For information only.
- **Incoming Group ID:** *Default = 0, Range 0 to 99999.*
The Incoming Group ID to which a line belongs is used to match it to incoming call routes in the IP Office configuration. The matching incoming call route is then used to route incoming calls. The same ID can be used for multiple lines.
- **Outgoing Group ID:** *Default = 0, Range 0 to 99999.*
Short codes that specify a number to dial also specify the line group to be used. The IP Office will then seize a line with a matching Outgoing Group ID. The same ID can be used for multiple lines.
- **Prefix:** *Default = Blank.*
The prefix is used in the following ways:
 - **For incoming calls**
The ISDN messaging tags indicates the call type (National, International or Unknown). If the call type is unknown, then the number in the Prefix field is added to the ICLID.
 - **For outgoing calls**
For IP Office 3.2 and lower, when a outgoing call is presented to the line with a leading digit to dial that matches the Prefix, that digit is stripped from the number. IP Office 4.0 and higher does not strip the prefix, therefore any prefixes not suitable for external line presentation should be stripped using short codes.
- **National Prefix:** *Default = 0*
This indicates the digits to be prefixed to a incoming national call. When a number is presented from ISDN as a "national number" this prefix is added. For example 1923000000 is converted to 01923000000.
- **International Prefix:** *Default = 00*
This indicates the digits to be prefixed to an incoming international call. When a number is presented from ISDN as an "international number" this prefix is added. For example 441923000000 is converted to 00441923000000.
- **TEI:** *Default = 0*
The Terminal Equipment Identifier. Used to identify each device connected to a particular ISDN line. For Point-to-Point lines this is 0. It can also be 0 on a Point to Multipoint line, however if multiple devices are sharing a Point-to-Multipoint line it should be set to 127 which results in the exchange allocating the TEI's to be used.
- **Number of Channels:** *Default = 2. Range = 0 to 2.*
Defines the number of operational channels that are available on this line.

-
- **Outgoing Channels:** *Default = 2. Range = 0 to 2.*

This defines the number of channels available, on this line, for outgoing calls. This should normally be the same as Number of Channels field, but can be reduced to ensure incoming calls cannot be blocked by outgoing calls.

- **Voice Channels:** *Default = 2. Range = 0 to 2.*
The number of channels available for voice use.

- **Data Channels:** *Default = 2. Range = 0 to 2.*
The number of channels available for data use. If left blank, the value is 0.

- **Clock Quality:** *Default = Network*

Refer to the IP Office Installation Manual for full details. This option sets whether the IP Office should try to take its clock source for call synchronization and signalling from this line. Preference should always be given to using the clock source from a central office exchange if available by setting at least one exchange line to **Network**.

- If multiple lines are set as **Network**, the order in which those lines are used is described in the IP Office Installation Manual. If additional lines are available, **Fallback** can be used to specify a clock source to use should the **Network** source not be available.
- Lines from which the clock source should not be taken should be set as **Unsuitable**.
- If no clock source is available, the IP Office uses its own internal 8KHz clock source.
- In scenarios where several systems are network via digital trunk lines, care must be taken to ensure that all the systems use the same clock source. The current source being used by an IP Office is reported within the IP Office System Status Application.
- **Add 'Not-end-to-end ISDN' Information Element:** *Default = Never*, Software level = 4.2+.*
Sets whether the optional 'Not end-to-end ISDN' information element should be added to outgoing calls on the line. The options are **Never**, **Always** or **POTS** (only if the call was originated by an analog extension). *The default is **Never** except for the following locales; for Italy the default is **POTS**, for New Zealand the default is **Always**.
- **Supports Partial Rerouting:** *Default = Off, Software level = 4.0+.*
Partial rerouting (PR) is an ISDN feature. It is supported on external (non-network and QSIG) ISDN exchange calls. When an external call is transferred to another external number, the transfer is performed by the ISDN exchange and the channels to the IP Office are freed. Use of this service may need to be requested from the line provider and may incur a charge.
 - **Force Number Plan to ISDN:** *Default = Off, Software level = 4.2+.*
This option is only configurable when **Support Partial Rerouting** is also enabled. When selected, the plan/type parameter for Partial Rerouting is changed from **Unknown/Unknown** to **ISDN/Unknown**. For IP Office 4.0 and 4.1 the plan/type is fixed as **Unknown/Unknown**. The use of this setting will depend on line provider requirements for partial rerouting.
- **Support Call Tracing:** *Default = Off, Software level = 4.0+.*
IP Office 4.0+ supports the triggering of malicious caller ID (MCID) tracing at the ISDN exchange. Use of this feature requires liaison with the ISDN service provider and the appropriate legal authorities to whom the call trace will be passed. The user will also need to be enabled for call tracing and be provided with either a short code or programmable button to activate MCID call trace. Refer to [Malicious Call Tracing](#)^[73b] in the Telephone Features section for full details.
- **Active CCBS Support:** *Default = Off, Software level = 4.0+.*
Call completion to a busy subscriber (CCBS). It allows automatic callback to be used on outgoing ISDN calls when the destination is busy. This feature can only be used on point-to-point trunks. Use of this service may need to be requested from the line provider and may incur a charge.
- **Passive CCBS:** *Default = Off, Software level = 4.0+.*
- **Cost Per Charging Unit:** *Software level = 4.0+.*
Advice of charge (AOC) information can be display on T3/T3IP phones and stored by the IP Office Delta Server application. The information is provided in the form of charge units. This setting is used to enter the call cost per charging unit set by the line provider. The values are 1/10,000th of a currency unit. For example if the call cost per unit is £1.07, a value of 10700 should be set on the line. Refer to [Advice of Charge](#)^[72a] in the Telephone Features section.

5.4.2.2 Channels

This tab allows settings for individual channels within the trunk to be adjusted. To edit a channel either double-click on it or click the channel and then select **Edit**.

To edit multiple channels at the same time, select the required channels using Ctrl or Shift and then click **Edit**. When editing multiple channels, fields that must be unique such as **Line Appearance ID** are not shown.

Line Channels (BRI)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **Line Appearance ID:** *Default = Auto-assigned, Range = 2 to 9 digits, Software level = 3.0+.*
Used for configuring Line Appearances with button programming. The line appearance ID must be unique and not match any extension number. Line appearance is not supported for trunks set to QSIG operation and is not recommended for trunks be used for DID.

5.4.3 E1 Line



PRI trunks are provided by the installation of a PRI trunk card into the IP Office control unit. IP400 PRI cards are available in E1, E1R2 and T1/US PRI variants. The IP500 PRI-U trunk card can be configured (see below) to one of those line types. The cards are also available with either 1 or 2 physical ports. The number of B-channels supported by each physical port depends on the line type of the card.

- **E1:** 30 B-channels and 1 D-channel per port.
- **T1:** 24 B-channels per port.
- **US PRI:** 23 B-channels and 1 D-channel per port.
- **E1-R2:** 30 B-channels and 1 D-channel per port.

The Small Office Edition control unit only supports a 1 single port IP400 T1 PRI trunk card.

Dual port PRI trunk cards are only supported in Slot A of the IP406 V2 control unit or any slot of the IP412 and IP500 control units.

For full details of installation refer to the IP Office Installation manual.

IP500 PRI-U Trunk Card Line Type

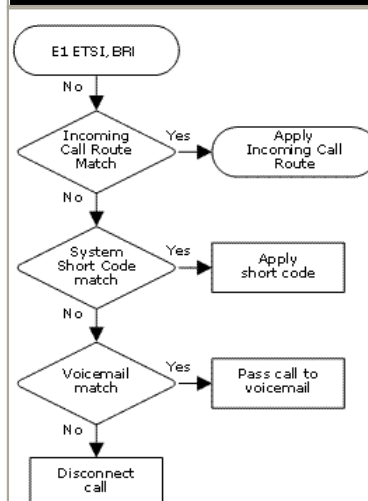
The IP500 PRI-U card can be configured to support either E1, T1 or E1-R2 PRI line types. To select the line type required, right-click on the line in the group or navigation pane and select **Change Universal PRI Card Line Type**.

The IP500 supports 8 B-channels on port of any IP500 PRI-U card fitted. Additional B-channels up to the full capacity of IP500 PRI-U ports installed require **IP500 Universal PRI (Additional Channels)** licenses added to the configuration. D-channels are not affected by licensing.

- For ETSI and QSIG trunks, **IP500 Universal PRI (Additional Channels)** licenses are consumed by the number of calls in progress on B-channels.
- For T1, E1R2 and ETSI CHI trunks, **IP500 Universal PRI (Additional Channels)** licenses are consumed by the channels set as in service.

Each E1 trunk port can be set to either **ETSI** or **QSIG** line sub type. The selected sub type affects how incoming calls are handled.

Incoming Call Routing: E1 ETSI, BRI



The following options are used to route incoming calls received on this type of trunk.

1. Incoming Call Route

The IP Office checks for a match to the Incoming Line Group plus, if set, the incoming number and or ICLID.

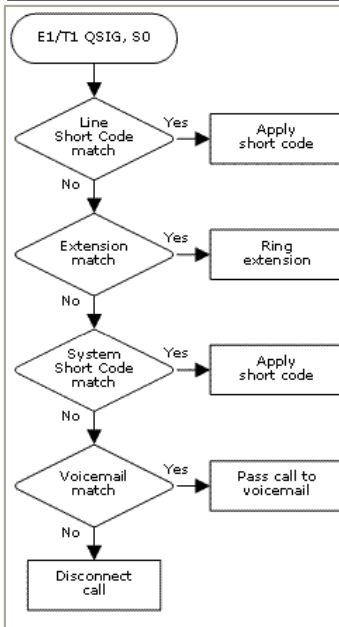
2. System Short Code

The IP Office checks for a short code match based on the incoming number.

3. Voicemail Match

The IP Office checks for a call flow start point name matching the incoming number.

Incoming Call Routing: E1 QSIG and S0 Lines



The following options are used to route incoming calls received on this type of trunk.

1. Line Short Code Match

The IP Office checks for a short code match based on the incoming number.

2. Extension Match

The IP Office checks for an extension match based on the incoming number.

3. System Short Code

The IP Office checks for a short code match based on the incoming number.

4. Voicemail Match

The IP Office checks for a call flow start point name matching the incoming number.

5.4.3.1 PRI Line

Line PRI Line (E1)	
Control Unit	SOE  , IP403  , IP406 V1  , IP406 V2  , IP412  , IP500  .
Software Level	1.0+.
Mergeable	 .

- **Line Number**
This parameter is not configurable; it is allocated by the system.
- **Line Sub Type:**
Select to match the particular line type provided by the line provider. E1 PRI trunks support **ETSI**, **ETSI CHI**, **QSIG A** or **QSIG B**.
 - **ETSI CHI** is used to send the channel allocation ID (CHI) in the call setup signalling. This is a request to use a particular B-channel rather than use any B-channel allocated by the central office exchange.
 - **QSIG** is not supported on IP500 systems without IP500 Voice Networking licenses.
- **Card/Module:** *Software level = 4.1+.*
Indicates the card slot or expansion module being used for the trunk device providing the line.
 - For IP400 control units, SLOT A on the control unit is shown as 1, SLOT B is shown as 2. Expansion modules are numbered from 4 upwards, for example trunks on the module in Expansion Port 1 are shown as 4.
 - For IP Office 500 control units, 1 to 4 match the slots on the front of the control unit from left to right. Expansion modules are numbered from 5 upwards, for example trunks on the module in Expansion Port 1 are shown as 5.
- **Port:** *Software level = 4.1+.*
Indicates the port on the Card/Module above to which the configuration settings relate.
- **Network Type:** *Default = Public, Software level = 4.2+.*
This option is available if [Restrict Network Interconnect](#)^[166] ([System | Telephony | Telephony](#)^[166]) is enabled. It allows the trunk to be set as either **Public** or **Private**. The IP Office will return number unobtainable indication to any attempt to connect a call on a **Private** trunk to a **Public** trunk or vice versa. This restriction includes transfers, forwarding and conference calls.
 - Due to the nature of this feature, its use is not recommended on systems also using any of the following other IP Office features: [Small Community Networks](#)^[792], VPNremote, Phone Manager telecommuter mode.
- **Telephone Number:**
Used to remember the external telephone number of this line to assist with loop-back testing. For information only.
- **Channel Allocation:** *Default = 30->1, Software level = 4.2+.*
For lines set to **ETSI CHI**, this option allows the IP Office to select the default order in which channels should be used for outgoing calls. Typically this is set as the opposite of the default order in which the central office exchange uses channels for incoming calls.
- **Incoming Group ID:** *Default = 0, Range 0 to 99999.*
The Incoming Group ID to which a line belongs is used to match it to incoming call routes in the IP Office configuration. The matching incoming call route is then used to route incoming calls. The same ID can be used for multiple lines.
- **Outgoing Group ID:** *Default = 0, Range 0 to 99999.*
Short codes that specify a number to dial also specify the line group to be used. The IP Office will then seize a line with a matching Outgoing Group ID. The same ID can be used for multiple lines.
 - For IP Office 4.2+, for lines set to the **Line Sub Type** of **ETSI CHI**, the **Incoming Group ID** is set as part of the individual [channel](#)^[208] settings.
- **Prefix:** *Default = Blank.*
The prefix is used in the following ways:
 - **For incoming calls**
The ISDN messaging tags indicates the call type (National, International or Unknown). If the call type is unknown, then the number in the Prefix field is added to the ICLID.
 - **For outgoing calls**
For IP Office 3.2 and lower, when a outgoing call is presented to the line with a leading digit to dial that matches the Prefix, that digit is stripped from the number. IP Office 4.0 and higher does not strip the prefix, therefore any prefixes not suitable for external line presentation should be stripped using short codes.
- **National Prefix:** *Default = 0*
This indicates the digits to be prefixed to a incoming national call. When a number is presented from ISDN as a "national number" this prefix is added. For example 1923000000 is converted to 01923000000.

- **International Prefix:** *Default = 00*

This indicates the digits to be prefixed to an incoming international call. When a number is presented from ISDN as an "international number" this prefix is added. For example 441923000000 is converted to 00441923000000.

- **TEI:** *Default = 0*

The Terminal Equipment Identifier. Used to identify each Control Unit connected to a particular ISDN line. For Point to Point lines this is typically (always) 0. It can also be 0 on a Point to Multi-Point line, however if multiple devices are sharing a Point to Multi-Point line it should be set to 127 which results in the exchange deciding on the TEI's to be used.

- **Number of Channels**

Defines the number of operational channels that are available on this line. Up to 30 for E1 PRI, 23 for T1 PRI.

- **Outgoing Channels**

This defines the number of channels available, on this line, for outgoing calls. This should normally be the same as **Number of Channels** field, but can be reduced to ensure incoming calls cannot be blocked by outgoing calls. Only available when the **Line Sub Type** is set to **ETSI**.

- **Voice Channels**

The number of channels available for voice use. Only available when the **Line Sub Type** is set to **ETSI**.

- **Data Channels**

The number of channels available for data use. Only available when the **Line Sub Type** is set to **ETSI**.

- **CRC Checking:** *Default = On*

Switches CRC on or off.

- **Line Signalling:** *Default = CPE*

This option is not used for lines where the **Line SubType** is set to **QSIG**. Select either **CPE** (customer premises equipment) or **CO** (central office). The **CO** feature is intended to be used primarily as a testing aid. It allows PRI lines to be tested in a back-to-back configuration, using crossover cables.

- The CO feature operates on this line type by modifying the way in which incoming calls are disconnected for IP Office configuration in Brazil and Argentina. In these locales, the CO setting uses Forced-Release instead of Clear-Back to disconnect incoming calls. The Brazilian Double-Seizure mechanism, used to police Collect calls, is also disabled in CO mode.

- **Clock Quality:** *Default = Network*

Refer to the IP Office Installation Manual for full details. This option sets whether the IP Office should try to take its clock source for call synchronization and signalling from this line. Preference should always be given to using the clock source from a central office exchange if available by setting at least one exchange line to **Network**.

- If multiple lines are set as **Network**, the order in which those lines are used is described in the IP Office Installation Manual. If additional lines are available, **Fallback** can be used to specify a clock source to use should the **Network** source not be available.
- Lines from which the clock source should not be taken should be set as **Unsuitable**.
- If no clock source is available, the IP Office uses its own internal 8KHz clock source.
- In scenarios where several systems are network via digital trunk lines, care must be taken to ensure that all the systems use the same clock source. The current source being used by an IP Office is reported within the IP Office System Status Application.

- **Add 'Not-end-to-end ISDN' Information Element:** *Default = Never*, Software level = 4.2+.*

Sets whether the optional 'Not end-to-end ISDN' information element should be added to outgoing calls on the line. The options are **Never**, **Always** or **POTS** (only if the call was originated by an analog extension). *The default is **Never** except for the following locales; for Italy the default is **POTS**, for New Zealand the default is **Always**.

- **Supports Partial Rerouting:** *Default = Off, Software level = 4.0+.*

Partial rerouting (PR) is an ISDN feature. It is supported on external (non-network and QSIG) ISDN exchange calls. When an external call is transferred to another external number, the transfer is performed by the ISDN exchange and the channels to the IP Office are freed. Use of this service may need to be requested from the line provider and may incur a charge.

- **Force Number Plan to ISDN:** *Default = Off, Software level = 4.2+.*

This option is only configurable when **Support Partial Rerouting** is also enabled. When selected, the plan/type parameter for Partial Rerouting is changed from **Unknown/Unknown** to **ISDN/Unknown**. For IP Office 4.0 and 4.1 the plan/type is fixed as **Unknown/Unknown**. The use of this setting will depend on line provider requirements for partial rerouting.

- **Support Call Tracing:** *Default = Off, Software level = 4.0+.*

IP Office 4.0+ supports the triggering of malicious caller ID (MCID) tracing at the ISDN exchange. Use of this feature requires liaison with the ISDN service provider and the appropriate legal authorities to whom the call trace will be passed. The user will also need to be enabled for call tracing and be provided with either a short code or programmable button to activate MCID call trace. Refer to [Malicious Call Tracing](#)^[738] in the Telephone Features section for full details.

- **Active CCBS Support:** *Default = Off, Software level = 4.0+.*

Call completion to a busy subscriber (CCBS). It allows automatic callback to be used on outgoing ISDN calls when the destination is busy. This feature can only be used on point-to-point trunks. Use of this service may need to be requested from the line provider and may incur a charge.

-
- **Passive CCBS:** *Default = Off, Software level = 4.0+.*

- **Cost Per Charging Unit:** *Software level = 4.0+.*

Advice of charge (AOC) information can be display on T3/T3IP phones and stored by the IP Office Delta Server application. The information is provided in the form of charge units. This setting is used to enter the call cost per charging unit set by the line provider. The values are 1/10,000th of a currency unit. For example if the call cost per unit is £1.07, a value of 10700 should be set on the line. Refer to [Advice of Charge](#)^[723] in the Telephone Features section.

The following fields are shown for a US T1 trunk card set to ETSI or QSIG operation. These cards have the same settings E1 PRI trunk cards set to ETSI or QSIG but only support 23 channels.

- **CSU Operation**

Tick this field to enable the T1 line to respond to loop-back requests from the line.

- **Haul Length:** *Default = 0-115 feet*

Sets the line length to a specific distance.

- **Channel Unit:** *Default = Foreign Exchange*

This field should be set to match the channel signaling equipment provided by the Central Office. The options are Foreign Exchange, Special Access or Normal.

5.4.3.2 Short Codes

Line short codes can be applied to the digits received with incoming call. The stage at which they are applied also varies depending on the trunk type.

- **IP Trunks**

Line short codes are used if Small Community Networking (SCN) is not being used or no SCN user extension match occurs on the digits received.

- **QSIG and SO Trunks**

S₀ trunks, and E1 and T1 trunks set to QSIG mode use line short code.

Line H323 Line Short Codes	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

Short codes can be added and edited using the **Add**, **Remove** and **Edit** buttons. Alternatively you can right-click on the list of existing short code to add and edit short codes.

5.4.3.3 Channels

This tab allows settings for individual channels within the trunk to be adjusted. To edit a channel either double-click on it or click the channel and then select **Edit**.

To edit multiple channels at the same time, select the required channels using Ctrl or Shift and then click **Edit**. When editing multiple channels, fields that must be unique such as **Line Appearance ID** are not shown.

Line Channels (E1 PRI)	
Control Unit	SOE ✗, IP403 ✔, IP406 V1 ✔, IP406 V2 ✔, IP412 ✔, IP500 ✔.
Software Level	1.0+.
Mergeable	✗.

- **Line Appearance ID:** *Default = Auto-assigned, Range = 2 to 9 digits, Software level = 3.0+.*
Used for configuring Line Appearances with button programming. The line appearance ID must be unique and not match any extension number. Line appearance is not supported for trunks set to QSIG operation and is not recommended for trunks be used for DID.
 - For IP Office 4.2+, if the trunk **Line Sub Type** is set to **ETSI CHI**, outgoing line appearance calls must use the correspond channel.

For IP Office 4.2+, the following additional fields are shown for lines where the **Line Sub Type** is set to **ETSI CHI**.

- **Incoming Group ID:** *Default = 0, Range 0 to 99999.*
The Incoming Group ID to which a line belongs is used to match it to incoming call routes in the IP Office configuration. The matching incoming call route is then used to route incoming calls. The same ID can be used for multiple lines.
- **Outgoing Group ID:** *Default = 0, Range 0 to 99999.*
Short codes that specify a number to dial also specify the line group to be used. The IP Office will then seize a line with a matching Outgoing Group ID. The same ID can be used for multiple lines.
- **Direction:** *Default = Bothways*
Controls the direction of calls allowed on the channel. Options are **Bothways**, **Incoming** or **Outgoing**.
- **Bearer:** *Default = Any.*
Allows selection of the type of call that can use the channel. Options are **Any**, **Data** or **Voice**.
- **Admin:** *Default = Out of Service.*
This field can be used to indicate whether the channel is in use or not. On trunks where only a limited number of channels have been requested from the trunk provider (known as sub-equipped trunks), those channels not provided should be set as **Out of Service**. For channels that are available but are temporarily not being used select **Maintenance**.
- **Tx Gain:** *Default = 0dB, Range = -10dBb to +5dB.*
The transmit gain in dB.
- **Rx Gain:** *Default = 0dB, Range = -10dBb to +5dB.*
The receive gain in dB.

5.4.4 E1R2 Line



PRI trunks are provided by the installation of a PRI trunk card into the IP Office control unit. IP400 PRI cards are available in E1, E1R2 and T1/US PRI variants. The IP500 PRI-U trunk card can be configured (see below) to one of those line types. The cards are also available with either 1 or 2 physical ports. The number of B-channels supported by each physical port depends on the line type of the card.

- **E1:** 30 B-channels and 1 D-channel per port.
- **T1:** 24 B-channels per port.
- **US PRI:** 23 B-channels and 1 D-channel per port.
- **E1-R2:** 30 B-channels and 1 D-channel per port.

The Small Office Edition control unit only supports a 1 single port IP400 T1 PRI trunk card.

Dual port PRI trunk cards are only supported in Slot A of the IP406 V2 control unit or any slot of the IP412 and IP500 control units.

For full details of installation refer to the IP Office Installation manual.

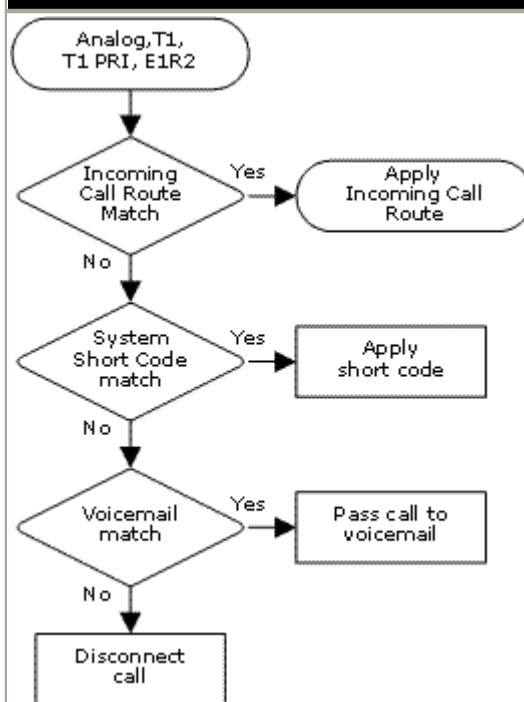
IP500 PRI-U Trunk Card Line Type

The IP500 PRI-U card can be configured to support either E1, T1 or E1-R2 PRI line types. To select the line type required, right-click on the line in the group or navigation pane and select **Change Universal PRI Card Line Type**.

The IP500 supports 8 B-channels on port of any IP500 PRI-U card fitted. Additional B-channels up to the full capacity of IP500 PRI-U ports installed require **IP500 Universal PRI (Additional Channels)** licenses added to the configuration. D-channels are not affected by licensing.

- For ETSI and QSIG trunks, **IP500 Universal PRI (Additional Channels)** licenses are consumed by the number of calls in progress on B-channels.
- For T1, E1R2 and ETSI CHI trunks, **IP500 Universal PRI (Additional Channels)** licenses are consumed by the channels set as in service.

Incoming Call Routing: Analog, T1, T1 ISDN and E1R2 Trunks



The following options are used to route incoming calls received on this type of trunk.

1. Incoming Call Route

Based on matching the Incoming Line Group plus if set the incoming number and or ICLID.

2. System Short Code

The IP Office checks for a short code match based on the incoming number.

3. Voicemail Match

The IP Office checks for a call flow start point name matching the incoming number.

5.4.4.1 E1-R2 Options (Line)

Line Line (E1-R2)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.4+.
Mergeable	✗.

- **Card/Module:** *Software level = 4.1+.*
Indicates the card slot or expansion module being used for the trunk device providing the line.
 - For IP400 control units, SLOT A on the control unit is shown as 1, SLOT B is shown as 2. Expansion modules are numbered from 4 upwards, for example trunks on the module in Expansion Port 1 are shown as 4.
 - For IP Office 500 control units, 1 to 4 match the slots on the front of the control unit from left to right. Expansion modules are numbered from 5 upwards, for example trunks on the module in Expansion Port 1 are shown as 5.
- **Port:** *Software level = 4.1+.*
Indicates the port on the Card/Module above to which the configuration settings relate.
- **Network Type:** *Default = Public, Software level = 4.2+.*
This option is available if [Restrict Network Interconnect](#) (System | Telephony | Telephony) is enabled. It allows the trunk to be set as either **Public** or **Private**. The IP Office will return number unobtainable indication to any attempt to connect a call on a **Private** trunk to a **Public** trunk or vice versa. This restriction includes transfers, forwarding and conference calls.
 - Due to the nature of this feature, its use is not recommended on systems also using any of the following other IP Office features: [Small Community Networks](#), VPNremote, Phone Manager telecommuter mode.
- **Line Number:**
Allocated by the system.
- **Line SubType:** *Default = E1-R2*
Supported options are **E1-R2**, **ETSI**, **QSIGA** or **QSIGB**.
 - QSIG is not supported on IP500 systems without IP500 Voice Networking licenses.
- **Channel Allocation:** *Default = 30 -> 1*
The order, **30 -> 1** or **1 -> 30**, in which channels are used.
- **Country (Locale):** *Default = Mexico.*
Select the locale that matches the area of usage. Note that changing the locale will return the MFC Group settings to the defaults for the selected locale. Currently supported locales Argentina, Brazil, China, India, Korea, Mexico and None.

The table at the base of the form displays the settings for the individual channels provided by the line. For details of the channel settings see [Edit Channel \(E1-R2\)](#).

To edit a channel, either double-click on it or right-click and select Edit. This will display the [Edit Channel](#) dialog box. To edit multiple channels at the same time select the channels whilst pressing the Shift or Ctrl key. Then right-click and select Edit.

5.4.4.2 Channels

This tab allows settings for individual channels within the trunk to be adjusted. To edit a channel, select the required channel or channels and click **Edit**.

Line Channels (E1-R2)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.4+.
Mergeable	✗.

The channel settings are split into two sub-tabs, **E1R2 Edit Channel** and **Timers**.

E1R2 Edit Channel Settings

- **Channel**
The channel or channels being edited.
- **Incoming Group ID:** *Default = 0, Range 0 to 99999.*
The Incoming Group ID to which a line belongs is used to match it to incoming call routes in the IP Office configuration. The matching incoming call route is then used to route incoming calls. The same ID can be used for multiple lines.
- **Outgoing Group ID:** *Default = 0, Range 0 to 99999.*
Short codes that specify a number to dial also specify the line group to be used. The IP Office will then seize a line with a matching Outgoing Group ID. The same ID can be used for multiple lines.
- **Direction:** *Default = Both Directions*
The direction of calls on the channel (**Incoming**, **Outgoing** or **Both Directions**).
- **Bearer:** *Default = Any*
The type of traffic carried by the channel (**Voice**, **Data** or **Any**).
- **Line Signaling Type:** *Default = R2 Loop Start*
The signaling type used by the channel. Current supported options are: **R2 Loop Start**, **R2 DID**, **R2 DOD**, **R2 DIOD**, **Tie Immediate Start**, **Tie Wink Start**, **Tie Delay Dial**, **Tie Automatic**, **WAN Service** and **Out of Service**.
- **Dial Type:** *Default = MFC Dialing*
The type of dialing supported by the channel; **MFC Dialing**, **Pulse Dialing** or **DTMF Dialing**.

Timers Settings

This sub-tab displays the various timers provided for E1-R2 channels. These should only be adjusted when required to match the line provider's settings.

5.4.4.3 MFC Group

These tabs show the parameter assigned to each signal in an MFC group. The defaults are set according to the Country (Locale) on the Line tab. All the values can be returned to default by the **Default All** button on the **Advanced** tab.

To change a setting either double-click on it or right-click and select **Edit**.

Line MFC Group (E1-R2)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.4+.
Mergeable	✗.

5.4.4.4 Advanced

Line Advanced (E1-R2)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.4+.
Mergeable	✗.

- **Zero Suppression:** *Default = HDB3*
Selects the method of zero suppression used (HDB3 or AMI).
- **Clock Quality:** *Default = Network*
Refer to the IP Office Installation Manual for full details. This option sets whether the IP Office should try to take its clock source for call synchronization and signalling from this line. Preference should always be given to using the clock source from a central office exchange if available by setting at least one exchange line to **Network**.
 - If multiple lines are set as **Network**, the order in which those lines are used is described in the IP Office Installation Manual. If additional lines are available, **Fallback** can be used to specify a clock source to use should the **Network** source not be available.
 - Lines from which the clock source should not be taken should be set as **Unsuitable**.
 - If no clock source is available, the IP Office uses its own internal 8KHz clock source.
 - In scenarios where several systems are network via digital trunk lines, care must be taken to ensure that all the systems use the same clock source. The current source being used by an IP Office is reported within the IP Office System Status Application.
- **Pulse Metering Bit:** *Default = A Bit*
Sets which bit should be used to indicate the pulse metering signal; **A Bit**, **B Bit** or **C Bit**.
- **Line Signaling:** *Default = CPE*
Select either **CPE** or **CO**. The **CO** feature is intended to be used primarily as a testing aid. It allows T1 and E1 lines to be tested in a back-to-back configuration, using crossover (QSIG) cables.
 - The CO feature operates by modifying the way in which incoming calls are disconnected for IP Office configuration in Brazil and Argentina. In these locales, the CO setting uses Forced-Release instead of Clear-Back to disconnect incoming calls. The Brazilian Double-Seizure mechanism used to police Collect calls, is also disabled in CO mode.
- **Incoming Routing Digits:** *Default = 4*
Sets the number of incoming digits used for incoming call routing.
- **CRC Checking:** *Default = Ticked (On)*
Switches CRC on or off.
- **Default All Group Settings**
Default the MFC Group tab settings.
- **Line Signaling Timers:**
To edit one of these timers, either double-click on the timer or right-click on a timer and select the action required.

5.4.5 T1 Line



PRI trunks are provided by the installation of a PRI trunk card into the IP Office control unit. IP400 PRI cards are available in E1, E1R2 and T1/US PRI variants. The IP500 PRI-U trunk card can be configured (see below) to one of those line types. The cards are also available with either 1 or 2 physical ports. The number of B-channels supported by each physical port depends on the line type of the card.

- **E1:** 30 B-channels and 1 D-channel per port.
- **T1:** 24 B-channels per port.
- **US PRI:** 23 B-channels and 1 D-channel per port.
- **E1-R2:** 30 B-channels and 1 D-channel per port.

The Small Office Edition control unit only supports a 1 single port IP400 T1 PRI trunk card.

Dual port PRI trunk cards are only supported in Slot A of the IP406 V2 control unit or any slot of the IP412 and IP500 control units.

For full details of installation refer to the IP Office Installation manual.

IP500 PRI-U Trunk Card Line Type

The IP500 PRI-U card can be configured to support either E1, T1 or E1-R2 PRI line types. To select the line type required, right-click on the line in the group or navigation pane and select **Change Universal PRI Card Line Type**.

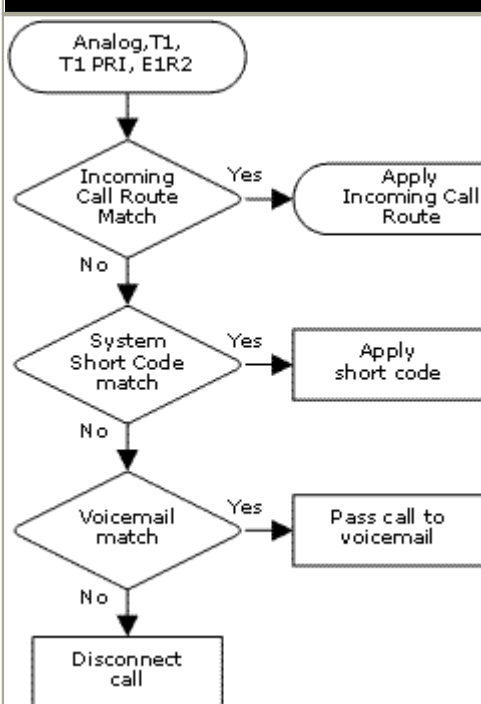
The IP500 supports 8 B-channels on port of any IP500 PRI-U card fitted. Additional B-channels up to the full capacity of IP500 PRI-U ports installed require **IP500 Universal PRI (Additional Channels)** licenses added to the configuration. D-channels are not affected by licensing.

- For ETSI and QSIG trunks, **IP500 Universal PRI (Additional Channels)** licenses are consumed by the number of calls in progress on B-channels.
- For T1, E1R2 and ETSI CHI trunks, **IP500 Universal PRI (Additional Channels)** licenses are consumed by the channels set as in service.

• Dialing Complete

The majority of North-American telephony services use en-bloc dialing. Therefore the use of a ; is recommended at the end of all dialing short codes that use an N. This is also recommended for all dialing where secondary dial tone short codes are being used.

Incoming Call Routing: Analog, T1, T1 ISDN and E1R2 Trunks



The following options are used to route incoming calls received on this type of trunk.

1. Incoming Call Route

Based on matching the Incoming Line Group plus if set the incoming number and or ICLID.

2. System Short Code

The IP Office checks for a short code match based on the incoming number.

3. Voicemail Match

The IP Office checks for a call flow start point name matching the incoming number.

5.4.5.1 Line

Line Line (T1)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **Line Number:**
Allocated by the system.
- **Card/Module:** *Software level = 4.1+.*
Indicates the card slot or expansion module being used for the trunk device providing the line.
 - For IP400 control units, SLOT A on the control unit is shown as 1, SLOT B is shown as 2. Expansion modules are numbered from 4 upwards, for example trunks on the module in Expansion Port 1 are shown as 4.
 - For IP Office 500 control units, 1 to 4 match the slots on the front of the control unit from left to right. Expansion modules are numbered from 5 upwards, for example trunks on the module in Expansion Port 1 are shown as 5.
- **Port:** *Software level = 4.1+.*
Indicates the port on the Card/Module above to which the configuration settings relate.
- **Network Type:** *Default = Public, Software level = 4.2+.*
This option is available if [Restrict Network Interconnect](#)^[166] ([System | Telephony | Telephony](#)^[166]) is enabled. It allows the trunk to be set as either **Public** or **Private**. The IP Office will return number unobtainable indication to any attempt to connect a call on a **Private** trunk to a **Public** trunk or vice versa. This restriction includes transfers, forwarding and conference calls.
 - Due to the nature of this feature, its use is not recommended on systems also using any of the following other IP Office features: [Small Community Networks](#)^[792], VPNremote, Phone Manager telecommuter mode.
- **Line Sub Type:** *Default = T1*
Set to T1 for a T1 line. For PRI see [Line Form \(US PRI\)](#)^[218]. If set to ETSI, QSIG A or QSIG B see [Line \(E1\)](#)^[204].
- **Channel Allocation:** *Default = 24 -> 1*
The order, 24 to 1 or 1 to 24, in which channels are used.
- **Prefix:** *Default = Blank*
Enter the number to prefix to all incoming numbers for callback. This is useful if all users must dial a prefix to access an outside line. The prefix is automatically placed in front of all incoming numbers so that users can dial the number back.
- **Framing:** *Default = ESF*
Selects the type of signal framing used (**ESF** or **D4**).
- **Zero Suppression:** *Default = B8ZS*
Selects the method of zero suppression used (**B8ZS** or **AMI ZCS**).
- **Clock Quality:** *Default = Network*
Refer to the IP Office Installation Manual for full details. This option sets whether the IP Office should try to take its clock source for call synchronization and signalling from this line. Preference should always be given to using the clock source from a central office exchange if available by setting at least one exchange line to **Network**.
 - If multiple lines are set as **Network**, the order in which those lines are used is described in the IP Office Installation Manual. If additional lines are available, **Fallback** can be used to specify a clock source to use should the **Network** source not be available.
 - Lines from which the clock source should not be taken should be set as **Unsuitable**.
 - If no clock source is available, the IP Office uses its own internal 8KHz clock source.
 - In scenarios where several systems are network via digital trunk lines, care must be taken to ensure that all the systems use the same clock source. The current source being used by an IP Office is reported within the IP Office System Status Application.
- **Haul Length:** *Default = 0-115 feet*
Sets the line length to a specific distance.
- **Channel Unit:** *Default = Foreign Exchange*
This field should be set to match the channel signaling equipment provided by the Central Office. The options are Foreign Exchange, Special Access or Normal.
- **CRC Checking:** *Default = On*
Turns CRC on or off.

- **Line Signaling:** *Default = CPE*

This field affects T1 channels set to Loop-Start or Ground-Start. The field can be set to either CPE (Customer Premises Equipment) or CO (Central Office). This field should normally be left at its default of CPE. The setting CO is normally only used in lab back-to-back testing.

- **Incoming Routing Digits:** *Default=0 (present call immediately)*

Sets the number of routing digits expected on incoming calls. This allows the line to present the call to the system once the expected digits have been received rather than waiting for the digits timeout to expire. This field only affects T1 line channels set to E&M Tie, E&M DID, E&M Switched 56K and Direct Inward Dial.

- **CSU Operation:**

Tick this field to enable the T1 line to respond to loop-back requests from the line.

- **Enhanced Called Party Number:** *Default = Off*

This option is not supported for systems set to the United States locale. Normally the dialed number length is limited to 15 digits. Selecting this option increases the allowed dialed number length to 30 digits.

5.4.5.2 Channels

The settings for each channel can be edited. Users have the option of editing individual channels by double-clicking on the channel or selecting and editing multiple channels at the same time. Note that the Line Appearance ID cannot be updated when editing multiple channels.

When editing a channel or channels, the settings available are displayed on two sub-tabs; T1 Edit Channel and Timers.

Line Channels (T1)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

T1 Edit Channel Sub-Tab Settings

- **Channel**
Allocated by the system.
- **Incoming Group ID:** *Default = 0, Range 0 to 99999.*
The Incoming Group ID to which a line belongs is used to match it to incoming call routes in the IP Office configuration. The matching incoming call route is then used to route incoming calls. The same ID can be used for multiple lines.
- **Outgoing Group ID:** *Default = 0, Range 0 to 99999.*
Short codes that specify a number to dial also specify the line group to be used. The IP Office will then seize a line with a matching Outgoing Group ID. The same ID can be used for multiple lines.
- **Line Appearance ID:** *Default = Auto-assigned, Range = 2 to 9 digits, Software level = 3.0+.*
Used for configuring Line Appearances with button programming. The line appearance ID must be unique and not match any extension number. Line appearance is not supported for trunks set to QSIG operation and is not recommended for trunks be used for DID.
- **Direction:** *Default = Bothway*
The direction of calls on the channel (**Incoming**, **Outgoing** or **Bothway**).
- **Bearer:** *Default = Any*
The type of traffic carried by the channel.
- **Type:** *Default = Out of Service*
The T1 emulates the following connections (**Ground-Start**, **Loop-Start**, **E&M - TIE**, **E&M - DID**, **E&M Switched 56K**, **Direct Inward Dial**, **Clear Channel 64K** or **Out of Service**). Trunks set to **E&M - DID** will only accept incoming calls.
 - If **E&M - TIE** is selected and the **Outgoing Trunk Type** is set to **Automatic**, no secondary dial tone is provided for outgoing calls on this line/trunk.
- **Dial Type:** *Default = DTMF Dial*
Select the dialing method required (**DTMF Dial** or **Pulse Dial**).
- **Incoming Trunk Type:** *Default = Wink-Start*
Used for E&M types only. The handshake method for incoming calls (**Automatic**, **Immediate**, **Delay Dial** or **Wink-Start**).
- **Outgoing Trunk Type:** *Default = Wink-Start*
Used for E&M types only. The handshake method for outgoing calls (**Automatic**, **Immediate**, **Delay Dial** or **Wink-Start**).
 - If the line Type is set to **E&M-TIE** and the **Outgoing Trunk Type** is set to **Automatic**, no secondary dial tone is provided for outgoing calls on this line/trunk.
- **Tx Gain:** *Default = 0dB*
The transmit gain in dB.
- **Rx Gain:** *Default = 0dB*
The receive gain in dB.

Timers Sub-Tab Settings

This sub-tab allows various timers relating to operation of an individual channel to be adjusted. These should only be adjusted to match the requirements of the line provider. The following is a list of the default values. To reset a value, click on the current value and then right click and select from the default, minimize and maximize options displayed.

- **Outgoing Seizure:** 10.
- **Wink Start:** 5000.
- **Wink Validated:** 80.
- **Wink End:** 350.
- **Wink Signal:** 200.
- **Incoming Dial Guard:** 50.
- **First Incoming Digit:** 15000.
- **Incoming Inter Digit:** 5000.

- **Delay End:** 5000.
- **Outgoing Dial Guard:** 590.
- **Outgoing IMM Dial Guard:** 1500.
- **Outgoing Pulse Dial Break:** 60.
- **Outgoing Pulse Dial Make:** 40.
- **Outgoing Pulse Dial Inter Digit:** 720.
- **Outgoing Pulse Dial Pause:** 1500.
- **Flash Hook Generation:** 500.
- **Outgoing End of Dial:** 1000.
- **Answer Supervision:** 300.
- **Incoming Confirm:** 20.
- **Incoming Automatic Delay:** 410.
- **Incoming Wink Delay:** 100.
- **Maximum Inter Digit:** 300.
- **Flash Hook Detect:** 240.
- **Incoming Disconnect:** 300.
- **Incoming Disconnect Guard:** 800.
- **Disconnected Signal Error:** 240000.
- **Outgoing Disconnect:** 300.
- **Outgoing Disconnect Guard:** 800.
- **Ring Verify Duration:** 220.
- **Ring Abandon:** 6300.
- **Ping Verify:** 600.
- **Long Ring Time:** 1100.
- **Silent Interval:** 1100.

5.4.6 T1 PRI Line



PRI trunks are provided by the installation of a PRI trunk card into the IP Office control unit. IP400 PRI cards are available in E1, E1R2 and T1/US PRI variants. The IP500 PRI-U trunk card can be configured (see below) to one of those line types. The cards are also available with either 1 or 2 physical ports. The number of B-channels supported by each physical port depends on the line type of the card.

- **E1:** 30 B-channels and 1 D-channel per port.
- **T1:** 24 B-channels per port.
- **US PRI:** 23 B-channels and 1 D-channel per port.
- **E1-R2:** 30 B-channels and 1 D-channel per port.

The Small Office Edition control unit only supports a 1 single port IP400 T1 PRI trunk card.

Dual port PRI trunk cards are only supported in Slot A of the IP406 V2 control unit or any slot of the IP412 and IP500 control units.

For full details of installation refer to the IP Office Installation manual.

IP500 PRI-U Trunk Card Line Type

The IP500 PRI-U card can be configured to support either E1, T1 or E1-R2 PRI line types. To select the line type required, right-click on the line in the group or navigation pane and select **Change Universal PRI Card Line Type**.

The IP500 supports 8 B-channels on port of any IP500 PRI-U card fitted. Additional B-channels up to the full capacity of IP500 PRI-U ports installed require **IP500 Universal PRI (Additional Channels)** licenses added to the configuration. D-channels are not affected by licensing.

- For ETSI and QSIG trunks, **IP500 Universal PRI (Additional Channels)** licenses are consumed by the number of calls in progress on B-channels.
- For T1, E1R2 and ETSI CHI trunks, **IP500 Universal PRI (Additional Channels)** licenses are consumed by the channels set as in service.

Each physical trunk port supports up to 24 channels in T1 mode, 23 channels in PRI and QSIG modes.

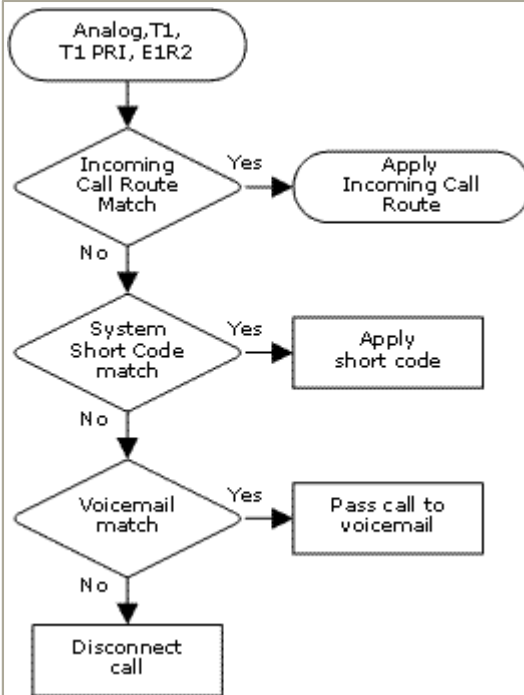
- **Dialing Complete**

The majority of North-American telephony services use en-bloc dialing. Therefore the use of a ; is recommended at the end of all dialing short codes that use an N. This is also recommended for all dialing where secondary dial tone short codes are being used.

- **AT&T Provider Settings**

For AT&T operation two information elements, TNS (Transit Network Selector) and NSF (Network Specific Facility), are sent in the call setup to the service provider. On IP Office, the values for TNS, NSF and the actual phone number presented to the line are determined by parsing the number dialed through, in sequence, the TNS, Special and Call by Call tabs. These tabs appear when the Provider setting on the Line tab is set to AT&T. Note also that B-channels within the same line can be brought from different service providers. Additionally some B-channels can be used 'call by call', that is, use a different service provider for each call.

Incoming Call Routing: Analog, T1, T1 ISDN and E1R2 Trunks



The following options are used to route incoming calls received on this type of trunk.

1. Incoming Call Route

Based on matching the Incoming Line Group plus if set the incoming number and or ICLID.

2. System Short Code

The IP Office checks for a short code match based on the incoming number.

3. Voicemail Match

The IP Office checks for a call flow start point name matching the incoming number.

5.4.6.1 Line

Line Line (T1 PRI)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **Line Number:**
Allocated by the system.
- **Card/Module:** *Software level = 4.1+.*
Indicates the card slot or expansion module being used for the trunk device providing the line.
 - For IP400 control units, SLOT A on the control unit is shown as 1, SLOT B is shown as 2. Expansion modules are numbered from 4 upwards, for example trunks on the module in Expansion Port 1 are shown as 4.
 - For IP Office 500 control units, 1 to 4 match the slots on the front of the control unit from left to right. Expansion modules are numbered from 5 upwards, for example trunks on the module in Expansion Port 1 are shown as 5.
- **Port:** *Software level = 4.1+.*
Indicates the port on the Card/Module above to which the configuration settings relate.
- **Network Type:** *Default = Public, Software level = 4.2+.*
This option is available if [Restrict Network Interconnect](#)^[166] ([System | Telephony | Telephony](#)^[166]) is enabled. It allows the trunk to be set as either **Public** or **Private**. The IP Office will return number unobtainable indication to any attempt to connect a call on a **Private** trunk to a **Public** trunk or vice versa. This restriction includes transfers, forwarding and conference calls.
 - Due to the nature of this feature, its use is not recommended on systems also using any of the following other IP Office features: [Small Community Networks](#)^[792], VPNremote, Phone Manager telecommuter mode.
- **Line SubType:** *Default = PRI*
Set to **PRI**. If set to T1 see [Line Form \(T1\)](#)^[213]. If set to **ETSI**, **ETSI CHI**, **QSIG A** or **QSIG B** see [Line \(E1\)](#)^[204].
 - IP Office 4.2 adds support for **ETSI CHI**.
 - QSIG is not supported on IP500 systems without IP500 Voice Networking licenses.
- **Channel Allocation:** *Default = 23 -> 1*
The order, 23 to 1 or 1 to 23, in which channels are used.
- **Switch Type:** *Default = NI2*
Options **4ESS**, **5ESS**, **DMS100** and **NI2**.
- **Provider:** *Default = Local Telco*
Select the PSTN service provider (**AT&T**, **Sprint**, **WorldCom** or **Local Telco**).
- **Prefix:** *Default = Blank*
Enter the number to prefix to all incoming numbers for callback. This is useful if all users must dial a prefix to access an outside line. The prefix is automatically placed in front of all incoming numbers so that users can dial the number back.
- **Add 'Not-end-to-end ISDN' Information Element:** *Default = Never*, Software level = 4.2+.*
Sets whether the optional 'Not end-to-end ISDN' information element should be added to outgoing calls on the line. The options are **Never**, **Always** or **POTS** (only if the call was originated by an analog extension). *The default is **Never** except for the following locales; for Italy the default is **POTS**, for New Zealand the default is **Always**.
- **Test Number:**
Used to remember the external telephone number of this line to assist with loop-back testing. For information only.
- **Framing:** *Default = ESF*
Selects the type of signal framing used (ESF or D4).
- **Zero Suppression:** *Default = B8ZS*
Selects the method of zero suppression used (B8ZS or AMI ZCS).
- **Clock Quality:** *Default = Network*
Refer to the IP Office Installation Manual for full details. This option sets whether the IP Office should try to take its clock source for call synchronization and signalling from this line. Preference should always be given to using the clock source from a central office exchange if available by setting at least one exchange line to **Network**.
 - If multiple lines are set as **Network**, the order in which those lines are used is described in the IP Office Installation Manual. If additional lines are available, **Fallback** can be used to specify a clock source to use should the **Network** source not be available.
 - Lines from which the clock source should not be taken should be set as **Unsuitable**.
 - If no clock source is available, the IP Office uses its own internal 8KHz clock source.

- In scenarios where several systems are network via digital trunk lines, care must be taken to ensure that all the systems use the same clock source. The current source being used by an IP Office is reported within the IP Office System Status Application.
- **CSU Operation**
Tick this field to enable the T1 line to respond to loop-back requests from the line.
- **Haul Length:** *Default = 0-115 feet*
Sets the line length to a specific distance.
- **Channel Unit:** *Default = Foreign Exchange*
This field should be set to match the channel signaling equipment provided by the Central Office. The options are **Foreign Exchange**, **Special Access** or **Normal**.
- **CRC Checking:** *Default = On*
Turns CRC on or off.
- **Line Signaling:**
The field can be set to either **CPE** (Customer Premises Equipment) or **CO** (Central Office). This field should normally be left at its default of **CPE**. The setting **CO** is normally only used in lab back-to-back testing.
- **Incoming Routing Digits:** *Default=0 (present call immediately)*
Sets the number of routing digits expected on incoming calls. This allows the line to present the call to the system once the expected digits have been received rather than waiting for the digits timeout to expire. This field only affects T1 line channels set to **E&M Tie**, **E&M DID**, **E&M Switched 56K** and **Direct Inward Dial**.

5.4.6.2 Channels

This tab allows settings for individual channels within the trunk to be adjusted. This tab is not available for trunks sets to ETSI or QSIG mode.

Line Channels (T1 PRI)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	X.

- **Channel**
Allocated by the system.
- **Incoming Group ID:** *Default = 0, Range 0 to 99999.*
The Incoming Group ID to which a line belongs is used to match it to incoming call routes in the IP Office configuration. The matching incoming call route is then used to route incoming calls. The same ID can be used for multiple lines.
- **Outgoing Group ID:** *Default = 0, Range 0 to 99999.*
Short codes that specify a number to dial also specify the line group to be used. The IP Office will then seize a line with a matching Outgoing Group ID. The same ID can be used for multiple lines.
- **Line Appearance ID:** *Default = Auto-assigned, Range = 2 to 9 digits, Software level = 3.0+.*
Used for configuring Line Appearances with button programming. The line appearance ID must be unique and not match any extension number.
- **Direction:** *Default = Both Directions*
The direction of calls on the channel (**Incoming**, **Outgoing** or **Both Directions**).
- **Bearer:** *Default = Any*
The type of traffic carried by the channel (**Voice**, **Data** or **Any**).
- **Service:** *Default = None.*
If the line provider is set to AT&T, selects the type of service provided by the channel from **Call by Call**, **SDN** (inc GSDN), **MegaCom800**, **MegaComWats**, **Accunet**, **NLDS**, **1800**, **ETN**, **Private Line**, **AT&T Multiquest**. For other providers the service options are **None** or **No Service**.
- **Admin:** *Default = Out of Service*
Used to indicate the channel status (**In Service**, **Out of Service** or **Maintenance**).
- **Tx Gain:** *Default = 0dB*
The transmit gain in dB.
- **Rx Gain:** *Default = 0dB*
The receive gain in dB.

5.4.6.3 TNS

This tab is shown when the line Provider is set to AT&T. It allows the entry of the Network Selection settings. These are prefixes for alternative long distance carriers. When a number dialed matches an entry in the table, that pattern is stripped from the number before being sent out. This table is used to set field in the TNS (Transit Network Selection) information element for 4ESS and 5ESS exchanges. It is also used to set fields in the NSF information element.

Line TNS (T1 PRI)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **TNS Code:**

The pattern for the alternate long distance carrier. For example: The pattern 10XXX is added to this tab. If 10288 is dialed, 10 is removed and 288 is placed in the TNS and NSF information.

5.4.6.4 Special

This tab is shown when the line Provider is set to AT&T. This table is used to set additional fields in the NSF information element after initial number parsing by the TNS tab. These are used to indicate the services required by the call. If the channel is set to Call by Call, then further parsing is done using the entries in the Call by Call tab.

Line Special (T1 PRI)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **Short code:**

The number which results from the application of the rules specified in the User or System Short code tables and the Network Selection table and the Call-by-call table to the number dialed by the user.

- **Number:**

The number to be dialed to line.

- **Special:** *Default = No Operator*

(**No Operator**, **Local Operator** or **Presubscribed Operator**).

- **Plan:** *Default = National*

(**National** or **International**).

Typical values are:

Short Code	Number	Service
011N	N	No Operator, International
010N	N	Local Operator, International
01N	N	Local Operator, National
00N	N	Presubscribed Operator, National
0N	N	Presubscribed Operator, National
1N	1N	No operator, National

5.4.6.5 Call By Call

This tab is shown when the line Provider is set to AT&T. Settings in this tab are only used when calls are routed via a channel which has its **Service** set to **Call by Call**.

It allows short codes to be created to route calls to a different services according to the number dialed. Call By Call reduces the costs and maximizes the use of facilities. Call By Call chooses the optimal service for a particular call by including the Bearer capability in the routing decision. This is particularly useful when there are limited resources.

Line Call By Call (T1 PRI)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

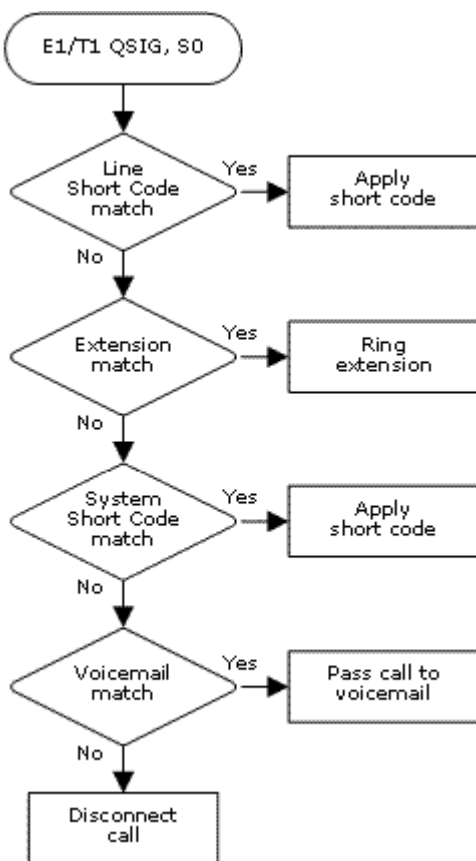
- **Short Code:**
The number which results from the application of the rules specified in the User or System Short code tables and the Network Selection table to the number dialed by the user.
- **Number:**
The number to be dialed to line.
- **Bearer:** *Default = Any*
The type of channel required for the call (Voice, Data or Any).
- **Service:** *Default = AT&T*
The service required by the call (**SDN** (inc GSDN), **MegaCom800**, **MegaCom**, **Inwats**, **Wats**, **Accunet**, **NLDS**, **I800**, **ETN**, **Private Line**, **AT&T Multiquest**).

5.4.7 S0 Line



These settings are used for S0 ports provided by an S08 expansion module connected to the IP Office control unit. Though displayed as lines, these BRI ports are used for connection of ISDN2 devices such as video conferencing units or ISDN PC cards. For full details of installation refer to the IP Office Installation manual.

Incoming Call Routing: E1 QSIG and S0 Lines



The following options are used to route incoming calls received on this type of trunk.

1. Line Short Code Match

The IP Office checks for a short code match based on the incoming number.

2. Extension Match

Based on matching an user or hunt group extension number.

3. System Short Code

The IP Office checks for a short code match based on the incoming number.

4. Voicemail Match

The IP Office checks for a call flow start point name matching the incoming number.

5.4.7.1 Line

Line Line (S0)	
Control Unit	SOE ✗ , IP403 ✓ , IP406 V1 ✓ , IP406 V2 ✓ , IP412 ✓ , IP500 ✓ .
Software Level	1.0+.
Mergeable	✗ .

- **Line Number**
This parameter is not configurable. It is allocated by the system.
- **Telephone Number:**
Used to remember the telephone number of this line. For information only.
- **Prefix:** *Default = Blank.*
The prefix is used in the following ways:
 - **For incoming calls**
The ISDN messaging tags indicates the call type (National, International or Unknown). If the call type is unknown, then the number in the Prefix field is added to the ICLID.
 - **For outgoing calls**
For IP Office 3.2 and lower, when a outgoing call is presented to the line with a leading digit to dial that matches the Prefix, that digit is stripped from the number. IP Office 4.0 and higher does not strip the prefix, therefore any prefixes not suitable for external line presentation should be stripped using short codes.
- **National Prefix:** *Default = 0*
This indicates the digits to be prefixed to a incoming national call. When a number is presented from ISDN as a "national number" this prefix is added. For example 1923000000 is converted to 01923000000.
- **International Prefix:** *Default = 00*
This indicates the digits to be prefixed to an incoming international call. When a number is presented from ISDN as an "international number" this prefix is added. For example 441923000000 is converted to 00441923000000.
- **Incoming Group ID:** *Default = 0, Range 0 to 99999.*
The Incoming Group ID to which a line belongs is used to match it to incoming call routes in the IP Office configuration. The matching incoming call route is then used to route incoming calls. The same ID can be used for multiple lines.
- **Outgoing Group ID:** *Default = 0, Range 0 to 99999.*
Short codes that specify a number to dial also specify the line group to be used. The IP Office will then seize a line with a matching Outgoing Group ID. The same ID can be used for multiple lines.
- **TEI:** *Default = 0*
Not used. The Control Unit will ignore any entry.
- **Number of Channels:** *Default = 2*
Defines the number of operational channels that are available on this line. 2 for BRI and up to 30 for PRI - depending upon the number of channels subscribed.
- **Outgoing Channels:** *Default = 2*
This defines the number of channels available, on this line, for outgoing calls. This should normally be the same as Number of Channels field, but can be reduced to ensure incoming calls cannot be blocked by outgoing calls.
- **Voice Channels:** *Default = 2*
The number of channels available for voice use.
- **Data Channels:** *Default = 2*
The number of channels available for data use. If left blank the value is 0.

5.4.7.2 Short Codes

Line short codes can be applied to the digits received with incoming call. The stage at which they are applied also varies depending on the trunk type.

- **IP Trunks**

Line short codes are used if Small Community Networking (SCN) is not being used or no SCN user extension match occurs on the digits received.

- **QSIG and SO Trunks**

S₀ trunks, and E1 and T1 trunks set to QSIG mode use line short code.

Line H323 Line Short Codes	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

Short codes can be added and edited using the **Add**, **Remove** and **Edit** buttons. Alternatively you can right-click on the list of existing short code to add and edit short codes.

5.4.7.3 Channels

This tab allows settings for individual channels within the trunk to be adjusted. For So channels this form is not used.

Line Channels (S0)	
Control Unit	SOE  , IP403  , IP406 V1  , IP406 V2  , IP412  , IP500  .
Software Level	1.0+.
Mergeable	 .

- **Line Appearance ID**
Not used with So lines.

5.4.8 H323 Line



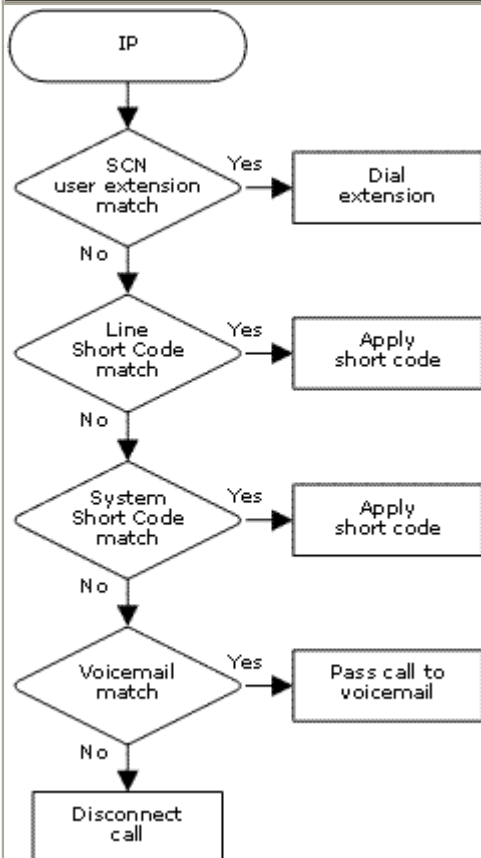
These lines are added manually. They allow voice calls to be routed over data links within the IP Office system. They are therefore dependent on the IP data routing between the IP Office and the destination having being configured and tested.

Network Assessments

Not all data connections are suitable for voice traffic. A network assessment is required for internal network connections. For external network connections a service level agreement is required from the service provider. Avaya cannot control or be held accountable for the suitability of a data connection for carrying voice traffic. Refer to the IP Office Installation Manual for further details of Network Assessments and VoIP requirements.

- IP Trunks are not supported on IP500 systems without **IP500 Voice Networking** licenses.

Incoming Call Routing: IP Lines



The following options are used to route incoming calls received on this type of trunk.

1. SCN User Extension

If the line is configured for Small Community Networking, the IP Office checks the incoming digits for a match to a user extension.

2. Line Short Code

The IP Office checks for a short code match based on the incoming number.

3. System Short Code

The IP Office checks for a short code match based on the incoming number.

4. Voicemail Match

The IP Office checks for a call flow start point name matching the incoming number.

5.4.8.1 Line

IP Trunks are not supported on IP500 systems without IP500 Voice Networking licenses.

Line H323 Line VoIP Line	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **Line Number:** *Default = 0, Range = 1 to 249.*
Enter the line number that you wish. Note that this must be unique.
- **Telephone Number:**
Used to remember the telephone number of this line. For information only.
- **Network Type:** *Default = Public, Software level = 4.2+.*
This option is available if [Restrict Network Interconnect](#)^[168] ([System | Telephony | Telephony](#)^[168]) is enabled. It allows the trunk to be set as either **Public** or **Private**. The IP Office will return number unobtainable indication to any attempt to connect a call on a **Private** trunk to a **Public** trunk or vice versa. This restriction includes transfers, forwarding and conference calls.
 - Due to the nature of this feature, its use is not recommended on systems also using any of the following other IP Office features: [Small Community Networks](#)^[792], VPNremote, Phone Manager telecommuter mode.
- **Incoming Group ID:** *Default = 0, Range 0 to 99999.*
The Incoming Group ID to which a line belongs is used to match it to incoming call routes in the IP Office configuration. The matching incoming call route is then used to route incoming calls. The same ID can be used for multiple lines.
- **Outgoing Group ID:** *Default = 0, Range 0 to 99999.*
Short codes that specify a number to dial also specify the line group to be used. The IP Office will then seize a line with a matching Outgoing Group ID. The same ID can be used for multiple lines.
- **Prefix:** *Default = Blank.*
The prefix is used in the following ways:
 - **For incoming calls**
The ISDN messaging tags indicates the call type (National, International or Unknown). If the call type is unknown, then the number in the Prefix field is added to the ICLID.
 - **For outgoing calls**
For IP Office 3.2 and lower, when a outgoing call is presented to the line with a leading digit to dial that matches the Prefix, that digit is stripped from the number. IP Office 4.0 and higher does not strip the prefix, therefore any prefixes not suitable for external line presentation should be stripped using short codes.
- **National Prefix:** *Default = 0*
This indicates the digits to be prefixed to a incoming national call. When a number is presented from ISDN as a "national number" this prefix is added. For example 1923000000 is converted to 01923000000.
- **International Prefix:** *Default = 00*
This indicates the digits to be prefixed to an incoming international call. When a number is presented from ISDN as an "international number" this prefix is added. For example 441923000000 is converted to 00441923000000.
- **Number of Channels:** *Default = 20, Range 0 to 120.*
Defines the number of operational channels that are available on this line.
- **Outgoing Channels:** *Default = 20, Range 0 to 120.*
This defines the number of channels available, on this line, for outgoing calls. This should normally be the same as Number of Channels field, but can be reduced to ensure incoming calls cannot be blocked by outgoing calls.
- **Data Channels:** *Default = 20, Range 0 to 120.*
The number of channels available for data use. If left blank the value is 0.
- **Voice Channels:** *Default = 20, Range 0 to 120.*
The number of channels available for voice use.
- **TEI:** *Default = 0, Range = 0 to 127.*
The Terminal Equipment Identifier. Used to identify each Control Unit connected to a particular ISDN line. For Point to Point lines this is typically (always) 0. It can also be 0 on a Point to Multi-Point line, however if multiple devices are actually sharing a Point to Multi-Point line it should be set to 127 which will result in the exchange deciding on the TEI's to be used by this Control Unit.

5.4.8.2 Short Codes

Line short codes can be applied to the digits received with incoming call. The stage at which they are applied also varies depending on the trunk type.

- **IP Trunks**

Line short codes are used if Small Community Networking (SCN) is not being used or no SCN user extension match occurs on the digits received.

- **QSIG and SO Trunks**

S₀ trunks, and E1 and T1 trunks set to QSIG mode use line short code.

Line H323 Line Short Codes	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

Short codes can be added and edited using the **Add**, **Remove** and **Edit** buttons. Alternatively you can right-click on the list of existing short code to add and edit short codes.

5.4.8.3 VoIP

Line H323 Line VoIP Settings (IP)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

H323 Trunk (Non SCN)

The following settings are applicable to trunks with their **Supplementary Services** set to other than **IP Office SCN** or **IP Office SCN - Fallback**.

- **Gateway IP Address:** *Default = Blank*
Enter the IP address of the gateway device at the remote end. This address must not be shared by any other IP line (H323, SIP, SES or IP DECT).
- **Compression Mode:** *Default = Automatic Selection*
This field defines the compression mode (codec) or modes offered during call setup. The supported codecs are **G.711 ALAW 64K**, **G.711 ULAW 64K**, **G.729(a) 8K CS-ACELP**, **G.723.1 6K3 MP-MLQ**.
 - **Automatic Select**
This setting is used as follows:
 - For pre-IP Office 5.0 systems, **Automatic Select** uses the codecs in the order of preference **G729a**, **G711 ALAW**, **G711 ULAW** and **G.723.1**.
 - For IP Office 5.0+, the **Automatic Code Preference** ^[168] setting (**System | Telephony | Telephony** ^[168]) can be used to set which codec should be first in the list of preferred codecs. The remaining codecs are used in the order as above. Note that the G711 codecs are treated as a pair, so if one is selected as the first preference, the other will be second in the list.
 - If required, a specific codec can be selected. However, if during call setup negotiation with a specific codec, connect fails, the IP Office will fallback to using automatic selection.
- **Supplementary Services:** *Default = IP Office SCN*
Selects the supplementary service signaling method for use across the H323 trunk. The remote end of the trunk must support the same option. Options are:
 - **None**
No supplementary services are supported.
 - **H450**
Use for H323 lines connected to another PBX or device that uses H450.
 - **QSIG**
Use for H323 lines connected to another PBX or device that uses QSIG.
 - **IP Office SCN**
This option is used for H323 trunks within a Small Community Network (SCN). The IP Offices with an SCN automatically exchange information about users and extensions, allowing remote users to be called without any additional configuration on the local IP Office. For full details of SCN operation see [Small Community Networking](#) ^[792].
 - **IP Office SCN - Fallback** (*IP Office 5.0+ only*)
This option is used for an SCN trunk connection as above, where the IP Office system at the end of the trunk will try to take over the selected **SCN Backup Options** if this IP Office is not visible within the Small Community Network for a period of more than 3 minutes. Only one H323 trunk per system can be set as **IP Office SCN - Fallback**. See [SCN Fallback](#) ^[797].
- **Call Initiation Timeout:** *Default = 4 seconds, Range = 1 to 99 seconds, Software level = 4.2+.*
This option sets how long the IP Office should wait for a response to its attempt to initiate a call before following the alternate routes set in an [ARS](#) ^[408] form.
- **VoIP Silence Suppression:** *Default = Off*
When selected, this option will detect periods of silence on any call over the line and will not send any data during those silent periods. This feature is not used on IP lines using **G711** between IP400 and IP500 systems.
- **Enable FastStart:** *Default = Off*
A fast connection procedure. Reduces the number of messages that need to be exchanged before an audio channel is created.
- **Fax Transport Support:** *Off (Fixed)*
This option is only supported on trunks with their **Supplementary Services** set to **IP Office SCN** or **IP Office SCN - Fallback**.
 - For IP Office 5.0, IP500 systems with an IP500 VCM are able to support [T38 fax relay](#) ^[732] across H323 SCN lines with **Fax Transport Support** selected. This will use 2 VCM channels in each of the IP Offices. T38 fax calls can originate from SIP lines or extensions.

- **Local Tones:** *Default = Off*

When selected, the tones are generated by the local IP Office system to which the phone is registered. This option should not be used with lines being used for Small Community Networking. For the IP Office Small Office Edition control unit, this field should not be enabled.

- **DTMF Support:** *Default = Out of Band*

DTMF tones can be sent to the remote end either as DTMF tones within the calls audio path (**In Band**) or a separate signals (**Out of Band**). Out of Band is recommended for compression modes such as G.729 and G.723 compression modes where DTMF in the voice stream could become distorted.

- For trunks with **Supplementary Services** set to **SCN** or **Resilient SCN**, this option is fixed to **Out of Band**.

- **Allow Direct Media Path:** *Default = On*

This settings controls whether H323 calls must be routed via the H323 gatekeeper (the IP Office) or can be routed alternately if possible within the network structure.

- If enabled, H323 calls can take routes other than through the IP Office. This removes the need for a voice compression channel. Both ends of the calls must support Direct Media. Enabling this option may cause some vendors problems with changing the media path in mid call. Pre-IP Office 4.0, when using direct media path, it is not always possible for the extension to be recorded or monitored.
- If disabled or not supported at on one end of the call, the call is routed via the IP Office.
 - On pre-4.0 these calls would then require a voice compression channel even if the IP devices use the same audio codec.
 - On IP Office 4.0 and higher, RTP relay support allows calls between devices using the same audio codec to not require a voice compression channel.
- **Progress Ends Overlap Send:** *Default = Off, Software level = 3.2+.*
Some telephony equipment, primarily AT&T switches, over IP trunks send a H323 Progress rather than H323 Proceeding message to signal that they have recognised the digits sent in overlap state. IP Office by default expects an H323 Proceeding message. This option is not available by default. If required, the value **ProgressEndsOverlapSend** must be entered into the [Source Numbers](#) ^[275] tab of the [NoUser](#) ^[750] user.
- **Default Name for Display IE:** *Default = Off, Software level = 4.2+.*

H323 Trunk (SCN)

The following settings are applicable to trunks with their **Supplementary Services** set to **IP Office SCN** or **IP Office SCN - Fallback**.

- **Gateway IP Address:** *Default = Blank*

Enter the IP address of the gateway device at the remote end. This address must not be shared by any other IP line (H323, SIP, SES or IP DECT).

- **Compression Mode:** *Default = Automatic Selection*

This field defines the compression mode (codec) or modes offered during call setup. The supported codecs are **G.711 ALAW 64K**, **G.711 ULAW 64K**, **G.729(a) 8K CS-ACELP**, **G.723.1 6K3 MP-MLQ**.

- **Automatic Select**

This setting is used as follows:

- For pre-IP Office 5.0 systems, **Automatic Select** uses the codecs in the order of preference **G729a**, **G711 ALAW**, **G711 ULAW** and **G.723.1**.
- For IP Office 5.0+, the **Automatic Code Preference** ^[166] setting ([System | Telephony | Telephony](#) ^[166]) can be used to set which codec should be first in the list of preferred codecs. The remaining codecs are used in the order as above. Note that the G711 codecs are treated as a pair, so if one is selected as the first preference, the other will be second in the list.
- If required, a specific codec can be selected. However, if during call setup negotiation with a specific codec, connect fails, the IP Office will fallback to using automatic selection.
- **Supplementary Services:** *Default = IP Office SCN*
Selects the supplementary service signaling method for use across the H323 trunk. The remote end of the trunk must support the same option. Options are:
 - **None**
No supplementary services are supported.
 - **H450**
Use for H323 lines connected to another PBX or device that uses H450.
 - **QSIG**
Use for H323 lines connected to another PBX or device that uses QSIG.

-
- **IP Office SCN**
This option is used for H323 trunks within a Small Community Network (SCN). The IP Offices with an SCN automatically exchange information about users and extensions, allowing remote users to be called without any additional configuration on the local IP Office. For full details of SCN operation see [Small Community Networking](#) [792].
 - **IP Office SCN - Fallback** (*IP Office 5.0+ only*)
This option is used for an SCN trunk connection as above, where the IP Office system at the end of the trunk will try to take over the selected **SCN Backup Options** if this IP Office is not visible within the Small Community Network for a period of more than 3 minutes. Only one H323 trunk per system can be set as **IP Office SCN - Fallback**. See [SCN Fallback](#) [793].
 - **SCN Backup Options:** *Software level = 5.0+.*
These options are only available on when the **Supplementary Services** option is set to **IP Office - Fallback**. The IP Office system to which the trunk connects must be an IP Office 5.0+ system. The intention of this feature is to attempt to maintain a minimal level of operation while problems with the local IP Office are resolved.
 - **Backs up my IP Phones:** *Default = On.*
This option is used for Avaya 1600, 4600 and 5600 Series phones registered with the IP Office. When selected, it will share information about the registered phones and users on those phones with the other IP Office.
 - If the local IP Office is no longer visible to the phones, the phones will reregister with the other IP Office. The users who were currently on those phones will appear on the other IP Office as if they had hot desked.
 - Note that when the local IP Office is restored to the SCN, the phones will not automatically re-register with it. A phone reset via either a phone power cycle or using the IP Office System Status Application is required.
 - When phones have registered with the other IP Office, they will show an **R** on their display.
 - **Backs up my Hunt Groups:** *Default = On.*
When selected, any hunt groups the local IP Office is advertising to the SCN are advertised from the other IP Office when fallback is required. The trigger for this occurring is Avaya H323 phones registered with the local IP Office registering with the other IP Office, ie. **Backs up my IP Phones** above must also be enabled.
 - When used, the only hunt group members that will be available are as follows:
 - If the group was a distributed hunt group, those members who were remote members on other IP Office systems still visible within the SCN.
 - Any local members who have hot desked to another IP Office system still visible within the SCN.
 - When the local IP Office becomes visible to the other IP Office again, the groups will return to be advertised from the local IP Office.
 - **Backs up my Voicemail:** *Default = On.*
This option can be used if the local IP Office is hosting the Voicemail Pro server being used by the SCN. If selected, when the local IP Office is no longer visible to the voicemail server, the other IP Office will act as host for the voicemail server.
 - This option requires the other IP Office to have licenses for the Voicemail Pro features that are required to operated during any fallback period.
 - This option requires Voicemail Pro 5.0+.
 - **Call Initiation Timeout:** *Default = 4 seconds, Range = 1 to 99 seconds, Software level = 4.2+.*
This option sets how long the IP Office should wait for a response to its attempt to initiate a call before following the alternate routes set in an [ARS](#) [408] form.
 - **VoIP Silence Suppression:** *Default = Off*
When selected, this option will detect periods of silence on any call over the line and will not send any data during those silent periods. This feature is not used on IP lines using **G711** between IP400 and IP500 systems.
 - **Fax Transport Support:** *Off (Fixed)*
This option is only supported on trunks with their **Supplementary Services** set to **IP Office SCN** or **IP Office SCN - Fallback**.
 - For IP Office 5.0, IP500 systems with an IP500 VCM are able to support [T38 fax relay](#) [732] across H323 SCN lines with **Fax Transport Support** selected. This will use 2 VCM channels in each of the IP Offices. T38 fax calls can originate from SIP lines or extensions.
 - **Local Tones:** *Default = Off*
When selected, the tones are generated by the local IP Office system to which the phone is registered. This option should not be used with lines being used for Small Community Networking. For the IP Office Small Office Edition control unit, this field should not be enabled.
 - **DTMF Support:** *Default = Out of Band*
DTMF tones can be sent to the remote end either as DTMF tones within the calls audio path (**In Band**) or a separate signals (**Out of Band**). Out of Band is recommended for compression modes such as G.729 and G.723 compression modes where DTMF in the voice stream could become distorted.
 - For trunks with **Supplementary Services** set to **SCN** or **Resilient SCN**, this option is fixed to **Out of Band**.

- **Allow Direct Media Path:** *Default = On*

This settings controls whether H323 calls must be routed via the H323 gatekeeper (the IP Office) or can be routed alternately if possible within the network structure.

- If enabled, H323 calls can take routes other than through the IP Office. This removes the need for a voice compression channel. Both ends of the calls must support Direct Media. Enabling this option may cause some vendors problems with changing the media path in mid call. Pre-IP Office 4.0, when using direct media path, it is not always possible for the extension to be recorded or monitored.
- If disabled or not supported at on one end of the call, the call is routed via the IP Office.
 - On pre-4.0 these calls would then require a voice compression channel even if the IP devices use the same audio codec.
 - On IP Office 4.0 and higher, RTP relay support allows calls between devices using the same audio codec to not require a voice compression channel.

5.4.9 IP DECT Line



This type of line can be manually added. They are used to route voice calls over an IP data connection to an Avaya IP DECT system. Only one IP DECT line can be added to an IP Office system. Refer to the IP Office IP DECT Installation manual for full details.

For North American locales, an IP DECT line is only supported with the IP Office 4.0 Q2 2007 maintenance release and higher.

5.4.9.1 Line

Currently only one IP DECT line is supported on an IP Office system. For North American locales, an IP DECT line is only supported with the IP Office 4.0 Q2 2007 maintenance release and higher.

Line Line (IP DECT)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.1+.
Mergeable	✗.

- **Line Number**
This number is allocated by the system and is not adjustable.
- **Number Of Channels:** *Default = 0 (Grayed out)*
Defines the number of operational channels that are available on this line. This will match the number of associated IP DECT extensions.
- **Outgoing Channels:** *Default = 0 (Grayed out)*
This defines the number of channels available, on this line, for outgoing calls. This will match the number of associated IP DECT extensions.
- **Voice Channels:** *Default = 0 (Grayed out)*
The number of channels available for voice use. This will match the number of associated IP DECT extensions.
- **Incoming Group ID:** *Default = 0, Range 0 to 99999.*
The Incoming Group ID to which a line belongs is used to match it to incoming call routes in the IP Office configuration. The matching incoming call route is then used to route incoming calls. The same ID can be used for multiple lines.
- **Outgoing Group ID:** *Default = 0, Range 0 to 99999.*
Short codes that specify a number to dial also specify the line group to be used. The IP Office will then seize a line with a matching Outgoing Group ID. The same ID can be used for multiple lines.
- **Extensions**
Lists all the DECT extensions associated with the IP DECT line. Adding and deleting IP DECT extensions is done via the Manager User List.

5.4.9.2 Gateway

Line Gateway (IP DECT)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.1+.
Mergeable	✗.

- **Gateway IP Address:** *Default = Blank*

Enter the IP address of the IP DECT base station that will be the Avaya IP DECT Mobility Manager (ADMM). If Enable DHCP Support is enabled, this address should be from the range of assignable IP Office DHCP addresses. This address must not be shared by any other IP, IP DECT or SIP line in the IP Office system configuration.

- **Compression Mode:** *Default = Automatic Selection*

This defines the type of compression which is to be used for calls on this line.

- **Automatic Selection** - During call setup, the IP Office negotiates the compression mode using the following order of preference: G729a, G.723.1, G711 ALAW, G711 ULAW. This order is an optimum balance of quality and bandwidth for most scenarios.

- Other available options are: **G.711 ALAW 64K, G.711 ULAW 64K, G.729(a) 8K CS-ACELP, G.729 Simple, G.723.1 6K3 MP-MLQ.**

- **Gain:** *Default = Default*

Allow adjustment of the gain applied to calls between the IP DECT system and the IP Office.

- **Enable DHCP Support:** *Default = Off*

This option is not supported for use with Avaya IP DECT R4. The IP DECT base stations require DHCP and TFTP support. Enable this option if the IP Office is being used to provide that support, using IP addresses from its DHCP range (LAN1 or LAN2) and its TFTP server setting. If not enabled, alternate DHCP and TFTP options must be provided during the IP DECT installation.

- If it is desired to use the IP Office for DHCP support of the ADMM and IP DECT base stations only, the IP Office address range should be set to match that number of addresses. Those addresses are then taken during the IP Office restart and will not be available for other DHCP responses following the restart.
- For Small Office Edition and IP406V2 control units, use of the embedded voicemail memory card slot for the TFTP server is recommended for small IP DECT installations. See [System | TFTP IP Server Address](#)^[149]. For other control units, or larger IP DECT installations, the use of a non-embedded TFTP software option other than Manager is recommended.

When **Enable DHCP Support** is selected, the following fields are also enabled. These fields are not used for IP DECT R4.

- **Boot File:** *Default = ADMM_RFP_1_0_0.tftp, Range = Up to 31 characters.*

The name and path of the ADMM software file. The path is relative to the TFTP server root directory.

- **ADMM MAC Address:** *Default = 00:00:00:00:00:00*

This field must be used to indicate the MAC address of the IP DECT base station that should load the ADMM software file and then act as the IP DECT system's ADMM. The address is entered in hexadecimal format using comma, dash, colon or period separators.

- **VLAN ID:** *Default = Blank, Range = 0 to 4095.*

If VLAN is being used by the IP DECT network, this field sets the VLAN address assigned to the base stations by the IP Office if Enable DHCP Support is selected.

- The IP Office itself does not apply or use VLAN marking. It is assumed that the addition of VLAN marking and routing of VLAN traffic is performed by other switches within the customer network.
- An ID of zero is not recommended for normal VLAN operation.
- When blank, no VLAN option is sent to the IP DECT base station.

- **Base Station Address List:** *Default = Empty*

This box is used to list the MAC addresses of the IP DECT base stations, other than the base station being used as the ADMM and entered in the ADMM MAC Address field. Right-click on the list to select Add or Delete. or use the Insert and Delete keys. The addresses are entered in hexadecimal format using comma, dash, colon or period separators.

- **Silence Suppression:** *Default = Off*

When selected H.323 terminals will not send data if they are silent, this is useful when optimizing data traffic.

- **Enable RSVP:** *Default = Disabled (Grayed out)*

This setting is allocated by the system and is not adjustable. RSVP is not support on the IP DECT system.

- **Out of Band DTMF:** *Default = On (Grayed out)*

This setting is allocated by the system and is not adjustable. When on, DTMF is sent as a separate signal rather than as part of the encoded voice stream ("In Band"). This is recommended for low bit-rate compression modes such as G.729 and G.723 where DTMF in the voice stream can become distorted.

- **Allow Direct Media Path:** *Default = On*

When disabled the media (voice) path always passes through the IP Office Control Unit. When enabled the remote end may be told of a new IP address for the media path if for example the call is transferred to a H.323 extension. Enabling this option may cause some vendors problems with changing the media path in mid call.

- **Auto-create Extension:** *Default = Off, Software level = 4.0+.*

If enabled, subscription of a handset with the IP DECT ADMM causes the auto-creation of a matching numbered extension and user within the IP Office configuration.

5.4.9.3 VoIP

- **Gateway IP Address:** *Default = Blank*

Enter the IP address of the gateway device at the remote end. This address must not be shared by any other IP line (H323, SIP, SES or IP DECT).

- **Compression Mode:** *Default = Automatic Selection*

This field defines the compression mode (codec) or modes offered during call setup. The supported codecs are **G.711 ALAW 64K**, **G.711 ULAW 64K**, **G.729(a) 8K CS-ACELP**, **G.723.1 6K3 MP-MLQ**.

- **Automatic Select**

This setting is used as follows:

- For pre-IP Office 5.0 systems, **Automatic Select** uses the codecs in the order of preference **G729a**, **G711 ALAW**, **G711 ULAW** and **G.723.1**.
 - For IP Office 5.0+, the **Automatic Code Preference** ⁽¹⁶⁶⁾ setting (**System | Telephony | Telephony** ⁽¹⁶⁶⁾) can be used to set which codec should be first in the list of preferred codecs. The remaining codecs are used in the order as above. Note that the G711 codecs are treated as a pair, so if one is selected as the first preference, the other will be second in the list.
 - If required, a specific codec can be selected. However, if during call setup negotiation with a specific codec, connect fails, the IP Office will fallback to using automatic selection.
- **Gain:** *Default = Default, Software level = 3.0 to 4.1.*
Allows adjustment of the volume. The gain is selectable from -31dB to +31dB in 1dB increments.
- **TDM->IP Gain:** *Default = Default, Range = -31dB to +31dB, Software level = 4.1 Q1 2008+.*
Allows adjustment of the gain on audio from the IP Office TDM interface to the IP connection.
- **IP->TDM Gain:** *Default = Default, Range = -31dB to +31dB, Software level = 4.1 Q1 2008+.*
Allows adjustment of the gain on audio from the IP connection to the IP Office TDM interface.
- **VoIP Silence Suppression:** *Default = Off*
When selected, this option will detect periods of silence on any call over the line and will not send any data during those silent periods. This feature is not used on IP lines using **G711** between IP400 and IP500 systems.
- **Allow Direct Media Path:** *Default = On*
This settings controls whether H323 calls must be routed via the H323 gatekeeper (the IP Office) or can be routed alternately if possible within the network structure.
 - If enabled, H323 calls can take routes other than through the IP Office. This removes the need for a voice compression channel. Both ends of the calls must support Direct Media. Enabling this option may cause some vendors problems with changing the media path in mid call. Pre-IP Office 4.0, when using direct media path, it is not always possible for the extension to be recorded or monitored.
 - If disabled or not supported at on one end of the call, the call is routed via the IP Office.
 - On pre-4.0 these calls would then require a voice compression channel even if the IP devices use the same audio codec.
 - On IP Office 4.0 and higher, RTP relay support allows calls between devices using the same audio codec to not require a voice compression channel.

5.4.10 SIP Line

IP Office 4.0 and higher supports SIP voice calls through the addition of SIP trunks to the IP Office configuration. This approach allows users with non-SIP phones to make and receive SIP calls.

Use of SIP requires the following:

1. SIP Service Account

An account or accounts with a SIP internet service provider (ITSP). The method of operation and the information provided will vary. The key requirement is a SIP URI, a web address of the form **name@example.com**. This is the equivalent of a SIP telephone number for making and receiving calls via SIP.

2. Voice Compression Channels

SIP calls use IP Office voice compression channels in the same way as used for standard IP trunks and extensions. These are provided by the installation of VCM modules within the IP Office control unit. RTP relay is applied to SIP calls where applicable.

3. Licensing

SIP Trunk Channels licenses is required in the IP Office configuration. These set the maximum number of simultaneous SIP calls supported by the IP Office. Multiple licenses can be added to achieve a cumulative maximum number of channels supported.

4. Firewall Traversal

Routing traditional H323 VoIP calls through firewalls often fails due to the effects of NAT (Network Address Translation). For SIP a number of ways of ensuring successful firewall traversal have been created.

- **STUN (Simple Traversal of UDP NAT)**

UDP SIP can use a mechanism called STUN to cross firewalls between the switch and the ITSP. This requires the ITSP to provide the IP address of their STUN server and the IP Office to then select from various STUN methods how to connect to that server. The IP Office can attempt to auto-detect the required settings to successfully connect. These settings are part of the [System | LAN1](#)^[152] and [System | LAN2](#)^[162] forms. STUN is not required if the ITSP used Session Border Control (SBC).

- **TURN (Traversal Using Relay NAT)**

TCP SIP can use a mechanism called TURN (Traversal Using Relay NAT). IP Office does not currently support this method of firewall traversal.

- **IP Office Firewall**

The IP Office firewall between LAN1 and LAN2 is not applied to SIP calls.

5. SIP Trunks

These trunks are manually added to the IP Office configuration. Typically a SIP trunk is required for each SIP ITSP being used. As the configuration provides methods for multiple URI's from that ITSP to use the same trunk. For each trunk at least one SIP URI entry is required, up to 150 SIP URI's are supported on the same trunk. Amongst other things this sets the incoming and outgoing groups for call routing.

6. Outgoing Call Routing

The initial routing uses any standard short code with a dial feature. The short code's Line Group ID should be set to match the Outgoing Group ID of the [SIP URI](#)^[245] channels to use. However the short code must also change the number dialed into a destination SIP URI suitable for routing by the ITSP. In most cases, if the destination is a public telephone network number, a URI of the form **123456789@example.com** is suitable. For example:

- **Code:** 9N#
- **Feature:** Dial
- **Telephone Number:** N"@example.com"
- **Line Group ID:** 100

7. Incoming Call Routing

Incoming SIP calls are routed in the same way as other incoming external calls. The caller and called information in the SIP call header can be used to match Incoming CLI and Incoming Number settings in normal IP Office [Incoming Call Route](#)^[345] entries.

8. DiffServ Marking

DiffServ marking is applied to calls using the DiffServer Settings on the [System | LAN | VoIP](#)^[156] tab of either LAN1 or LAN2 as set by the line's **Use Network Topology Info** setting.

SIP URIs

Calls across SIP require URI's (Uniform Resource Identifiers), one for the source and one for the destination. Each SIP URI consists of two parts, the user part (for example **name**) and the domain part (for example **example.com**) to form a full URI (in this case **name@example.com**). SIP URI's can take several forms:

- name@117.53.22.2
- name@example.com
- 012345678@example.com

Typically each account with a SIP service provider will include a SIP URI or a set of URI's. The domain part is then used for the SIP trunk configured for routing calls to that provider. The user part can be assigned either to an individual user if you have one URI per user for that ITSP, or it can also be configured against the line for use by all users who have calls routed via that line.

Resource Limitation

A number of limits can affect the number of SIP calls. When one of these limits is reached the following occurs: any further outgoing SIP calls are blocked unless some alternate route is available using ARS; any incoming SIP calls are queued until the required resource becomes available. Limiting factors are:

- the number of licensed SIP channels.
- the number of SIP channels configured for a SIP URI.
- the number of voice compression channels.
 - **SIP Line Call to/from Non-IP Devices**
Voice compression channel required.
 - **Outgoing SIP Line Call from IP Device**
No voice compression channel required.
 - **Incoming SIP Line Call to IP Device**
If using the same codec, voice compression channel reserved until call connected. If using differing codecs then 2 channels used.

SIP Information Display

For Delta Server the full from and to SIP URI will be recorded for use by SMDR, CBC and or CCC. For all other applications and for telephone devices, the SIP URI is put through system directory matching the same as for incoming CLI matching. First a match against the full URI is attempted, then a match against the user part of the URI. Directory wildcards can also be used for the URI matching.

SIP Standards

The IP Office implementation of SIP conforms to the following SIP RFC's.

RFC	Description
2833 [7]	RTP Payload for DTMF digits, telephony tones and telephony signals.
3261 [8]	SIP Session Initiation Protocol.
3264 [11]	An Offer/Answer Model with Session Description Protocol (SDP).
3323 [14]	A Privacy Mechanism for SIP
3489 [18]	STUN - Simple Traversal of User Datagram Protocol (UDP) Through Network Address Translators (NAT's).
3824 [24]	Using E.164 Numbers with the Session Initiation Protocol (SIP). E.164 is the ITU-T recommendation for international public telecommunication numbering plans.

5.4.10.1 Incoming Call Routing

Incoming SIP calls are routed using IP Office Incoming Call Routes in the same way as call arriving on other external trunks. The following Incoming Call Route fields are used to determine which route is the best match for a call.

- **Line Group ID**

This field is matched against the Incoming Group settings of the SIP URI (Line | SIP URI). This must be an exact match.

- **Incoming Number**

This field can be used to match the called details (TO) in the SIP header of incoming calls. It can contain a number, SIP URI or Tel URI. For SIP URI's the domain part of the URI is removed before matching by incoming call routing occurs. For example, for the SIP URI mysip@example.com , only the user part of the URI, ie. mysip, is used for matching.

- **Incoming CLI**

This field can be used to match the calling details (FROM) in the SDP header of incoming SIP calls. It can contain a number, SIP URI, Tel URI or IP address received with SIP calls. For all types of incoming CLI except IP addresses a partial entry can be used to achieve the match, entries being read from left to right. For IP addresses only full entry matching is supported.

The fields Bearer Capability and Incoming Sub Address are not used for matching of incoming SIP calls. The remain Incoming Call Route fields, including those voice recording, as used as for all call types.

5.4.10.2 SIP Line

Line SIP Line	
Control Unit	SOE  , IP403  , IP406 V1  , IP406 V2  , IP412  , IP500  .
Software Level	4.0+.
Mergeable	 .

- **Line Number:** *Default = Automatically assigned.*
By default a value is assigned by the IP Office. This value can be changed but it must be unique.
- **Network Type:** *Default = Public, Software level = 4.2+.*
This option is available if [Restrict Network Interconnect](#)^[166] ([System | Telephony | Telephony](#)^[166]) is enabled. It allows the trunk to be set as either **Public** or **Private**. The IP Office will return number unobtainable indication to any attempt to connect a call on a **Private** trunk to a **Public** trunk or vice versa. This restriction includes transfers, forwarding and conference calls.
 - Due to the nature of this feature, its use is not recommended on systems also using any of the following other IP Office features: [Small Community Networks](#)^[792], VPNremote, Phone Manager telecommuter mode.
- **ITSP Domain Name:** *Default = Blank.*
This field is used to enter the domain part of the SIP URI provided by the ITSP. For example, in the SIP URI **name@example.com**, the domain part of the URI is **example.com**. For outgoing calls the user part of the SIP URI is determined in a number of ways:
 - For the user making the call, the user part of the FROM SIP URI is determined by the settings of the [SIP URI](#)^[245] channel entry being used to route the call. This will use one of the following:
 - a specific name entered in Local URI field of the channel entry.
 - or specify using the primary or secondary authentication name set for the line below
 - or specify using the SIP Name set for the user making the call ([User | SIP | SIP Name](#)^[306]).
 - For the destination of the call, the user part of the TO SIP URI is determined by the dialing short codes of the form 9N / N"@example.com" where N is the user part of the SIP URI.
- **ITSP IP Address:** *Default = 0.0.0.0*
This value is provided by the SIP ITSP. This address must not be shared by any other IP, IP DECT or SIP line in the IP Office system configuration.
- **Primary Authentication Name:** *Default = Blank.*
This value is provided by the SIP ITSP. Depending on the settings on the Local URI tab associated with the SIP call it may also be used as the user part of the SIP URI.
 - If the **From** field on the [Local URI](#)^[245] being used for the call is set to Use Authentication Name and the Registration is set to Primary, this value is used as the user part of the SIP URI for calls.
- **Primary Authentication Password:** *Default = Blank.*
This value is provided by the SIP ITSP.
- **Primary Registration Expiry:** *Default = 60 minutes.*
This setting defines how often registration with the SIP ITSP is required following any previous registration.
- **Secondary Authentication Name:** *Default = Blank.*
This value is provided by the SIP ITSP. Depending on the settings on the Local URI tab associated with the SIP call it may also be used as the user part of the SIP URI.
 - If the **From** field on the [Local URI](#)^[245] being used for the call is set to Use Authentication Name and the Registration is set to Secondary, this value is used as the user part of the SIP URI for calls.
- **Secondary Authentication Password:** *Default = Blank.*
This value is provided by the SIP ITSP.
- **Secondary Registration Expiry:** *Default = 60 minutes.*
This setting defines how often registration with the SIP ITSP is required following any previous registration.
- **Send Caller ID:** *Default = None, Software level = 5.0+.*
Called/Calling Party ID at call setup. The data is not updated if the endpoint changes, for example due to forwarding or call pickup/etc. For incoming calls to a hunt group, the hunt group details will be provided and not the details of the answering agent. When there are multiple possible sources for the caller ID information, the IP Office will use one source in the following order of priority (highest first): P Asserted Identity (RFC3325)/Remote Party ID (draft-ietf-sip-privacy-04)/Contact/From. This setting is mergeable.
 - **Remote Party ID**
This option corresponds to the standard "draft-ietf-sip-privacy-04".
 - **P Asserted ID**
This option corresponds to the standard "RFC3325". This is the default setting for new SIP lines.

-
- **None**
This option corresponds to the ISDN withheld setting. This is the default setting for existing SIP lines in configurations upgraded to IP Office 5.0+.
 - **Registration Required:** *Default = Off.*
If selected, the SIP trunk will register with the ITSP using the value in the ITSP Domain Name field.
 - **In Service:** *Default = On.*
When this field is not selected, the SIP trunk is unregistered and not available to incoming and outgoing calls.
 - **Use Tel URI:** *Default = Off.*
Use Tel URI format (for example TEL: +1-425-555-4567) rather than SIP URI format (for example name@example.com). This affects the From field of outgoing calls. The To field for outgoing calls will always use the format specified by the short codes used for outgoing call routing.
 - **VoIP Silence Suppression:** *Default = Off.*
When selected, this option will detect periods of silence on any call over the line and will not send any data during those silent periods.

Network Configuration

- **Layer 4 Protocol:** *Default = UDP*
This field sets whether the line uses UDP SIP or TCP SIP.
- **Use Network Topology Info:** *Default = LAN1*
This field associates the SIP line with the [System | LAN1 | Network Topology](#)^[158] settings of either LAN1 or LAN2. If **None** is selected, IP Office STUN lookup is not applied and routing is determined by the IP Office routing tables.
- **Send Port:** *Default = 5060*
This field sets the port to which IP Office send outgoing SIP calls.
- **Listen Port:** *Default = 5060*
This field sets the port on which the IP Office listens for incoming SIP calls.

5.4.10.3 SIP URI

Having setup the SIP trunk to the SIP ITSP, the SIP URI's registered with that ITSP are entered on this tab. A SIP URI (Uniform Resource Identifier) is similar to an internet email address, for example name@example.com, or 01555326978@example.com and represents the source or destination for SIP connection. The URI consists of two parts, the user part (eg. name) and the host part (eg. example.com).

In the case of IP Office each SIP URI acts as a set of trunk channels. Outgoing calls can then be routed to the required URI by short codes that match that URI's Outgoing Group setting. Incoming calls can be routed by incoming call routes that match the URI's Incoming Group setting.

Note that the IP Office only supports up to 150 URI entries on a SIP line.

Line SIP URI	
Control Unit	SOE ✓, IP403 ✗, IP406 V1 ✗, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	4.0+.
Mergeable	✗.

- **Via**

This field is for information only and cannot be edited. It shows the IP address of the IP Office LAN interface with which the SIP trunk is associated.

- **Local URI: Default = Use Authentication Name**

This field sets the 'From' for outgoing SIP calls using this URI. The value can either be entered manually or the options **Use Authentication Name** or **Use User Data** selected.

- **Use Authentication Name**

Use the appropriate Authentication Name on the SIP Line tab as indicated by the Registration setting below.

- **Use User Data**

Use the SIP Name value from the [User | SIP](#) ^[306] tab of the user making the SIP call.

- **Contact: Default = Use Authentication Name**

This field sets the 'Contact' details for SIP calls using this URI. The value can either be entered manually or the options **Use Authentication Name** or **Use User Data** selected.

- **Use Authentication Name**

Use the appropriate Authentication Name on the SIP Line tab as indicated by the Registration setting below.

- **Use User Data**

Use the Contact value from the [User | SIP](#) ^[306] tab of the user making the SIP call.

- **Display Name: Default = Use Authentication Name**

This field sets the 'Name' value for SIP calls using this URI. The value can either be entered manually or the options **Use Authentication Name** or **Use User Data** selected.

- **Use Authentication Name**

Use the appropriate Authentication Name on the SIP Line tab as indicated by the Registration setting below.

- **Use User Data**

Use the SIP Display Name (Alias) value from the [User | SIP](#) ^[306] tab of the user making the SIP call.

- **Registration: Default = Primary**

This field sets whether the primary or secondary authentication name values set on the SIP line tab are used.

- **Incoming Group ID: Default = 0, Range 0 to 99999.**

The Incoming Group ID to which a line belongs is used to match it to incoming call routes in the IP Office configuration. The matching incoming call route is then used to route incoming calls. The same ID can be used for multiple lines.

- **Outgoing Group ID: Default = 0, Range 0 to 99999.**

Short codes that specify a number to dial also specify the line group to be used. The IP Office will then seize a line with a matching Outgoing Group ID. The same ID can be used for multiple lines.

- **Max Calls per Channel: Default = 10**

This field sets the maximum number of simultaneous calls that can use the URI before the IP Office returns busy to any further calls.

5.4.10.4 VoIP

- **Gateway IP Address:** *Default = Blank*

Enter the IP address of the gateway device at the remote end. This address must not be shared by any other IP line (H323, SIP, SES or IP DECT).

- **Compression Mode:** *Default = Automatic Selection*

This field defines the compression mode (codec) or modes offered during call setup. The supported codecs are **G.711 ALAW 64K**, **G.711 ULAW 64K**, **G.729(a) 8K CS-ACELP**, **G.723.1 6K3 MP-MLQ**.

- **Automatic Select**

This setting is used as follows:

- For pre-IP Office 5.0 systems, **Automatic Select** uses the codecs in the order of preference **G729a**, **G711 ALAW**, **G711 ULAW** and **G.723.1**.
 - For IP Office 5.0+, the **Automatic Code Preference**^[166] setting (**System | Telephony | Telephony**^[166]) can be used to set which codec should be first in the list of preferred codecs. The remaining codecs are used in the order as above. Note that the G711 codecs are treated as a pair, so if one is selected as the first preference, the other will be second in the list.
 - If required, a specific codec can be selected. However, if during call setup negotiation with a specific codec, connect fails, the IP Office will fallback to using automatic selection.

The **Advanced** button can be used to display a list of the codecs in their current order of preference. Codecs can be dragged up or down the list or deselected from the list. Note that once a list has been edited in this way, clicking **Advanced** again will return it to **Automatic Select**.

- **Call Initiation Timeout:** *Default = 4 seconds, Range = 1 to 99 seconds, Software level = 4.2+.*

This option sets how long the IP Office should wait for a response to its attempt to initiate a call before following the alternate routes set in an **ARS**^[408] form.

- **DTMF Support:** *Default = RFC2833.*

This setting is used to select the method by which DTMF key presses are signalled to the remote end. The supported options are **In Band**, **RFC2833** or **Info**.

- **Call Initiation Timeout:** *Default = 4 seconds, Range = 1 to 99 seconds, Software level = 4.2+.*

This option sets how long the IP Office should wait for a response to its attempt to initiate a call before following the alternate routes set in an **ARS**^[408] form.

- **VoIP Silence Suppression:** *Default = Off*

When selected, this option will detect periods of silence on any call over the line and will not send any data during those silent periods. This feature is not used on IP lines using **G711** between IP400 and IP500 systems.

- **Fax Transport Support:** *Default = Off, Software level = 5.0+.*

This option is only selectable if the option **Re-Invite Supported** is also selected. For IP500 systems with an IP500 VCM card, **T38 fax relay**^[732] is supported for the sending and receiving of faxes. These fax calls can also be relayed across H323 SCN lines that also have Fax Transport Support selected.

- **Local Tones:** *On (Fixed)*

Indicates that the IP Office will generate tones when required.

- **RE-Invite Supported:** *Default = Off.*

When enabled, Re-Invite can be used during a session to change the characteristics of the session, for example when the target of an incoming call or a transfer does not support the codec originally negotiated on the trunk. Requires the ITSP to also support Re-Invite.

- **Use Offerer's Codec:** *Default = Off, Software level = 4.2+.*

Normally for SIP calls, the answerer's codec preference is used. This option can be used to override that behaviour and use the codec preferences offered by the caller.

5.4.10.5 T38 Fax

The setting on this tab are only accessible if **Re-invite Supported** and **Fax Transport Support** are selected on the **VoIP** ^[246] tab. **T38 fax relay** ^[732] is only supported on IP500 systems with an IP500 VCM card.

SIP Line T38 Fax	
Control Unit	SOE ✗ , IP403 ✗ , IP406 V1 ✗ , IP406 V2 ✗ , IP412 ✗ , IP500 ✔ .
Software Level	5.0+.
Mergeable	✗ .

- **Use Default Values:** *Default = On.*
If selected, all the fields are set to their default values and greyed out.
- **T38 Fax Version:** *Default = 3.*
The IP Office can support Versions **0**, **1**, **2** and **3**. During fax relay, the two gateways will negotiate to use the highest version which they both support.
- **Transport:** *Default = UDPTL (fixed).*
Currently only **UDPTL** is supported. **TCP** and **RTP** transport are not supported.
 - For **UDPTL**, redundancy error correction is supported. Forward Error Correction (FEC) is not supported.
- **Redundancy:**
Redundancy sends additional fax packets in order to increase the reliability. However increased redundancy increases the bandwidth required for the fax transport.
 - **Low Speed:** *Default = 0 (No redundancy), Range = 0 to 5.*
Sets the number of redundant T38 fax packets that should be sent for low speed V.21 T.30 fax transmissions.
 - **High Speed:** *Default = 0 (No redundancy), Range = 0 to 5.*
Sets the number of redundant T38 fax packets that should be sent for V.17, V.27 and V.28 fax transmissions.
- **TCF Method:** *Default = Trans TCF.*
TCF = Training Check Frame.
- **Max Bit Rate (bps):** *Default = 14400.*
Lower rates can be selected if the current rate is not supported by the fax equipment or is found to not be reliable.
- **EFlag Start Timer (msecs):** *Default = 2600.*
- **EFlag Stop Timer (msecs):** *Default = 2300.*
- **Tx Network Timeout (secs):** *Default = 150.*
- **Scan Line Fix-up:** *Default = On.*
- **TFOP Enhancement:** *Default = On.*
- **Disable T30 ECM:** *Default = Off.*
When selected, disabled the T.30 Error Correction Mode used for fax transmission.
- **Disable EFlags For First DIS:** *Default = Off.*
- **Disable T30 MR Compression:** *Default = Off.*
- **NSF Override:** *Default = Off.*
If selected, the NSF (Non-Standard Facility) information sent by the T38 device can be overridden using the values in the fields below.
 - **Country Code:** *Default = 0.*
 - **Vendor Code:** *Default = 0.*

5.4.11 SES Line

IP Office SES lines are used for connection to an Avaya SIP Enablement Service (SES) server within an Avaya SIP for Branch network. This is a variant of TCP SIP line and requires SIP Trunk Channels licenses in the IP Office configuration for the number of simultaneous SIP and or SES calls. The SES server supports up to 1000 branches arranged in a star network configuration.

With an Avaya SIP for Branch network, all extensions are reachable from any branch. Using short codes, the IP Office should be configured to route calls for other branches in the network to the SES server via a SES line. The SES server acts as a SIP proxy. It holds a table of all branch prefixes and uses that table to reroute each call to the appropriate destination branch. The SES server will only route calls to the branch if the number match both the branch prefix and the expected extension number length.

Related Fields

There are a number of fields in the IP Office configuration which are used with SES lines but are not on the SES Line form. The following are located on the [System | System](#) ^[149] tab:

- **Branch Prefix:** *Default = Blank, Range = 0 to 999999999, Software level = 4.1+.*
Used to identify the IP Office system within an Avaya SIP for Branch network linked via an SES server. The branch prefixes of each IP Offices within the network must unique and must not overlap. For example 85, 861 and 862 are okay, but 86 and 861 overlap.
- **Local Number Length:** *Default = Blank (Off), Range = Blank (Off) or 3 to 9, Software level = 4.1+.*
Set the default length for extension numbers for extensions, users and hunt groups. Entry of an extension number of a different length will cause an error warning within IP Office Manager. This field is intended for IP Office systems being used in an Avaya SIP for Branch network linked via an SES server, where fixed extension lengths must be used. Note that the Branch Prefix and the Local Number Length must not exceed 15 digits.

Short Codes

Calls are routed to the SES line using short codes in the same was as for other line types. The short codes can route calls directly to the SES line's Outgoing Group ID or to an ARS form configured for the SES line. If at all possible, requiring a short code for each branch within the SIP for Branch Network should be avoided.

- **Common Branch Prefix Leading Digit Routing**
If a common digit has been used at the start of all branch prefixes, that digit can be used as the key for a single SES routing short code. For example, first use a single range for branch prefixes, ie. 80 to 89 in a small network, 800 to 899 in a medium network or 8000 to 8999 in a large network. At each branch a single short code of the form 8N could then be used to start SES routing.
- **Common Branch Prefix and Extension Length Routing**
If the above method cannot be used, maintaining a common branch prefix and local number length throughout the network is another option to simplify routing. For example, if all branches have a two digit branch prefixes and then 4 digit extension numbers, a short code of the form XXXXXX; could be used to only match dialed six digit numbers. Longer dialing is still possible so long as the first additional digit is dialed within the Dial Delay Time setting of the IP Office system.
- **SES Line Prefix**
The SES line includes a prefix field that can be added to any calling number information supplied with calls received on a SES line. That prefix can then be used as the mechanism to route return calls back to the SES line. For example, if the line prefix is 3, a short code of the form 3N/N can be used.

Additional Notes**1. Voice Compression Channels**

SES calls use IP Office voice compression channels in the same way as used for standard IP trunks and extensions. These are provided by the installation of VCM modules within the IP Office control unit. RTP relay is applied to SES calls where applicable.

2. Licensing

SIP Trunk Channels licenses is required in the IP Office configuration. These set the maximum number of simultaneous SIP and SES calls supported by the IP Office. Multiple licenses can be added to achieve a cumulative maximum number of channels supported.

3. IP Office Firewall

The IP Office firewall between LAN1 and LAN2 is not applied to SES calls.

4. Incoming Call Routing

Incoming SES calls are routed as if being internal calls. The dialed branch prefix is removed and the remaining extension number is used as if dialed on switch.

5. DiffServ Marking

DiffServ marking is applied to calls using the **DiffServ Settings** on the [System | LAN | VoIP](#) ⁽¹⁵⁶⁾ tab of either LAN1 or LAN2 as set by the line's **Use Network Topology Info** setting.

Resource Limitation

A number of limits can affect the number of SES calls. When one of these limits is reached the following occurs: any further outgoing SES calls are blocked unless some alternate route is available using ARS; any incoming SES calls are queued until the required resource becomes available.

Limiting factors are:

- the number of licensed SIP channels.
- the **Max Calls** setting of the SES line.
- the number of voice compression channels.
 - **SES Line Call to/from Non-IP Devices**
Voice compression channel required.
 - **Outgoing SES Line Call from IP Device**
No voice compression channel required.
 - **Incoming SIP Line Call to IP Device**
Voice compression channel reserved until call connected.
- If the IP Office also used SIP trunks, the same resources are shared between SES and SIP calls.

5.4.11.1 SES Line

Line SES Line	
Control Unit	SOE  , IP403  , IP406 V1  , IP406 V2  , IP412  , IP500  .
Software Level	4.1+.
Mergeable	 .

- **Line Number:** *Default = Automatically assigned.*
By default a value is assigned by the IP Office. This value can be changed but it must be unique.
- **Network Type:** *Default = Public, Software level = 4.2+.*
This option is available if [Restrict Network Interconnect](#)^[166] ([System | Telephony | Telephony](#)^[166]) is enabled. It allows the trunk to be set as either **Public** or **Private**. The IP Office will return number unobtainable indication to any attempt to connect a call on a **Private** trunk to a **Public** trunk or vice versa. This restriction includes transfers, forwarding and conference calls.
 - Due to the nature of this feature, its use is not recommended on systems also using any of the following other IP Office features: [Small Community Networks](#)^[792], VPNremote, Phone Manager telecommuter mode.
- **SES Domain Name:** *Default = Blank.*
This field is used to enter the domain part of the SIP URI provided by the ITSP. For example, in the SIP URI mysip@example.com, the domain part of the URI is example.com. For outgoing calls the user part of the SIP URI is the Branch Prefix and the extension number.
- **SES Address:** *Default = 0.0.0.0*
This value is the public IP address of the SES server. This address must not be shared by any other IP, IP DECT or SIP line in the IP Office system configuration.
- **Inactivity Timeout (seconds):** *Default = 120, Range = 0 to 99999 seconds.*
If no SIP messages or signalling have been sent or received during this period the IP Office will close the connection.
- **Outgoing Group:** *Default = 0, Range 0 to 99999.*
Short codes that specify a number to dial also specify the line group to be used. The IP Office will then seize a line with a matching Outgoing Group ID.
- **Prefix:** *Default = Blank.*
This prefix will be added to any source number received with incoming calls. Normally this should match a dialing short code configured to route matching calls to the SES line's Outgoing Group ID number.
- **Max Calls:** *Default = 10*
This field sets the maximum number of simultaneous calls that can use the URI before the IP Office returns busy to any further calls.
- **In Service:** *Default = On.*
When this field is not selected, the SIP trunk is unregistered and not available to incoming and outgoing calls.
- **Network Configuration**
 - **Layer 4 Protocol:** *Default = TCP*
This field cannot be changed.
 - **Use Network Topology Info:** *Default = LAN1*
For various settings, this field indicates whether the SES line uses the [System | LAN | Network Topology](#)^[158] settings of either LAN1 or LAN2. For instance the DiffServ Settings applied to outgoing SES calls and the IP address (see description of **Via Nat** below).
 - **Send Port:** *Default = 5060*
This field cannot be changed.
 - **Listen Port:** *Default = 5060*
This field cannot be changed.
 - **Via NAT:** *Default = Off.*
This option controls which address should be used as the IP address of the IP Office system that is entered into the SES server configuration.
 - If disabled, the address used is the [IP Address](#)^[153] of the IP Office system as set on the LAN Settings sub-tab of LAN1 or LAN2. The selection of LAN1 or LAN2 is determined by the Use Network Topology field above.
 - If enabled, the address used is the [Public IP Address](#)^[153] as set on the Network Topology sub-tab of LAN1 or LAN2. The selection of LAN1 or LAN2 is determined by the Use Network Topology field above.

Prefix Allocation Check

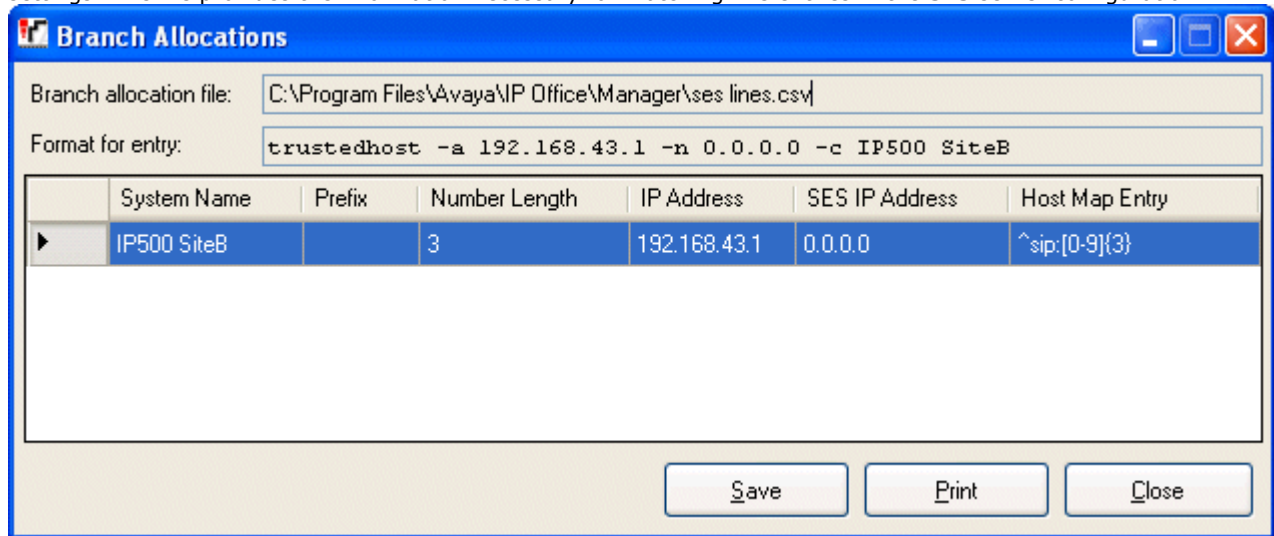
As SES lines are configured within each IP Office system in the SIP for Branch network, details of the IP Office system can be written to a CSV file. This file can then be used to ensure the following:

1. Check branch allocation

Check that the settings of the IP Office and SES line being added are both complete and do not conflict with those of other IP Office systems already added to the CSV file. Select this option and click Execute, then select the CSV file containing details of the other IP Offices with SES lines.

2. List branch allocations

Provide the source of the details that need to be entered in the SES server configuration for each IP Office. Select this option and click Execute to select and display the CSV file containing details of existing IP Office SES line settings. This file provides the information necessary for matching line entries in the SES server configuration.



Branch Allocations

Branch allocation file: C:\Program Files\Avaya\IP Office\Manager\ses lines.csv

Format for entry: trustedhost -a 192.168.43.1 -n 0.0.0.0 -c IP500 SiteB

	System Name	Prefix	Number Length	IP Address	SES IP Address	Host Map Entry
▶	IP500 SiteB		3	192.168.43.1	0.0.0.0	^sip:[0-9]{3}

Save Print Close

5.4.11.2 VoIP

Line SES Line	
Control Unit	SOE ✓, IP403 ✗, IP406 V1 ✗, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	4.1+.
Mergeable	✗.

- **Gateway IP Address:** *Default = Blank*

Enter the IP address of the gateway device at the remote end. This address must not be shared by any other IP line (H323, SIP, SES or IP DECT).

- **Compression Mode:** *Default = Automatic Selection*

This field defines the compression mode (codec) or modes offered during call setup. The supported codecs are **G.711 ALAW 64K**, **G.711 ULAW 64K**, **G.729(a) 8K CS-ACELP**, **G.723.1 6K3 MP-MLQ**.

- **Automatic Select**

This setting is used as follows:

- For pre-IP Office 5.0 systems, **Automatic Select** uses the codecs in the order of preference **G729a**, **G711 ALAW**, **G711 ULAW** and **G.723.1**.
 - For IP Office 5.0+, the **Automatic Code Preference** ⁽¹⁶⁶⁾ setting (**System | Telephony | Telephony** ⁽¹⁶⁶⁾) can be used to set which codec should be first in the list of preferred codecs. The remaining codecs are used in the order as above. Note that the G711 codecs are treated as a pair, so if one is selected as the first preference, the other will be second in the list.
 - If required, a specific codec can be selected. However, if during call setup negotiation with a specific codec, connect fails, the IP Office will fallback to using automatic selection.

The **Advanced** button can be used to display a list of the codecs in their current order of preference. Codecs can be dragged up or down the list or deselected from the list. Note that once a list has been edited in this way, clicking **Advanced** again will return it to **Automatic Select**.

- **Call Initiation Timeout:** *Default = 4 seconds, Range = 1 to 99 seconds, Software level = 4.2+.*

This option sets how long the IP Office should wait for a response to its attempt to initiate a call before following the alternate routes set in an **ARS** ⁽⁴⁰⁸⁾ form.

- **DTMF Support:** *Default = RFC2833.*

This setting is used to select the method by which DTMF key presses are signalled to the remote end. The supported options are **In Band**, **RFC2833** or **Info**.

- **VoIP Silence Suppression:** *Default = Off*

When selected, this option will detect periods of silence on any call over the line and will not send any data during those silent periods. This feature is not used on IP lines using **G711** between IP400 and IP500 systems.

- **Local Tones:** *On (Fixed)*

Indicates that the IP Office will generate tones when required.

- **Allow Direct Media Path:** *Default = On*

This settings controls whether H323 calls must be routed via the H323 gatekeeper (the IP Office) or can be routed alternately if possible within the network structure.

- If enabled, H323 calls can take routes other than through the IP Office. This removes the need for a voice compression channel. Both ends of the calls must support Direct Media. Enabling this option may cause some vendors problems with changing the media path in mid call. Pre-IP Office 4.0, when using direct media path, it is not always possible for the extension to be recorded or monitored.
 - If disabled or not supported at on one end of the call, the call is routed via the IP Office.
 - On pre-4.0 these calls would then require a voice compression channel even if the IP devices use the same audio codec.
 - On IP Office 4.0 and higher, RTP relay support allows calls between devices using the same audio codec to not require a voice compression channel.

- **RE-Invite Supported:** *Default = Off.*

When enabled, Re-Invite can be used during a session to change the characteristics of the session, for example when the target of an incoming call or a transfer does not support the codec originally negotiated on the trunk. Requires the ITSP to also support Re-Invite.

- **Use Offerer's Codec:** *Default = Off, Software level = 4.2+.*

Normally for SIP calls, the answerer's codec preference is used. This option can be used to override that behaviour and use the codec preferences offered by the caller.

5.4.11.3 T38 Fax

The setting on this tab are only accessible if **Re-invite Supported** and **Fax Transport Support** are selected on the **VoIP** ^[252] tab. **T38 fax relay** ^[732] is only supported on IP500 systems with an IP500 VCM card.

SIP Line T38 Fax	
Control Unit	SOE ✗ , IP403 ✗ , IP406 V1 ✗ , IP406 V2 ✗ , IP412 ✗ , IP500 ✔ .
Software Level	5.0+.
Mergeable	✗ .

- **Use Default Values:** *Default = On.*
If selected, all the fields are set to their default values and greyed out.
- **T38 Fax Version:** *Default = 3.*
The IP Office can support Versions **0**, **1**, **2** and **3**. During fax relay, the two gateways will negotiate to use the highest version which they both support.
- **Transport:** *Default = UDPTL (fixed).*
Currently only **UDPTL** is supported. **TCP** and **RTP** transport are not supported.
 - For **UDPTL**, redundancy error correction is supported. Forward Error Correction (FEC) is not supported.
- **Redundancy:**
Redundancy sends additional fax packets in order to increase the reliability. However increased redundancy increases the bandwidth required for the fax transport.
 - **Low Speed:** *Default = 0 (No redundancy), Range = 0 to 5.*
Sets the number of redundant T38 fax packets that should be sent for low speed V.21 T.30 fax transmissions.
 - **High Speed:** *Default = 0 (No redundancy), Range = 0 to 5.*
Sets the number of redundant T38 fax packets that should be sent for V.17, V.27 and V.28 fax transmissions.
- **TCF Method:** *Default = Trans TCF.*
TCF = Training Check Frame.
- **Max Bit Rate (bps):** *Default = 14400.*
Lower rates can be selected if the current rate is not supported by the fax equipment or is found to not be reliable.
- **EFlag Start Timer (msecs):** *Default = 2600.*
- **EFlag Stop Timer (msecs):** *Default = 2300.*
- **Tx Network Timeout (secs):** *Default = 150.*
- **Scan Line Fix-up:** *Default = On.*
- **TFOP Enhancement:** *Default = On.*
- **Disable T30 ECM:** *Default = Off.*
When selected, disabled the T.30 Error Correction Mode used for fax transmission.
- **Disable EFlags For First DIS:** *Default = Off.*
- **Disable T30 MR Compression:** *Default = Off.*
- **NSF Override:** *Default = Off.*
If selected, the NSF (Non-Standard Facility) information sent by the T38 device can be overridden using the values in the fields below.
 - **Country Code:** *Default = 0.*
 - **Vendor Code:** *Default = 0.*

5.5 Control Unit



The Control Unit configuration form gives details for devices connected to the system. This includes some modules within the control unit as well as external expansion modules.

For most units, this information is allocated by the system and is not configurable.

The **New** and **Delete** actions on this form have special functions.

- **New**
This action is used to added a WAN3 expansion module. If when a WAN3 is added to the system, the WAN3 is not recognized following a system reboot, New on this form can be used to scan for the WAN3 module.

- **Delete**

This action can only be used with external expansion modules. It cannot be applied to the control unit and modules inside the control unit. The action should be used with caution as deleting an expansion module will also delete any extensions or lines associated with that expansion module. If the module is physically present, those entries will be recreated following a reboot but with default settings.

Control Unit Control Unit	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	Pre-3.2 ✗, 3.2+ ✓.

- **Device Number**

This is automatically allocated by the system.

- **Unit Type**

The name of the device.

- **Version**

The version of software running on each unit.

- **Serial Number**

This is the number the system uses to tie a physical Control Unit to a device configuration (device number). For the control unit and WAN3 modules this is the MAC address. For a device connected to an Expansion port it is the Expansion port number plus 1.

- **Unit IP Address**

This field shows the IP address for the control unit (LAN1) and if present, WAN3 expansion module.

- **Interconnect Number**

For external expansion modules this is the control unit expansion port used for connection. For other devices this is 0.

- **Module Number**

For external expansion modules this is the control unit expansion port used for connection. For internal devices in the control unit, **Control Unit** is displayed.

5.6 Extension Settings



The IP Office supports both physical extensions and IP extensions.

By default, each extension is normally associated with a user and uses that user's directory number and other setting. Users with a log in code can move between extensions by logging in and out, so the directory number is not a fixed property of the extension.

- **Physical Extensions**

Physical extension ports are either integral to the IP Office control unit or added by the installation of an IP Office analog or digital phone expansion module. Extension entries are automatically created for each physical extension port within the system. These ports cannot be added or deleted manually.



- **Standard Telephone**

An analog extension port (PHONE or POT) or an Avaya digital station port (DS) within the IP Office system.



- **Quiet Headset**

Used for analog extension devices that are permanently off-hook.



- **IVR Port**

Used for analog ports connected to devices that require a specific disconnect clear signal at the end of each call.



- **Paging Speaker**

An analog extension port set to be used as a paging speaker connection.

- **IP Extensions**

These are used for IP phone devices or applications.



- **H323 or SIP Extension**

This icon indicates an IP extension. For Avaya IP hardphones the IP extensions is either added manually or by the automatic detection the phone being connected, refer to the IP Office IP Phone Installation Manual. IP extensions can also be added manually to support a Phone Manager Pro PC Softphone or a third-party IP phone device. Note that third-party IP phone devices require entry of an IP End-Points license.



- **IP DECT**

An extension port manually added to match extensions within an Avaya IP DECT system connected to the IP Office via an IP DECT line.

5.6.1 Extn

This tab contains settings applicable to most types of extension.

Extension Extn	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗. For IP Office 4.1+, Base Extension , Disable Speakerphone and Reset Volume After Calls are mergeable.

- **Extension ID**

The physical ID of the extension port. Except for IP extensions, this settings is allocated by the system and is not configurable.

- **Base Extension:** *Range = 2 to 9 digits.*

This is the directory number of the extension's default associated user. For IP Office 4.1+, changes to the Base Extension are mergeable.

- For IP Office 4.0 and higher, following a restart the system will attempt to log in the last user associated with the extension. For pre-4.0 IP Office systems the extension's default associated user is logged in. In either case this does not occur it that user is set to Force Login ([User | Telephone](#)^[277]).
- If another user logs onto an extension, when they log out, the extension returns to its default associated user unless they have logged in elsewhere or are set to Force Login.
- In the US the Base Extension number is used for E911 calls. Any change to an extension's base extension must be matched by changes to the E911 adjunct database, see [E911 Overview](#)^[420]. The extensions default associated user should not be deleted.
- Extensions associated with IP phones should not be given extension numbers greater than 7 digits.
- Extension numbers in the range 8897 to 9999 are reserved for use by the IP Office Delta Server.
- Users for Delta Server, CBC and CCC should only use up to 4 digit extension numbers.

- **Caller Display Type:** *Default = On.*

Controls the presentation of caller display information for analog extensions, see [Caller Display](#)^[738]. For digital and IP extensions, this value is fixed as **On**. The table below lists the supported options, all others are currently not used and default to matching **UK**.

Type	Description
Off	Disables caller display.
On	Enables caller display using the caller display type appropriate to the System Locale, see Supported Country and Locale Settings ^[800] . If a different setting is required it can be selected from the list of supported options. For an analog extension connected to a fax server or other device that requires the pass through of DTMF tones, select DTMFF .
UK	FSK before the first ring conforming to BT SIN 227. Name and number.
UK20	As per UK but with a maximum length of 20 characters. Name and number.
DTMFA	Caller ID in the DTMF pattern A<caller ID>C. Number only.
DTMFB	Caller ID in DTMF after call connection. Number only.
DTMFC	Caller ID in the DTMF pattern A<caller ID>#. Number only.
DTMFF	Sends the called number in DTMF after call connection. Number only. • Used for fax servers. When calls are delivered via a hunt group it is recommended that hunt group queuing is not used. For IP Office 4.2, if hunt group queuing is being used, set the Queue Type to Assign Call on Agent Alert.
DTMFD	Caller ID in the DTMF pattern D<caller ID>C. Number only.
FSKA	Variant of UK used for BT Relate 1100 phones. Name and number.
FSKB	ETSI specification with 0.25 second leading ring. Name and number.
FSKC	ETSI specification with 1.2 second leading ring. Name and number.
FSKD	Conforms to Belcore specification. Name and number.

- **Reset Volume after Calls:** *Default = Off.*

Resets the phone's handset volume after each call. This option is supported on Avaya 1600, 2400, 4400, 4600, 5400, 5600 and 6400 Series phones.

- **Device Type**

This field is for information only. It indicates, if possible, the type of phone connected to the extension port when the configuration was received from the IP Office.

- Analogue extension ports always report as **Analog Handset** since the presence or absence of actual analog phone cannot be detected.
- Digital extension ports report the type of digital phone connected or **Unknown digital handset** if no phone is detected.
- H323 extensions report the type of IP phone registered or **Unknown H323 handset** if no phone is currently registered as that extension.
- SIP extensions (*IP Office 5.0+*) report the type of SIP phone registered or **Unknown SIP device** if no SIP device is currently registered as that extension.

- **Module**

This field indicates the external expansion module on which the port is located. **BP** indicates an analog phone extension port on the base or control unit. **BD** indicates a digital station (DS) port on the control unit. For the IP500 control unit, **BD** and **BP** is also followed by the slot number. VoIP extensions report as **0**.

- **Port**

This field indicates the port number on the **Module** indicated above. VoIP extensions report as **0**.

- **Disable Speakerphone:** *Default = Off (Speakerphone enabled), Software level = 4.1+.*

When selected, disables the fixed **SPEAKER** button if present on the phone using this extension port. Only supported on Avaya DS and H323 IP phones. An audible beep is sounded when a disabled **SPEAKER** button is pressed. Incoming calls such as pages and intercom calls are still connected but the speech path is not audible until the user goes off-hook using the handset or headset. Similarly calls made or answered using other buttons on the phone are not audible unless the user goes off-hook using the handset or headset. Currently connected calls are not affected by changes to this setting.

- **Force Authorization:** *Default = On, Software level = 5.0+, SIP Extensions only*

This setting is used with SIP extension devices.

5.6.2 Analog

This tab contains settings that are applicable to analog extensions. These extensions are provided by ports marked as **POT** or **PHONE** on IP Office control units and expansion modules.

Extension Analog	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **Equipment Classification:** *Default = Standard Telephone*

Only available for analog extension ports. Note that changing this settings should be followed by a system reboot.

- **Quiet Headset**

On extensions set to **Quiet Headset**, the audio path is disabled when the extension is idle. Ringing is presented in the audio path. Caller ID is not supported on the phone. This option can be used with analog extensions where the handset is replaced by a headset since in such a scenario audio is only desired when a call is connected. Since the audio path is disabled when idle, the **Quiet Headset** extension cannot dial digits to make calls. Therefore to make and answer calls this option is typically used with the user [Offhook Station](#)^[277] ([User | Telephony | Call Settings](#)^[277]) setting which allows the extension user to make and answer calls using IP Office applications such as Phone Manager.

- **Paging Speaker**

Used for analog ports connected to a paging amplifier. This extension will present busy and cannot be called or be used to make calls. It can only be accessed using [Dial Paging](#)^[461] features. For more details refer to [Paging from IP Office](#)^[773].

- For IP Office 4.0+, when using a UPAM connected to an analog extension port, the extension's [Equipment Classification](#)^[258] ([Extension | Analog](#))^[258] should be set to **IVR Port** and not **Paging Speaker**.

- **Standard Telephone**

Use for normal analog phones.

- **Door Phone 1/Door Phone 2**

These two options are currently not used and so are grayed out.

- **IVR Port**

Used for analog ports connected to devices that require a disconnect clear signal (ie. a break in the loop current) at the end of each call. When selected the **Disconnect Pulse Width** is used. For pre-3.2 IP Office systems, this option was only supported on systems with the locale set to **United States** or **Saudi Arabia**.

- **FAX Machine** (IP Office 5.0+)

If [T38 Fax Relay](#)^[732] is being used, this setting should be selected on any analog extension connected to an analog fax machine.

- **Message Waiting Lamp Indication Type:** *Default = None*

Allows the selection of the message waiting indication (MWI) mode for analog and IP DECT extensions.

- For control unit and Phone V1 module analog extensions, the options **None**, **On**, **51V Stepped**, **81V**, **Line Reversal A** and **Line Reversal B** are available. **On** defaults the MWI using the system locale,.

'On'	Locale
81V	Belgium, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Italy, Netherlands, Norway, Poland, Portugal, Russia, Saudi Arabia, Sweden, Switzerland, Turkey, United Kingdom.
51V Stepped	Argentina, Australia, Brazil, Canada, Chile, China, Colombia, Japan, Korea, Mexico, New Zealand, Peru, South Africa, Spain, United States.

- For Phone V2 module extensions, the additional option 101V is available.

- **Hook Persistency:** *Default = 100ms, Range = 50 to 255ms.*

Defines the time frame (in milliseconds) in which the system will wait before determining that the phone is off-hook.

- **Flash Hook Pulse Width**

The following options are only available for analog extension ports. They define the length of loop break that will be considered a time break recall (TBR) signal.

- **Use System Defaults:** *Default = Selected (On)*

Use the default values appropriate to the system's locale. See [Appendix A: Locale Settings](#)^[800].

- **Minimum Width:** *Range = 0 to 99 x 10ms.*

Minimum hook flash length used if Use System Defaults is not selected. Shorter breaks are ignored a glitches.

- **Maximum Width:** *Range = 0 to 255 x10ms.*

Maximum hook flash length used if Use System Defaults is not selected. Longer breaks are treated as clearing.

- **Disconnect Pulse Width:** *Default = 0ms, Range = 0 to 2550ms*

This setting is used with analog extensions where the **Equipment Classification** above has been set to **IVR Port**. It sets the length of loop current break used to indicate call clearing.

5.6.3 VoIP

This tab is only available for H323 and SIP extensions. The settings available will vary depending on the extension type:

- [H323 IP Extension](#) ^[260]
- [SIP Extension](#) ^[262]

H323 IP Extension

Extension VoIP	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **IP Address:** *Default = 0.0.0.0*
The IP address of the phone. The default entry accepts connection from any address. Note that if an address is set here, a T3 IP phone with the matching IP address is able to override the address set here with its own address.
- **MAC Address:** *Default = 000000000000 (Grayed out)*
This field is grayed out and not used.
- **Compression Mode:** *Default = Automatic Selection*
This field defines the compression mode (codec) or modes offered during call setup. The supported codecs are **G.711 ALAW 64K**, **G.711 ULAW 64K**, **G.729(a) 8K CS-ACELP**, **G.723.1 6K3 MP-MLQ**.
 - **Automatic Select**
This setting is used as follows:
 - For pre-IP Office 5.0 systems, **Automatic Select** uses the codecs in the order of preference **G729a**, **G711 ALAW**, **G711 ULAW** and **G.723.1**.
 - For IP Office 5.0+, the **Automatic Code Preference** ^[166] setting ([System | Telephony | Telephony](#) ^[166]) can be used to set which codec should be first in the list of preferred codecs. The remaining codecs are used in the order as above. Note that the G711 codecs are treated as a pair, so if one is selected as the first preference, the other will be second in the list.
 - If required, a specific codec can be selected. However, if during call setup negotiation with a specific codec, connect fails, the IP Office will fallback to using automatic selection.
- **Gain:** *Default = Default, Software level = 3.0 to 4.1.*
Allows adjustment of the volume. The gain is selectable from -31dB to +31dB in 1dB increments.
- **TDM->IP Gain:** *Default = Default, Range = -31dB to +31dB, Software level = 4.1 Q1 2008+.*
Allows adjustment of the gain on audio from the IP Office TDM interface to the IP connection.
- **IP->TDM Gain:** *Default = Default, Range = -31dB to +31dB, Software level = 4.1 Q1 2008+.*
Allows adjustment of the gain on audio from the IP connection to the IP Office TDM interface.
- **Supplementary Services:** *Default = H450, Software level = 4.0+.*
Selects the supplementary service signaling method for use with non-Avaya IP devices. Options are **None**, **QSIG** and **H450**. For H450, hold and transfer are supported. Note that the selected method must be supported by the remote end.
- **VoIP Silence Suppression:** *Default = Off*
When selected, this option will detect periods of silence on any call over the line and will not send any data during those silent periods. This feature is not used on IP lines using **G711** between IP400 and IP500 systems.
- **Enable FastStart:** *Default = Off*
A fast connection procedure. Reduces the number of messages that need to be exchanged before an audio channel is created.
- **Out of Band DTMF:** *Default = On*
When on, DTMF is sent as a separate signal ("Out of Band") rather than as part of the encoded voice stream ("In Band"). The "Out of Band" signaling is inserted back into the audio by the remote end. This is recommended for low bit-rate compression modes such as G.729 and G.723 where DTMF in the voice stream can become distorted. Switch off for T3 IP extensions.
 - For Avaya 1600/4600/5600 Series phones the IP Office will enforce the appropriate setting for the phone type.
 - For Avaya T3 IP phones, when **Out-Of-Band** is unchecked, the **Allow Direct Media Path** option is ignored and calls are via the IP Office in order to provide tones.
- **Local Tones:** *Default = Off*
When selected, the H.323 phones generate their own tones. This option is not supported by Avaya IP phones and Phone Manager Pro PC Softphone.

- **Allow Direct Media Path:** *Default = On*

This settings controls whether H323 calls must be routed via the H323 gatekeeper (the IP Office) or can be routed alternately if possible within the network structure.

- If enabled, H323 calls can take routes other than through the IP Office. This removes the need for a voice compression channel. Both ends of the calls must support Direct Media. Enabling this option may cause some vendors problems with changing the media path in mid call. Pre-IP Office 4.0, when using direct media path, it is not always possible for the extension to be recorded or monitored.
- If disabled or not supported at on one end of the call, the call is routed via the IP Office.
 - On pre-4.0 these calls would then require a voice compression channel even if the IP devices use the same audio codec.
 - On IP Office 4.0 and higher, RTP relay support allows calls between devices using the same audio codec to not require a voice compression channel.
 - T3 IP phones must be configured to 20ms packet size to use RTP relay. With the IP Office 4.0 Q2 2007 maintenance release, previous restrictions on T3 IP phones using direct media were removed. The phone must have firmware T246 or higher as provided on the IP Office Administrator Applications CD.

- **VPN Phone Allowed:** *Default = Off, Software level = 4.1+.*

Indicates that the extension can be used with Avaya IP Office VPNremote Phone firmware. The phones must be licensed using a VPN IP Extensions licenses added to the IP Office configuration for the number of VPN IP phones required. Note that the field is grayed out if there are no available licenses.

SIP Extension

Extension VoIP (SIP)	
Control Unit	SOE ✗, IP403 ✗, IP406 V1 ✔, IP406 V2 ✔, IP412 ✔, IP500 ✔.
Software Level	5.0+.
Mergeable	✗.

- **IP Address:** *Default = 0.0.0.0*
The IP address of the phone. The default entry accepts connection from any address. If an address is entered, registration is only accepted from a device with that address.
- **Compression Mode:** *Default = Automatic Selection*
This field defines the compression mode (codec) or modes offered during call setup. The supported codecs are **G.711 ALAW 64K**, **G.711 ULAW 64K**, **G.729(a) 8K CS-ACELP**, **G.723.1 6K3 MP-MLQ**.
 - **Automatic Select**
This setting is used as follows:
 - For pre-IP Office 5.0 systems, **Automatic Select** uses the codecs in the order of preference **G729a**, **G711 ALAW**, **G711 ULAW** and **G.723.1**.
 - For IP Office 5.0+, the **Automatic Code Preference** ⁽¹⁶⁶⁾ setting ([System | Telephony | Telephony](#) ⁽¹⁶⁶⁾) can be used to set which codec should be first in the list of preferred codecs. The remaining codecs are used in the order as above. Note that the G711 codecs are treated as a pair, so if one is selected as the first preference, the other will be second in the list.
 - If required, a specific codec can be selected. However, if during call setup negotiation with a specific codec, connect fails, the IP Office will fallback to using automatic selection.
- **Gain:** *Default = Default, Software level = 3.0 to 4.1.*
Allows adjustment of the volume. The gain is selectable from -31dB to +31dB in 1dB increments.
- **TDM->IP Gain:** *Default = Default, Range = -31dB to +31dB, Software level = 4.1 Q1 2008+.*
Allows adjustment of the gain on audio from the IP Office TDM interface to the IP connection.
- **IP->TDM Gain:** *Default = Default, Range = -31dB to +31dB, Software level = 4.1 Q1 2008+.*
Allows adjustment of the gain on audio from the IP connection to the IP Office TDM interface.
- **DTMF Support:** *Default = RFC2833.*
This setting is used to select the method by which DTMF key presses are signalled to the remote end. The supported options are **In Band**, **RFC2833** or **Info**.
- **VoIP Silence Suppression:** *Default = Off*
When selected, this option will detect periods of silence on any call over the line and will not send any data during those silent periods. This feature is not used on IP lines using **G711** between IP400 and IP500 systems.
- **Enable FastStart:** *Default = Off*
A fast connection procedure. Reduces the number of messages that need to be exchanged before an audio channel is created.
- **Local Tones:** *Default = Off*
When selected, the extension generates their own tones.
- **Local Hold Music:** *Default = Off*
- **Allow Direct Media Path:** *Default = On*
This settings controls whether H323 calls must be routed via the H323 gatekeeper (the IP Office) or can be routed alternately if possible within the network structure.
 - If enabled, H323 calls can take routes other than through the IP Office. This removes the need for a voice compression channel. Both ends of the calls must support Direct Media. Enabling this option may cause some vendors problems with changing the media path in mid call. Pre-IP Office 4.0, when using direct media path, it is not always possible for the extension to be recorded or monitored.
 - If disabled or not supported at on one end of the call, the call is routed via the IP Office.
 - On pre-4.0 these calls would then require a voice compression channel even if the IP devices use the same audio codec.
 - On IP Office 4.0 and higher, RTP relay support allows calls between devices using the same audio codec to not require a voice compression channel.
- **RE-Invite Supported:** *Default = Off.*
When enabled, Re-Invite can be used during a session to change the characteristics of the session, for example when the target of an incoming call or a transfer does not support the codec originally negotiated on the trunk. Requires the ITSP to also support Re-Invite.

- **Use Offerer's Codec:** *Default = Off, Software level = 4.2+.*

Normally for SIP calls, the answerer's codec preference is used. This option can be used to override that behaviour and use the codec preferences offered by the caller.

5.6.4 T38 Fax

The setting on this tab are only accessible if **Re-invite Supported** and **Fax Transport Support** are selected on the **VoIP**^[260] tab. **T38 fax relay**^[732] is only supported on IP500 systems with an IP500 VCM card.

SIP Extension T38 Fax	
Control Unit	SOE ✗ , IP403 ✗ , IP406 V1 ✗ , IP406 V2 ✗ , IP412 ✗ , IP500 ✔ .
Software Level	5.0+.
Mergeable	✗ .

- **Use Default Values:** *Default = On.*
If selected, all the fields are set to their default values and greyed out.
- **T38 Fax Version:** *Default = 3.*
The IP Office can support Versions **0**, **1**, **2** and **3**. During fax relay, the two gateways will negotiate to use the highest version which they both support.
- **Transport:** *Default = UDPTL (fixed).*
Currently only **UDPTL** is supported. **TCP** and **RTP** transport are not supported.
 - For **UDPTL**, redundancy error correction is supported. Forward Error Correction (FEC) is not supported.
- **Redundancy:**
Redundancy sends additional fax packets in order to increase the reliability. However increased redundancy increases the bandwidth required for the fax transport.
 - **Low Speed:** *Default = 0 (No redundancy), Range = 0 to 5.*
Sets the number of redundant T38 fax packets that should be sent for low speed V.21 T.30 fax transmissions.
 - **High Speed:** *Default = 0 (No redundancy), Range = 0 to 5.*
Sets the number of redundant T38 fax packets that should be sent for V.17, V.27 and V.28 fax transmissions.
- **TCF Method:** *Default = Trans TCF.*
TCF = Training Check Frame.
- **Max Bit Rate (bps):** *Default = 14400.*
Lower rates can be selected if the current rate is not supported by the fax equipment or is found to not be reliable.
- **EFlag Start Timer (msecs):** *Default = 2600.*
- **EFlag Stop Timer (msecs):** *Default = 2300.*
- **Tx Network Timeout (secs):** *Default = 150.*
- **Scan Line Fix-up:** *Default = On.*
- **TFOP Enhancement:** *Default = On.*
- **Disable T30 ECM:** *Default = Off.*
When selected, disabled the T.30 Error Correction Mode used for fax transmission.
- **Disable EFlags For First DIS:** *Default = Off.*
- **Disable T30 MR Compression:** *Default = Off.*
- **NSF Override:** *Default = Off.*
If selected, the NSF (Non-Standard Facility) information sent by the T38 device can be overridden using the values in the fields below.
 - **Country Code:** *Default = 0.*
 - **Vendor Code:** *Default = 0.*

5.6.5 IP DECT

This tab is displayed for IP DECT extensions. These are created manually after a IP DECT line has been added to the configuration. They should match the extensions configured on the IP DECT system. Refer to the IP Office IP DECT Installation manual.

Extension IP DECT	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.1+.
Mergeable	✗.

- **DECT Line ID**
Use the drop-down list to select the [IP DECT line](#) ^[236] from the IP Office to the Avaya IP DECT system.
- **Message Waiting Lamp Indication Type:** *Default = On*
Allows selection of the message waiting indication to use with the IP DECT extension. Options are: **None**, **On**.

5.7 User Settings



Users are the people who use the IP Office system. They do not necessary have to be an extension user, for example users are used for RAS dial in data access. In addition, more users can be created than there are extensions, with users logging in to an extension when they want to receive calls.

By default, a user is automatically created to match each extension. They are numbered from 201 upwards and the first 16 are placed in the hunt group Main (200), which is the default destination for incoming calls.

-  **Standard User:** A standard user.
-  **No User:** Used to apply settings for extensions which currently have no associated user.
-  **Remote Manager:** Used as the default settings for dial in user connections.
-  **Hot Desking User:** Users with a Login Code can move between extensions by logging in and off.

When a user is deleted

When a user is deleted, any calls in progress continue until completed. The ownership of the call is shown as the NoUser user. Merging the deletion of a user causes all references to that deleted user to be removed from the system.

Changing a user's extension

Changing a user's extension number automatically logs the user in on the matching base extension if available and the user doesn't have [Forced Login](#) ^[27] enabled. If **Forced Login** is enabled, then the user remains on the current extension being used until they log out and log in at the new extension.

Note that changing a user's extension number affects the user's ability to collect Voicemail messages from their own extension. Each user's extension is set up as a "trusted location" under the Source Numbers tab of the User configuration form. This "trusted location" allows the user to dial *17 to collect Voicemail from his own extension. Therefore if the extension number is changed so must the "trusted location".

The following related configuration items are automatically updated when a user extension is changed:

- User, Coverage and Bridged Appearance buttons associated with the user.
- Hunt group membership (disabled membership state is maintained).
- Forwards and Follow Me's set to the user as the destination.
- Incoming call routes to this destination.
- Dial in source numbers for access to the user's own voicemail.
- Direct call pickup buttons are updated.
- The extension number of an associated extension is updated.

Creating a User Rights Based on an Existing User

1. Select  **User Rights**.
2. In the group pane, right-click and select **New User Rights from a User**.
3. Select the user and click **OK**.

Associating User Rights to a User

1. Select  **User Rights** or  **User**.
2. In the group pane, right-click and select **Apply User Rights to Users**.
3. Select the user rights to be applied.
4. On the **Members of this User Rights** sub tab select the users to which the user rights should be applied as their Working Hours User Rights.
5. On the **Members when out of hours** sub tab select which users should use the selected user rights as their out of hours user rights.
6. Click **OK**.

or

1. Select the required user to display their settings in the details pane.
2. Select the **User** tab.
3. Use **Working Hours User Rights** drop-down to select the user rights required.
4. If required a **Working Hours Time Profile** and **Out of Hours User Rights** can be selected.
5. Click **OK**.

Copy User Rights Settings over a User's Settings

This process replaces a user's current settings with those that are part of the selected user rights. It does not associate the user with the user rights.

1. Select  **User Rights**.
2. In the group pane, right-click and select **Copy user rights values to users**.
3. Select the user rights to be applied.
4. Click **OK**.

5.7.1 User

Users are the people who use the system or are Dial In users for data access. A system User may or may not have an Extension Number that physical exists - this is useful if users do not require a physical extension but wish to use system features, for example voicemail, forwarding etc.

- **NoUser** is used to apply settings to extensions which have no associated user.
- **Remote Manager** is used as the default settings for dial in connections.

User User	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

A  symbol indicates that the setting can also be set and locked within a set of [user rights](#)^[389] with which the user is associated using the [Working Hour User Rights](#)^[268] and [Out of Hours User Rights](#)^[268] settings. The user rights applied can be controlled by a [time profile](#)^[361] selected as the user's [Working Hours Time Profile](#)^[268] setting. The effect of the user rights can be displayed using the [User Right View](#)^[268] control.

- **Name:** *Range = Up to 15 characters*

This is the user's account name used for RAS Dial In, Caller Display and voicemail mailbox. As the display on Caller Display telephones is normally only 16 digits long it is useful to keep the name short. Only alphanumeric characters and space are supported in this field. Do not use punctuation characters such as #, ?, /, -, _ and . Start names with a alphabetic character. This field is case sensitive and must be unique.

- Voicemail uses the name to match a user to their mailbox. Changing a user's name will route their voicemail calls to a new mailbox. Note however that Voicemail Pro is not case sensitive and will treat names such as "Steve Smith", "steve smith" and "STEVE SMITH" as being the same.

- **Password:** *Default = Blank, Range = Up to 31 alphanumeric characters.*

This password is used by IP Office user applications such as Phone Manager, SoftConsole and TAPI. It is also used for user's with Dial In access. Note that this is not the user's voicemail mailbox password (see [User | Voicemail | Voicemail Code](#)^[279]) or their phone log in code (see [User | Telephony | Supervisor Settings | Login Code](#)^[279]).

- For IP Office 4.2+ and Phone Manager 4.2+, users can change their Password using the **File | Change Password** option within Phone Manager.

- **Full Name:** *Default = Blank*

Use this field to enter the user's full name. The recommended format is <first name><space><last name> in order for this value to be used correctly by voicemail dial by name features. When set, the Full Name is used in place of the Name for display by phones and IP Office user applications. Only alphanumeric characters and spaces are supported in this field. Do not use punctuation characters such as #, ?, /, -, _ , ^, > and . The entry in this field also cannot start with either a space or a numeral.

- **Extension:** *Range = 2 to 9 digits.*

Any number up to 9 digits. In general all extensions should have the same number of digits. This setting can be left blank for users used just for dial in data connections.

- Users for Delta Server, CBC and CCC should only use up to 4 digit extension numbers.
- Users associated with IP phones or who may log in as such devices should not be given extension numbers greater than 7 digits.
- Extension numbers in the range 8897 to 9999 are reserved for use by the IP Office Delta Server.

- **Locale:** *Default = Blank* ([Use system locale](#)^[149])

Configures the language used for voicemail prompts played to the user, assuming the language is available on the voicemail server. See [Supported Country and Locale Settings](#)^[808]. On a digital extension it also controls the display language used for messages from the IP Office. Note however that some phones have their own menu options for the selected language for the phone menus.

- When the IP Office routes a call to the voicemail server it indicates the locale for which matching prompts should be provided [if available](#). The locale sent to the voicemail server by the IP Office is determined as follows:

Locale Source	Usage
Short Code	The short code locale, if set, is used if the call is routed to voicemail using the short code.
System	If no user or incoming call route locale is set system locale is used unless overridden by a short code locale.
Incoming Call Route	The incoming call route locale, if set, is used if caller is external.
User	The user locale, if set, is used if the caller is internal.

- **Priority:** *Default = 5, Range = 1 (Lowest) to 5 (Highest)* 
This setting is used by [Least Cost Routing](#)^[37] (pre-IP Office 4.0) or [ARS](#)^[40] (IP Office 4.0+).
- **Restrictions:** *Default = None, Software level = Up to 3.1.*
Sets which set of User Restrictions applies to the user. See [User Restrictions](#)^[38].
- **Phone Manager Type:** *Default = Lite, Software level = Up to 3.1.*
Determines the mode in which the user's copy of the Phone Manager application will operate. Modes are Lite, Pro and VoIP (Phone Manager Pro PC Softphone). Note that the number of users able to simultaneously use Pro and VoIP modes is controlled by licenses entered into the IP Office configuration. *In IP Office 3.2 configurations this option has moved to the Phone Manager Options tab.
- **Book a Conferencing Center in Phone Manager:** *Default = Off, Software level = Up to 3.1.*
When enabled, displays links in the user's Phone Manager application for access to the IP Office Conferencing Center application if installed. Note that to book a conference requires the user to have a Conferencing Center user ID and password. This feature also requires the Conferencing Center IP Address and Conferencing Center URL to be set (System | System). *In IP Office 3.2 configurations this option has moved to the Phone Manager Options tab.
- **Ex Directory:** *Default = Off*
When on, the user does not appear in the directory list shown by the Phone Manager and SoftConsole applications and on phones with a directory function.
- **Enable one-X Portal Services:** *Default = Off, Software level = 5.0+.*
Select if the user is able to use the one-X Portal for IP Office application to access their phone settings and to control phone calls. Enabling this option requires the IP Office configuration to contain one-X Portal Services licenses and will use one instance of that license.
- **Device Type:**
This field shows the type of phone at which the user is either current logged in. If the user is logged out but is associated with a **Base Extension** the device type for the extension port is shown. If the user has been logged out and is not associated with a **Base Extension**, the device type is listed as **Device Type Unknown**.
- **User Rights View:** *Software level = 3.2+.*
This field affects Manager only. It allows you to switch between displaying the user settings as affected by their associated **Working Hours User Rights** or **Out of Hours User Rights**.
- **Working Hours Time Profile:** *Default = <None> (Continuous), Software level = 3.2+.*
If set, the selected time profile defines when the user's **Working Hours User Rights** are applied. Outside the time profile, the user's **Out of Hours User Rights** are applied.
- **Working Hours User Rights:** *Default = Blank (No rights restrictions), Software level = 3.2+.*
This field allows selection of user rights which may set and lock some user settings. If a **Working Hours Time Profile** has been selected, the **Working Hours User Rights** are only applied during the times defined by that time profile, otherwise they are applied at all times.
- **Out of Hours User Rights:** *Default = Blank (No rights restrictions), Software level = 3.2+.*
This field allows selection of alternate user rights that are used outside the times defined by the user's Working Hours Time Profile.

5.7.2 Voicemail

If a voicemail server application is being used on your system, each user has use of a voicemail mailbox. You can use this form to enable this facility and various user voicemail settings.

User Voicemail	
Control Unit	SOE  , IP403  , IP406 V1  , IP406 V2  , IP412  , IP500  .
Software Level	1.0+.
Mergeable	 .

A  symbol indicates that the setting can also be set and locked within a set of [user rights](#)^[389] with which the user is associated using the [Working Hour User Rights](#)^[268] and [Out of Hours User Rights](#)^[268] settings. The user rights applied can be controlled by a [time profile](#)^[361] selected as the user's [Working Hours Time Profile](#)^[268] setting. The effect of the user rights can be displayed using the [User Right View](#)^[268] control.

- **Voicemail Code:** *Default = Blank, Range = 0 (no code) to 15 digits.*

A code (1-15 digits) used by the voicemail server to validate access to this mailbox. If remote access is attempted to a mailbox that has no voicemail code set, the prompt "Remote access is not configured on this mailbox" is played. Whether the caller will be prompted to enter this code varies as follows:

- **Embedded Voicemail**

The voicemail code is used if set.

- **Trusted Source Access**

The voicemail code is required when accessing the mailbox from a location that is not set as a trusted number in the user's [Source Numbers](#)^[275] list. Also Voicemail Pro call flows containing an action where the action's PIN code set to \$ will prompt the user for their voicemail code.

- Users can set their own code through the mailbox telephone user interface. In this case the user is forced to enter at least 4 digits.
- Codes set through the Voicemail Pro telephone user interface are restricted to valid sequences. For example, attempting to enter a code that matches the mailbox extension, repeat the same number (1111) or a sequence of numbers (1234) are not allowed. If these types of code are required they can be entered through Manager.

- **Changing the Code**

All of the voicemail interfaces, except IMS and IMAP, provide options for the user to change the voicemail code themselves. In addition, Voicemail Pro running in Intuity emulation mode will request that the user sets a code when they first log in to their mailbox using the phone.

- **Voicemail On** *Default = On*

When on, the mailbox is used by the IP Office to answer the user's unanswered calls or calls when the user's extension returns busy. Note that selecting off does not disable use of the user's mailbox. Messages can still be forward to their mailbox and recordings can be placed in it. The mailbox can also still be accessed to collect messages.

- When a caller is directed to voicemail to leave a message, the IP Office indicates the target user or hunt group mailbox.
 - For pre-IP Office 4.0 systems, the mailbox of the user or hunt group whose settings have caused the call to go to voicemail is used.
 - For IP Office 4.0+, the mailbox of the originally targeted user or hunt group is used. This applies even if the call has been forwarded to another destination. It also includes scenarios where a hunt group call overflows or is in fallback to another group.
 - Voicemail Pro can be used to customize which mailbox is used separately from the mailbox indicated by IP Office.

- **Voicemail Help** *Default = Off*

For voicemail systems running IP Office mailbox mode, this option controls whether users retrieving messages are automatically given an additional prompt "For help at any time press 8." If switched off, users can still press 8 for help. For voicemail systems running in Intuity emulation mode, this option has no effect. On those systems the default access greeting always includes the prompt "For help at any time, press *4" (*H in the US locale).

- **Voicemail Ringback:** *Default = Off* 

When enabled and a new message has been received, the voicemail server calls the user's extension to attempt to deliver the message each time the telephone is put down. Voicemail will not ring the extension more than once every 30 seconds.

- **Voicemail Email Reading:** *Default = Off*

When you log into you voicemail box, it will detect your email messages and read them to you. This email text to speech feature is set-up through Voicemail Pro.

- **UMS Web Services:** *Default = Off, Software level = 4.2+.*

This option is used with Voicemail Pro 4.2+. If enabled, the user can use either an IMAP email client, web browser or Exchange 2007 to access their voicemail mailbox messages. **UMS Web Service** licenses are required for the number of users configured. Note that the user must have a voicemail code set in order to use the UMS interfaces.

- In the  [License](#) ^[378] section, double-clicking on the UMS Web Services license display a menu that allows you to add and remove users from the list of those enabled for UMS Web Services without having to open the settings of each individual user.

- **Voicemail Email:** *Default = Blank (No voicemail email features)*

This field is used to set the user or group email address used by the voicemail server for voicemail email operation. When an address is entered, the additional Voicemail Email control below are selectable to configure the type of voicemail email service that should be provided.

- Use of voicemail email requires the Voicemail Pro server to have been configured to use either a local MAPI email client or an SMTP email server account.
- The use of voicemail email for the sending (automatic or manual) of email messages with wav files attached should be considered with care. A one-minute message creates a 1MB .wav file.

- **Voicemail Email Default = Off**

If an email address is entered for the user or group, the following options become selectable. These control the mode of automatic voicemail email operation provided by the voicemail server whenever the voicemail mailbox receives a new voicemail message.

- Users can change their voicemail email mode using visual voice. If the voicemail server is set to IP Office mode, user can also change their voicemail email mode through the telephone prompts. The ability to change the voicemail email mode can also be provided in a call flow using a Play Configuration Menu action or a Generic action.
- If the voicemail server is set to IP Office mode, users can manually forward a message to email.

- **Off**

If off, none of the options below are used for automatic voicemail email. Users can also select this mode by dialing *03 from their extension.

- **Copy**

If this mode is selected, each time a new voicemail message is received in the voicemail mailbox, a copy of the message is attached to an email and sent to the email address. There is no mailbox synchronization between the email and voicemail mailboxes. For example reading and deletion of the email message does not affect the message in the voicemail mailbox or the message waiting indication provided for that new message.

- **Forward**

If this mode is selected, each time a new voicemail message is received in the voicemail mailbox, that message is attached to an email and sent to the email address. No copy of the voicemail message is retained in the voicemail mailbox and there is no message waiting indication. As with Copy, there is no mailbox synchronization between the email and voicemail mailboxes. Users can also select this mode by dialing *01 from their extension.

- **UMS Exchange 2007**

Voicemail Pro 5.0+ supports voicemail email to an Exchange 2007 server email account. For users and groups also enabled for UMS Web Services this significantly changes their mailbox operation. The Exchange Server inbox is used as their voicemail message store and features such as message waiting indication are set by new messages in that location rather than the voicemail mailbox on the voicemail server. Telephone access to voicemail messages, including Visual Voice access, is redirected to the Exchange 2007 mailbox.

- **Alert**

If this mode is selected, each time a new voicemail message is received in the voicemail mailbox, a simple email message is sent to the email address. This is an email message announcing details of the voicemail message but with no copy of the voicemail message attached. Users can also select this mode by dialing *02 from their extension.

- **DTMF Breakout**

When a caller is directed to voicemail to leave a message, they can be given the option to be transferred to a different extension. The greeting message needs to be recorded telling the caller the options available. The extension numbers that they can be transferred to are entered in the fields below. For IP Office 5.0+, system default values can be set for these numbers and are used unless a different number is set within these user settings. Also for IP Office 5.0+, these values can be set using [User Rights](#) ^[399].

- **Reception / Breakout (DTMF 0)**

The number to which a caller is transferred if they press **0** while listening to the mailbox greeting rather than leaving a message (***0** on embedded voicemail).

- For systems set to Intuity emulation mode, the mailbox user can also access this option when collecting their messages by dialing ***0**.
- If the mailbox has been reached through a call flow containing a **Leave Mail** action, the option provided when **0** is pressed are:
 - For IP Office mode, the call follows the **Leave Mail** action's **Failure** or **Success** results connections depending on whether the caller pressed **0** before or after the record tone.

-
- For Intuity mode, pressing **0** always follows the **Reception / Breakout (DTMF 0)** setting.

- **Breakout (DTMF 2)**

The number to which a caller is transferred if they press **2** while listening to the mailbox greeting rather than leaving a message (***2** on embedded voicemail). Pre-IP Office 5.0 this option is not support for Voicemail Pro running in IP Office mailbox mode.

- **Breakout (DTMF 3)**

The number to which a caller is transferred if they press **3** while listening to the mailbox greeting rather than leaving a message (***3** on embedded voicemail). Pre-IP Office 5.0 this option is not support for Voicemail Pro running in IP Office mailbox mode.

5.7.3 DND

Do not disturb prevents the user from receiving hunt group and page calls. Direct callers hear busy tone or are diverted to voicemail if available. It overrides any call forwarding, follow me and call coverage settings. A set of exception numbers can be added to list numbers from which the user still wants to be able to receive calls when they have do not disturb in use.

The user can switch do not disturb on/off using short codes, pre-programmed keys on their phone or IP Office Phone Manager application. See [Do Not Disturb](#) in the Telephone Features section for full details of Do Not Disturb operation.

User DND	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

A  symbol indicates that the setting can also be set and locked within a set of [user rights](#) with which the user is associated using the [Working Hour User Rights](#) and [Out of Hours User Rights](#) settings. The user rights applied can be controlled by a [time profile](#) selected as the user's [Working Hours Time Profile](#) setting. The effect of the user rights can be displayed using the [User Right View](#) control.

- **Do Not Disturb:** *Default = Off*

When checked the user's extension is considered busy, except for calls coming from sources listed in their Do Not Disturb Exception List. When a user has do not disturb in use, their normal extension will give [alternate dialtone](#) when off hook.

- For IP Office 4.2+, users with DND on are indicated as 'busy' on any BLF indicators set to that user.

- **Do Not Disturb Exception List:** *Default = Blank*

This is the list of telephone numbers that are still allowed through when Do Not Disturb is set. For example this could be an assistant or an expected phone call. Internal extension numbers or external telephone numbers can be entered. If you wish to add a range of numbers, you can either enter each number separately or make use of the wildcards "N" and "X" in the number. For example, to allow all numbers from 7325551000 to 7325551099, the DND Exception number can be entered as either 73255510XX or 73255510N. Note that this list is only applied to direct calls to the user.

- Calls to a hunt group of which the user is a member do not use the Do Not Disturb Exceptions list.

5.7.4 Short Codes

Short codes entered in this list can only be dialed by the user. They will override any matching user rights or system short code. See [Short Codes](#)^[424] for details.

User and User Rights short codes are only applied to numbers dialed by that user. For example they are not applied to calls forwarded via the user.

- **WARNING**

User dialing of emergency numbers must not be blocked by the addition of short codes. If short codes are added, the users ability to dial emergency numbers must be tested and maintained.

User Short Codes	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

A  symbol indicates that the setting can also be set and locked within a set of [user rights](#)^[388] with which the user is associated using the [Working Hour User Rights](#)^[268] and [Out of Hours User Rights](#)^[268] settings. The user rights applied can be controlled by a [time profile](#)^[361] selected as the user's [Working Hours Time Profile](#)^[268] setting. The effect of the user rights can be displayed using the [User Right View](#)^[268] control.

Short codes can be added and edited using the **Add**, **Remove** and **Edit** buttons. Alternatively you can right-click on the list of existing short code to add and edit short codes.

- ***FWD**

Short codes of this form are inserted by the IP Office. They are used in conjunction with the **User | Forwarding** settings to remember previously used forwarding numbers. They can be accessed on that tab by using the drop-down selector on the forwarding fields.

5.7.5 Source Numbers

This form is used to enter values that have special usages. These are entered using the **Add**, **Edit** and **Remove** buttons.

User Source Numbers	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

The following types of entry can be added to a user's source numbers.

- **V<Caller's ICLID>**

For systems using Voicemail Lite or Voicemail Pro, strings prefixed with a V indicate numbers from which access to the users mailbox is allowed without requiring entry of the mailbox's voicemail code. This is referred to as "trusted source".

- For Voicemail Pro running in Intuity mode, trusted source is used for calls from programmable buttons set to Voicemail Collect and Visual Voice. Other controls are prompted for the mailbox number and then password.

- **R<Caller's ICLID>**

To allow Dial In/RAS call access only from a specified number prefix the number with a "R", for example **R7325551234**.

- **H<Group Name>**

Allows the user to receive message waiting indication of new group messages. Enter H followed by the group name, for example **HMain**.

- On suitable display extensions, the hunt group name and number of new messages is displayed. Refer to the appropriate telephone user guide.
- If the user is using Phone Manager, the Messages tab shows the hunt group name and number of new messages.
- If the user is not a member of the group, a voicemail code must be set for the group's mailbox. See Voicemail Code on the [Hunt Group | Voicemail](#)^[314] tab.

- **P<Telephone Number>**

This entry sets the destination for callback (outbound alert) calls from voicemail. Enter **P** followed by the telephone number including any necessary external dialing prefix, for example P917325559876. This facility is only available when using Voicemail Pro through which a default Callback or a user specific Callback start point has been configured. Refer to the Voicemail Pro documentation. This feature is separate from voicemail ringback and Voicemail Pro outcalling.

- **RESERVE_LAST_CA=** *Software level = Up to 3.2.*

Used for users with multiple call appearance buttons. When present, this string stops the users last call appearance button from being used to receive incoming calls. This ensures that the user always has a call appearance button available to make outgoing calls and to initiate transfers and conferences. For IP Office 4.0 and higher this option has been replaced by [Reserve Last CA](#)^[281] ([User | Telephony | Multi-line Options](#)^[281]).

- **AT<string>**

Strings beginning with AT can be used with a user called **DTEDefault** to configure the default settings of the IP Office control unit's DTE port.

NoUser User Source Numbers

The following source numbers can also be used on the **Source Numbers** tab of the [NoUser](#)^[750] user. These affect all users on the system. Note that changes to these source numbers require a reboot of the IP Office system to become effective.

- **ACD_QUEUE_DELAY=nn** *Software level = Up to 3.2.*

Used to change the timeout for still queued messages. The parameter **nn** can be replaced with a time in seconds between 20 and 180. For IP Office 4.0+ this has been replaced by [Hunt Group | Announcements](#)^[323].

- **ALLOW_5410_UPGRADES** *Software level - 4.1 Q1 2008 Maintenance Release+.*

Previously the only control over the upgrading of 5410 phones was controlled by the use of the turn_on.bat and turn_off.bat batch files installed with the IP Office Manager application. Now in addition this option must be present for 5410 phones to update their firmware. Refer to the IP Office Installation manual for full details.

- **DISTINCT_HOLD_RINGBACK** *(Software level = 4.1+)*

Used to display a specific message about the call type for calls returning after timing out from being parked or held. If set, such call display Return Call - Held or Return Call - Parked rather than connected party name or line name.

- **ExtendDirectLimit <optional limit>** *(Software level = 4.1 - 4.2)*

This command allows the number of directory entries that can be added to the configuration to be controlled. By default Manager imposes a limit of 1000 directory entries. If this command is used without specifying an optional limit, the limit set is determined by the type of IP Office control unit; refer to the table below. Note that specifying or allowing a large directory limit may affect the performance of applications that use and display the directory, for example IP Office Phone Manager.

- **Warning**

Specifying a large directory limit may affect the performance of applications that use and display the directory, for example IP Office Phone Manager, SoftConsole and phones with access to the directory. It may also delay the inward routing of calls as the IP Office attempts to match ICLID's received to names using the directory entries.

- **ExtendLDAPDirectLimit <optional limit>** (Software level = 4.1 – 4.2)

This command allows the number of LDAP directory entries that the IP Office will read to be controlled. By default the IP Office will only support up to 500 LDAP directory entries. If this command is used without specifying an optional limit, the limit set is determined by the type of IP Office control unit; refer to the table below. Note that specifying or allowing a large directory limit may affect the performance of applications that use and display the directory, for example IP Office Phone Manager.

Control Unit	IP Office Directory Entries	LDAP Entries
Small Office Edition	100	1000
IP406 V2	2500	10000
IP412	10000	10000
IP500	10000	10000

- **FORCE_HANDSFREE_TRANSFER** (Software level = 4.2 Q4 Maintenance release+)

If set, when using the [handsfree announced transfer](#)^[71h] process, both the transfer enquiry and transfer completion calls are auto-answered. Without this setting only the transfer enquiry call is auto-answered.

- **H323SetupTimerNoLCR** (Software level = 3.2 only)

Used to set the fallback time from VoIP trunks to non-VoIP trunks within LCR. See IP Trunk Fallback. For IP Office 4.2+ the setting **Call Initiation Timeout** is available on SIP and IP trunks.

- **HIDE_CALL_STATE**

Used to hide the call status information, for example Dial, Conn, etc, on DS phones. Used in conjunction with the LONGER_NAMES option. Not supported for 1600 Series phones.

- **LONGER_NAMES**

Used to increase the length of names sent for display on DS phones. See [Caller Display](#)^[73h]. Not supported for 1600 Series phones.

- **ProgressEndsOverlapSend**

See [Line | VoIP](#)^[23h].

- **VM_TRUNCATE_TIME=X** (Range X = 0 to 7 seconds, Software level = 3.2 Maintenance Releases and 4.0+)

On analog trunks, call disconnection can occur through busy tone detection. When such calls go to voicemail to be recorded or leave a message, when the call ends the IP Office indicates to the voicemail system how much to remove from the end of the recording in order to remove the busy tone segment. This amount varies by [system locale](#)^[80h], the defaults being listed below. For some systems it may be necessary to override the default if analog call recordings are being clipped or include busy tone. That can be done by adding a **VM_TRUNCATE_TIME=** setting with the required value in the range 0 to 7 seconds.

- **New Zealand, Australia, China, Saudi Arabia and Custom:** 5 seconds.

- **Korea:** 3 seconds.

- **Italy, Mexico, Chile, Colombia and Brazil:** 2 seconds.

- **Argentina, United States, Canada and Turkey:** 0 seconds.

- **All other locales:** 7 seconds.

- **VMAIL_WAIT_DURATION=X** (Software level = 4.2 2Q09+)

The number of milliseconds to wait before cutting through the audio to Voicemail. Some delay is required to allow for codec negotiation.

5.7.6 Telephony

This form allows you to set telephony related features for the user. These override any matching setting in the [System | Telephony](#) tab. The settings are grouped into a number of sub-tabs.

5.7.6.1 Call Settings

This form allows you to set telephony related features for the user. These override any matching setting in the [System | Telephony](#) tab. For details of the ringing tones, see [Ring Tones](#). DefaultRing uses the system default setting set through the [System | Telephony](#) tab.

User Telephony Call Settings	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

A  symbol indicates that the setting can also be set and locked within a set of [user rights](#) with which the user is associated using the [Working Hour User Rights](#) and [Out of Hours User Rights](#) settings. The user rights applied can be controlled by a [time profile](#) selected as the user's [Working Hours Time Profile](#) setting. The effect of the user rights can be displayed using the [User Right View](#) control.

- Outside Call Sequence:** *Default = Default Ring (Use system setting)*
 Applies only to analog phones. Sets the ring pattern used for external calls to the user. The distinctive ring patterns used for other phones are fixed. Note that changing the pattern for users associated with fax and modem device extensions may cause those devices to not recognize and answer calls.
- Inside Call Sequence:** *Default = Default Ring (Use system setting)*
 Applies only to analog phones. Sets the ring pattern used for internal calls to the user. The distinctive ring patterns used for other phones are fixed.
- Ring Back Sequence:** *Default = Default Ring (Use system setting)*
 Applies only to analog phones. Sets the ring pattern used for ringback calls to the user. The distinctive ring patterns used for other phones are fixed.
- No Answer Time:** *Default = Blank (Use system setting), Range = 6 to 99999 seconds.*
 Sets how long a call rings the user before following forwarded on no answer if set or going to voicemail. Leave blank to use the system default setting.
- Wrap-up Time (secs):** *Default = 2 seconds, Range 0 to 99999 seconds.*
 Specifies the amount of time after ending one call before another call can ring. During this interval the user is treated as still being on a call. You may wish to increase this in a "call center" environment where users may need time to log call details before taking the next call. It is recommended that this option is not set to less than the default of 2 seconds. 0 is used to allow immediate ringing.
 - For users set as an CCR Agent, the [After Call Work Time](#) (User | Telephony | Supervisor Settings) setting is also used.
- Transfer Return Time (secs):** *Default = Blank (Off), Range 1 to 99999 seconds.*
 Sets the delay after which any call transferred by the user, which remains unanswered, should return to the user. A return call will continue ringing and does not follow any forwards or go to voicemail.
 - Pre-3.2 IP Office, the transfer return only occurs if the user has no other connected call.
 - For IP Office 3.2+, transfer return will occur if the user has an available call appearance button.
 - Transfer return is not applied if the transfer is to a hunt group that has queuing enabled.
- Call Cost Mark-Up:** *Default = 100, Software level = 4.0+.*
 This setting is used for ISDN advice of charge (AOC). The markup is applied to the cost calculations based on the number of units and the line base cost per charging unit. The field is in units of 1/100th, for example an entry of 100 is a markup factor of 1. This value is included in the IP Office SMDR output.
- Call Waiting On:** *Default = Off*
 For users on phones without appearance buttons, if the user is on a call and a second call arrives for them, an audio tone can be given in the speech path to indicate a waiting call (the call waiting tone varies according to locale). The waiting caller hears ringing rather than receiving busy. There can only be one waiting call, any further calls receive normal busy treatment. If the call waiting is not answered within the no answer time, it follows forward on no answer or goes to voicemail as appropriate. User call waiting is not used for users on phones with multiple call appearance buttons. Call waiting can also be applied to hunt group calls, see [Hunt Group | Hunt Group | Call Waiting](#). Call waiting should not be used for fax and modem devices.
- Answer Call Waiting on Hold (Analog):** *Default = On*
 Applies to analog and IP DECT extension users only. If the user has a call waiting and places their current call on hold, the waiting call is automatically connected.

• **Busy on Held:** *Default = On*

If on, when the user has a call on hold, new calls receive busy treatment. They will follow the users forward on busy setting or are diverted to voicemail. Otherwise busy tone (ringing for incoming analog calls) is played. This overrides call waiting when the user has a call on hold. The use of Busy on Held for users with multiple call appearance buttons is deprecated and Manager will prompt whether it should switch off busy on held for such a user.

• **Offhook Station:** *Default = Off*

Off-hook station allows an analog extension to be left permanently off-hook, with calls being made and answered using an IP Office application such as IP Office Phone Manager, SoftConsole or TAPI. When enabled, the analog extension user is able to control calls using the IP Office application in the following ways:

- Offhook station does not disable the physical off-hook on the phone. When starting with the phone on-hook, making and answering calls is the same as normal analog extension operation. Additionally however calls can be initiated from the IP Office application. After entering the required number and making the call, the on-hook analog extension receives a ringback showing the users own caller ID and when answered the outgoing call leg to the dialed number is started.
 - On pre-4.0 systems, calls to a busy destination are cleared immediately without hearing busy tone. On 4.0+ (except Phone Manager PC Softphone) calls to a busy destination present busy tone before being cleared.
- The IP Office application can be used to end a call with the analog extension still off-hook. Instead of hearing disconnect tone the user hears silence and can use the IP Office application to make another call. Though off-hook the user is indicated as idle on BLF indicators. Without off-hook Station set the user would be indicated as busy when off-hook, whether on a call or not.
- If off-hook and idle (having cleared a previous call), incoming call alerts by presenting ringing through the audio path. The call can be answered using the IP Office application or going on-hook/off-hook or by pressing recall. Note that if the phone normally displays call ID, any caller ID displayed on the phone is not updated in this mode, however the call ID in the IP Office application will be that of the current call.
- If on-hook, an incoming call alerts as normal using the phone's ringer and is answered by going off-hook. The answer call option in the IP Office application cannot be used to answer calls to an on-hook analog extension.
- While off-hook and idle, the analog extension user will receive page calls.
- If the analog extension handset is replaced with a headset, changing the [Extension Classification](#) ^[258] ([Extn | Analog](#)) ^[258] to **Quiet Handset** is recommended.
- Offhook Station is not intended for non-analog phone extension. However since it enables the answer calls control in IP Office Phone Manager it is recommended that the option is selected for non-analog extension users.

• **System Phone:** *Default = Off*

Allows the user, on DS phones with a **MENU** key, to alter the date and time displayed on the phones. On those phones it is accessed by pressing **Menu | Menu | Func | Setup**. Pre-IP Office 4.0, See [System Phone](#) ^[749].

Software Level	
All	On 4412, 4424, 4612, 4624, 6408, 6416 and 6424 phones (where supported by the IP Office software), a system phone user can manually set the system date and time ^[747] by pressing Menu Menu Func Setup .
Pre-IP Office 4.0	This option also allowed the user to use the SoftConsole Send Message function. This setting is no longer required for IP Office 4.0+.
IP Office 4.1+	A system phone user can be configured to use a Self-Administer ^[634] programmable button to set the system date and time ^[747] .
IP Office 4.2+	A system phone user can use Change Login Code ^[451] short codes to change the login code of other users.
IP Office 5.0+	A system phone user on a 1600 Series phone is able to edit Directory ^[359] records.

• **Remote Homeworker/Agent:** *Default = Off, Software level = Up to 3.2 only.*

Select if the user has been configured as a remote extension on an Avaya INDeX telephone system. Refer to the INDeX Level 10 documentation for full details. Only available in Locales where the Avaya INDeX switch is supported.

5.7.6.2 Supervisor Settings

User Telephony Supervisor Settings	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

A  symbol indicates that the setting can also be set and locked within a set of [user rights](#) [388] with which the user is associated using the [Working Hour User Rights](#) [268] and [Out of Hours User Rights](#) [268] settings. The user rights applied can be controlled by a [time profile](#) [361] selected as the user's [Working Hours Time Profile](#) [268] setting. The effect of the user rights can be displayed using the [User Right View](#) [268] control.

- Login Code:** *Default = Blank, Range = Up to 31 digits.*
 The code that has to be entered, as part of a log in sequence, to allow a user to make use of an extension as if it was their own phone. This log in code can be used for hot desking as well as logging back onto your phone after it has been used by a hot desking user. This entry must be at least 4 digits for DS port users. Login codes of up to 15 digits are supported with [Extn Login](#) [602] [buttons](#) [602]. Login codes of up to 31 digits are supported with [Extn Login](#) [469] [short codes](#) [469].
 - IP Office 4.0+ supports hot desking between IP Office systems. To log in at a pre-IP Office 5.0 system requires that IP Office to have a **Advanced Small Community Networking** license.
 - For IP Office 4.0+ users can only log out if they have a **Login Code** set.
 - For IP Office 4.2+ users can log out without having a **Login Code** set if they are currently logged in at an extension whose [Base Extension Number](#) [256] ([Extension | Extn](#)) [256] no longer matches their own [Extension](#) [268] ([User | User](#)) [268].
 - IP Office 4.1 2008 Q2 maintenance release and higher supports the short code feature [Change Login Code](#) [451].
- Login Idle Period (secs):** *Default = Blank (Off), Range = 0 (Off) to 99999.*
 If the telephone is not used for this period; the user currently logged in is automatically logged out. This option should be used only in conjunction with Force Login (see below).
- Monitor Group:** *Default = <None>*
 Sets the hunt group whose members the user can monitor if silent monitoring is setup. See [Call Listen](#) [443].
- Coverage Group:** *Default = <None>, Software level = 5.0+* 
 If a group is selected, then in scenarios where an external call would normally have gone to voicemail, it instead continues ringing and also starts alerting the members of the coverage group. For further details refer to [Coverage Groups](#) [731].
- Status on No Answer:** *Default = Logged On, Software level = 4.0+.*
 Hunt groups can change the status of call center agents (users with a log in code and set to forced log in) who do not answer a hunt group call presented to them before it is automatically presented to the next agent. Use of this is controlled by the [Agent's Status on No Answer Applies To](#) [309] setting of the hunt group.
 - Logged On**
 If this option is selected, the user's status is not changed.
 - Busy Wrap-Up**
 If this option is selected the user's membership status of the hunt group triggering the action is changed to disabled. The user can still make and receive calls and will still continue to receive calls from other hunt groups to which they belong.
 - Busy Not Available**
 If this option is selected the user's status is changed to do not disturb. This is the equivalent of DND and will affect all calls to the user.
 - Logged Off**
 If this option is selected the users status is changed to logged out. In that state they cannot make calls or receive calls. Hunt group calls go to the next available agent and personal calls treat the user as being busy.
- Reset Longest Idle Time:** *Default = All Calls, Software level = 4.0+.*
 This setting is used in conjunction with hunt groups set to Longest Waiting (also known as Idle and Longest Waiting). It defines what type of calls reset the idle time of users who are members of these hunt groups. Options are **All Calls** and **External Incoming**.
- Force Login:** *Default = Off* 
 If checked, the user must log in using their Login Code to use any extension including an extension to which they are the default associated user (Base Extension). For example, if Force Login is ticked for user A and user B has logged onto A's phone, when B logs off user A is not automatically associated with their normal phone and instead must log back on. If Force Login was not ticked, A would be automatically logged back in.
 - For users set as **CCR Agents**, **Forced Login** is automatically enabled and cannot be switched off.

- Note that users with a **Login Code** and set to **Forced Login** are treated as call center agents. These users consume CCC agents licenses and their status is reported within CBC and CCC applications.
- **Force Account Code:** *Default = Off* 
If checked, the user must enter a valid account code to make an external call.
- **Force Authorization Code:** *Default = Off, Software level = 3.2+.*
If checked, the user must enter a valid authorization code to make an external call. That authorization code must be one associated with the user or the user rights to which the user belongs. See [Authorization Codes](#) ^[403].
- **Outgoing Call Bar:** *Default = Off* 
When enabled, this setting stops a user from making any external calls except those that use dial emergency features. On many Avaya display phones, this causes a **B** to be displayed.
 - IP Office 4.1 2008 Q2 Maintenance release adds a number of features that can be used in conjunction with the outgoing call bar setting. These include short codes for [Outgoing Call Bar On](#) ^[484], [Outgoing Call Bar Off](#) ^[484] and [Change Login Code](#) ^[451].
- **Inhibit Off-Switch Forward/Transfers:** *Default = Off, Software level = 3.2+.*
When enabled, this setting stops the user from transferring or forwarding calls externally. This does not stop another user transferring the restricted users calls off-switch on their behalf. Note that a number of other controls may inhibit the transfer operation, see [Off-Switch Transfer Restriction](#) ^[765].
- **Can Intrude:** *Default = Off* 
Check this option if the User can interrupt other user's calls. This setting and the setting below are used to control the use of the following short code and button features: Call Intrude, Call Listen, Call Steal and Dial Inclusion.
- **Cannot be Intruded:** *Default = On (Pre-4.0 - Off in Italy)* 
If checked, this user's calls cannot be interrupted or acquired. In addition to the features listed above, this setting also affects whether other users can use their appearance buttons to bridge into a call to which this user has been the longest present user.
- **Can Trace Calls:** *Default = Off, Software level = 4.0+.*
This settings controls whether the user is able to make use of ISDN MCID controls.
- **Can Accept Collect Calls:** *Default = Off [Brazil Only]*
Determines whether the user is able to receive and accept collect calls.
- **CCR Agent:** *Default = Off, Software level = 4.2+.* 
This field is used by the IP Office CCR application to indicate which users are Agents monitored by that application. It also indicate to the IP Office those users who can use other CCR features within the IP Office configuration. If a user is set as an CCR Agent, **Forced Login** is enabled and greyed out from being changed and a warning is given if the user does not have a log in code set.
 - The number of simultaneous logged in CCR Agents supported by the IP Office is controlled by licenses entered into the configuration. If all CCR Agent licenses on a system have been used, additional agents are prevented from logging in.
- **Automatic After Call Work:** *Default = Off, Software level = 4.2.* 
CCR Agents (see above) can be automatically put into **After Call Work** (ACW) state after ending a hunt group call. During ACW state, further hunt group calls are not presented to the agent. Unless ended manually, the After Call Work state is automatically cleared after the agent's After Call Work Time setting. Automatic after call work is only supported when the agent is using a phone that supports an [After Call Work](#) ^[562] button.
- **After Call Work Time (secs):** *Default = System Default, Range = 0 (No ACW) to 999 seconds., Software level = 4.2+.* 
For CCR Agents with **Automatic After Call Work** enabled, this value sets the duration of the ACW period. If set to **System Default**, the value set in [System | CCR | Default After Call Work Time](#) ^[192] is used. A value of **0** disables the user from using ACW.

5.7.6.3 Multi-line Options

User Telephony Multi-line Options	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

A  symbol indicates that the setting can also be set and locked within a set of [user rights](#)^[388] with which the user is associated using the [Working Hour User Rights](#)^[268] and [Out of Hours User Rights](#)^[268] settings. The user rights applied can be controlled by a [time profile](#)^[361] selected as the user's [Working Hours Time Profile](#)^[268] setting. The effect of the user rights can be displayed using the [User Right View](#)^[268] control.

- Individual Coverage Time (secs):** *Default = 10 seconds, Range 1 to 99999 seconds, Software level 3.0+.* 

This function sets how long the phone will ring at your extension before also alerting at any call coverage users. This time setting should not be equal to or greater than the **No Answer Time** applicable for the user.
- Ring Delay:** *Default = Blank (Use system setting), Range = 0 ([use system setting](#)^[168]) to 98 seconds, Software level = 3.2+.*

This setting is used when any of the user's programmed appearance buttons is set to Delayed ringing. Calls received on that button will initially only alert visually. Audible alerting will only occur after the ring delay has expired.
- Coverage Ring:** *Default = Ring, Software level = 5.0+.*

This field selects the type of ringing that should be used for calls alerting on any the user's call coverage and bridged appearance buttons. **Ring** selects normal ringing. **Abbreviated Ring** selects a single non-repeated ring. **No Ring** disables audible ringing. Note that each button's own ring settings (**Immediate**, **Delayed Ring** or **No Ring**) are still applied.

 - The ring used for a call alerting on a call coverage or bridged appearance button will vary according to whether the user is currently connected to a call or not.
 - If not currently on a call, the **Coverage Ring** setting is used.
 - If currently on a call, the quieter of the **Coverage Ring** and **Attention Ring** settings is used.

Attention Ring Setting	Coverage Ring Setting		
	Ring	Abbreviated	Off
Ring	Ring	Abbreviated	Off
Abbreviated	Abbreviated	Abbreviated	Off

- Attention Ring:** *Default = Abbreviated Ring, Software level = 4.1+.*

This field selects the type of ringing that should be used for calls alerting on appearance buttons when the user already has a connected call on one of their appearance buttons. **Ring** selects normal ringing. **Abbreviated Ring** selects a single ring. Note that each button's own ring settings (**Immediate**, **Delayed Ring** or **No Ring**) are still applied.
- Ringing Line Preference:** *Default = On, Software level = 3.0+.*

For users with multiple appearance buttons. When the user is free and has several calls alerting, ringing line preference assigns currently selected button status to the appearance button of the longest waiting call. Ringing line preference overrides idle line preference.
- Idle Line Preference:** *Default = On, Software level = 3.0+.*

For users with multiple appearance buttons. When the user is free and has no alerting calls, idle line preference assigns the currently selected button status to the first available appearance button.
- Delayed Ring Preference:** *Default = Off, Software level = 4.0+.*

This setting is used in conjunction with appearance buttons set to delayed or no ring. It sets whether ringing line preference should use or ignore the delayed ring settings applied to the user's appearance buttons.

 - When on, ringing line preference is only applied to alerting buttons on which the ring delay has expired.
 - When off, ringing line preference can be applied to an alerting button even if it has delayed ring applied. This is the same as pre-4.0 ringing line preference operation.
- Answer Pre-Select:** *Default = Off, Software level = 4.0+.*

Normally when a user has multiple alerting calls, only the details of the call on current selected button are shown. Pressing any of the alerting buttons will answer the call on that button, going off-hook will answer the current selected button. Enabling Answer Pre-Select allows the user to press any alerting button to make it the current selected button and displaying its call details without answering that call until the user either presses that button again or goes off-hook. Note that when both Answer Pre-Select and Ringing Line Preference are enabled, once current selected status is assigned to a button through ringing line preference it is not automatically moved to any other button.

-
- **Reserve Last CA:** *Default = Off, Software level = 4.0+.*

Used for users with multiple call appearance buttons. When selected this option stops the user's last call appearance button from being used to receive incoming calls. This ensures that the user always has a call appearance button available to make an outgoing call and to initiate actions such as transfers and conferences. For pre-4.0 IP Office this option is set by adding the **RESERVE_LAST_CA=** option on the [User | Source Numbers](#) ^[278] tab.

- **Abbreviated Ring:**

This option has been replaced by the Attention Ring setting above.

5.7.6.4 Call Log

For IP Office 5.0+, the IP Office can store a [centralized call log](#)^[728] for users.

Each users' centralized call log can contain up to 30 call records for user calls (10 on IP412 and IP406 V2 systems). When this limit is reached, new call records replace the oldest record.

That call log is can be displayed on the phone, by pressing **Call Log**, when the user is using a 1608 or 1616 Series phone. The user can use the call log to make calls or to store as a personal speed dial. They can also edit the call log to remove records.

The centralized call log moves with the user if they log on and off from different phones, including if they hot desk within a Small Community Network.

User Telephony Call Log	
Control Unit	SOE  , IP403  , IP406 V1  , IP406 V2  , IP412  , IP500  .
Software Level	5.0+.
Mergeable	 .

A  symbol indicates that the setting can also be set and locked within a set of [user rights](#)^[388] with which the user is associated using the [Working Hour User Rights](#)^[268] and [Out of Hours User Rights](#)^[268] settings. The user rights applied can be controlled by a [time profile](#)^[361] selected as the user's [Working Hours Time Profile](#)^[268] setting. The effect of the user rights can be displayed using the [User Right View](#)^[268] control.

- **Centralized Call Log:** *Default = System Default (On)*

This setting allows the use of centralized call logging to be enabled or disabled on a per user basis. The default is to match the system setting [Default Centralized Call Log On](#)^[171] ([System | Telephony | Call Log](#)^[171]). The other options are **On** or **Off** for the individual user. If off is selected, the call log shown on the users phone is the local call log stored by the phone.

- **Groups:** *Default = None selected.*

This section contains a list of hunt groups on the IP Office system. If the system setting [Log Missed Huntgroup Calls](#)^[168] ([System | Telephony | Call Log](#)^[168]) has been enabled, then missed calls for those groups selected are shown as part of the users call log. The missed calls are any missed calls for the hunt group, not just group calls presented to the user and not answered by them.

5.7.7 Forwarding

This form can be used to check and adjust a user's call forwarding and follow me settings.

Follow Me is intended for use when the user is present to answer calls but for some reason is working at another extension. For example; temporarily sitting at a colleague's desk or in another office or meeting room. As a user, you would use Follow Me instead of Hot-Desking if you don't have a log in code or you don't want to interrupt your colleague also receiving their own calls. Multiple users can use follow me to the same phone.

Forwarding is intended for use when, for some reason, the user is unable to answer a call. They may be busy on other calls, unavailable or simply don't answer. Calls may be forwarded to internal or, subject to the user's call barring controls, external numbers.

To bar a user from forwarding calls to an external number, the [Inhibit Off-Switch Forward/Transfers](#) ^[279] ([User | Telephony | Supervisor Settings](#) ^[279]) option should be selected. To bar all users from forwarding calls to external numbers the [Inhibit Off-Switch Forward/Transfers](#) ^[166] ([System | Telephony | Telephony](#) ^[166]) option should be selected.

Note that analog lines do not provide call progress signalling. Therefore calls forwarded off-switch via an analog line are treated as answered and are not recalled.

• Calls Forwarded

Once a call has been forwarded to an internal destination, it will ignore any further **Forward No Answer** or **Forward on Busy** settings but may follow additional **Forward Unconditional** settings.

User Forwarding	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

A  symbol indicates that the setting can also be set and locked within a set of [user rights](#) ^[389] with which the user is associated using the [Working Hour User Rights](#) ^[268] and [Out of Hours User Rights](#) ^[268] settings. The user rights applied can be controlled by a [time profile](#) ^[361] selected as the user's [Working Hours Time Profile](#) ^[268] setting. The effect of the user rights can be displayed using the [User Right View](#) ^[268] control.

• Follow Me Number: Default = Blank. Range = Internal extension number.

Redirects the user's calls to the internal extension number entered. If the redirected call receives busy or is not answered, it follows the user's forwarding and or voicemail settings as if it had been presented to their normal extension. When a user has follow me in use, their normal extension will give [alternate dialtone](#) ^[802] when off hook. For further details see [Follow Me](#) ^[754].

- Calls targeting longest waiting type hunt groups ignore Follow Me.
- Calls triggered by actions at the user's original extension, for example voicemail ringback, ignore Follow Me.
- Park, hold and transfer return calls will go to the extension at which the user initiated the park, hold or transfer action.

• Forward Unconditional: Default = Off

This option, when checked and a **Forward Number** is also set, forwards all external calls immediately. Additional options allow this forwarding to also be applied to internal calls and to hunt group calls if required. Using **Follow Me** overrides **Forward Unconditional**. When a user has forward unconditional in use, their normal extension will give [alternate dialtone](#) ^[802] when off hook. If the destination is an internal user on the same IP Office, they are able to transfer calls back to the user, overriding the Forward Unconditional.

- **To Voicemail:** Default = Off, Software level = 5.0+.
If selected and forward unconditional is enabled, calls are forwarded to the user's voicemail mailbox. The Forward Number and Forward Hunt Group Calls settings are not used. This option is not available if the system's **Voicemail Type** is set to **None**. 1600 Series phone users can select this setting through the phone menu. Note that if the user disables forward unconditional, for example using Phone Manager or a short code, the **To Voicemail** setting is cleared.
- **Forward Number:** Default = Blank. Range = Internal or External number. Up to 32 characters.
This option sets the destination number to which calls are forwarded when **Forward Unconditional** is checked. The number can be an internal or external number. This option is also used for **Forward on Busy** and **Forward on No Answer** if no separate **Forward Number** is set for those features.
- **Forward Internal Calls:** Default = On, Software level = 3.2+.
This option, when checked, sets that internal calls should also be forwarded immediately when forward unconditional is active.

- Forward Hunt Group Calls:** *Default = Off*
 Hunt group calls (internal and external) are not normally presented to a user who has forward unconditional active. Instead they are presented to the next available member of the hunt group. This option, when checked, sets that hunt group calls (internal and external) are also forwarded when forward unconditional is active. The group's **Ring Type** must be **Sequential** or **Rotary**, not **Collective** or **Longest Waiting**. The call is forwarded for the period defined by the hunt group's **No Answer Time** after which it returns to the hunt group if unanswered. Note also that hunt group calls cannot be forwarded to another hunt group.
- Forward On Busy:** *Default = Off*
 When checked and a forward number is set, external calls are forwarded when the user's extension is busy. The number used is either the **Forward Number** set for **Forward Unconditional** or if set, the separate **Forward Number** set under **Forward On Busy**. Having **Forward Unconditional** active overrides **Forward on Busy**.
 - If the user has **Busy on Held** selected, if forward on busy is active it is applied when the user is free to receive calls but already has a call on hold.
 - If the user's phone has multiple call appearance buttons, the system will not treat them as busy until all the call appearance buttons are in use unless the last appearance button has been reserved for outgoing calls only.
- Forward On No Answer:** *Default = Off*
 When checked and a forward number is set, calls are forwarded when the user does not answer within their set **No Answer Time**^[27h] ([User | Telephony | Call Settings](#)^[27h]). Having **Forward Unconditional** active overrides **Forward on No Answer**.
 - Forward Number:** *Default = Blank. Range = Internal or External number. Up to 32 characters.*
 If set, this number is used as the destination for **Forward On Busy** and **Forward On No Answer** when on. If not set, the **Forward Number** set for **Forward Unconditional** is used.
 - Forward Internal Calls:** *Default = On, Software level = 3.2+.*
 When checked, this option sets that internal calls should be also be forwarded when forward on no answer or forward on busy is active.

5.7.8 Dial In

Use this dialogue box to enable dial in access for a remote user. An Incoming Call Route and RAS service must also be configured.

User Dial In	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Dial In On:** *Default = Off*
When enabled, dial in access into the system is available via this User account.
- **Dial In Time Profile:** *Default = <None>*
Select the [Time Profile](#)^[361] applicable to this User account. A **Time Profile** can be used to set time restrictions on dial in access via this User account. Dial In is allowed during the times set in the Time Profile form. If left blank, then there are no restrictions.
- **Dial In Firewall Profile:** *Default = <None>*
Select the [Firewall Profile](#)^[363] to restrict access to the system via this User account. If blank, there are no Dial In restrictions.

5.7.9 Voice Recording

This tab is used to activate the automatic recording of user's external calls.

Call recording requires Voicemail Pro to be installed and running. Call recording also requires available conference resources similar to a 3-way conference.

- IP Office 4.0+ introduces the following changes to recording:
 - Calls to and from IP devices, including those using Direct media, can be recorded.
 - Calls parked or held pause recording until the unparked or taken off hold.
 - Recording is stopped if:
 - User recording stops if the call is transferred to another user.
 - User account code recording stops if the call is transferred to another user.
 - Hunt group recording stops if the call is transferred to another user who is not a member of the hunt group.
 - Incoming call route recording continues for the duration of the call on the system.

User Voice Recording	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Record Outbound:** *Default = None*
Select whether outgoing external calls are recorded. Options for recording are:
 - **On:** Record the call if possible.
 - **Mandatory:** If not possible to record block the call and return busy tone.
 - **Percentages of calls:** Various percentages of calls made by the user will be recorded.
- **Record Inbound:** *Default = None*
The same as **Record Outbound** but applied to inbound external calls to the user.
- **Record Time Profile:** *Default = <None> (Any time)*
Used to select a [time profile](#)^[36] during which automatic call recording setting above apply.
- **Auto Recording Mailbox:** *Default = <user's own mailbox>*
Sets the mailbox into which automatically triggered recordings are placed.
 - **Voice Recording Library (Auto):** *Default = Not Enabled, Software level = 3.0+.*
When checked, this setting overrides the **Auto Recording Mailbox** setting and marks the recording for collection by the ContactStore for IP Office application. Note that Voicemail Pro still performs the actual recording.
- **Manual Recording Mailbox:** *Default = <user's own mailbox>*
Sets the mailbox into which manually triggered recordings are placed.
 - **Voice Recording Library (Manual):** *Default = Blank (Not Enabled), Software level = 3.0+.*
When checked, this setting overrides the **Manual Recording Mailbox** setting and marks the recording for collection by the ContactStore for IP Office application. Note that Voicemail Pro still performs the actual recording.

5.7.10 Coverage

Call coverage allows calls ringing at one extension (the 'Sender') to also be presented and answered at other defined extensions (the 'Covering Extensions').

User Coverage	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✗.
Software Level	1.3 to 3.0DT only.
Mergeable	✓.

- **Covering Extension**
The number of the extension that will be receiving the calls from the selected extension.
- **Covering User**
This is the user's account name associated with the covering extension.

To add a covering extension

1. Right-click within the **Coverage** window and select **Add**.
2. Choose from the list of extension/users.
3. Click **OK**.

Senders

Senders are extensions that share their alerting calls with other extensions, referred to as their covering extensions. The only calls that are not shared are:

- Hunt Group calls that alert at the sender.
- Automatic Intercom calls.
- Calls that have been forwarded/diverted to the sender.
- Paging calls.
- Calls that are being covered for another station.
- Calls from one of their covering extensions.

Covering Extensions

When the sender's extension rings, the covering extensions also ring and show the call on a free call appearance button. The display indicates that the call is from the sender by showing the incoming call's name or number and the sender's name.

Covering Extensions can receive their own calls as well as calls for the Sender. A Covering Extension can receive a call when:

- Send All Calls/Do Not Disturb is not active.
- Forwarding/Divert is not active.
- They have an available Call Appearance button to accept the call.

Notes

To help covering extensions handle coverage calls efficiently it is suggested that the following buttons are programmed.

- **Program additional Call Appearance buttons**

Covering extensions must have enough call appearance buttons for their own calls and for the extensions they are covering. By default each extension has three call appearance buttons. A suggested minimum extra is one less than the number of call appearance buttons on the sender's extension.

- **Program a Voicemail Collect button for the Sender**

This will allow the covering extension to transfer a call directly to the sender's voicemail.

- **Program an Automatic Intercom button for the Sender**

This allows the covering extension to place a voice announcement. If you do not wish to make voice announcement calls, use Dial Intercom instead.

- **Program a Send All Calls button**

- **Program a Drop Button**

This helps in transferring calls.

Call Alerting Scenarios

Listed below are examples of how calls to the sender's extension are handled in specific scenarios.

- **Sender and Covering Extensions available**

An incoming call alerts both the sender's and covering extension's on call appearance buttons. It alerts the sender's extension for their set No Answer Time and then alerts the covering extension only until the call is answered or the caller hangs up.

- **Sender available/Covering Extension not available**

An incoming call alerts the sender only. The call remains alerting until it is answered or the caller hangs up.

- **Sender not available/Covering Extension available**

The call will alert the covering extension but not the sender. The call remains alerting until the call is answered or the call hangs up.

- If voicemail is available and enabled for the sender, then in all the above scenarios, following the sender's No Answer Time the call is redirected to the Sender's voicemail.

- **Sender and Covering Extension not available**

The caller hears busy tone or is redirected to the sender's voicemail.

5.7.11 Button Programming

This tab is used to assign functions to the programmable keys provided on many Avaya telephones. For full details of button programming refer to the section [Button Programming](#)^[508].

- **T3 Phones**

T3 phone buttons have default functions. These are not shown in the configuration file but can be overridden by settings added to the configuration file. Buttons left blank or set to call appearance will use the phone's default function for that button.

User Button Programming	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.1+.
Mergeable	✓.

A  symbol indicates that the setting can also be set and locked within a set of [user rights](#)^[388] with which the user is associated using the [Working Hour User Rights](#)^[268] and [Out of Hours User Rights](#)^[268] settings. The user rights applied can be controlled by a [time profile](#)^[361] selected as the user's [Working Hours Time Profile](#)^[268] setting. The effect of the user rights can be displayed using the [User Right View](#)^[268] control.

- **Button No.**

The number of the DSS key against which the function is being set. To set a function against a button double-click it or select it and then click **Edit**.

- **Label**^[515]

This is a text label for display on the phone. If no label is entered, the default label for the selected action is used.

- **Action**^[550]

Defines the action taken by the menu item.

- **Action Data**

This is a parameter used by the selected action. The options here will vary according to the selected button action.

- **Display All**

The number of button displayed is based on the phone associated with the user when the configuration was loaded. This can be overridden by selecting **Display All Buttons**. This may be necessary for users who switch between different phones using hot desking or have an expansion unit attached to their phone.

5.7.12 Menu Programming

These menus control a range of options that are specific to different types of phones. The functions become accessible when the user logs in on the appropriate type of phone.

5.7.12.1 T3 Telephony

These settings are applied to the user when they are using a T3 phone.

User Menu Programming T3 Options	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.1+.
Mergeable	✓.

- **Third Party Forwarding**

Avaya T3 phone users can be given menu options to change the forwarding settings of other users. In addition to the following controls, this functionality is protected by the forwarding user's log in code.

- **Allow Third Party Forwarding:** *Default = Off*

Sets whether this user can change the forwarding settings of other users.

- **Protect from Third Party Forwarding:** *Default = Off*

Sets whether this user's forwarding settings can be changed by other users.

- **Advice of Charge**

- **Display Charges:** *Default = On, Software level = 4.0+.*

This setting is used to control whether the user sees ISDN AOC information when using a T3 phone.

- **Allow Self Administer:** *Default = Off, Software level = 5.0+.*

If selected, this option allows the user to self-administer button programming.

5.7.12.2 Huntgroup

1608, 1616 and Avaya T3 Series phone users can control various settings for selected hunt groups.

User Menu Programming Huntgroup	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.1+.
Mergeable	✓.

- **Can Change Membership:** *Default = Off*

This list shows the hunt groups of which the user is a member. Up to 10 of these groups can be checked; those group and the users current membership status are then displayed on the phone. The user can change their membership status through the phone's menus.

- T3 Series - Phones Pre-IP Office 4.2: For the selected group, their status can be viewed and changed from the phone by the user using **Menu -> Settings -> Display/Audio ->Group Membership**.
- T3 Series Phones - IP Office 4.2+: The selected hunt groups and the user's current membership status are displayed on the T3 phones status display. That display can be used to change the status.

- **Can Change Service Status:** *Default = Off*

This list shows all the hunt groups on the IP Office system. Up to 10 of these groups can be checked.

- T3 Series Phones: The user is then able to view and change the service status of the checked groups through their T3 phones menus (**Menu -> Group State**).
- T3 Series Phones - IP Office 4.2+: In addition to changing the status of the individual hunt groups displayed via **Menu -> Group State**, the menu also displays option to change the status of all the groups; **All in service**, **All night service** and **All out service**.

- **Can Change Night Service Group:** *Default = Off, Software level = 5.0+.*

If selected, the user can change the fallback group used when the hunt group is in Night Service mode.

- **Can Change Out of Service Group:** *Default = Off, Software level = 5.0+.*

If selected, the user can change the fallback group used when the hunt group is in Out of Service mode.

5.7.12.3 1400/1600

User Menu Programming 1400/1600	
Control Unit	SOE ✗, IP403 ✗, IP406 V1 ✗, IP406 V2 ✔, IP412 ✔, IP500 ✔.
Software Level	5.0+.
Mergeable	✔.

- **Include Forwarding in Menu:** *Default = On, Software level = 5.0+.*
This setting controls whether the user is able to view and use options to control their forwarding within the 1600 Series phones menus.

5.7.12.4 4400/6400

4412, 4424, 4612, 4624, 6408, 6416 and 6424 phones have a **Menu** key, sometimes marked with an  icon. When **Menu** is pressed, a number of default functions are displayed. The < and > keys can be used to scroll through the functions while the keys below the display can be used to select the required function.

The default functions can be overwritten by selections made within this tab.

User Menu Programming	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.2+.
Mergeable	✓.

- **Menu No.**
The menu position which the function is being set.
- **Label** 
This is a text label for display on the phone. The label is limited to 5 characters. If no label is entered, the default label for the selected action is used.
- **Action** 
Defines the action taken by the menu button.
- **Action Data**
This is a parameter used by the selected action. The options here will vary according to the selected button action.

5.7.13 Phone Manager Options

This tab is used to configure the user's Phone Manager options.

User Phone Manager Options	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.2+.
Mergeable	✓.

A  symbol indicates that the setting can also be set and locked within a set of [user rights](#)^[389] with which the user is associated using the [Working Hour User Rights](#)^[268] and [Out of Hours User Rights](#)^[268] settings. The user rights applied can be controlled by a [time profile](#)^[361] selected as the user's [Working Hours Time Profile](#)^[268] setting. The effect of the user rights can be displayed using the [User Right View](#)^[268] control.

- **Allow user to modify Phone Manager settings:** *Default = On*

This setting is used with the **Phone Manager Status Options**, **Screen Pop Options** and **Hide Options** below. It controls whether those options are applied every time the user starts Phone Manager or only the first time the user starts Phone Manager.

- If this setting is enabled, then the IP Office configuration setting of those options are only applied the first time a user starts Phone Manager on a PC. Those settings become part of the user's Phone Manager profile on that PC. They can be changed by the user through Phone Manager. On subsequent Phone Manager starts the Manager settings are ignored.
- If this setting is not enabled, the IP Office configuration settings are applied every time the user starts Phone Manager and cannot be overridden by the user.

- **Agent Mode:** *Default = Off*

This option controls the setting of the Agent Mode option on the **Configure Preferences | Agent Mode** tab within Phone Manager Pro. When enabled, the user has additional toolbar controls for Busy Wrap Up, Busy Not Available and Select Group. Note that the options on the Phone Manager Pro Agent Mode tab can be grayed out from user changes by the Agent Mode setting in Configuration Options below.

- **Phone Manager Type:** *Default = Lite*

Determines the mode in which the user's copy of the Phone Manager application operates. Note that the number of users able to simultaneously use modes other than Lite is controlled by licenses entered into the IP Office configuration. This setting cannot be changed by the user. * For pre-3.2 IP Office systems this setting was located on the [User | User](#)^[268] tab.

- **Lite**

Basic Phone Manager mode. This mode does not require any licenses.

- **Pro**

Advanced Phone Manager mode that enables a range of additional functions. This mode requires an available Phone Manager Pro license, otherwise the application will run in Phone Manager Lite mode.

- **Phone Manager PC Softphone**

This is the VoIP IP phone mode of Phone Manager Pro. This mode requires both an available Phone Manager Pro license and a Phone Manager Pro IP Audio Enabled license. The user must be associated with an VoIP extension within the IP Office configuration.

- **Pro Telecommuter:** *Software level = 4.1+.*

This version of Phone Manager Pro is supported with Phone Manager 4.1+. It allows the user to make and receive calls via an external phone specified at Phone Manager log in. This mode requires an available Phone Manager Pro license, otherwise the application will run in Phone Manager Lite mode.

- **VoIP Mode:** *Default = On*

This option only appears if the selected **Phone Manager Type** is set to **Phone Manager PC Softphone**. It sets the **Enable VoIP** control within the user's Phone Manager PC Softphone.

- For IP Office 4.2+ this setting is automatically enabled and greyed out.

- **Book a Conference in Phone Manager:** *Default = Off*

When enabled, displays links in the user's Phone Manager application for access to the IP Office Conferencing Center application if installed. Note that to book a conference requires the user to have a Conferencing Center user ID and password. This feature also requires the [Conferencing Center URL](#)^[149] ([System | System](#))^[149] to be set. This setting cannot be changed by the user. *For pre-3.2 IP Office systems this setting was located on the [User | User](#)^[268] tab.

- **Configuration Options**

These options allow the user to changes the settings on the indicated configure preferences tabs within Phone Manager.

- The controllable tabs for Phone Manager Lite are **Telephone** and **Do Not Disturb**. For IP Office 4.0+, the **Mobile Twinning** option on the **Forwarding** tab is also controllable (the twinning number remains editable even if the **Mobile Twinning** option has been restricted).

-
- The additional controllable tabs for Phone Manager Pro and Phone Manager PC Softphone are **Screen Pop**, **Compact Mode**, **Agent Mode**, **Voicemail** (**Voicemail** and **Voicemail Ringback** controls only).
 - **Screen Pop Options** 
These options allow selection of the Phone Manager Pro/Phone Manager PC Softphone screen pop options **Ring****ing**, **Answering**, **Internal**, **External** and **Outlook**.
 - The **Allow user to modify Phone Manager** setting controls whether these settings are applied only when Phone Manager is first started or every time Phone Manager is started.
 - **Phone Manager Status Options** 
These options allow selection of the tabs to show within the call history area of the user's Phone Manager.
 - The tabs selectable for Phone Manager are **All**, **Missed**, **Status** and **Messages**.
 - The additional tabs selectable for Phone Manager Pro and PC Softphone are **Incoming**, **Outgoing** and **Account Codes**.
 - The **Allow user to modify Phone Manager** setting controls whether these settings are applied only when Phone Manager is first started or every time Phone Manager is started.
 - **Hide Options** 
These options allow selection of the Phone Manager Pro/Phone Manager PC Softphone options **Hide on close** and **Hide on no calls**.
 - The Allow user to modify Phone Manager settings option controls whether these settings are applied only when Phone Manager is first started or every time Phone Manager is started.

5.7.14 Hunt Group Memberships

This tab displays the hunt group of which the user has been made a member. The tick boxes indicate whether the user's membership of each of those groups is currently enabled or disabled.

5.7.15 Mobility (Twinning)

These settings relate to twinning features. These are where a user has a main or primary extension but also regularly answer calls at a secondary or twinned phone. These features are intended for a single user, they are not aimed at two users answering calls presented to a single primary extension.

Twinning

Twinning allows a user's calls to be presented to both their current extension and to another number. The IP Office supports two modes of twinning:

	Internal	Mobile
Twinning Destination	IP Office extensions only	External numbers only.
Supported in	All locales.*	All locales.
License Required	No	Yes

*IP Office 4.0 Q2 2007 maintenance release and higher only. Prior to IP Office 4.0 Q2 2007 maintenance release, Internal twinning was not supported in North American locales.

Internal Twinning

Internal twinning is available on IP Office 3.1 and higher systems. It can be used to link two IP Office extensions to act as a single extension. Typically this would be used to link a users desk phone with some form of wireless extension such as a DECT or WiFi handset.

Internal twinning is an exclusive arrangement, only one phone may be twinned with another. When twinned, one acts as the primary phone and the other as the secondary phone. With internal twinning in operation, calls to the user's primary phone are also presented to their twinned secondary phone. Other users cannot dial the secondary phone directly.

- If the primary or secondary phones have call appearance buttons, they are used for call alerting. If otherwise, call waiting tone is used, regardless of the users call waiting settings. In either case, the **Maximum Number of Twinned Calls** setting applies.
- Calls to and from the secondary phone are presented with the name and number settings of the primary.
- The twinning user can transfer calls between the primary and secondary phones.
- Logging out or setting do not disturb at the primary stops twinned calls alerting at the secondary also.
- Logging out or setting do not disturb at the secondary only affects the secondary.
- User buttons set to monitor the status of the primary also reflect the status of the secondary.
- Depending on the secondary phone type, calls alerting at the secondary but then answered at the primary may still be logged in the secondary's call log. This occurs if the call log is a function of the phone rather than the IP Office system.
- Call alerting at the secondary phone ignoring any **Ring Delay** settings applied to the appearance button being used at the primary phone. The only exception is buttons set to No Ring, in which case calls are not twinned.

For IP Office 5.0, the following enhancements apply to internal twinned extensions:

- If using a T3 or 1600 Series phone as the secondary extension:
 - The secondary extension's directory/contacts functions access the primary user's [Centralized Personal Directory](#)^[727] entries in addition to the [Centralized System Directory](#)^[724].
 - The secondary extension's call Log/call List functions access the primary user's [Centralized Call Log](#)^[728].
 - The secondary extension's redial function uses the primary users [Centralized Call Log](#)^[728]. Note: The list mode or single number mode setting is local to the phone.
 - On 1600 Series phones, twinned status is indicated by a **T** in the display of the secondary extension.
- For all phone types, changing the following settings from either the primary or secondary extension, will apply the setting to the primary user. This applies whether using a short code, programmable button or phone menu. The status of the function will be indicated on both extensions if supported by the extension type.
 - Forwarding settings.
 - Group membership status and group service status.
 - Voicemail on/off.
 - Do Not Disturb on/off and DND Exceptions Add/Delete.

Mobile Twinning

This licensed method of twinning can be used with external numbers. Calls routed to the secondary remain under control of the IP Office and can be pulled back to the primary if required. If either leg of an alerting twinned call is answered, the other leg is ended.

- For IP Office 4.2+, the **Mobile Twinning** license is now called the **Mobility Features** license, reflecting the fact that it can be used for Mobile Call Control and one-X Mobile Client support in addition to just mobile twinning. The mode of license operation has also changed. Prior to IP Office 4.2, the license was only consumed by users who had Mobile Twinning enabled. For IP Office 4.2 it is consumed by a user when they are configured for any of the mobility features, including mobile twinning even if they have turned mobile twinning off.

A number of controls are available in addition to those on this tab.

- **Button Programming Actions**

The **Emulation | Twinning** action can be used to control use of mobile twinning. Set on the primary extension, when that extension is idle the button can be used to set the twinning destination and to switch twinning usage on/off. When a twinned call has been answered at the twinned destination, the button can be used to retrieve the call at the primary extension.

- **Short Code Features**

The following short code actions are available for use with mobile twinning.

- **Set Mobile Twinning Number.**
- **Set Mobile Twinning On.**
- **Set Mobile Twinning Off.**
- **Mobile Twinned Call Pickup.**

- **Caller ID**

The options on the **System | Twinning** tab can be used to control which caller ID is sent with calls sent to the twinned destination. The use of those options may be restricted by the trunk type carrying the twinned call and the services provided by the line provider.

Mobile twinning is only applied to normal calls. It is not applied to:

- Intercom, dial direct and page calls.
- Calls alerting on line appearance, bridged appearance and call coverage buttons.
- Returning held, returning parked, returning transferred and automatic callback calls.
- Follow me calls.
- Forwarded calls (except in IP Office 4.2+ if the user's **Forwarded Calls Eligible for Mobile Twinning** setting is enabled).
- Hunt group calls (except in IP Office 4.2+ if the user's **Hunt Group Calls Eligible for Mobile Twinning** setting is enabled)
- Additional calls when the primary extension is active on a call or the twinning destination has a connected twinned call.

Do Not Disturb and Twinning

- **Mobile Twinning**

Selecting DND disables mobile twinning.

- **Internal Twinning**

- Logging out or setting do not disturb at the primary stops twinned calls alerting at the secondary also.
- Logging out or setting do not disturb at the secondary only affects the secondary.

- **Do Not Disturb Exceptions List**

For both types of twinning, while DND is selected calls from numbers entered in the user's [Do Not Disturb Exception List](#) ^[273] are only presented to the primary phone.

User BLF indicators and application speed dials set to the primary user will indicate busy when they are connected to a twinned call including twinned calls answered at the mobile twinning destination.

Analog Lines

These types of lines do not provide call progress signalling. Once a twinned call has been sent to an analog line, the IP Office assumes that it has been answered and stops ringing the primary extension.

Internal Twinning Settings

User Mobility Internal Twinning	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.1+ (For North American locales only supported from the IP Office 4.0 Q2 2007 maintenance release).
Mergeable	✓.

- **Internal Twinning:** *Software level = 3.1+.*

Select this option to enable internal twinning for a user. **Internal Twinning** cannot be selected for a user if they already have **Mobility Features** selected.

- **Twinned Handset:** *Default = Blank.*

For internal twinning, the drop-down list can be used to select an available user as the twinned calls destination. Users not displayed in the list are already twinned with another user. If the list is grayed out, the user is a twinning destination and the primary to which they are twinned is displayed. The secondary phone must be on the same IP Office.

- **Maximum Number of Twinned Calls:** *Default = 1.*

If set to one, when either the primary or secondary phone are in use, any additional incoming call receives busy treatment. If set to two, when either phone is in use, it receives call waiting indication for any second call. Any further calls above two receive busy treatment.

- **Twin Bridge Appearances:** *Default = Off, Software level = 4.1+.*

By default only calls alerting on the primary phone's call appearance buttons also alert at the secondary. When this option is enabled, calls alerting on a bridged appearance button at the primary can also alert at the secondary.

- **Twin Coverage Appearances:** *Default = Off, Software level = 4.1+.*

By default only calls alerting on the primary phone's call appearance buttons also alert at the secondary. When this option is enabled, calls alerting on a coverage appearance button at the primary can also alert at the secondary.

- **Twin Line Appearances:** *Default = Off, Software level = 4.1+.*

By default only calls alerting on the primary phone's call appearance buttons also alert at the secondary. When this option is enabled, calls alerting on a line appearance button at the primary can also alert at the secondary.

Mobility Features Settings

The use of mobile twinning requires entry of a **Mobility Features** license into the configuration.

User Mobility Mobility Features	
Control Unit	SOE  , IP403  , IP406 V1  , IP406 V2  , IP412  , IP500  .
Software Level	3.2+.
Mergeable	 .

A  symbol indicates that the setting can also be set and locked within a set of [user rights](#) ^[388] with which the user is associated using the [Working Hour User Rights](#) ^[268] and [Out of Hours User Rights](#) ^[268] settings. The user rights applied can be controlled by a [time profile](#) ^[361] selected as the user's [Working Hours Time Profile](#) ^[268] setting. The effect of the user rights can be displayed using the [User Right View](#) ^[268] control.

• Mobility Features:

Enabling this option requires the IP Office to have a **Mobility Features** license available. When all available licenses have been consumed, the option is greyed out. **Mobility Features** cannot be selected for a user if they already have **Internal Twinning** selected.

- For systems being upgraded to IP Office 4.2 where users have been previously enabled for **Mobile Twinning**, this option will be off by default. This will disable the user's mobile twinning until their **Mobility Features** option is also enabled.

• Mobile Twinning: *Software level = 3.2+.*

If selected, the user is enabled for mobile twinning. The user can control this option through a [Twinning](#) ^[646] programmable button on their phone.

- For user's setup for one-X Mobile Client, changes to their Mobile Twinning status made through the IP Office configuration or using a **Twinning** button are not reflected in the status of the **Extension to Cellular** icon on their mobile client. However, changes to the **Extension to Cellular** status made from the mobile client are reflected by the **Mobile Twinning** field in the IP Office configuration. Therefore for one-X Mobile Client users it is recommended that they control their Mobile Twinning status through the one-X Mobile Client rather than through a Twinning button.
- Twinned Mobile Number:** *Default = Blank.*
This field sets the external destination number for mobile twinned calls. It is subject to normal short code processing and should include any external dialing prefix if necessary. For users of [one-X Mobile Client](#) ^[717] and or [Mobile Call Control](#) ^[714] the number in this field is used to match the user's setting to the incoming CLI.
- Twinning Time Profile:** *Default = <None> (Any time)*
This field allows selection of a time profile during which mobile twinning will be used.
- Mobile Dial Delay:** *Default = 2 seconds* 
This setting controls how long calls should ring at the user's primary extension before also being routed to ring at the twinning destination number. This setting may be used at the user's choice, however it may also be a necessary control. For example, if the twinning number is a mobile device that has been switched off, the mobile service provider may immediately answer the call with their own voicemail service. This would create a scenario where the user's primary extension does not ring or ring only briefly.
- Mobile Answer Guard:** *Default = 0 (Off), Range = 0 to 99 seconds, Software level = 4.2+.*
This control can be used in situations where calls sent to the twinned destination are automatically answered by a voicemail service or automatic message if the twinned device is not available. If a twinned call is answered before the **Mobile Answer Guard** expires, the IP Office will drop the call to the twin.
- Hunt group calls eligible for mobile twinning:** *Default = Off* 
This setting controls whether hunt group calls ringing the user's primary extension should also be presented to the mobile twinning number.
- Forwarded calls eligible for mobile twinning:** *Default = Off* 
This setting controls whether calls forwarded to the user's primary extension should also be presented to the mobile twinning number.
- Twin When Logged Out:** *Default = Off, Software level = 4.2+.*
If enabled, if the user logs off their primary extension, calls to that extension will still alert at their twinned device rather than going immediately to voicemail or busy.
 - When logged out but twinned, **Mobile Dial Delay** is not applied.
 - Hunt group calls (all types) will be twinned if **Hunt group calls eligible for mobile twinning** is enabled. When this is the case the user's idle time is reset for each externally twinned call answered (note that calls twinned over analog and analog emulation trunks are automatically treated as answered).
 - When the user's **Mobile Time Profile**, if configured, is not active they will not get twinning calls. Calls will be treated the same as the user was logged out user with no twinning.

- Callback calls initiated by the user will mature to the **Twinned Mobile Number**. It will also be possible to initiate Automatic Callback to the user with external twinning and their busy/free state will be tracked for all calls via the IP Office.
- Any Bridged Appearance set to the user will not alert. Coverage appearance buttons for the user will continue to operate.
- The BLF/user button status shown for a logged out user with **Logged Off Mobile Twinning** is as follows:
 - If there are any calls alerting or in progress through the IP Office to the twin the user status is shown as alerting or in-use as appropriate. This includes the user showing as busy/in-use if they have such a call on hold and they have Busy on Held enabled.
 - If the user enables DND through Mobile Call Control or one-X Mobile client their status will show as DND/busy.
 - Calls from the IP Office dialed direct to the users twinned destination rather than directed by twinning from their primary extension will not change the user's status.
- **Can have one-X Mobile Client:** *Default = Off, Software level = 4.2+ (IP500 digital trunks only).*
 one-X Mobile Client is a software application that can be installed on Windows Mobile and Symbian mobile cell phones. It allows the user to access a number of IP Office features. For details see [one-X Mobile Client](#)^[717].
- **Can do Mobile Call Control:** *Default = Off, Software level = 4.2+ (IP500 digital trunks only).*
 Mobile call control is only supported on IP500 systems and only on digital trunks. It allows a user receiving a call on their twinned device to access IP Office dial tone and then perform dialing action including making calls and activating short codes. For details see [Mobile Call Control](#)^[714].

5.7.16 Announcements

Announcements are played to callers waiting to be answered. This includes callers being presented to hunt group members, ie. ringing, and callers queued for presentation.

- IP Office 4.0+ supports announcements using Voicemail Pro, Voicemail Lite (pre-5.0 only) or Embedded Voicemail.
- If no voicemail channel is available for an announcement, the announcement is not played.
- In conjunction with Voicemail Pro, IP Office 4.0+ allows a number of voicemail channels to be reserved for announcements. See [System | Voicemail](#)^[164].
- With Voicemail Pro, the announcement can be replaced by the action specified in a Queued (1st announcement) or Still Queued (2nd announcement) start point call flow. Refer to the Voicemail Pro Installation and Maintenance documentation for details.
- Calls can be answered during the announcement. If it is a mandatory requirement that announcements should be heard before a call is answered, then a Voicemail Pro call flow should be used before the call is presented.
 - **Warning: Call Billing and Logging**
Note that a call becomes connected when the first announcement is played to it. That connected state is signaled to the call provider who may start billing at that point. The call will also be recorded as answered within the [IP Office SMDR](#)^[844] output once the first announcement is played.
- If a call is rerouted, for example forwarded, the announcement plan of the original user is still applied until the call is answered. The exception is calls rerouted to a hunt group at which point the hunt group announcement settings are applied.
- For announcements to be used effectively, either the user's no answer time must be extended beyond the default 15 seconds or Voicemail On should be deselected.

Recording Announcements

- **Voicemail Pro**
There is no mechanism within the telephony user interfaces (TUI) to record user announcements. To provide custom announcements, user queued and still queued start points must be configured with Voicemail Pro with the required prompts played by a generic action.
- **Embedded Voicemail**
Embedded Voicemail does not include any default announcement or method for recording an announcement. The [Record Message](#)^[487] short code feature is provided to allow the recording of announcements. The telephone number field of short codes using this feature requires the extension number followed by either ".1" for announcement 1 or ".2" for announcement 2. For example, for extension number 300, the short codes ***91N# | Record Message | N".1"** and ***92N# | Record Message | N".2"** could be used to allow recording of the announcements by dialing ***91300#** and ***92300#**.

Hunt Group | Announcements

Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	4.0+.
Mergeable	✓.

- **Announcements On:** *Default = Off.*
This setting enables or disables announcements.
- **Wait before 1st announcement:** *Default = 10 seconds. Range = 0 to 9999 seconds.*
This setting sets the time delay from the calls presentation, after which the first announcement should be played to the caller. If **Synchronize Calls** is selected, the actual wait may differ, see below.
- **Flag call as answered:** *Default = Off.*
This setting is used by the IP Office CCC and CBC applications. By default they do not regarded a call as answered until it has been answered by a person or by a Voicemail Pro action with **Flag call as answered** selected. This setting allows calls to be marked as answered once the caller has heard the first announcement. This setting is not used by the IP Office Customer Call Reporter application.
 - **Warning: Call Billing and Logging**
Note that a call becomes connected when the first announcement is played to it. That connected state is signaled to the call provider who may start billing at that point. The call will also be recorded as answered within the [IP Office SMDR](#)^[844] output once the first announcement is played.
- **Post announcement tone:** *Default = Music on hold.*
Following the first announcement, you can select whether the caller should hear [Music on Hold](#)^[746], **Ringing** or **Silence** until answered or played another announcement.
- **2nd Announcement:** *Default = On.*
If selected, a second announcement can be played to the caller if they have still not been answered.
- **Wait before 2nd announcement:** *Default = 20 seconds. Range = 0 to 9999 seconds.*
This setting sets the wait between the 1st and the 2nd announcement. If **Synchronize Calls** is selected, the actual wait may differ, see below.
- **Repeat last announcement:** *Default = On.*
If selected, the last announcement played to the caller is repeated until they are answered or hang-up.
- **Wait before repeat:** *Default = 20 seconds. Range = 0 to 9999 seconds.*
If **Repeat last announcement** is selected, this setting sets is applied between each repeat of the last announcement. If **Synchronize Calls** is selected, this value is grayed out and set to match the **Wait before 2nd announcement** setting.
- **Synchronize calls:** *Default = Off*
This option can be used to restrict how many voicemail channels are required to provide the announcements.
 - **Off**
When **Synchronize** calls is off, announcement are played individually for each call. This requires a separate voicemail channel each time an announcement is played to each caller. While this ensures accurate following of the wait settings selected, it does not make efficient use of voicemail channels.
 - **On**
When **Synchronize calls** is on, if a required announcement is already being played to another caller, further callers wait until the announcement been completed and can be restarted. In addition, when a caller has waited for the set wait period and the announcement is started, any other callers waiting for the same announcement hear it even if they have not waited for the wait period. Using this setting, the maximum number of voicemail channels ever needed is 1 or 2 depending on the number of selected announcements.
 - **Note: Interaction with Voicemail Pro Queued and Still Queued Start Points**
If either custom **Queued** or **Still Queued** start point call flows are being used for the announcements, when **Synchronize Calls** is enabled those call flows will support the playing of prompts only. Voicemail Pro actions such as **Speak ETA**, **Speak Position**, **Menu**, **Leave Mail**, **Transfer** and **Assisted Transfer**, etc. are not supported.

5.7.17 Personal Directory

Each IP Office user is able to have up to 100 personal directory records, up to the IP Office system limit.

IP Office	Total User Directory Records
IP500	10800
IP412	3600
IP406 V2	1900

These records are used as follows:

- **Pre-IP Office 5.0**

- When using a T3 phone, the user is able to view and call their personal directory numbers.
- Unlike system directory numbers, these entries are not used for name matching against the incoming ICLID of calls the user received.

- **IP Office 5.0+**

For IP Office 5.0+, the scope of [Personal Directory](#)^[727] usage and operation has changed.

- When using a T3 or 1600 Series phone, the user is able to view and call their personal directory numbers.
- When using a 1600 Series phone, the user is also able to edit and add personal directory entries.
- If the user hot desks to a T3 or 1600 Series phone on another IP Office in a Small Community Network, they can still access their personal directory.

Directory entries are used for two types of function:

- **Directory Dialing**

Directory numbers are displayed by IP Office user applications such as Phone Manager and SoftConsole. Directory numbers are also viewable through the [Dir](#)^[598] function on many IP Office phones. In both cases they allow the user to select the number to dial by name. In this usage, the directory will also contain the names and numbers of users and hunt groups on the IP Office system.

- The **Dir** function groups directory entries shown to the phone user into the following categories. In some scenarios, the categories displayed may be limited to those supported for the function being performed by the user:

- **External**

Directory entries from the IP Office configuration. For IP Office 5.0 this includes HTTP and LDAP imported entries.

- **Groups**

Groups on the IP Office system. If the system is in a Small Community Network it will also include groups on other IP Office systems in the network (For pre-IP Office 5.0 systems, this feature requires the IP Offices to have **Advanced Small Community Networking** licenses).

- **Users or Index**

Users on the IP Office system. If the system is in a Small Community Network it will also include users on other IP Office systems in the network (For pre-IP Office 5.0 systems, this feature requires the IP Offices to have **Advanced Small Community Networking** licenses).

- **Personal**

Available for T3 phones, T3 IP phones and 1600 Series phones (IP Office 5.0+). These are the user's personal directory entries stored within the IP Office system configuration.

- **Name Matching**

Directory entries are also used to associate a name with the dialled number on outgoing calls or the received CLI on incoming calls. When name matching is being done, a match in the users personal directory overrides any match in the system directory. Note that some IP Office user applications also have their own user directory.

- The IP Office Phone Manager and SoftConsole applications have their own user directories which are also used by the applications name matching. Matches in the application directory may lead to the application displaying a different name from that shown on the phone.
- Name matching is not performed when a name is supplied with the incoming call, for example QSIG trunks.

User Personal Directory	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.1+.
Mergeable	✓.

- **Name:** *Range = Up to 31 characters.*
Enter the text to be used to identify the number.
- **Number:** *Range = Up to 31 digits plus * and #.*
Enter the number, without spaces, to be dialed. Wildcards are not supported in user personal directory entries. Note that if the system has been configured to use an external dialing prefix, that prefix should be added to directory numbers.

5.7.18 SIP

This tab is available when a SIP trunk with a [SIP URI](#) ^[24b] entry has been added to the IP Office configuration. It is also available when an [H323 trunk](#) ^[22b] set to **IP Office SCN** or **IP Office SCN - Fallback** has been added to the IP Office configuration.

Various fields within the URI settings used by SIP trunks can be set to **Use User Data**. When that is the case, the values from this tab are used inserted into the URI when the user makes or receives a SIP call. Within an IP Office Small Community Network that includes calls which break out using a SIP trunk on another IP Office within the SCN.

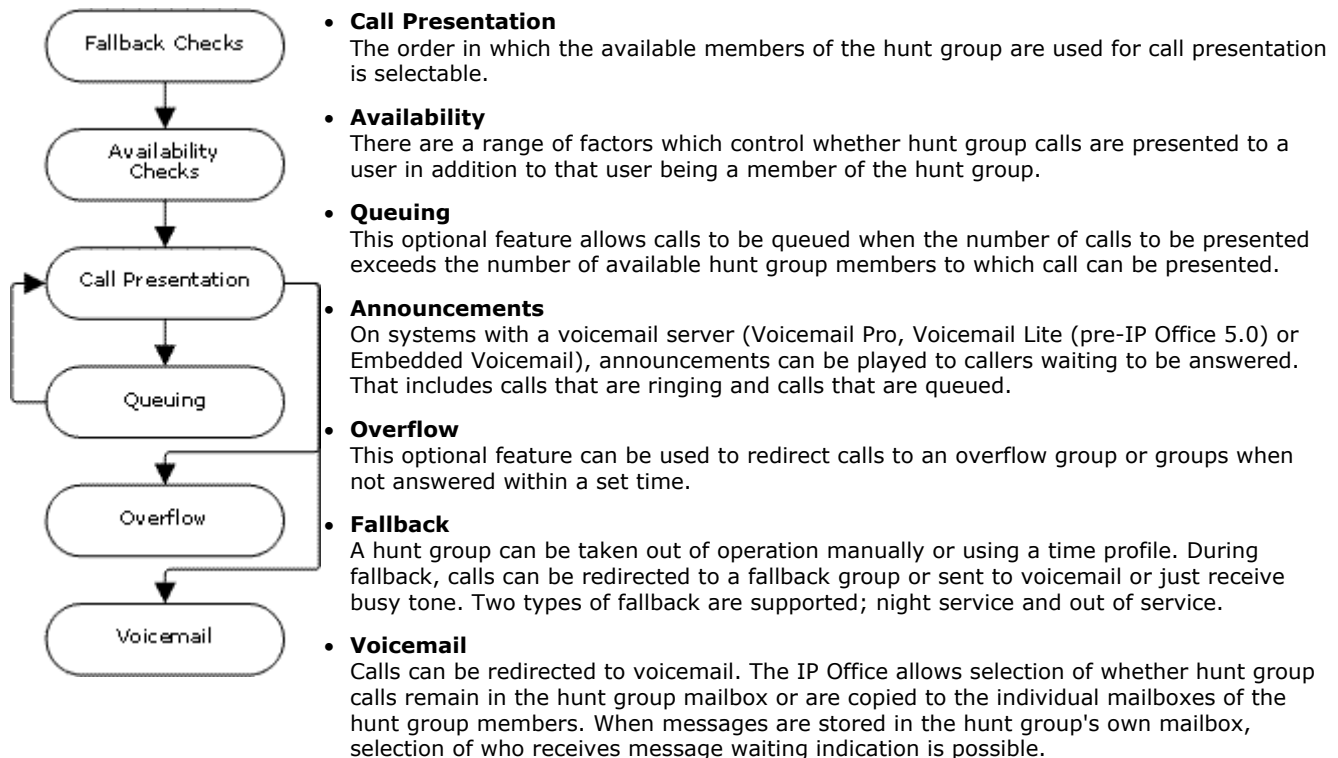
User SIP	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	4.0+.
Mergeable	✓.

- **SIP Name:** *Default = User name.*
The value from this field is used when the From field of the SIP URI being used for a SIP call is set to **Use User Data**.
- **SIP Display Name (Alias):** *Default = User name.*
The value from this field is used when the Display Name field of the SIP URI being used for a SIP call is set to **Use User Data**.
- **Contact:** *Default = User name.*
The value from this field is used when the Contact field of the SIP URI being used for a SIP call is set to **Use User Data**.
- **Anonymous:** *Default = Off.*
If the From field in the SIP URI is set to **Use User Data**, selecting this option inserts **Anonymous** into that field rather than the SIP Name set above.

5.8 Hunt Group Settings



A hunt group is a collection of users accessible through a single directory number. Calls to that hunt group can be answered by any available member of the group. The order in which calls are presented can be adjusted by selecting different group types and adjusting the order in which group members are listed. For a full overview of hunt groups, see Hunt Groups in the Telephone Features section.



Changing the name of a hunt group has the following effects:

- A new empty mailbox is created on voicemail with the new hunt group name.
- Entries in other groups' Overflow lists will be updated.
- Out-of-Service and Night-Service fallback references are updated.

Modifying the extension number of a hunt group updates the following:

- Group buttons.
- Overflow, Out of Service Fallback and Night Service Fallback group entries.
- Incoming call route entries.

When a hunt group is deleted, all references to the deleted group will be removed including:

- Entry in Incoming call routing table.
- Transfer target in internal auto-attendant.
- Overflow, Night-Service or Fallback-Service on other groups.
- DSS keys monitoring group status.

Hunt Groups in a Small Community Network (SCN)

In a Small Community network, the extension numbers of users are automatically shared between IP Office systems and become diallable from other systems without any further programming.

For IP Office 4.0+, the following features are available for hunt groups within a Small Community Network. For pre-IP Office 5.0 systems, these features requires the IP Offices to have **Advanced Small Community Networking** licenses.

- **Advertised Hunt Groups**

Each hunt group can be set as being 'advertised'. The hunt group can then be dialed from other systems within the SCN. The hunt groups extension number and name must be unique within the network. Non-advertised hunt group numbers remain local only to system hosting the hunt group.

- **Distributed Hunt Groups**

Hunt groups on a system can include users located on other IP Office systems within the SCN network. Distributed hunt groups are automatically advertised to other systems within the SCN. Note that distributed hunt groups can only be edited on the system on which they were created.

5.8.1 Hunt Group

Hunt Group Hunt Group	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Name:** *Range = Up to 15 characters*

The name to identify this Hunt Group. Only alphanumeric characters with no spaces should be used. Start names with a alphabetic character. This field is case sensitive and must be unique.

- Voicemail uses the name to match a group and its mailbox. Changing a group's name will route its voicemail calls to a new mailbox. Note however that Voicemail Pro will treat names such as "Sales", "sales" and "SALES" as being the same.
- **CCR Agent Group:** *Default = Off, Software level = 4.2+.*
This option is used in conjunction with IP Office CCR application to indicate the groups for which it collects information. CCR Agent Hunt Groups should only contain users who have been configured as [CCR Agents](#)^[279] ([User | Telephony | Supervisor Settings](#)^[279]) option. When selected, the menus to select hunt group members will only show users configured as CCR Agents and a warning will be given if the group already contains any users who are not CCR Agents.
- **Extension:** *Range = 2 to 9 digits.*
This sets the directory number for calls to the hunt group.
 - Groups for CBC and CCC should only use up to 4 digit extension numbers.
 - Extension numbers in the range 8897 to 9999 are reserved for use by the IP Office Delta Server.
- **Ring Mode:** *Default = Sequential*
Sets how the IP Office determines which hunt group member to ring first and the next hunt group member to ring if unanswered. This is used in conjunction with the **User List** which list the order of group membership.
 - **Collective** (previously known as **Group**)
All available phones in the **User List** ring simultaneously.
 - **Collective Call Waiting** (*Software level = 3.0+*)
This is a **Collective** hunt group as above but with hunt group call waiting also enabled (previous versions of Manager used a separate **Call Waiting On** control to select this option for a **Collective** group). When an additional call to the hunt group call is waiting to be answered, users in the group who are already on a call will receive call waiting indication. On phones with call appearance buttons, the call waiting indication takes the form of an alert on the next available call appearance button. On other phones, call waiting indication is given by a tone in the speech path (the tone is locale specific).
 - For pre-IP Office 4.0, all the users in the group must also have their own [Call Waiting On](#)^[277] setting enabled.
 - For IP Office 4.0+ the user's own **Call Waiting On** setting is overridden when they are using a phone with call appearances. Otherwise the user's **Call Waiting On** setting is used in conjunction with the hunt group setting.
 - **Sequential** (previously known as **Linear** and **Hunt**)
Each extension is rung in order, one after the other, starting from the first extension in the list each time.
 - **Rotary** (previously known as **Circular**)
Each extension is rung in order, one after the other. However, the last extension used is remembered. The next call received rings the next extension in the list.
 - **Longest Waiting** (previously known as **Idle** and **Most Idle**)
The extension that has been unused for the longest period rings first, then the extension that has been idle second longest rings, etc. For extensions with equal idle time, 'sequential' mode is used.
 - For IP Office 4.2+, where hunt group calls are being presented to a twinned extension, the longest waiting status of the user can be reset by calls answered at either their master or twinned extension.
- **No Answer Time (secs):** *Default = System Default. Range = System Default or 6 to 99999 seconds.*
The number of seconds an extension rings before the call is passed to another extension in the list. This applies to all telephones in this group and the **Overflow Groups** (if used). For collective hunt groups, the idea of moving to the next member when the **No Answer Time** expires does not apply, instead calls will continue ringing unless overflow or voicemail is applied.

- **Hold Music Source:** *Default = No Change, Software level = 4.2+ (Not Small Office Edition).*
IP Office 4.2+ supports up to 4 music on hold sources, the **System Source** (either an internal file or the external source port or tones) plus up to 3 additional internal wav files, see [System | Telephony | Tones & Music](#)^[169]. Before reaching a hunt group, the source used is set by the IP Office system setting or by the **Incoming Call Route**^[345] that routed the call. If the system has several hold music sources available, this field allows selection of the source to associate with calls presented to this hunt group or to leave it unchanged. The new source selection will then apply even if the call is forwarded or transferred out of the hunt group unless changed again by another hunt group. If the call is routed to another IP Office 4.2+ system in a Small Community Network, the matching source is used if available.
 - Calls overflowing from a hunt group will use the hold music source setting of the original hunt group and ignore the setting of the overflow group.
 - Calls going to night service or out of service fallback group use the hold music source setting of the original hunt group and then, if different, the setting of the fallback group. The setting of further fallback groups from the first are ignored.
- **Voicemail Answer Time:** *Default = 45 seconds, Range = Off, 1 to 99999 seconds, Software level = 4.0+.*
This setting sets how long a call should be presented to a hunt group, and its overflow groups if set, before going to voicemail. When exceeded the call goes to voicemail (if available) regardless of any announcements, overflow, queuing or any other actions. If set to **Off**, voicemail is used when all available members of the hunt group have been altered for the no answer time.
- **Agent's Status on No-Answer Applies To:** *Default = None (No status change), Software level = 4.0+.*
For call center agents, that is hunt group members with a log in code and set to forced log in, the IP Office can change the agent's status if they do not answer a hunt group call presented to them before being automatically presented to the next available agent.
 - This setting defines what type of hunt group calls should trigger use of the agent's Status on No Answer setting. The options are None, Any Call and External Inbound Calls Only.
 - The new status is set by the agent's **Status on No Answer**^[279] ([User | Telephony | Supervisor Settings](#)^[279]) setting.
 - This action is only applied if the call is unanswered at the agent for the hunt group's **No Answer Time** or longer. It does not apply if the call is presented and, before the **No Answer Time** expires, is answered elsewhere or the caller disconnects.
- **Central System:** *Software level = 4.0+.*
The field is for information only. It displays the IP Office system where the hunt group was created and can be configured. For pre-IP Office 5.0 systems, this field is only visible if the IP Office has an **Advanced Small Community Networking** license.
- **Advertise Group:** *Default = Off, Software level = 4.0+.*
If selected, details of the hunt group are advertised to the other systems within a Small Community Network and the hunt group can be dialled from those other systems without the need for routing short codes. For pre-IP Office 5.0 systems, this field is only visible if the IP Office has an **Advanced Small Community Networking** license.
 - Advertised groups must have an extension number that is unique within the SCN. If an advertised hunt group's extension number conflicts with a local groups extension number, the advertised group is ignored.
 - Groups set as advertised will appear in the configuration of other IP Office systems. However an advertised group can only be edited on the IP Office system on which it was created. Note that advertised groups are not saved as part of the configuration file when **File | Save Configuration As** is used.
 - Hunt groups that contain members from other IP Office systems are automatically advertised.
- **Call Waiting On:** *Default = Off, Software level = 3.0+.*
For IP Office Manager 6.2 and above, this control has been combined with the **Ring Type** option **Collective**. See the **Ring Mode** setting **Collective Call Waiting** above.
- **User List**
This is an ordered list of the users who are members of the hunt group. For **Sequential** and **Rotary** groups it also sets the order in which group members are used for call presentation.
 - Repeated numbers can be used, for example 201, 202, 201, 203, etc. Each extension will ring for the number of seconds defined by the **No Answer Time** before moving to the next extension in the list, dependent on the Hunt Type chosen.
 - The check box next to each member indicates the status of their membership. Checked boxes appear for members whose membership is enabled. The order of the users can be changed by dragging the existing entries to the required position.
 - To add entries select **Edit**. A new menu is displayed that shows available users on the left and current group members of the right. The lists can be sorted and filtered.
 - Users on remote systems in a Small Community Network can also be included. Groups containing remote members are automatically advertised within the SCN. For pre-IP Office 5.0 systems, this can only be done if the IP Office has an **Advanced Small Community Networking** license.

- **Overflow Group List**

If a call cannot be answered by the extensions shown in the **User List**, it can be presented to available extensions in the groups listed in this list. Each group is used in turn in order from the top of the list. The call is presented to each overflow group member once, using the Ring Mode of the overflow group. If the call remains unanswered the next overflow group listed is used. If the call remains unanswered at the end of the list of overflow groups, it is presented to available members of the overflowing group again and then to those in its overflow list in a repeating loop.

- If **Queuing** is off and all members of the hunt group are busy, a call presented to the group will overflow immediately, irrespective of the **Overflow Time**.
- If **Queuing** is on and all members of the hunt group are busy, a call presented to the group may queue for up to the **Overflow Time** before overflowing.
- If the call is currently ringing a hunt group member when the **Overflow Time** expires, it will complete ringing using the group's **No Answer Time** before overflowing.
- If no **Overflow Time** is set, a call will overflow when it has rung each available hunt group member without being answered.
- The groups in the overflow list are only used to expand the set of users available to answer calls. The overflowing call still belongs to the group that is overflowing and uses the settings of that group. For example:
 - Calls that overflow use the announcement settings of the group from which they are overflowing.
 - Calls that overflow use the Voicemail Time of the original group from which they are overflowing.
 - Calls that are overflowing are included in the overflowing group's **Queue Length** and **Calls In Queue Threshold**. They are not included in those values for the hunt group to which they overflow.
 - The only settings of the groups in the overflow list that are used are the **Ring Mode** and **No Answer Time**.
- **Overflow Time:** *Default = Blank, Range = Off or 1 to 99999 seconds.*
Hunt groups with an **Overflow Group List** set support the use of overflow to expand the group. When also using [queueing](#)^[319] the **Overflow Time** can also be used to set how long calls queue before also overflowing.
- **Overflow Mode:** *Default = Group, Software level = 4.2+.*
This option allows selection of whether the overflow of queued calls is determined on a call by call basis or applied to all calls for the hunt group once any one call overflows.
 - **Group**
In this mode, once one call overflows all additional queued calls overflow immediately. This is equivalent to the overflow mode used by IP Office 4.0-4.1 systems.
 - **Call**
In this mode, each individual call will follow the groups overflow time settings before it overflows. This is equivalent to the overflow mode used by pre-IP Office 4.0 system.

5.8.2 User List/Select Members

The hunt group **Select Members** form is used to add and remove users from the hunt group. For hunt group's with a **Ring Mode** of **Sequential** or **Rotary** it is also used to set the order of use for the members of the hunt group.

The filters section at the top of the form can be used to filter the users shown.

The controls and data on the form vary depending on the hunt group's **Ring Mode** setting and on whether the IP Office system is in a Small Community Network.

To sort either table, click on the column header that should be used for the sort the table. Sort changes the order of display only, it does not change the actual order of hunt group membership.

For **Sequential** and **Rotary** hunt groups, an **Order** column is shown. To change the order position of a hunt group member, select the member and then use the ↑ up and down ↓ arrow buttons.

Name	Extn
Extn201	201
Extn202	202
Extn203	203
Extn204	204
Extn205	205
Extn206	206
Extn207	207
Extn208	208
Extn209	209
Extn210	210

Order	Enabled	Name	Extn
1	☒	Extn201	201
2	☒	Extn202	202
3	☒	Extn203	203
4	☒	Extn204	204
5	☒	Extn205	205
6	☒	Extn206	206

Name	Extn	PBXName	PBXAddress
Extn201	201	System5	192.168.42.1
Extn202	202	System5	192.168.42.1
Extn203	203	System5	192.168.42.1
Extn204	204	System5	192.168.42.1
Extn205	205	System5	192.168.42.1
Extn206	206	System5	192.168.42.1
Extn207	207	System5	192.168.42.1
Extn208	208	System5	192.168.42.1
Extn296	296	System5	192.168.42.1
Extn297	297	System5	192.168.42.1
Extn298	298	System5	192.168.42.1
Extn299	299	System5	192.168.42.1
Extn307	307	System5	192.168.42.1

Order	Enabled	Name	Extn	PBXName	PBXAddress
1	☒	Extn201	201	System5	192.168.42.1
2	☒	Extn202	202	System5	192.168.42.1
3	☒	Extn203	203	System5	192.168.42.1
4	☒	Extn204	204	System5	192.168.42.1
5	☒	Extn205	205	System5	192.168.42.1
6	☒	Extn206	206	System5	192.168.42.1
7	☒	Extn207	207	System5	192.168.42.1
8	☐	Extn208	208	System5	192.168.42.1
9	☒	Extn298	298	System5	192.168.42.1
10	☒	Extn296	296	System5	192.168.42.1
11	☒	Extn299	299	System5	192.168.42.1

During the actions below, the Shift and Ctrl keys can be used as normal to select multiple users. Note that that the list of members has been sorted, the sort is updated after adding or moving members.

- **Add Before**
Using the Shift and/or Ctrl keys, select the users you want to add and then on the right select the existing member that you want to add them before.
- **Add After**
Using the Shift and/or Ctrl keys, select the users you want to add and then on the left select the existing member after which you want them added.
- **Append**
Add the selected users on the left to the hunt group members on the right as the last member in the group order.
- **Remove**
Remove the selected users on the right from the list of hunt group members.
- **↑ ↓**
Move the selected member on the right up or down the membership order of the group.

5.8.3 Voicemail

IP Office supports voicemail for hunt groups in addition to individual user voicemail mailboxes.

- **When is voicemail used?**

If voicemail is available and enabled for a hunt group, it is used in the following scenarios.

- **Voicemail Answer Time**

This timeout is supported by IP Office 4.0 and higher. The default is 30 seconds. When exceeded the call goes to voicemail (if available) regardless of any announcements, overflow, queuing or any other actions.

- **Unanswered Calls**

When a call has rung unanswered at all the available hunt group members. If overflow is being used that will include being unanswered by the available overflow group members.

- **Queue Limit Reached**

If queuing is being used, it overrides use of voicemail prior to expiry of the Voicemail Answer Time, unless the number of queued callers exceeds the set Queue Limit. By default there is no set limit.

- **Night Service**

When the hunt group is in night service with no Night Service Fallback Group set.

- **Out of Service**

When the hunt group is out of service with no Out of Service Fallback Group set.

- **Automatic Call Recording**

Incoming calls to a hunt group can be automatically recorded using the settings on the [Hunt Group | Voice Recording](#)^[322] tab.

- **Which Mailbox is Used**

- When a caller is directed to voicemail to leave a message, the IP Office indicates the target user or hunt group mailbox.
 - For pre-IP Office 4.0 systems, the mailbox of the user or hunt group whose settings have caused the call to go to voicemail is used.
 - For IP Office 4.0+, the mailbox of the originally targeted user or hunt group is used. This applies even if the call has been forwarded to another destination. It also includes scenarios where a hunt group call overflows or is in fallback to another group.
 - Voicemail Pro can be used to customize which mailbox is used separately from the mailbox indicated by IP Office.

- **Who Receives Message Waiting Indication?**

By default no user is configured to receive message waiting indication when a hunt group voicemail mailbox contains new messages. Message waiting indication is configured by adding a **Hgroupname** entry to a user's SourceNumbers tab ([User | Source Numbers](#)^[275]).

- **Accessing Hunt Group Messages**

By default no mechanism is provided for access to specific hunt group mailboxes.

- **Phone Manager**

User's with hunt group message waiting indication can access the hunt group mailbox through Phone Manager.

- **Intuity Emulation Mailbox Mode**

For IP Office systems using Intuity emulation mode mailboxes, the hunt group extension number and voicemail code can be used during normal mailbox access.

- **IP Office Mailbox Mode**

For IP Office mode mailbox access, short codes are required to access the mailbox directly.

- **Broadcast**

The voicemail system (Voicemail Pro only) can be instructed to automatically forward messages to the individual mailboxes of the hunt group members. The messages are not stored in the hunt group mailbox.

Hunt Group Voicemail	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Voicemail Code:** *Default = Blank, Range = 0 to 15 digits*

A code (1-15 digits) used by the voicemail server to validate access to this mailbox. If remote access is attempted to a mailbox that has no voicemail code set, the prompt "Remote access is not configured on this mailbox" is played.

Whether the caller will be prompted to enter this code varies as follows:

- **Embedded Voicemail**

The voicemail code is used if set.

- **Voicemail Lite/Voicemail Pro in IP Office mode**

The voicemail code is required when accessing the mailbox from a location that is not set as a trusted number in the user's [Source Numbers](#) ^[27b] list. Also Voicemail Pro call flows containing an action where the action's PIN code set to \$ will prompt the user for their voicemail code.

- **Voicemail Pro in Intuity Emulation mode**

By default the voicemail code is required for all mailbox access. The first time the mailbox is accessed the user will be prompted to change the password. Also if the voicemail code setting is left blank, the caller will be prompted to set a code when they next access the mailbox. The requirement to enter the voicemail code can be removed by adding a customized user or default collect call flow, refer to the Voicemail Pro manuals for full details. Also Voicemail Pro call flows containing an action where the action's PIN code set to \$ will prompt the user for their voicemail code.

- Codes set through the Voicemail Pro telephone user interface are restricted to valid sequences. For example, attempting to enter a code that matches the mailbox extension, repeat the same number (1111) or a sequence of numbers (1234) are not allowed. If these types of code are required they can be entered through Manager.

- **UMS Web Services:** *Default = Off, Software level = 5.0+.*

This option is used with Voicemail Pro 5.0+. If enabled, the hunt group mailbox can be accessed using an IMAP email client, web browser or Exchange 2007. **UMS Web Service** licenses are required for the number of users and hunt groups configured for UMS Web Services. Note that a voicemail code must be set in order to use the UMS interfaces.

- **Voicemail On** *Default = On*

When on, the mailbox is used by the IP Office to answer the user's unanswered calls or calls when the user's extension returns busy. Note that selecting off does not disable use of the user's mailbox. Messages can still be forward to their mailbox and recordings can be placed in it. The mailbox can also still be accessed to collect messages.

- When a caller is directed to voicemail to leave a message, the IP Office indicates the target user or hunt group mailbox.
 - For pre-IP Office 4.0 systems, the mailbox of the user or hunt group whose settings have caused the call to go to voicemail is used.
 - For IP Office 4.0+, the mailbox of the originally targeted user or hunt group is used. This applies even if the call has been forwarded to another destination. It also includes scenarios where a hunt group call overflows or is in fallback to another group.
 - Voicemail Pro can be used to customize which mailbox is used separately from the mailbox indicated by IP Office.

- **Voicemail Help** *Default = Off*

For voicemail systems running IP Office mailbox mode, this option controls whether users retrieving messages are automatically given an additional prompt "For help at any time press 8." If switched off, users can still press 8 for help. For voicemail systems running in Intuity emulation mode, this option has no effect. On those systems the default access greeting always includes the prompt "For help at any time, press *4" (*H in the US locale).

- **Broadcast:** *Default = Off, Software level = 3.0+ (Voicemail Pro only).*

If a voicemail message is left for the hunt group and Broadcast is enabled, copies of the message are forwarded to the mailboxes of the individual group members. The original message in the hunt group mailbox is deleted unless it occurred as the result of call recording.

- **UMS Web Services:** *Default = Off, Software level = 5.0+.*

This option is used with Voicemail Pro 5.0+. If enabled, the hunt group mailbox can be accessed using either an IMAP email client or a web browser. **UMS Web Service** licenses are required for the number of users and groups configured. Note that the mailbox must have a voicemail code set in order to use either of the UMS interfaces.

- In the  [License](#) ^[37b] section, double-clicking on the **UMS Web Services** license display a menu that allows you to add and remove users and groups from the list of those enabled for UMS Web Services without having to open the settings of each individual user or group.

- **Voicemail Email:** *Default = Blank (No voicemail email features)*

This field is used to set the user or group email address used by the voicemail server for voicemail email operation. When an address is entered, the additional Voicemail Email control below are selectable to configure the type of voicemail email service that should be provided.

- Use of voicemail email requires the Voicemail Pro server to have been configured to use either a local MAPI email client or an SMTP email server account.
- The use of voicemail email for the sending (automatic or manual) of email messages with wav files attached should be considered with care. A one-minute message creates a 1MB .wav file.

- **Voicemail Email** *Default = Off*

If an email address is entered for the user or group, the following options become selectable. These control the mode of automatic voicemail email operation provided by the voicemail server whenever the voicemail mailbox receives a new voicemail message.

- Users can change their voicemail email mode using visual voice. If the voicemail server is set to IP Office mode, user can also change their voicemail email mode through the telephone prompts. The ability to change the voicemail email mode can also be provided in a call flow using a Play Configuration Menu action or a Generic action.
- If the voicemail server is set to IP Office mode, users can manually forward a message to email.

- **Off**

If off, none of the options below are used for automatic voicemail email. Users can also select this mode by dialing *03 from their extension.

- **Copy**

If this mode is selected, each time a new voicemail message is received in the voicemail mailbox, a copy of the message is attached to an email and sent to the email address. There is no mailbox synchronization between the email and voicemail mailboxes. For example reading and deletion of the email message does not affect the message in the voicemail mailbox or the message waiting indication provided for that new message.

- **Forward**

If this mode is selected, each time a new voicemail message is received in the voicemail mailbox, that message is attached to an email and sent to the email address. No copy of the voicemail message is retained in the voicemail mailbox and there is no message waiting indication. As with Copy, there is no mailbox synchronization between the email and voicemail mailboxes. Users can also select this mode by dialing *01 from their extension.

- **UMS Exchange 2007**

Voicemail Pro 5.0+ supports voicemail email to an Exchange 2007 server email account. For users and groups also enabled for UMS Web Services this significantly changes their mailbox operation. The Exchange Server inbox is used as their voicemail message store and features such as message waiting indication are set by new messages in that location rather than the voicemail mailbox on the voicemail server. Telephone access to voicemail messages, including Visual Voice access, is redirected to the Exchange 2007 mailbox.

- **Alert**

If this mode is selected, each time a new voicemail message is received in the voicemail mailbox, a simple email message is sent to the email address. This is an email message announcing details of the voicemail message but with no copy of the voicemail message attached. Users can also select this mode by dialing *02 from their extension.

5.8.4 Fallback

Fallback settings can be used to make a hunt group unavailable and to set where the hunt group's calls should be redirected at such times. Hunt groups can be manually placed In Service, Out of Service or in Night Service. Additionally using a time profile, a group can be automatically placed in Night Service when outside the Time Profile settings.

Summary: Fallback redirects a hunt group's calls when the hunt group is not available, for example outside normal working hours. It can be triggered either manually or using an associated time profile.

- **Hunt Group Service States**

A hunt group can be in one of three states; In Service, Out of Service and Night Service. When In service, calls are presented as normal. In any other state calls are redirected.

- **Call Redirection During Fallback**

The following options are possible when a hunt group is either Out of Service or in Night Service.

- **Fallback Group**

If an Out of Service Fallback Group or Night Service Fallback Group has been set, calls are redirected to that group.

- **Voicemail**

If no fallback group has been set but voicemail is available, calls are redirected to voicemail.

- **Busy Tone**

If no fallback group has been set and voicemail is not available, busy tone is returned to calls.

- **Manually Controlling the Service State**

Manager and or short codes can be used to change the service state of a hunt group. The short code actions can also be assigned to programmable buttons on phones.

- The  icon is used for a hunt group manually set to **Night Service** mode.

- The  icon is used for a hunt group manually set to **Out of Service** mode.

- **Time Profile**

A time profile can be associated with the hunt group. When outside the time profile, the hunt group is automatically place into night service. When inside the time profile, the hunt group uses manually selected mode.

- When outside the time profile and therefore in night service, manual night service controls cannot be used to override the night service. However the hunt group can be put into out of service.
- When a hunt group is in Night Service due to a time profile, this is not indicated within Manager.
- For IP Office 4.0+, time profile operation does not affect hunt groups set to Out of Service.

Hunt Group Fallback	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- Time Profile: Default = <None> (No automatic night service)

This field allows selection of a previously created [Time Profile](#)^[361]. That profile then specifies the times at which it should use the manually selected Service Mode settings. Outside the period defined in the time profile, the hunt group behaves as if set to Night Service mode.

Please note that when a hunt group is in Night Service due to its associated time profile, this is not reflected by the Service Mode on this tab. Note also that the manual controls for changing a hunt group's service mode cannot be used to take a hunt group out of time profile night service.

- **Out of Service Fallback Group:** Default = <None> (Voicemail or Busy Tone)

This field sets the alternate hunt group destination for calls when this hunt group is in Out of Service mode. If left blank, calls are redirected to voicemail if available or otherwise receive busy tone.

- **Night Service Fallback Group:** Default = <None> (Voicemail or Busy Tone)

This field sets the alternate hunt group destination for calls when this hunt group is in Night Service mode. If left blank, calls are redirected to voicemail if available or otherwise receive busy tone.

- **Service Mode:** Default = In Service

This field is used to manually select the current service mode for the hunt group.



✗ Out of Service

When selected, calls are redirected using the **Out of Service Fallback Group** setting. This setting can also be manually controlled using the short code and button programming features Set Hunt Group Out of Service and Clear Hunt Group Out of Service.



or : In Service

When selected the hunt group is enabled. This is the default mode.



★ Night Service

When selected, calls are redirected using the **Night Service Fallback Group** setting. This setting can also be manually controlled using the short code and button programming features Set Hunt Group Night Service and Clear Hunt Group Night Service.

Hunt Group Fallback Controls

Hunt Group Fallback																							
Manager	Hunt group fallback selection is done through the Hunt Group Fallback ^[317] tab. A time profile if required is set through the Time Profile Time Profile tab.																						
Controls	The following short code features/button programming actions can be used: <table><tr><th>Feature/Action</th><th>Short Code</th><th>Default</th><th>Button</th></tr><tr><td>Set Hunt Group Night Service^[494]</td><td>✓</td><td>*20*N#</td><td>✓ - Toggles.</td></tr><tr><td>Clear Hunt Group Night Service^[453]</td><td>✓</td><td>*21*N#</td><td>✓</td></tr><tr><td>Set Hunt Group Out of Service^[494]</td><td>✗</td><td>✗</td><td>✓- Toggles.</td></tr><tr><td>Clear Hunt Group Out of Service^[453]</td><td>✗</td><td>✗</td><td>✓</td></tr></table> Note that for a hunt group using a time profile, these controls only are only applied when the hunt group is within the specified time profile period. When outside its time profile, the hunt group is in night service mode and cannot be overridden.			Feature/Action	Short Code	Default	Button	Set Hunt Group Night Service ^[494]	✓	*20*N#	✓ - Toggles.	Clear Hunt Group Night Service ^[453]	✓	*21*N#	✓	Set Hunt Group Out of Service ^[494]	✗	✗	✓- Toggles.	Clear Hunt Group Out of Service ^[453]	✗	✗	✓
Feature/Action	Short Code	Default	Button																				
Set Hunt Group Night Service ^[494]	✓	*20*N#	✓ - Toggles.																				
Clear Hunt Group Night Service ^[453]	✓	*21*N#	✓																				
Set Hunt Group Out of Service ^[494]	✗	✗	✓- Toggles.																				
Clear Hunt Group Out of Service ^[453]	✗	✗	✓																				
Phone Manager	There are no specific controls for the operation of hunt group fallback.																						
SoftConsole	There are no specific controls for the operation of hunt group fallback.																						
Voicemail	There are no specific controls for the operation of hunt group fallback.																						

5.8.5 Queuing

When is a Call Queued

The definition of when a call is in a queue can vary:

- For pre-4.0 IP Office systems, calls to a hunt group were only queued when the number of calls waiting exceeded the number of available hunt group members that could be ringing. Using that definition, calls that were actually ringing were not regarded as queued.
- For IP Office 4.0+, any calls waiting to be answered at a hunt group are regarded as being queued. The **Normalise Queue Length** control allows selection of whether features that are triggered by the queue length should include or exclude ringing calls.
- **Additional Calls**
Once one call is queued, any further calls are also queued. When an available hunt group member becomes idle, the first call in the queue is presented.
- **How Many Calls Can be Queued?**
Calls are added to the queue until the hunt group's Queue Limit, if set, is reached.
 - When the queue limit is reached, any further calls are redirected to the hunt group's voicemail if available.
 - If voicemail is not available excess calls receive busy tone. An exception to this are analog trunk and T1 CAS trunk calls which will remain queued regardless of the queue limit if no alternate destination is available.
 - If an existing queued call is displaced by a higher priority call, the displaced call will remain queued even if it now exceeds the queue limit.
- **Queue Announcements**
The method of hunt group announcements depends on the IP Office software level:
 - For pre-4.0 IP Office systems with Voicemail Pro or Voicemail Lite, announcements are applied to queued calls.
 - For IP Office 4.0+, hunt group announcements are separate from queuing. Announcements can be used even if queuing is turned off and are applied to ringing and queued calls. See [Hunt Group | Announcements](#)^[323].
- **Queue Monitoring**
There are several methods of displaying a hunt group queue.
 - **Group Button**
On phones, with programmable buttons, the **Group** function can be assigned to monitor a specified group. The button indicates when there are calls ringing within the group and also when there are calls queued. The button can be used to answer the longest waiting call.
 - **Phone Manager and SoftConsole**
Both these applications can display queue monitors for selected hunt groups, 2 using Phone Manager, 7 using SoftConsole. This requires the hunt group to have queuing enabled. These queues can be used to answer calls.
- **What Happens When A Hunt Group Members Becomes Available**
When a hunt group member becomes available, the first call in the queue is presented to that member. If several members become available, the first call in the queue is simultaneously presented to all the free members.
- **Overflow Calls**
Calls that overflow are counted in the queue of the original hunt group from which they overflow and not that of the hunt group to which they overflow. This affects the **Queue Limit** and **Calls in Queue Threshold**.

Hunt Group Queuing	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Queuing On:** *Default = On*

This settings allows calls to this hunt group to be queued. The normal  icon is replaced .

- **Queue Limit:** *Default = No Limit. Range = No Limit, 1 to 999 calls.*

This setting can be used to limit the number of calls that can be queued. Calls exceeding this limit are passed to voicemail if available or otherwise receive busy tone. This value is affected by Normalize Queue Length setting.

- If voicemail is not available excess calls receive busy tone. An exception to this is analog trunk and T1 CAS trunk calls which will remain queued regardless of the queue limit if no alternate destination is available. This is due to the limited call status signalling supported by those trunks which would otherwise create scenarios where the caller has received ringing from the local line provider and then suddenly gets busy from the IP Office, creating the impression that the call was answered and then hung up.
- If priority is being used with incoming call routes, high priority calls are place ahead of lower priority calls. If this would exceed the queue limit the limit is temporarily increased by 1.
- If an existing queued call is displaced by a higher priority call, the displaced call will remain queued even if it now exceeds the queue limit.

- **Normalize Queue Length:** *Default = Off, Software level = 4.0+.*

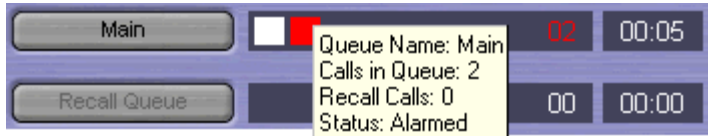
Prior to IP Office 4.0 the call queue only included calls waiting to ring and did not include calls actually ringing. For IP Office 4.0+ calls both waiting to ring and ringing are regarded as being queued. This therefore affects the use of the Queue Limit and Calls in Queue Alarm thresholds. If Normalize Queue Length is enabled, the number of hunt group members logged in and not on DND is added to those thresholds.

- **Example:** A customer has two products that it is selling through a call center with 10 available agents; one product with a \$10 margin and one with a \$100 margin. Separate hunt groups with the same 10 members are created for each product.
 - The \$100 product has a Queue Limit of 5 and Normalize Queue Length is on. The maximum number of \$100 calls that can be waiting to be answered will be 15 (10 ringing/connected + 5 waiting to ring).
 - The \$10 product has a Queue Limit of 5 and Normalize Queue Length is off. The maximum number of \$10 calls that can be waiting to be answered is 5 (5 ringing/connected).
- **Queue Type:** *Default = Assign Call On Agent Answer, Software level = 4.2+.*

When queuing is being used, the call that the agent receives when they answer can be assigned in one of two ways:

- **Assign Call On Agent Answer**
In this mode the call answered by the hunt group member will always be the longest waiting call of the highest priority. The same call will be shown on all ringing phones in the group. At the moment of answering that may not necessarily be the same call as was shown by the call details at the start of ringing. This is the default mode for IP Office 4.0+.
- **Assign Call on Agent Alert**
In this mode, once a call has been presented to a hunt group member, that is the call they will answer if they go off hook. This is similar to the method used for IP Office 3.2 and earlier. This mode should be used when calls are being presented to applications which use the call details such as a fax server, CTI or TAPI.
- **Queue Ring Time (secs):** *Default = 10 seconds. Range = 0 to 99999 seconds, Software level = Up to 3.2 only.*
On systems with Voicemail Lite (pre-IP Office 5.0 only) or Voicemail Pro, the voicemail system can provide announcements to queued callers. This setting controls the time before the first queued announcement is played to a queued caller. For IP Office 4.0+ this has been replaced by the [Hunt Group | Announcement](#) ³²³ tab controls.
- **Calls In Queue Alarm:** *Software Level = 4.1+.*
The IP Office can be set to send an alert to a specified extension when the number of calls queued for the hunt group reaches the specified threshold.
 - **Calls In Queue Threshold:** *Default = Off (Range = Off, 2 to 99, Software level = 4.1+.*
Alerting is triggered when the number of queued calls reaches this threshold. Alerting will stop only when the number of queued calls drops back below this threshold. This value is affected by **Normalize Queue Length** setting above.
 - **Analog Extension to Notify:** *Default = <None>, Software Level = 4.1+.*
This should be set to the extension number of a user associated with an analog extension. The intention is that this analog extension port should be connected to a loud ringer or other alerting device and so is not used for making or receiving calls. The list will only shown analog extensions that are not members of any hunt group or the queuing alarm target for any other hunt group queue. The alert does not follow user settings such as forwarding, follow me, DND, call coverage, etc or receive ICLID information.

Hunt Group Queue Settings

Manager	Hunt group queuing is enabled using the Queuing On option on the Hunt Group Queuing ³¹⁹ tab. When enabled, the  icon is used for the hunt group.								
Controls	The following short code features/button programming actions can be used: <table><tr><th>Feature/Action</th><th>Short Code</th><th>Default</th><th>Button</th></tr><tr><td>Group</td><td>✗</td><td>✗</td><td>✓</td></tr></table>	Feature/Action	Short Code	Default	Button	Group	✗	✗	✓
Feature/Action	Short Code	Default	Button						
Group	✗	✗	✓						
Phone Manager	Phone manager Pro can be used to monitor up to two hunt group queues. This is configured by clicking  and then on the Queue ID tab selecting the two hunt groups. During normal operation the Phone Manager user then has access to a Queue tab which is automatically given focus when calls become queued.								
SoftConsole	SoftConsole can display up to 7 hunt group queues (an eight queue is reserved for recall calls). They are configured by clicking  and selecting the Queue Mode tab. For each queue alarm threshold can be set based on number of queued calls and longest queued call time. Actions can then be selected for when a queue exceeds its alarm threshold; Automatically Restore SoftConsole, Ask me whether to restore SoftConsole or Ignore the Alarm.  Within the displayed queues, the number of queued calls is indicated and the time of the longest queued call is shown. Exceeding an alarm threshold is indicated by the queue icons changing from white to red. The longest waiting call in a queue can be answered by clicking on the adjacent button.								

5.8.6 Voice Recording

This tab is used to configure automatic recording of external calls handled by hunt group members.

Call recording requires Voicemail Pro to be installed and running. Call recording also requires available conference resources similar to a 3-way conference.

- IP Office 4.0+ introduces the following changes to recording:
 - Calls to and from IP devices, including those using Direct media, can be recorded.
 - Calls parked or held pause recording until the unparked or taken off hold.
 - Recording is stopped if:
 - User recording stops if the call is transferred to another user.
 - User account code recording stops if the call is transferred to another user.
 - Hunt group recording stops if the call is transferred to another user who is not a member of the hunt group.
 - Incoming call route recording continues for the duration of the call on the system.
- For IP Office 4.1+, a destination mailbox other than the hunt group's own mailbox can be specified as the destination for recordings.

Hunt Group Voice Recording	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Record Inbound:** *Default = None*
Select whether inbound external calls to group members should be recorded. Options are **On**, **Mandatory** and then various percentages of the calls received by the group members.
 - **On**
Record the call if possible.
 - **Mandatory**
If not possible to record, return busy tone to the caller.
- **Record Time Profile:** *Default = <None> (Any time)*
Used to select a [time profile](#)^[36] during which automatic call recording setting above apply.
- **Auto Recording Mailbox:** *Default = <hunt group's own mailbox>, Software level = 4.1+.*
Sets the mailbox into which automatically triggered recordings are placed.
 - **Voice Recording Library:** *Default = Off, Software level = 3.0+.*
When checked, this setting overrides the **Auto Recording Mailbox** setting and marks the recording for collection by the ContactStore for IP Office application. Note that Voicemail Pro still performs the actual recording.

5.8.7 Announcements

This tab is new for IP Office 4.0 and higher. Unlike pre-4.0 IP Office systems, this method of using announcements is independent of hunt group queuing.

Announcements are played to callers waiting to be answered. This includes callers being presented to hunt group members, ie. ringing, and callers queued for presentation.

- IP Office 4.0+ supports announcements using Voicemail Pro, Voicemail Lite (pre-5.0 only) or Embedded Voicemail.
- If no voicemail channel is available for an announcement, the announcement is not played.
- In conjunction with Voicemail Pro, IP Office 4.0+ allows a number of voicemail channels to be reserved for announcements. See [System | Voicemail](#)^[164].
- With Voicemail Pro, the announcement can be replaced by the action specified in a Queued (1st announcement) or Still Queued (2nd announcement) start point call flow. Refer to the Voicemail Pro Installation and Maintenance documentation for details.
- Calls can be answered during the announcement. If it is a mandatory requirement that announcements should be heard before a call is answered, then a Voicemail Pro call flow should be used before the call is presented.
 - **Warning: Call Billing and Logging**
Note that a call becomes connected when the first announcement is played to it. That connected state is signaled to the call provider who may start billing at that point. The call will also be recorded as answered within the [IP Office SMDR](#)^[84] output once the first announcement is played.
- If a call is rerouted to a hunt group's Night Service Group or Out of Service Fallback Group, the announcements of the new group are applied.
- If a call overflows, the announcements of the original group are still applied, not those of the overflow group.
- For announcements to be used effectively, the hunt group's **Voicemail Answer Time** must be extended or **Voicemail On** must be unselected.

Recording the Hunt Group Announcement

Voicemail Lite and Voicemail Pro provide the default announcement *"I'm afraid all the operators are busy but please hold and you will be transferred when somebody becomes available"*. This default is used for announcement 1 and announcement 2 if no specific hunt group announcement has been recorded. Embedded Voicemail does not provide any default announcement.

The maximum length for announcements is 10 minutes. New announcements can be recorded using the following methods:

- **Voicemail Lite**
Access the hunt group mailbox and press 3. Then press either 3 to record the 1st announcement for the hunt group or 4 to record the 2nd announcement for the hunt group.
- **Voicemail Pro - IP Office Mode**
This is the same as Voicemail Lite above.
- **Voicemail Pro - Intuity Emulation Mode**
There is no mechanism within the Intuity telephony user interface (TUI) to record hunt group announcements. To provide custom announcements, hunt group queued and still queued start points must be configured with Voicemail Pro with the required prompts played by a generic action.
- **Embedded Voicemail**
Embedded Voicemail does not include any default announcement or method for recording an announcement. The [Record Message](#)^[487] short code feature is provided to allow the recording of announcements. The telephone number field of short codes using this feature requires the extension number followed by either ".1" for announcement 1 or ".2" for announcement 2. For example, for extension number 300, the short codes ***91N# | Record Message | N".1"** and ***92N# | Record Message | N".2"** could be used to allow recording of the announcements by dialing ***91300#** and ***92300#**.

Hunt Group Announcements	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	4.0+.
Mergeable	✓.

- **Announcements On:** *Default = Off.*
This setting enables or disables announcements.
- **Wait before 1st announcement:** *Default = 10 seconds. Range = 0 to 9999 seconds.*
This setting sets the time delay from the calls presentation, after which the first announcement should be played to the caller. If **Synchronize Calls** is selected, the actual wait may differ, see below.
- **Flag call as answered:** *Default = Off.*
This setting is used by the IP Office CCC and CBC applications. By default they do not regarded a call as answered until it has been answered by a person or by a Voicemail Pro action with **Flag call as answered** selected. This setting allows calls to be marked as answered once the caller has heard the first announcement. This setting is not used by the IP Office Customer Call Reporter application.
 - **Warning: Call Billing and Logging**
Note that a call becomes connected when the first announcement is played to it. That connected state is signaled to the call provider who may start billing at that point. The call will also be recorded as answered within the [IP Office SMDR](#) ⁽⁸⁴⁴⁾ output once the first announcement is played.
- **Post announcement tone:** *Default = Music on hold.*
Following the first announcement, you can select whether the caller should hear [Music on Hold](#) ⁽⁷⁴⁶⁾, **Ringing** or **Silence** until answered or played another announcement.
- **2nd Announcement:** *Default = On.*
If selected, a second announcement can be played to the caller if they have still not been answered.
- **Wait before 2nd announcement:** *Default = 20 seconds. Range = 0 to 9999 seconds.*
This setting sets the wait between the 1st and the 2nd announcement. If **Synchronize Calls** is selected, the actual wait may differ, see below.
- **Repeat last announcement:** *Default = On.*
If selected, the last announcement played to the caller is repeated until they are answered or hang-up.
- **Wait before repeat:** *Default = 20 seconds. Range = 0 to 9999 seconds.*
If **Repeat last announcement** is selected, this setting sets is applied between each repeat of the last announcement. If **Synchronize Calls** is selected, this value is grayed out and set to match the **Wait before 2nd announcement** setting.
- **Synchronize calls:** *Default = Off*
This option can be used to restrict how many voicemail channels are required to provide the announcements.
 - **Off**
When **Synchronize** calls is off, announcement are played individually for each call. This requires a separate voicemail channel each time an announcement is played to each caller. While this ensures accurate following of the wait settings selected, it does not make efficient use of voicemail channels.
 - **On**
When **Synchronize calls** is on, if a required announcement is already being played to another caller, further callers wait until the announcement been completed and can be restarted. In addition, when a caller has waited for the set wait period and the announcement is started, any other callers waiting for the same announcement hear it even if they have not waited for the wait period. Using this setting, the maximum number of voicemail channels ever needed is 1 or 2 depending on the number of selected announcements.
 - **Note: Interaction with Voicemail Pro Queued and Still Queued Start Points**
If either custom **Queued** or **Still Queued** start point call flows are being used for the announcements, when **Synchronize Calls** is enabled those call flows will support the playing of prompts only. Voicemail Pro actions such as **Speak ETA**, **Speak Position**, **Menu**, **Leave Mail**, **Transfer** and **Assisted Transfer**, etc. are not supported.

5.8.8 Hunt Group Operation

5.8.8.1 Hunt Types

At its most basic, a hunt groups settings consist of a hunt group name, an extension number, a list of hunt group members and a hunt type selection. It is the last two settings which determine the order in which incoming calls are presented to hunt group members.

The available hunt types are; Collective, Sequential, Rotary and Longest Waiting. These work are follows:

Collective Group (formerly Group Group)	
An incoming call is presented simultaneously to all the available hunt group members.	
Sequential Group (formerly Hunt or Linear Group)	
An incoming call is presented to the first available member in the list. If unanswered, it is presented to the next available member in the list. The next incoming call uses the same order. It is presented to the available members starting again from the top of the list.	
Rotary Hunt Type (formerly Circular Group)	
This hunt type operates similarly to Sequential. However the starting point for call presentation is the first available member after the last member to answer a call.	
Longest Waiting Hunt Type (formerly Idle or Most Idle)	
This hunt type does not present calls to hunt group members in the order that they are listed. It presents calls using the order of how long the available hunt group members have been idle. An incoming call is first presented to the available member who has been idle the longest. If unanswered it is presented to the next longest idle member. For IP Office 4.2+, where hunt group calls are being presented to a twinned extension, the longest waiting status of the user can be reset by calls answered at either their master or twinned extension.	

5.8.8.2 Call Presentation

Summary: Calls are presented to each available hunt group member in turn. If having been presented to all the available members, none answers, the call is redirected to voicemail if available, otherwise it continues to be presented to the next available member.

In addition to the summary, options exist to have calls queued or to have calls redirected to overflow groups.

- **First and Next Available Members**

The first available member to which a call is presented and the order of the next available members to which a call is presented are determined by the hunt group's [Hunt Type](#) ^[325] setting.

- **Additional Calls**

When additional calls are waiting to be presented, additional available hunt group members are alerted using the hunt group type. The way additional calls are presented if there are available members depends on the IP Office software level.

- **Pre-IP Office 4.0**

Additional calls ring around the group separately. This means that additional calls may be answered ahead of the first call.

- **IP Office 4.0 and Higher**

When any member answers a call it will be the first waiting call that is answered.

- **No Available Members**

If the number of incoming calls exceeds the number of available members to which calls can be presented, the following actions are usable in order of precedence.

- **Queuing**

If queuing has been enabled for the hunt, it is applied to the excess calls up to the limits specified for the number of queued calls or length of time queued.

- **Voicemail**

If voicemail has been enabled for the hunt group, excess calls are directed to voicemail.

- **Busy Tone**

Busy tone is returned to the excess calls (except analog and T1 CAS calls which remain queued).

- **No Answer Time**

This value is used to determine how long a call should ring at a hunt group member before being presented to the next available hunt group member. The **System | Telephony | Telephony | No Answer Time** setting is used unless a specific **Hunt | Hunt Group | No Answer Time** is set.

- **Voicemail**

If voicemail is being used, if having been presented to all the available group members the call is still not answered then it goes to voicemail. For IP Office 4.0 and higher, the call will also go to voicemail when the hunt groups Voicemail Answer Time is exceeded.

- For IP Office 3.2 and earlier, when voicemail was invoked, the mailbox of whichever hunt group was currently handling the call was used, for example the mailbox of the overflow or night service hunt group might be used if the call had gone from the original hunt group to an overflow or night server hunt group. For IP Office 4.0 and higher, the mailbox of the originally targeted hunt group is used even if the call has overflowed or gone to a night server hunt group.

- **Calls Not Being Answered Quick Enough - Overflow**

In addition to ringing at each available member for the No Answer Time, a separate Overflow Time can be set. When a calls total ring time against the group exceeds this, the call can be redirected to an overflow group or groups.

- **No Available Member Answers**

If a call has been presented unanswered to all the available members, either of two actions can be applied. If voicemail is available, the call is redirected to voicemail. If otherwise, the call will continue being presented to hunt group members until answered or, if set, overflow is used.

- **Call Waiting**

For hunt groups using the Group hunt type, call waiting can be used.

5.8.8.3 Member Availability

Summary: Details when a hunt group member is seen as being available to be presented a hunt group call.

The Hunt Group settings within Manager list those users who are members of the hunt group and therefore may receive calls directed to that hunt group. However there are a range of factors that can affect whether a particular hunt group member is available to take hunt group calls at any time.

- **Existing Connected Call**

Users with an existing connected call are not available to further hunt group calls. This is regardless of the type of connected call, whether the user has available call appearance buttons or is using call waiting.

- **Hunt Group Call Waiting**

For Collective hunt groups call waiting can be enabled using the **Ring Type** of **Collective Call Waiting**.

- **Logged In/Logged Out**

IP Office allows user's to log in and out extensions, a process known as 'hot desking'. Whilst a user is logged out they are not available to receive hunt group calls.

- For IP Office 4.2, Mobile Twinning users with both **Hunt group calls eligible for mobile twinning** and **Twin when logged out** selected will still receive hunt group calls unless they switch off twinning.

- **Membership Enabled/Disabled**

The IP Office provides controls to temporarily disable a users' membership of a hunt group. Whilst disabled, the user is not available to receive calls directed to that hunt group.

- **Do Not Disturb**

This function is used by users to indicate that they do not want to receive any calls. This includes hunt group calls. In call center environments this state is also known as 'Busy Not Available'. See [Do Not Disturb](#)^[752].

- **Busy on Held**

When a user has a held call, they can receive other calls including hunt group calls. The Busy on Held settings can be used to indicate that the user is not available to further calls when they have a held call.

- **Forward Unconditional**

Users set to Forward Unconditional are by default not available to hunt group calls. The IP Office allows the forwarding of hunt group calls to be selected as an option.

- **Idle /Off Hook**

The hunt group member must be idle in order to receive hunt group call ringing.

- **No Available Members**

If queuing has been enabled, calls will be queued. If queuing has not been enabled, calls will go to the overflow group if set, even if the overflow time is not set or is set to 0. If queuing is not enabled and no overflow is set, calls will go to voicemail. If voicemail is not available, external calls go to the incoming call routes fallback destination while internal calls receive busy indication.

Hunt Group Member Availability Settings

Manager	Forwarding and do not disturb controls for a user are found on the User Forwarding^[284] and User DND^[273] tabs. Enabling and disabling a users hunt group membership is done by ticking or unticking the user entry in the hunt group's extensions list on the Hunt Group Hunt Group^[308] tab.																																								
Controls	The following short code features/button programming actions can be used: <table><tr><th>Feature/Action</th><th>Short Code</th><th>Default</th><th>Button</th></tr><tr><td>Hunt Group Enable^[481]</td><td>✓</td><td>✗</td><td>✓HGEa - Toggles.</td></tr><tr><td>Hunt Group Disable^[481]</td><td>✓</td><td>✗</td><td>✓HGDis</td></tr><tr><td>Forward Hunt Group On^[473]</td><td>✓</td><td>✓-*50</td><td>✓FwDH+ - Toggles</td></tr><tr><td>Forward Hunt Group Off^[473]</td><td>✓</td><td>✓-*51</td><td>✓FwDH-</td></tr><tr><td>Busy on Held^[441]</td><td>✓</td><td>✗</td><td>✓BusyH</td></tr><tr><td>Do Not Disturb On^[467]</td><td>✓</td><td>✓-*08</td><td>✓DNDOOn - Toggles</td></tr><tr><td>Do Not Disturb Off^[467]</td><td>✓</td><td>✓-*09</td><td>✓DNDOF</td></tr><tr><td>Extn Login^[469]</td><td>✓</td><td>✓-*35*N#</td><td>✓Login</td></tr><tr><td>Extn Logout^[469]</td><td>✓</td><td>✓-*36</td><td>✓Logof</td></tr></table>	Feature/Action	Short Code	Default	Button	Hunt Group Enable ^[481]	✓	✗	✓HGEa - Toggles.	Hunt Group Disable ^[481]	✓	✗	✓HGDis	Forward Hunt Group On ^[473]	✓	✓-*50	✓FwDH+ - Toggles	Forward Hunt Group Off ^[473]	✓	✓-*51	✓FwDH-	Busy on Held ^[441]	✓	✗	✓BusyH	Do Not Disturb On ^[467]	✓	✓-*08	✓DNDOOn - Toggles	Do Not Disturb Off ^[467]	✓	✓-*09	✓DNDOF	Extn Login ^[469]	✓	✓-*35*N#	✓Login	Extn Logout ^[469]	✓	✓-*36	✓Logof
Feature/Action	Short Code	Default	Button																																						
Hunt Group Enable ^[481]	✓	✗	✓HGEa - Toggles.																																						
Hunt Group Disable ^[481]	✓	✗	✓HGDis																																						
Forward Hunt Group On ^[473]	✓	✓-*50	✓FwDH+ - Toggles																																						
Forward Hunt Group Off ^[473]	✓	✓-*51	✓FwDH-																																						
Busy on Held ^[441]	✓	✗	✓BusyH																																						
Do Not Disturb On ^[467]	✓	✓-*08	✓DNDOOn - Toggles																																						
Do Not Disturb Off ^[467]	✓	✓-*09	✓DNDOF																																						
Extn Login ^[469]	✓	✓-*35*N#	✓Login																																						
Extn Logout ^[469]	✓	✓-*36	✓Logof																																						
Phone Manager	DND, Forwarding and Busy on Held can all be controlled through Phone Manager. They are accessed by clicking  and then selecting the Do Not Disturb, Forwarding or Telephone tabs respectively. Phone Manager Pro users can select agent mode by clicking , selecting the Agent Mode tab and selecting Agent Mode. In this mode, Phone Manager provides icons for Busy Wrap Up (Hunt group disable) and Busy Not Available (DND). It also allows individual selection of which group memberships are enabled. Phone Manager can also be used to log in and log out when the application is started or stopped.																																								
SoftConsole	A SoftConsole user can view and edit a user's settings. Through the directory, select the required user. Their current status including DND, Logged In and hunt group membership states are shown and can be changed. Forwarding settings can be accessed by then selecting Forwarding.																																								

5.8.8.4 Example Hunt Group

The follow are simple examples of how a department might use the facilities of an IP Office hunt group.

1. Basic Hunt Group	
Scenario	The Sales department want all sales related calls to be presented first to Jane, then Peter and finally Anne.
Actions	1. Create a hunt group named Sales and assign it an extension number. 2. Set the Hunt Type to Sequential. 3. Add Jane, Peter and Ann to the User List in that order. 4. Turn off queuing on the Queuing tab and voicemail on the Voicemail tab. 5. Route relevant calls to the Sales group by selecting it as the destination in the appropriate Incoming Call Routes.
Results	Any call received by the Sales hunt group is first presented to Jane if she is available. If Jane is not available or does not answer within 15 seconds the call is presented to Peter. If Peter is not available or does not answer within 15 seconds the call goes Anne. Since voicemail is not on, the call will continue to be presented around the group members in that order until it is answered or the callers hangs up.

2. Adding Voicemail Support	
Scenario	An IP Office voicemail server (Voicemail Pro) has now been added to the IP Office system. The Sales department wants to use it to take messages from unanswered callers. When messages are left, they want Jane to receive message waiting indication.
Actions	1. Open the Sales hunt group settings and select Voicemail On on the Voicemail tab. 2. Select the User settings for Jane. On the Source Numbers tab, add the entry HSales.
Results	Once a call to the Sales group has been presented to all the available members, if it is still unanswered then the call will be redirected to the group's voicemail mailbox to leave a message. When a message has been left, the message waiting indication lamp on Jane's phone is lit.

3. Using the Queuing Facility	
Scenario	The Sales department now wants calls queued when no one is available to answer. However if the number of queued calls exceeds 3 they then want any further callers directed to voicemail.
Actions	1. Open the Sales hunt group settings and select Queuing On on the Queuing tab. 2. Set the Queue Limit to 3.
Results	When the Sales group are all on calls or ringing, any further calls to the group are queued and receive queuing announcements from the voicemail server. When the number of queued calls exceeds 3, any further calls are routed to the group's voicemail mailbox.

4. Using Out of Service Fallback	
Scenario	During team meetings, the Sales department want their calls redirected to another group, for this example Support.
Actions	1. Open the Sales hunt group settings and select the Fallback tab. In the Out of Service Fallback Group field select the Support group. 2. Create a system short code *98 / 300 / Set Hunt Group Out of Service. 3. Create a system short code *99 / 300 / Clear Hunt Group Out of Service.
Results	Prior to team meetings, dialing *98 puts the Sales group into out of service mode. Its calls are then redirected to the Support group. Following the meeting, dialing *99 puts the Sales group back In Service.

5. Using a Night Service Time Profile	
Scenario	Outside their normal business hours the Sales department want their group calls automatically sent to voicemail. This can be done using a time profile and leaving the Night Service Fallback Group setting blank.
Actions	1. Create a Time Profile called Sales Hours and in it enter the time during which the Sales department are normally available. 2. Open the Sales hunt group settings and select the Fallback tab. 3. In the Time Profile field select Sales Hours.
Results	Outside the normal business hours set in the time profile, the Sales hunt group is automatically put into Night Service mode. Since no Night Service Fallback Group has been set, calls are redirected to voicemail.

5.8.8.5 CBC/CCC Agents and Hunt Groups

The use of and reporting on hunt groups is a key feature of call center operation. For IP Office, reporting is provided through the Compact Business Center (CBC) or Compact Contact Center (CCC) applications.

In order for these applications to provide hunt group and hunt group user (agent) reports, the following rules apply:

- The hunt group names must be restricted to a maximum of 12 characters.
- The hunt group and user extension numbers should be a maximum of 4 digits.
- Hunt group members should be given a Login Code and set to Force Login.
- The agent state Busy Not Available is equivalent to Do Not Disturb. The agent state Busy Wrap Up is equivalent to hunt group disable.

5.9 Short Code Form



This form is used to create System Short Codes. System short codes can be dialed by all IP Office users. However the system short code is ignored if the user dialing matches a user short code or user restriction short code. For full details on short code usage and parameter see the section [Short Codes](#)^[424].

Short Code Short Code	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Short Code**^[425]
The dialing digits used to trigger the short code. Maximum length 31 characters.
- **Telephone Number**^[425]
The number dialed by the short code or parameters for the short code feature. This field can contain numbers and characters. For example, it can contain Voicemail Pro start point names, user names, hunt group names and telephone numbers (including those with special characters). Maximum length 31 characters.
 - **Dialing Complete**
The majority of North-American telephony services use 'en-bloc' dialing, ie. they expect to receive all the routing digits for a call as a single simultaneous set of digits. Therefore the use of a ; is recommended at the end of all dialing short codes that use an N. This is also recommended for all dialing where secondary dial tone short codes are being used.
- **Line Group ID:** *Default = 0*
For short codes that result in the dialing of a number, that is short codes with a Dial feature, this field is used to enter the initially routing destination of the call. The drop down can be used to select the following from the displayed list:
 - **Outgoing Group ID**
The Outgoing Group ID's current setup within the IP Office configuration are listed. If an **Outgoing Group ID** is selected, the call will be routed to the first available line or channel within that group.
 - **ARS**
For IP Office 4.0+ systems, the ARS entries currently configured in the system are listed. If an ARS entry is selected, the call will be routed by the setting within that ARS entry. Refer to [ARS Overview](#)^[406].
- **Feature**^[437]
Select the action to be performed by the short code.
- **Locale**^[806]: *Default = Blank*
For short codes that route calls to voicemail, this field can be used to set the prompts locale that should be used if available on the voicemail server.
 - When the IP Office routes a call to the voicemail server it indicates the locale for which matching prompts should be provided if available. The locale sent to the voicemail server by the IP Office is determined as follows:

Locale Source	Usage
Short Code	The short code locale, if set, is used if the call is routed to voicemail using the short code.
System	If no user or incoming call route locale is set system locale is used unless overridden by a short code locale.
Incoming Call Route	The incoming call route locale, if set, is used if caller is external.
User	The user locale, if set, is used if the caller is internal.

- **Force Account Code:**^[376] *Default = Off.*
For short codes that result in the dialing of a number, this field trigger the user being prompted to enter a valid account code before the call is allowed to continue.
- **Force Authorization Code**^[403]: *Default = Off*
This option is only shown on systems where authorization codes have been enabled. If selected, then for short codes that result in the dialing of a number, the user is required to enter a valid authorization code in order to continue the call.

5.10 Service Settings



Services are used to configure the settings required when a user or device on the IP Office LAN needs to connect to a off-switch data service such as the Internet or another network. Services can be used when making data connections via trunk or WAN interfaces.

Once a service is created, it can be used as the destination for an IP Route entry. One service can also be set as the Default Service. That service will then be used for any data traffic received by the IP Office for which no IP Route is specified.

The IP Office supports three types of service:

-  **Normal Service**
This type of service should be selected when for example, connecting to an ISP.
-  **WAN Service**
This type of service is used when creating a WAN link. A User and RAS Service will also be created with the same name. These three entries are automatically linked and each open the same form. Note however, that this type of Service cannot be used if the Encrypted Password option is checked. In this case the RAS Service name must match the Account Name. Therefore either create each entry manually or create an Intranet Service.
-  **Intranet Service**
This type of service can be selected to automatically create a User with the same name at the same time. These two entries are linked and will each open the same form. The User's password is entered in the Incoming Password field at the bottom on the Service tab. An Intranet Services shares the same configuration tabs as those available to the WAN Service.

5.10.1 Service

Service Service	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Name**
The name of the service. It is recommended that only alphanumeric characters be used.
- **Account Name**
The User Name that is used to authenticate the connection. This is provided by the ISP or remote system.
- **Password:** *Default = Blank*
Enter the password that is used to authenticate the connection. This is provided by the ISP or remote system.
- **Telephone Number:** *Default = Blank*
If the connection is to be made via ISDN enter the telephone number to be dialed. This is provided by the ISP or remote system.
- **Firewall Profile:** *Default = Internet01 if present, otherwise <None>*
From the list box select the Firewall Profile that is used to allow/disallow protocols through this Service.
- **Encrypted Password:** *Default = Off*
When enabled the password is authenticated via CHAP (this must also be supported at the remote end). If disabled, PAP is used as the authentication method.
- **Default Route:** *Default = Off*
When enabled this Service is the default route for data packets unless a blank IP Route has been defined in the IP Office [IP Routes](#) ^[368]. A green arrow appears to the left of the Service in the Configuration Tree. Only one Service can be the default route. If disabled, a route must be created under IP Route.
- **Incoming Password:** *Default = Blank*
Shown on WAN and Intranet services. Enter the password that will be used to authenticate the connection from the remote Control Unit. (If this field has appeared because you have created a Service and User of the same name, this is the password you entered in the User's Password field).

5.10.2 Bandwidth

These options give the ability to make ISDN calls between sites only when there is data to be sent or sufficient data to warrant an additional call. The calls are made automatically without the users being aware of when calls begin or end. Using ISDN it is possible to establish a data call and be passing data in less than a second. Note: the system will check **Minimum Call Time** first, then **Idle Period**, then the **Active Idle Period**.

Service Bandwidth	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Minimum No of Channels:** *Default = 1. Range = 1 to 30.*
Defines the number of channels used to connect for an outgoing connection. The initial channel must be established and stable, before further calls are made.
- **Maximum No of Channels:** *Default = 1. Range = 1 to 30.*
Defines the maximum number of channels to can be used. This field should contain a value equal to or greater than the Minimum Channels field.
- **Extra BW Threshold:** *Default = 50%. Range = 0 to 100%.*
Defines the utilization threshold at which extra channels are connected. The value entered is a %. The % utilization is calculated over the total number of channels in use at any time, which may be one, two etc.
 - For example, if **Minimum Channels** set to 1, **Maximum Channels** set to 2 and **Extra Bandwidth** set to 50 - once 50% of first channel has been used the second channel is connected.
- **Reduce BW Threshold:** *Default = 10%. Range = 0 to 100%.*
Defines the utilization threshold at which additional channels are disconnected. The value entered is a %. Additional calls are only dropped when the % utilization, calculated over the total number of channels in use, falls below the % value set for a time period defined by the Service-Idle Time. The last call (calls - if Minimum Calls is greater than 1) to the Service is only dropped if the % utilization falls to 0, for a time period defined by the Service-Idle Time. Only used when 2 or more channels are set above.
 - For example, if Minimum Channels set to 1, Maximum Channels set to 2 and Reduce Bandwidth is set to 10 - once the usage of the 2 channels drops to 10% the number of channels used is 1.
- **Callback Telephone Number:** *Default = Blank*
The number that is given to the remote service, via BAP, which the remote Control Unit then dials to allow the bandwidth to be increased. Incoming Call routing and RAS Services must be appropriately configured.
- **Idle Period (secs):** *Default = 10 seconds. Range = 0 to 999999 seconds.*
The time period, in seconds, required to expire after the line has gone idle. At this point the call is considered inactive and is completely closed.
 - For example, the 'Idle Period' is set to X seconds. X seconds before the 'Active Idle Period' timeouts the Control Unit checks the packets being transmitted/received, if there is nothing then at the end of the 'Active Idle Period' the session is closed & the line is dropped. If there are some packets being transmitted or received then the line stays up. After the 'Active Idle Period' has timed out the system performs the same check every X seconds, until there are no packets being transferred and the session is closed and the line dropped.
- **Active Idle Period (secs):** *Default = 180 seconds. Range = 0 to 999999 seconds.*
Sets the time period during which time the line has gone idle but there are still active sessions in progress (for example an FTP is in process, but not actually passing data at the moment). Only after this timeout will call be dropped.
 - For example, you are downloading a file from your PC and for some reason the other end has stopped responding, (the remote site may have a problem etc.) the line is idle, not down, no data is being transmitted/ received but the file download session is still active. After the set time period of being in this state the line will drop and the sessions close. You may receive a remote server timeout error on your PC in the Browser/FTP client you were using.
- **Minimum Call Time (secs):** *Default = 60 seconds. Range = 0 to 999999 seconds.*
Sets the minimum time that a call is held up after initial connection. This is useful if you pay a minimum call charge every time a call is made, no matter the actual length of the call. The minimum call time should be set to match that provided by the line provider.
- **Extra BW Mode:** *Default = Incoming Outgoing*
Defines the mode of operation used to increases bandwidth to the initial call to the remote Service.
 - **Outgoing Only**
Bandwidth is added by making outgoing calls.
 - **Incoming Only**
Bandwidth is added by the remote service calling back on the BACP number (assuming that BACP is successfully negotiated).
 - **Outgoing Incoming**
Uses both methods but bandwidth is first added using outgoing calls.

- ***Incoming Outgoing***

Uses both methods but bandwidth is first added using incoming BACP calls.

5.10.3 IP

The fields in this tab are used to configure network addressing for the services you are running. Depending on how your network is configured, the use of [Network Address Translation \(NAT\)](#)^[780] may be required.

Service IP	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **IP Address:** *Default = 0.0.0.0 (address assigned by ISP)*
An address should only be entered here if a specific IP address and mask have been provided by the Service Provider. Note that if the address is in a different domain from the IP Office then NAT is automatically enabled.
- **IP Mask:** *Default = 0.0.0.0 (use NAT)*
Enter the IP Mask associated with the IP Address if an address is entered.
- **Primary Transfer IP Address:** *Default = 0.0.0.0 (No transfer)*
This address acts as a primary address for incoming IP traffic. All incoming IP packets without a session are translated to this address. This would normally be set to the local mail or web server address.
 - For IP Office control units supporting a LAN1 and LAN2, the primary transfer address for each LAN can be set through the [System | LAN1](#)^[152] and [System | LAN2](#)^[162] tabs.
- **Request DNS:** *Default = Off*
When selected, DNS information is obtained from the service provider. To use this, the DNS Server addresses set in the IP Office configuration ([System | DNS](#)^[163]) should be blank. The PC making the DNS request should have the IP Office set as its DNS Server. For DHCP clients the IP Office will provide its own address as the DNS server.
- **Forward Multicast Messages:** *Default = On*
By default this option is on. Multicasting allows WAN bandwidth to be maximized through the reduction of traffic that needs to be passed between sites.
- **RIP Mode:** *Default = None*
Routing Information Protocol (RIP) is a method by which network routers can exchange information about device locations and routes. RIP can be used within small networks to allow dynamic route configuration as opposed to static configuration using.
 - **None**
The LAN does not listen to or send RIP messages.
 - **Listen Only (Passive)**
Listen to RIP-1 and RIP-2 messages in order to learn RIP routes on the network.
 - **RIP1**
Listen to RIP-1 and RIP-2 messages and send RIP-1 responses as a sub-network broadcast.
 - **RIP2 Broadcast (RIP1 Compatibility)**
Listen to RIP-1 and RIP-2 messages and send RIP-2 responses as a sub-network broadcast.
 - **RIP2 Multicast**
Listen to RIP-1 and RIP-2 messages and send RIP-2 responses to the RIP-2 multicast address.

5.10.4 Autoconnect

Fields in this tab enable you to set up automatic connections to the specified Service.

Service Autoconnect	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- Auto Connect Interval (mins):** *Default = 0 (disabled). Range = 0 to 99999 minutes.*
 This field defines how often this Service will automatically be called ("polled"). For example setting 60 means the system will call this Service every hour in the absence of any normally generated call (this timer is reset for every call; therefore if the service is already connected, then no additional calls are made). This is ideal for SMTP Mail polling from Internet Service Providers.
- Auto Connect Time Profile:** *Default = <None>*
 Allows the selection of any configured Time Profiles. The selected profile controls the time period during which automatic connections to the service are made. It does NOT mean that connection to that service is barred outside of these hours. For example, if a time profile called "Working Hours" is selected, where the profile is defined to be 9:00AM to 6:00PM Monday to Friday, then automatic connection to the service will not be made unless its within the defined profile. If there is an existing connection to the service at 9:00AM, then the connection will continue. If there is no connection, then an automatic connection will be made at 9:00AM.

5.10.5 Quota

Quotas are associated with outgoing calls, they place a time limit on calls to a particular IP Service. This avoids excessive call charges when perhaps something changes on your network and call frequency increases unintentionally.

Service Quota	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Quota Time (mins):** *Default = 240 minutes. Range = 0 to 99999 minutes.*
Defines the number of minutes used in the quota. When the quota time is used up no further data can be passed to this service. This feature is useful to stop things like an internet game keeping a call to your ISP open for a long period.
 - Warning: Setting a value here without selecting a Quota period below will stop all further calls after the Quota Time has expired.
- **Quota:** *Default = Daily, Range = None, Daily, Weekly or Monthly*
Sets the period during which the quota is applied. For example, if the **Quota Time** is 60 minutes and the **Quota** is set to **Daily**, then the maximum total connect time during any day is 60 minutes. Any time beyond this will cause the system to close the service and prevent any further calls to this service. To disable quotas select **None** and set a **Quota Time** of zero.
 - Note: The [ClearQuota](#)^[454] feature can be used to create short codes to refresh the quota time.

5.10.6 Fallback

These options allow you to set up a fallback for the Service. For example, you may wish to connect to your ISP during working hours and at other times take advantage of varying call charges from an alternative carrier. You could therefore set up one Service to connect during peak times and another to act as fallback during the cheaper period.

You need to create an additional Service to be used during the cheaper period and select this service from the Fallback Service list box (open the Service form and select the Fallback tab).

If the original Service is to be used during specific hours and the Fallback Service to be used outside of these hours, a Time Profile can be created. Select this Time Profile from the Time Profile list box. At the set time the original Service goes into Fallback and the Fallback Service is used.

A Service can also be put into Fallback manually using short codes, for example:

- **Put the service "Internet" into fallback:**
 - **Short Code:** *85
 - **Telephone Number:** "Internet"
 - **Line Group ID:** 0
 - **Feature:** SetHuntGroupNightService
- **Take the service "Internet" out of fallback:**
 - **Short Code:** *86
 - **Telephone Number:** "Internet"
 - **Line Group ID:** 0
 - **Feature:** ClearHuntGroupNightService

Service Fallback	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **In Fallback:** *Default = Off*
This option indicates whether the Service is in Fallback or not. A service can be set into fallback using this setting. Alternatively a service can be set into fallback using a time profile or short codes.
- **Time profile:** *Default = <None> (No automatic fallback)*
Select the time profile you wish to use for the service. The time profile should be set up for the hours that you wish this service to be operational, out of these hours the Fallback Service is used.
- **Fallback Service:** *<None>*
Select the service that is used when this service is in fallback.

5.10.7 DialIn

Only available for WAN and Intranet Services. This tab is used to define a WAN connection.

Service Dial In	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

To define a WAN connection

1. Select Add.
2. Enter **WAN** if the service is being routed via a WAN port on a WAN3 expansion module.

5.11 RAS



A Remote Access Server (RAS) is a piece of computer hardware which sits on a corporate LAN and into which employees dial on the public switched telephone network to get access to their email and to software and data on the corporate LAN.

This form is used to create a RAS service that the system offers Dial In users. A RAS service is needed when configuring modem dial in access, digital (ISDN) dial in access and a WAN link. Some systems may only require one RAS service since the incoming call type can be automatically sensed.

RAS RAS	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Name**
A textual name for this service. If Encrypted Password (see below) is used this name must match the Account Name entered in the Service Form.
- **Extension**
Enter an extension number if this service is to be accessed internally.
- **COM Port**
For future use.
- **TA Enable:** *Default = Off*
Select to enable or disable - if enabled RAS will pass the call onto a TA port for external handling.
- **Encrypted Password:** *Default = Off*
This option is used to define whether Dial In users are asked to use PAP or CHAP during their initial log in to the RAS Service. If the Encrypted Password box is checked then Dial In users are sent a CHAP challenge, if the box is unchecked PAP is used as the Dial In Authorization method.

5.11.1 PPP

PPP (Point-to-Point Protocol) is a Protocol for communication between two computers using a Serial interface, typically a personal computer connected by phone line to a server.

RAS PPP	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **CHAP Challenge Interval (secs):** *Default = 0 (disabled). Range = 0 to 99999 seconds.*
The period between successive CHAP challenges. Blank or 0 disables repeated challenges. Some software, for example Windows 95 DUN, does not support repeated CHAP challenges.
- **Header Compression:** *Default = Off*
Enables the negotiation and use of IP Header Compression as per RFC2507, RFC2508 and RFC2509.
- **PPP Compression Mode:** *Default = MPPC*
This option is used to negotiate compression (or not) using CCP. If set to MPPC or StacLZS the system will try to negotiate this mode with the remote Control Unit. If set to Disable CCP is not negotiated.
 - **Disable**
Do not use or attempt to use compression.
 - **StacLZS**
Attempt to use and negotiate STAC compression (the standard, Mode 3)
 - **MPPC**
Attempt to use and negotiate MPPC (Microsoft) compression. Useful for dialing into NT Servers.
- **PPP Callback Mode:** *Default = Disable*
 - **Disable:**
Callback is not enabled
 - **LCP:** *(Link Control Protocol)*
After authentication the incoming call is dropped and an outgoing call to the number configured in the Service will be made to reestablish the link.
 - **Callback CP:** *(Microsoft's Callback Control Protocol)*
After acceptance from both ends the incoming call is dropped and an outgoing call to the number configured in the Service is made to reestablish the link.
 - **Extended CBCP:** *(Extended Callback Control Protocol)*
Similar to Callback CP however the Microsoft application at the remote end will prompt for a telephone number. An outgoing call will then be made to that number to reestablish the link.
- **Data Pkt. Size:** *Default = 0, Range = 0 to 2048.*
This is the number of data bytes contained in a Data Packet.
- **BACP:** *Default = Off*
Allows negotiation of the BACP/BCP protocols. These are used to control the addition of additional B channels to simultaneously improve data throughput.
- **Multilink:** *Default = Off*
When enabled the system attempts to negotiate the use of the Multilink protocol (MPPC) on the link(s) into this Service. Multilink must be enabled if the more than one channel is allowed to be Bundled/Multilinked to this RAS Service.

5.12 Incoming Call Route Settings



Incoming call routes are used to determine the destination of voice and data calls received by the IP Office. On IP Office systems where a large number incoming call routes need to be setup for DID numbers, the [MSN/DID Configuration](#) ¹³⁸ tool can be used. Select **Tools | MSN Configuration**.

Determining which incoming call route is used is based on the call matching a number of possible criteria. In order of highest priority first, these are:

1. The **Bearer Capability** indicated, if any, with the call. For example voice, data, video.
2. The **Line Group ID** of the trunk or trunk channel on which the call was received.
3. The **Incoming Number** received with the call.
4. The **Incoming Sub Address** received with the call.
5. The **Incoming CLI** of the caller.

Multiple Matches

If there is a match between more than one incoming call route entry, the one added to the configuration first is used.

Incoming Call Route Destinations

Each incoming route can include a fallback destination for when the primary destination is busy. It can also include a time profile which control when the primary destination is used. Outside the time profile calls are redirected to a night service destination.

- For IP Office 4.1+, multiple time profiles can be associated with an incoming call route. Each time profile used has its own destination and fallback destination specified.

Incoming Call Routing Examples

Example 1

For this example, the customer has subscribes to receive two 2-digit DID numbers. They want calls on one routed to a Sales hunt group and calls on the other to a Services hunt group. Other calls should use the normal default route to hunt group Main. The following incoming call routes were added to the configuration to achieve this:

Line Group	Incoming Number	Destination
0	77	Sales
0	88	Services
0	blank	Main

Note that the incoming numbers could have been entered as the full dialed number, for example 7325551177 and 7325551188 respectively. The result would still remain the same as incoming number matching is done from right-to-left.

Line Group	Incoming Number	Destination
0	7325551177	Sales
0	7325551188	Services
0	blank	Main

Example 2

In the example below the incoming number digits 77 are received. The incoming call route entries 677 and 77 have the same number of matching digit place and no non-matching places so both a potential matches. In this scenario the IP Office will use the incoming call route with the Incoming Number specified for matching.

Line Group	Incoming Number	Destination
0	677	Support
0	77	Sales
0	7	Services
0	blank	Main

Example 3

In the following example, the 677 entry is used as the match for 77 as it has more matching digits than the 7 entry and no non-matching digits.

Line Group	Incoming Number	Destination
0	677	Support
0	7	Services
0	blank	Main

Example 4

In this example the digits 777 are received. The 677 entry had a non-matching digit, so it is not a match. The entry 7 is used as it has one matching digit and no non-matching digits.

Line Group	Incoming Number	Destination
0	677	Support
0	7	Services
0	blank	Main

Example 5

In this example the digits 77 are received. Both the additional incoming call routes are potential matches. In this case the route with the shorter Incoming Number specified for matching is used and the call is routed to **Services**.

Line Group	Incoming Number	Destination
0	98XXX	Support
0	8XXX	Services
0	blank	Main

Example 6

In this example two incoming call routes have been added, one for incoming number 6XXX and one for incoming number 8XXX. In this case, any three digit incoming numbers will potential match both routes. When this occurs, potential match that was added to the IP Office configuration first is used. If 4 or more digits were received then an exact matching or non-matching would occur.

Line Group	Incoming Number	Destination
0	6XXX	Support
0	8XXX	Services
0	blank	Main

5.12.1 Incoming Call Route



Incoming call routes are used to match call received with destinations. Routes can be based on the incoming line group, the type of call, incoming digits or the caller's ICLID. If a range of MSN/DID numbers has been issued, this form can be populated using the MSN Configuration tool (see [MSN Configuration](#) ^[138]).

- **Default Blank Call Routes**

By default the configuration contains two incoming calls routes; one set for **Any Voice** calls (including analog modem) and one for **Any Data** calls. While the destination of these default routes can be changed, it is strongly recommended that the default routes are not deleted.

- Deleting the default call routes, may cause busy tone to be returned to any incoming external call that does not match any incoming call route.
- Setting any route to a blank destination field, may cause the incoming number to be checked against system short codes for a match. This may lead to the call being rerouted off-switch.
- Calls received on IP, S₀ and QSIG trunks do not use incoming call routes. Routing for these is based on incoming number received as if dialed on-switch. Line short codes on those trunks can be used to modify the incoming digits.
- If there is no matching incoming call route for a call, matching is attempted against system short codes and finally against voicemail nodes before the call is dropped.

- **SIP Calls**

For SIP calls, the following fields are used for call matching:

- **Line Group ID**

This field is matched against the Incoming Group settings of the SIP URI (Line | SIP URI). This must be an exact match.

- **Incoming Number**

This field can be used to match the called details (TO) in the SIP header of incoming calls. It can contain a number, SIP URI or Tel URI. For SIP URI's the domain part of the URI is removed before matching by incoming call routing occurs. For example, for the SIP URI mysip@example.com , only the user part of the URI, ie. mysip, is used for matching.

- **Incoming CLI**

This field can be used to match the calling details (FROM) in the SDP header of incoming SIP calls. It can contain a number, SIP URI, Tel URI or IP address received with SIP calls. For all types of incoming CLI except IP addresses a partial entry can be used to achieve the match, entries being read from left to right. For IP addresses only full entry matching is supported.

Incoming Call Route Standard	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

Incoming Call Matching Fields

The following fields are used to determine if the Incoming Call Route is a potential match for the incoming call.

- **Bearer Capability:** *Default = Any Voice*
The type of call selected from the list of standard bearer capabilities: **Any, Any Voice, Any Data, Speech, Audio 3K1, Data 56K, Data 64K, Data V110, Video.**
- **Line Group ID:** *Default = 0, Range = 0 to 99999.*
Matches against the Incoming Line Group to which the trunk receiving the call belongs.
- **Incoming Number:** *Default = Blank (Match any unspecified)*
Matches to the digits presented by the line provider. A blank entry matches all calls that do not match other entries. By default this is a right-to-left matching.
 - **- = Left-to-Right Exact Length Matching**
Using a - in front of the number causes a left-to-right match. When left-to-right matching is used, the number match must be the same length. For example -96XXX will match a DID of 96000 but not 9600 or 960000.
 - **X = Single Digit Wildcard**
Use X's to enter a single digit wild card character. For example **91XXXXXXXX** will only match DID numbers of at least 10 digits and starting with 91, **-91XXXXXXXX** would only match numbers of exactly 10 digits starting with 91. Other wildcard such as **N, n, *** and **?** cannot be used.
 - Where the incoming number potentially matches two incoming call routes with X wildcards and the number of incoming number digits is shorter than the number of wildcards, the one with the shorter overall **Incoming Number** specified for matching is used.
 - **i = ISDN Calling Party Number 'National'**
The **i** character does not affect the incoming number matching. It is used for Outgoing Caller ID Matching, see notes below.
- **Incoming Sub Address:** *Default = Blank (Match all)*
Matches any sub address component sent with the incoming call. If this field is left blank, it matches all calls.
- **Incoming CLI:** *Default = Blank (Match all)*
Enter a number to match the caller's ICLID provided with the call. This field is matched left-to-right. Number options are:
 - Full telephone number.
 - Partial telephone number, for example just the area code.
 - **!** : Matches calls where the ICLID was withheld.
 - **?** : for number unavailable.
 - Blank for all.

Call IP Office Setting Fields

For calls routed using this Incoming Call Route, the settings of the following fields are applied to the call regardless of the destination.

- **Locale:** *Default = Blank (Use system setting)*
This option specifies the language prompts, if available, that voicemail should use for the call if it is directed to voicemail.
 - When the IP Office routes a call to the voicemail server it indicates the locale for which matching prompts should be provided if available. The locale sent to the voicemail server by the IP Office is determined as follows:

Locale Source	Usage
Short Code	The short code locale, if set, is used if the call is routed to voicemail using the short code.
System	If no user or incoming call route locale is set system locale is used unless overridden by a short code locale.
Incoming Call Route	The incoming call route locale, if set, is used if caller is external.

User	The user locale, if set, is used if the caller is internal.

• **Priority:** *Default = 1-Low, Range = 1-Low to 3-High.*

This setting allows incoming calls to be assigned a priority. Other calls such as internal calls are assigned priority **1-Low**.

- In situations where calls are queued, high priority calls are placed before calls of a lower priority. This has a number of effects:
 - Mixing calls of different priority is not recommended for destinations where Voicemail Pro is being used to provided queue ETA and queue position messages to callers since those values will no longer be accurate when a higher priority call is placed into the queue. Note also that Voicemail Pro will not allow a value already announced to an existing caller to increase.
 - If the addition of a higher priority call causes the queue length to exceed the hunt group's **Queue Length Limit**^[319], the limit is temporarily raised by 1. This means that calls already queued are not rerouted by the addition of a higher priority call into the queue.
- IP Office 4.2+ supports the use of a timer to increase the priority of queued calls, see [System | Telephony | Telephony | Call Priority Promotion Time](#)^[166].
- For IP Office 4.2+, the current priority of a call can be changed through the use of the **p short code character**^[425] in a short code used to transfer the call.

• **Tag:** *Default = Blank (No tag), Software level = 4.1+.*

Allows a text tag to be associated with calls routed by this incoming call route. This tag is displayed with the call within applications such as Phone Manager and SoftConsole (note that those application can also be used to change the tag text when transferring calls). See [Call Tagging](#)^[739].

• **Hold Music Source:** *Default = System source, Software level = 4.2+ (Not Small Office Edition).*

IP Office 4.2+ supports up to 4 music on hold source, the **System Source** (either an internal file or the external source port or tones) plus up to 3 additional internal wav files, see [System | Telephony | Tones & Music](#)^[166]. If the system has several hold music sources available, this field allows selection of the source to associate with calls routed by this incoming call route. The new source selection will then apply even if the call is forwarded or transferred away from the Incoming Call Route destination. If the call is routed to another IP Office 4.2+ system in a Small Community Network, the matching source is used if available. The hold music source associated with a call can also be changed by a hunt group's [Hold Music Source](#)^[309] setting.

• **Destination:** *Default = Blank, Software Level = Up to 4.0 only.*

For IP Office 4.1+ this option has moved to the [Incoming Call Route | Destinations](#)^[350] tab. Select the destination for the call from the drop-down list box which contains all available extensions, users, groups, RAS services and voicemail. System short codes and dialing numbers can be entered manually. Once the incoming call is matched the call is passed to that destination.

• **Drop-Down List Options**

The following options appear in the drop-down in the following order:

- Voicemail allows remote mailbox access with Embedded Voicemail, Voicemail Lite or Voicemail Pro. Callers are asked to enter the extension ID of the mailbox required and then the mailbox access code.
- User Names
- Hunt Groups Names
- AA:Name directs calls to an Embedded Voicemail auto-attendant services.

• **Manually Entered Options**

The following options can be entered manually into the field.

- VM:Name Directs calls to the matching start point in Voicemail Pro.
- A . matches the Incoming Number field. This can be used even when X wildcards are being used in the Incoming Number field.
- A # matches all X wildcards in the Incoming Number field. For example, if the Incoming Number was - 91XXXXXXXXXX, the Destination would be XXXXXXXXXXXX.
- Text and number strings entered here are passed through to system short codes, for example to direct calls into a conference. Note that not all short code features are supported.

• **Fallback Extension:** *Default = Blank (No fallback), Software level = Up to 4.0 only.*

For IP Office 4.1+ this option has moved to the [Incoming Call Route | Destinations](#)^[350] tab. Defines an alternate destination which should be used when the current destination, set in the Destination or Night Service Destination field, cannot be obtained. For example if the primary destination is a hunt group returning busy and without queuing or voicemail.

• **Night Service Profile:** *Default = <None> (No night service), Software level = Up to 4.0 only.*

A time profile during which the Night Service Destination should be used rather than the Destination.

• **Night Service Destination:** *Default = Blank, Software level = Up to 4.0 only.*

Set the destination to be used during periods defined by the Night Service Profile. The same range of values can be used as for the Destination field.

Outgoing Caller ID Matching

In cases where a particular Incoming Number is routed to a specific individual user, the IP Office will attempt to use that Incoming Number as the user's caller ID when they make outgoing calls if no other number is specified. This requires that the Incoming Number is a full number suitable for user as outgoing caller ID and acceptable to the line provider.

When this is the case, the character **i** can also be added to the Incoming Number field. This character does not affect the incoming call routing. However when the same Incoming Number is used for an outgoing caller ID, the calling party number plan is set to ISDN and the type is set to National. This option may be required by some network providers.

5.12.2 Voice Recording

This tab is used to activate the automatic recording of incoming calls that match the incoming call route.

Call recording requires Voicemail Pro to be installed and running. Call recording also requires available conference resources similar to a 3-way conference.

- IP Office 4.0+ introduces the following changes to recording:
 - Calls to and from IP devices, including those using Direct media, can be recorded.
 - Calls parked or held pause recording until the unparked or taken off hold.
 - Recording is stopped if:
 - User recording stops if the call is transferred to another user.
 - User account code recording stops if the call is transferred to another user.
 - Hunt group recording stops if the call is transferred to another user who is not a member of the hunt group.
 - Incoming call route recording continues for the duration of the call on the system.

Incoming Call Route Voice Recording	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	4.0+.
Mergeable	✓.

- **Record Inbound:** *Default = None*
Applied to inbound external calls.
 - **On:** Record the call if possible.
 - **Mandatory:** If not possible to record, return busy tone.
 - **Percentages of calls:** Various percentages of calls made by the user will be recorded.
- **Record Time Profile:** *Default = <None> (Any time)*
Used to select a [time profile](#)^[36] during which automatic call recording setting above apply.
- **Recording Mailbox:** *Default = <None>*
Sets the mailbox into which automatically triggered recordings are placed.
 - **Voice Recording Library:** *Default = Not Enabled*
When checked, this setting overrides the **Recording Mailbox** setting and marks the recording for collection by the ContactStore for IP Office application. Note that Voicemail Pro still performs the actual recording.

5.12.3 Destinations

IP Office 4.1+ allows multiple time profiles to be associated with an incoming call route. For each time profile, a separate Destination and Fallback Extension can be specified.

When multiple entries are added, they are resolved from the bottom up. The entry used will be the first one, working from the bottom of the list upwards, that is currently 'true', ie. the current day and time or date and time match those specified by the Time Profile. If no match occurs the Default Value options are used.

Once a match is found, the IP Office does not use any other destination set even if the intended Destination and Fallback Extension destinations are busy or not available.

Incoming Call Route Standard	
Control Unit	SOE ✓, IP403 ✗, IP406 V1 ✗, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	4.1+.
Mergeable	✓.

- **Time Profile**

This column is used to specify the [time profiles](#)^[36] used by the incoming call routes. The entry displays a drop-down list of existing time profiles from which a selection can be made. To remove an existing entry, select it by clicking on the button on the left of the row, then right-click on the row and select **Delete**.

- **Default Value**

This entry is fixed and is used if no match to a time profile below occurs.

- **Destination: Default = Blank**

Either enter the destination manually or select the destination for the call from the drop-down list. The drop-down box contains all available extensions, users, groups, RAS services and voicemail. System short codes and dialing numbers can be entered manually. Once the incoming call is matched the call is passed to that destination.

- **Drop-Down List Options**

The following options appear in the drop-down list:

- **Voicemail** allows remote mailbox access with Embedded Voicemail, Voicemail Lite or Voicemail Pro. Callers are asked to enter the extension ID of the mailbox required and then the mailbox access code.
- Local user names.
- Local hunt groups names.
- **AA:Name** directs calls to an Embedded Voicemail auto-attendant services.

- **Manually Entered Options**

In addition to short codes, extension and external numbers, the following options can be also be entered manually:

- **VM:Name** Directs calls to the matching start point in Voicemail Pro.
- A **.** matches the Incoming Number field. This can be used even when X wildcards are being used in the Incoming Number field.
- A **#** matches all X wildcards in the Incoming Number field. For example, if the Incoming Number was - 91XXXXXXXXXX, the Destination would be XXXXXXXXXXXX.
- Text and number strings entered here are passed through to system short codes, for example to direct calls into a conference. Note that not all short code features are supported.

- **Fallback Extension: Default = Blank (No fallback)**

Defines an alternate destination which should be used when the current destination, set in the **Destination** field cannot be obtained. For example if the primary destination is a hunt group returning busy and without queuing or voicemail.

5.13 WAN Port Settings



These entries are used to configure the operation of IP Office WAN ports. These are the 37-way D-type WAN ports found on the rear of all IP Office control units except the Small Office Edition.

Additional WAN ports can be added by the installation of up to two WAN3 expansion modules, each module providing 3 additional WAN ports. On the Small Office Edition control unit, a single WAN port can be added by the installation of a WAN trunk card at the rear of the unit. For full details of installing additional WAN ports, refer to the IP Office Installation Manual.

Physical WAN are not supported on the IP500.

Creating a Virtual WAN Port

WAN services can be run over a T1 PRI trunk connection. This requires creation of a virtual WAN port. For full details refer to [Using a Dedicated T1/PRI ISP Link](#) ⁽⁷⁸²⁾ in Appendix A.

1. Select  **WAN Port**.
2. Click  and select **PPP**.
3. In the **Name** field, enter either **LINE x . y** where:
 - **LINE** must be in uppercase.
 - **x** is the line number. For a PRI/T1 module in Slot A, this will be 1. For a PRI/T1 module in Slot B, this will be 5.
 - **y** is the lowest numbered channel number to be used by the WAN link minus 1. For example, if the lowest channel to be used is channel 1 then $y = 1 - 1 = 0$.
4. In the **Speed** field, enter the total combined speed of the maximum number of channels sets in the Service. In this example, 12 channels x 64000 bits = 76800.
 - Note: The maximum number of channels that can be used will be limited by the number of data channels supported by the IP Office Control Unit and not already in use.
5. In the **RAS Name** field, select the RAS name created when the new Service of that name was created.
6. Click **OK**.

5.13.1 WAN Port

Use this form to configure the leased line connected to the WAN port on the Control Unit. Normally this connection is automatically detected by the IP Office control unit. If a WAN Port is not displayed, connect the WAN cable, reboot the Control Unit and receive the configuration. The WAN Port configuration form should now be added.

WAN Port WAN Port	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **Name**
The physical ID of the Extension port,. This parameter is not configurable; it is allocated by the system.
- **Speed**
The operational speed of this port. For example for a 128K connection, enter 128000. This should be set to the actual speed of the leased line as this value is used in the calculation of bandwidth utilization. If set incorrectly, additional calls may be made to increase Bandwidth erroneously.
- **Mode:** *Default = SyncPPP*
Select the protocol required:
 - **SyncPPP**
For a data link.
 - **SyncFrameRelay**
For a link supporting Frame Relay.
- **RAS Name**
If the **Mode** is **SyncPPP**, selects the RAS service to associate with the port. If the **Mode** is **SyncFrameRelay**, the RAS Name is set through the DCLIs tab.

5.13.2 Frame Relay

This tab is only available for Frame Relay entries. These show **SyncFrameRelay** as the **Mode** on the WAN Port tab.

WAN Port Frame Relay	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **Frame Management Type**

This must match the management type expected by the network provider. Selecting **AutoLearn** allows the IP Office to automatically determine the management type based on the first few management frames received. If a fixed option is required the following are supported: **Q933 AnnexA 0393**, **Ansi AnnexD**, **FRFLMI** and **None**.

- **Frame Learn Mode**

This parameter allows the DLCIs that exist on the given WAN port to be provisioned in a number of different ways.

- **None**

No automatic learning of DLCIs. DLCIs must be entered and configured manually.

- **Mgmt**

Use LMI to learn what DLCIs are available on this WAN.

- **Network**

Listen for DLCIs arriving at the network. This presumes that a network provider will only send DLCIs that are configured for this particular WAN port.

- **NetworkMgmt**

Do both management and network listening to perform DLCI learning and creation.

- **Max Frame Length**

Maximum frame size that is allowed to traverse the frame relay network.

- **Fragmentation Method**

Options are **RFC1490** or **RFC1490+FRF12**.

5.13.3 DLCIs

This tab is only available for Frame Relay entries. These show **SyncFrameRelay** as the **Mode** on the **WAN Port** ^[352] tab.

The tab lists the DLCIs created for the connection. These can be edited using the **Add**, **Edit** and **Remove** buttons.

WAN Port DLCIs	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **Frame Link Type:** *Default = PPP*
Data transfer encapsulation method. Set to the same value at both ends of the PVC (Permanent Virtual Channel).
 - **None**
 - **PPP**
Using PPP offers features such as out of sequence traffic reception, compression and link level connection management.
 - **RFC 1490**
RFC 1490 encapsulation offers performance and ease of configuration and more inter-working with third party CPE.
 - **RFC1490 + FRF12**
Alternate encapsulation to PPP for VoIP over Frame Relay. When selected all parameters on the Service | PPP tab being used are overridden.
- **DLCI:** *Default = 100*
This is the Data Link Connection Identifier, a unique number assigned to a PVC end point that has local significance only. Identifies a particular PVC endpoint within a user's physical access channel in a frame relay.
- **RAS Name**
Select the RAS Service you wish to use.
- **Tc:** *Default = 10*
This is the Time Constant in milliseconds. This is used for measurement of data traffic rates. The Tc used by the IP Office can be shorter than that used by the network provider.
- **CIR:** *(Committed Information Rate) Default = 64000 bps*
This is the Committed Information Rate setting. It is the maximum data rate that the WAN network provider has agreed to transfer. The committed burst size (Bc) can be calculated from the set Tc and CIR as $Bc = CIR \times Tc$. For links carrying VoIP traffic, the Bc should be sufficient to carry a full VoIP packet including all its required headers. See the example below.
- **EIR:** *(Excess Information Rate) Default = 0 bps*
This is the maximum amount of data in excess of the CIR that a frame relay network may attempt to transfer during the given time interval. This traffic is normally marked as De (discard eligible). Delivery of De packets depends on the network provider and is not guaranteed and therefore they are not suitable for UDP and VoIP traffic. The excess burst size (Be) can be calculated as $Be = EIR \times Tc$.

Example: Adjusting the Tc Setting

G.729 VoIP creates a 20 byte packet every 20ms. Adding typical WAN PPP headers results in a 33 byte packet every 20ms.

For a Committed Information Rate (CIR) of 14Kbps, with the Time Constant (Tc) set to 10ms; we can calculate the Committed Burst size:

$$Bc = CIR \times Tc = 14,000 \times 0.01 = 140 \text{ bits} = 17.5 \text{ bytes.}$$

Using 10ms as the Tc, a full G.729 VoIP packet (33 bytes) cannot be sent without exceeding the Bc. The most likely result is lost packets and jitter.

If the Tc is increased to 20ms:

$$Bc = CIR \times Tc = 14,000 \times 0.02 = 280 \text{ bits} = 35 \text{ bytes.}$$

The Bc is now sufficient to carry a full G.729 VoIP packet.

Notes

1. Backup over Frame Relay is not supported when the Frame Link Type is set to RFC1490.
2. When multiple DLCIs are configured, the WAN link LED is switched off if any of those DLCIs is made inactive, regardless of the state of the other DLCIs. Note also that the WAN link LED is switched on following a reboot even if one of the DLCIs is inactive. Therefore when multiple DLCIs are used, the WAN link LED cannot be used to determine the current state of all DLCIs.
3. When the Frame Link Type is set to RFC1490, the WAN link LED is switched on when the WAN cable is attached regardless other whether being connected to a frame relay network.

5.13.4 Advanced

The settings on this tab are used for Frame Relay connections.

WAN Port Advanced	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- **Address Length**

The address length used by the frame relay network. The network provider will indicate if lengths other than two bytes are to be used.

- **N391: Full Status Polling Counter**

Polling cycles count used by the CPE and the network provider equipment when bidirectional procedures are in operation. This is a count of the number of link integrity verification polls (T391) that are performed (that is Status Inquiry messages) prior to a Full Status Inquiry message being issued.

- **N392: Error Threshold Counter**

Error counter used by both the CPE and network provider equipment. This value is incremented for every LMI error that occurs on the given WAN interface. The DLCIs attached to the given WAN interface are disabled if the number of LMI errors exceeds this value when N393 events have occurred. If the given WAN interface is in an error condition then that error condition is cleared when N392 consecutive clear events occur.

- **N393: Monitored Events Counter**

Events counter measure used by both the CPE and network provider equipment. This counter is used to count the total number of management events that have occurred in order to measure error thresholds and clearing thresholds.

- **T391: Link Integrity Verification Polling Timer**

The link integrity verification polling timer normally applies to the user equipment and to the network equipment when bidirectional procedures are in operation. It is the time between transmissions of Status Inquiry messages.

- **T392: Polling Verification Timer**

The polling verification timer only applies to the user equipment when bidirectional procedures are in operation. It is the timeout value within which to receive a Status Inquiry message from the network in response to transmitting a Status message. If the timeout lapses an error is recorded (N392 incremented).

5.13.5 PPP

Fields in this tab enable you to configure Point to Point Protocol (PPP) in relation to this particular service. PPP is a protocol for communication between two computers using a Serial interface.

Service PPP	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Chap Challenge Interval (secs):** *Default = 0 (disabled). Range = 0 to 99999 seconds.*
The period between CHAP challenges. Blank or 0 disables repeated challenges. Some software such as Windows 95 DUN does not support repeated CHAP challenges.
- **Bi-Directional Chap:** *Default = Off.*
- **Header Compression:** *Default = None selected*
Enables the negotiation and use of IP Header Compression. Supported modes are IPHC and VJ. IPHC should be used on WAN links.
- **PPP Compression Mode:** *Default = MPPC*
Enables the negotiate and use of compression. Do not use on VoIP WAN links.
 - **Disable**
Do not use or attempt to use compression.
 - **StacLZS**
Attempt to use STAC compression (Mode 3, sequence check mode).
 - **MPPC**
Attempt to use MPPC compression. Useful for NT Servers.
- **PPP Callback Mode:** *Default = Disable*
 - **Disable**
Callback is not enabled
 - **LCP: (Link Control Protocol)**
After authentication the incoming call is dropped and an outgoing call to the number configured in the Service is made to re-establish the link.
 - **Callback CP: (Microsoft's Callback Control Protocol)**
After acceptance from both ends the incoming call is dropped and an outgoing call to the number configured in the Service is made to re-establish the link.
 - **Extended CBCP: (Extended Callback Control Protocol)**
Similar to Callback CP except the Microsoft application at the remote end prompts for a telephone number. An outgoing call is then made to that number to re-establish the link.
- **PPP Access Mode:** *Default = Digital64*
Sets the protocol, line speed and connection request type used when making outgoing calls. Incoming calls are automatically handled (see RAS services).
 - **Digital64**
Protocol set to Sync PPP, rate 64000 bps, call presented to local exchange as a "Data Call".
 - **Digital56**
As above but rate 56000 bps.
 - **Voice56**
As above but call is presented to local exchange as a "Voice Call".
 - **V120**
Protocol set to Async PPP, rate V.120, call presented to local exchange as a "Data Call". This mode runs at up to 64K per channel but has a higher Protocol overhead than pure 64K operation. Used for some bulletin board systems as it allows the destination end to run at a different asynchronous speed to the calling end.
 - **V110**
Protocol is set to Async PPP, rate V.110. This runs at 9600 bps, call is presented to local exchange as a "Data Call". It is ideal for some bulletin boards.
 - **Modem**
Allows Asynchronous PPP to run over an auto-adapting Modem to a service provider (requires a Modem2 card in the main unit)
- **Data Pkt. Size:** *Default = 0, Range = 0 to 2048.*
Sets the size limit for the Maximum Transmissible Unit.

-
- **BACP:** *Default = Off*
Enables the negotiation and use of BACP/BCP protocols. These are used to control the addition of B channels to increase bandwidth.
 - **Incoming traffic does not keep link up:** *Default = On*
When enabled, the link is not kept up for incoming traffic only.
 - **Multilink/QoS:** *Default = Off*
Enables the negotiation and use of Multilink protocol (MPPC) on links into this Service. Multilink must be enabled if there is more than one channel that is allowed to be Bundled/Multilinked to this RAS Service.

5.14 Directory



This section is used to edit directory records that are stored in the IP Office system's configuration. These directory records can be manually [imported or export using a CSV file](#)^[73].

The IP Office can also use [Directory Services](#)^[172] to automatically import directory entries from an LDAP server at regular intervals. For IP Office 5.0+ it can also automatically import directory entries from another IP Office. Automatically imported entries are used as part of the system directory but are not part of the editable configuration. Automatically imported entries cannot override manually entered entries.

Directory entries are used for two types of function:

- **Directory Dialing**

Directory numbers are displayed by IP Office user applications such as Phone Manager and SoftConsole. Directory numbers are also viewable through the [Dir](#)^[598] function on many IP Office phones. In both cases they allow the user to select the number to dial by name. In this usage, the directory will also contain the names and numbers of users and hunt groups on the IP Office system.

- The **Dir** function groups directory entries shown to the phone user into the following categories. In some scenarios, the categories displayed may be limited to those supported for the function being performed by the user:

- **External**

Directory entries from the IP Office configuration. For IP Office 5.0 this includes HTTP and LDAP imported entries.

- **Groups**

Groups on the IP Office system. If the system is in a Small Community Network it will also include groups on other IP Office systems in the network (For pre-IP Office 5.0 systems, this feature requires the IP Offices to have **Advanced Small Community Networking** licenses).

- **Users or Index**

Users on the IP Office system. If the system is in a Small Community Network it will also include users on other IP Office systems in the network (For pre-IP Office 5.0 systems, this feature requires the IP Offices to have **Advanced Small Community Networking** licenses).

- **Personal**

Available for T3 phones, T3 IP phones and 1600 Series phones (IP Office 5.0+). These are the user's personal directory entries stored within the IP Office system configuration.

- **Name Matching**

Directory entries are also used to associate a name with the dialled number on outgoing calls or the received CLI on incoming calls. When name matching is being done, a match in the users personal directory overrides any match in the system directory. Note that some IP Office user applications also have their own user directory.

- The IP Office Phone Manager and SoftConsole applications have their own user directories which are also used by the applications name matching. Matches in the application directory may lead to the application displaying a different name from that shown on the phone.
- Name matching is not performed when a name is supplied with the incoming call, for example QSIG trunks.

On pre-IP Office 5.0 systems, a maximum of 1000 entries are supported in the IP Office system configuration. For IP Office 5.0 systems, a maximum of 2500 directory entries are supported in the IP Office configuration. Using a 1600 Series phone, system phone users can also edit the configuration directory records.

IP Office	Number of Directory Records			Total Number of Directory Records
	IP Office Configuration	LDAP Import	HTTP Import	
IP500	2500	5000	5000	5000
IP412	2500	2500	2500	2500
IP406 V2	2500	2500	2500	2500

Directory Directory Entry	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Name**

Enter the text, to be used to identify the number. Names should not begin with numbers.

- **Number**

Enter the number to be matched with the above name. Any brackets or - characters used in the number string are ignored. The directory number match is done on reading from the left-hand side of the number string. Note that if the system has been configured to use an external dialing prefix, that prefix should be added to directory numbers.

For IP Office 5.0, the following characters are supported in directory entries. They are supported in both system configuration entries and in HTTP/LDAP imported entries.

- **? = Any Digit**

Directory entries containing a ? are only used for name matching against the dialed or received digits on outgoing or incoming. They are not included in the directory of numbers to dial available to users through IP Office phones or applications. The wildcard can be used in any position but typically would be used at the end of the number.

- In the following example, any calls where the dialed or received number is 10 digits long and starts 732555 will have the display name Homdel associated with them.

- **Name:** Holmdel

- **Number:** 9732555????

- **(and) brackets = Optional Digits**

These brackets are frequently used to enclose an optional portion of a number, typically the area code. Only one pair of brackets are supported in a number. Entries containing digits inside () brackets are used for both name matching or user dialling. When used for name matching, the dialed or received digits are compared to the directory number with and without the () enclosed digits. When used for dialling from a phone or application directory, the full string is dialed with the () brackets removed.

- The following example is a local number. When dialed by users they are likely to dial just the local number. However on incoming calls, for the CLI the telephony provider includes the full area code. Using the () to enclose the area code digits, it is possible for the single directory entry to be used for both incoming and outgoing calls.

- **Name:** Raj Garden

- **Number:** 9(01707)373386

- **Space and - Characters**

Directory entries can also contain spaces and - characters. These will be ignored during name matching and dialing from the directory.

5.15 Time Profile



Time Profiles are used by different IP Office services to change their operation when required. In most areas where time profiles can be used, not setting a time profile is taken as meaning 24-hour operation.

- Pre-IP Office 4.1 time profiles consist of recurring weekly patterns of days and times when the time profile is in effect.
- IP Office 4.1 time profiles can include time periods on specified calendar days when the time profile is in effect. Calendar entries can be entered for the current and following calendar year.

Time profiles are used by the following entry types:



Hunt Group

A Hunt Group can use time profiles in the following ways:

- A time profile can be used to determine when a hunt group is put into night service mode. Calls then go to an alternate Night Service Fallback group if set, otherwise to voicemail if available or busy tone if not. See [Hunt Group | Fallback](#)^[317].
- For automatic voice recording, a time profile can be used to set when voice recording is used. See [Hunt Group | Voice Recording](#)^[322].



Service

A Service can use time profiles in the following ways:

- A time profile can be used to set when a data service is available. Outside its time profile, the service is either not available or uses an alternate fallback service if set.
- For services using auto connect, a time profile can be used to set when that function is used. See [Service | Autoconnect](#)^[337].



User

A user can use time profiles in the following ways:

- Users being used for Dial In data services such as RAS can have an associated time profile that defines when they can be used for that service. See [User | Dial In](#)^[286].
- Users can be associated with a working hours and an out of hours user rights. A time profile can then be used to determine which user rights is used at any moment. See [User | User](#)^[265].
- For automatic voice recording, a time profile can be used to set when that voice recording is used. See [User | Voice Recording](#)^[287].
- For mobile twinning, a time profile can be used to define when twinning should be used. See [User | Twinning](#)^[297].



Incoming Call Route

Incoming Call Routes can use an alternate night service destination. A time profile is then used to set when that destination is used. See [Incoming Call Route | Incoming Call Route](#)^[345].

- For IP Office 4.0 and higher incoming call routes can also use time profiles to specify when calls should be recorded.
- For IP Office 4.1 and higher, multiple time profiles can be associate with an incoming call route, each profile specifying a destination and fall back destination.



Least Cost Route

A Least Cost Route uses time profiles to determine when the routes should be used. See [Least Cost Route | LCR](#)^[373].

ARS

ARS forms use time profile to determine when the ARS form should be used or calls rerouted to an out of hours route.



Account Code

Account Codes can use automatic voice recording triggered by calls with particular account codes. A time profile can be used to set when this function is used. See [Account Code | Voice Recording](#)^[377].



Auto Attendant

Auto Attendant supported by embedded voicemail on IP406 V2 and Small Office systems, use time profiles to control the different greetings played to callers. See [Auto Attendant | Actions](#)^[407].

For a time profile with multiple entries, for example a week pattern and some calendar entries, the profile is valid when any entry is valid.

Time Profile Time Profile	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	Pre-3.2 ✗, 3.2+ ✓.

- **Name:** Range = Up to 31 characters
This name is used to select the time profile from within other tabs.
- **Time Entry List**
This list shows the current periods during which the time profile is active. Clicking on an existing entry will display the existing settings and allows them to be edited if required. To remove an entry, selecting it and then click on Remove or right-click and select Delete.
- **Recurrence Pattern (Weekly Time Pattern)**
When a new time entry is required, click Add Recurring and then enter the settings for the entry using the fields displayed. Alternately right-click and select Add Recurring Time Entry. This type of entry specifies a time period and the days on which it occurs, for example 9:00 - 12:00, Monday to Friday. A time entry cannot span over two days. For example you cannot have a time profile starting at 18:00 and ending 8:00. If this time period is required two Time Entries should be created - one starting at 18:00 and ending 11:59, the other starting at 00:00 and ending 8:00.
 - **Start Time**
The time at which the time period starts.
 - **End Time**
The time at which the time period ends.
 - **Days of Week**
The days of the week to which the time period applies.
- **Recurrence Pattern (Calendar Date):** Software Level = 4.1+.
When a new calendar date entry is required, click Add Date and then enter the settings required. Alternately right-click and select Add Calendar Time Entry. Calendar entries can be set for up to the end of the next calendar year.
 - **Start Time**
The time at which the time period starts.
 - **End Time**
The time at which the time period ends.
 - **Year**
Select either the current year or the next calendar year.
 - **Date**
To select or de-select a particular day, double-click on the date. Selected days are shown with a dark gray background. Click and drag the cursor to select or de-select a range of days.

5.16 Firewall Profile Settings



The IP Office can act as a firewall, allowing only specific types of data traffic to start a session across the firewall and controlling in which direction such sessions can be started.

- **Static NAT** ^[367]

IP Office 4.2+ adds support for Static NAT address translation by IP Office Firewall Profiles. If the Firewall Profile contains any Static NAT entries, all packets received by the firewall must match one of those static NAT entries to not be blocked.

IP Office firewall profiles can be applied in the following areas of IP Office operation.



- **System** ^[162]

A firewall profile can be selected to be applied to traffic between LAN1 and LAN2.



- **User** ^[286]

Users can be used as the destination of incoming RAS calls. For those users a firewall profile can be selected on the user's [Dial In](#) ^[286] tab.



- **Service** ^[333]

Services are used as the destination for IP routes connection to off-switch data services such as the internet. A Firewall Profile can be selected for use with a service.



- **Logical LAN** ^[383]

Where a logical LAN is created for use as an IP Route destination, a Firewall Profile can be selected for use with the logical LAN.

If Network Address Translation (NAT) is used with the firewall (which it typically is), then you must also configure a Primary Incoming Translation Address (see [IP](#) ^[336] tab of the Service configuration form) if you wish sessions to be started into your site (typically for SMTP) from the Internet.

5.16.1 Standard

By default, any protocol not listed in the standard firewall list is dropped unless a [custom firewall entry](#)^[365] is configured for that protocol.

Firewall Standard	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Name:** *Range = Up to 31 characters*
Enter the name to identify this profile.

- **Protocol Control**

For each of the listed protocols, the options **Drop**, **In** (Incoming traffic can start a session), **Out** (Outgoing traffic can start a session) and **Both Directions** can be selected. Once a session is started, return traffic for that session is also able to cross the firewall.

Protocol	Default	Description
TELNET	Out	Remote terminal log in.
FTP	Out	File Transfer Protocol.
SMTP	Out	Simple Mail Transfer Protocol.
TIME	Out	Time update protocol.
DNS	Out	Domain Name System.
GOPHER	Drop	Internet menu system.
FINGER	Drop	Remote user information protocol.
RSVP	Drop	Resource Reservation Protocol.
HTTP	Out	Hypertext Transfer Protocol.
POP3	Out	Post Office Protocol.
NNTP	Out	Network News Transfer Protocol.
SNMP	Drop	Simple Network Management Protocol.
IRC	Out	Internet Relay Chat.
PPTP	Drop	Point to Point Tunneling Protocol.
IGMP	Drop	Internet Group Membership Protocol.
H323	Drop	This option is not supported and so is grayed out.

- **IP Office Service Control:** *Software level = 4.0+.*

For each of the listed services, the options **Drop**, **In**, **Out** and **Both Directions** can be selected. Once a session is started, return traffic for that session is also able to cross the firewall.

Protocol	Default	Description
SSI	In	System Status Application access.
SEC	Drop	TCP security settings access.
CFG	Drop	TCP configuration settings access.

5.16.2 Custom

The tab lists custom firewall settings added to the firewall profile. The Add, Edit and Remove controls can be used to amend the settings in the list.

Firewall Custom	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Notes**

For information only. Enter text to remind you of the purpose of the custom firewall entry.

- **Remote IP Address**

The IP address of the system at the far end of the link. Blank allows all IP addresses.

- **Remote IP Mask**

The mask to use when checking the Remote IP Address. When left blank no mask is set, equivalent to 255.255.255.255 - allow all.

- **Local IP Address**

The address of devices local to this network (pre-translated). Blank allows all IP addresses.

- **Local IP Mask**

The mask to use when checking the Local IP Address. When left blank no mask is set, equivalent to 255.255.255.255 - allow all.

- **IP Protocol**

The value entered here corresponds to the IP Protocol which is to be processed by this Firewall profile: 1 for ICMP, 6 for TCP, 17 for UDP or 47 for GRE. This information can be obtained from the "pcol" parameter in a Monitor trace.

- **Match Offset**

The offset into the packet (0 = first byte of IP packet) where checking commences for either a specific port number, a range of port numbers, or data.

- **Match Length**

The number of bytes to check in the packet, from the Match Offset point, that are checked against the Match Data and Match Mask settings.

- **Match Data**

The values the data must equal once masked with the Match Mask. This information can be obtained from "TCP Dst" parameter in a Monitor trace (the firewall uses hex so a port number of 80 is 50 in hex)

- **Match Mask**

This is the byte pattern, which is logically ANDed with the data in the packet from the offset point. The result of this process is then compared against the contents of the "Match Data" field.

- **Direction**

The direction that data may take if matching this filter.

Drop	All matching traffic is dropped.
In	Incoming traffic can start a session.
Out	Outgoing traffic can start a session.
Both Directions	Both incoming and outgoing traffic can start sessions.

Example Custom Firewall Entries

Example: Dropping NetBIOS searches on an ISPs DNS

We suggest that the following filter is always added to the firewall facing the Internet to avoid costly but otherwise typically pointless requests from Windows machines making DNS searches on the DNS server at your ISP.

- **Direction:** Drop
- **IP Protocol:** 6 (TCP)
- **Match Offset:** 20
- **Match Length:** 4
- **Match Data:** 00890035
- **Match Mask:** FFFFFFFF

Example: Browsing Non-Standard Port Numbers

The radio button for HTTP permits ports 80 and 443 through the firewall. Some hosts use non-standard ports for HTTP traffic, for example 8080, 8000, 8001, 8002, etc. You can add individual filters for these ports as you find them.

You wish to access a web page but you cannot because it uses TCP port 8000 instead of the more usual port 80, use the entry below.

- **Direction:** Out
- **IP Protocol:** 6 (TCP)
- **Match Offset:** 22
- **Match Length:** 2
- **Match Data:** 1F40
- **Match Mask:** FFFF

A more general additional entry given below allows all TCP ports out.

- **Direction:** Out
- **IP Protocol:** 6 (TCP)
- **Match Offset:** 0
- **Match Length:** 0
- **Match Data:** 00000000000000000000000000000000
- **Match Mask:** 00000000000000000000000000000000

Example: Routing All Internet Traffic through a WinProxy

If you wish to put WinProxy in front of all Internet traffic via the Control Unit. The following firewall allows only the WinProxy server to contact the Internet : -

1. Create a new Firewall profile and select **Drop** for all protocols
2. Under Custom create a new Firewall Entry
3. In Notes enter the name of the server allowed. Then use the default settings except in Local IP Address enter the IP address of the WinProxy Server, in Local IP Mask enter 255.255.255.255 and in Direction select Both Directions.

Stopping PINGS

You wish to stop pings - this is ICMP Filtering. Using the data below can create a firewall filter that performs the following; Trap Pings; Trap Ping Replies; Trap Both.

- **Trap Pings:** Protocol = 1, offset = 20, data = 08, mask = FF
- **Trap Ping Replies:** Protocol = 1, offset = 20, data = 00, mask = FF
- **Trap Both:** Protocol = 1, offset = 20, data = 00, mask = F7, Traps Both.

5.16.3 Static NAT

The **Static NAT** table allows the firewall to perform address translation between selected internal and external IP addresses. Up to 64 internal and external IP address pairs can be added to the Static NAT section of a Firewall Profile.

This feature is intended for incoming maintenance access using applications such as PC-Anywhere, IP Office Manager and the Voicemail Pro Client. The address translation is used for destinations such as an IP Office Voicemail Pro server or the IP Office's own LAN1 address.

- If there are any entries in the **Static NAT** settings of a Firewall Profile, each packet attempting to pass through the firewall must match one of the static NAT pairs or else the packet will be dropped.
- The destination address of incoming packets is checked for a matching **External IP Address**. If a match is found, the target destination address is changed to the corresponding **Internal IP Address**.
- The source address of outgoing packets is checked for a matching **Internal IP Address**. If a match is found, the source address is changed to the corresponding **External IP Address**.
- Even when a static NAT address match occurs, the other settings on the Firewall Profile [Standard](#)^[364] and [Custom](#)^[365] tabs are still applied and may block the packet.

5.17 IP Route Settings



The IP Office acts as the default gateway for its DHCP clients. It can also be specified as the default gateway for devices with static IP addresses on the same subnet as the IP Office. When devices on LAN1 and LAN2 want to send data to IP addresses on a different subnet, they will send that data to their default gateway for onward routing.

The IP Route table is used by the IP Office to determine where data traffic should be forwarded. This is done by matching details of the destination IP address to IP Route entries and then using the Destination specified by the matching IP route. These are referred to as 'static routes'.

- **Automatic Routing (RIP)**

The IP Office can support RIP (Routing Information Protocol) on LAN1 and or LAN2. This is a method through which the IP Office can automatically learn routes for data traffic from other routers that also support matching RIP options, see [RIP](#)^[370]. These are referred to as 'dynamic routes'.

- **Dynamic versus Static Routes**

By default, static routes entered into the IP Office override any dynamic routes it learns by the use of RIP. This behavior is controlled by the Favor RIP Routes over static routes option on the [System | System](#)^[140] tab.

- **Static IP Route Destinations**

The IP Office allows the following to be used as the destinations for IP routes:

- [LAN1](#)^[152]
Direct the traffic to the IP Office's LAN1.
- [LAN2](#)^[162]
On IP Office Small Office Edition, IP412 and IP500 systems, traffic can be directed to LAN2. For IP Office 4.1+, LAN port 8 on IP406 V2 control units can be enabled as LAN2.
- [Service](#)^[332]
Traffic can be directed to a service. The service defines the details necessary to connect to a remote data service.
- [Logical LAN](#)^[380]
Traffic can be directed to a logical LAN already added to the configuration.
- [Tunnel](#)^[380]
Traffic can be directed to an IPSec or L2TP tunnel.

- **Default Route**

IP Office provides two methods of defining a default route for IP traffic that does not match any other specified routes. Use either of the following methods:

- **Default Service**
Within the settings for services, one service can be set as the **Default Route** ([Service | Service](#)^[333]).
- **Default IP Route**
Create an IP Route entry with a blank IP Address and blank IP Mask set to the required destination for default traffic.

5.17.1 IP Route

This tab is used to setup static IP routes from the IP Office. These are in addition to RIP if RIP is enabled on LAN1 and or LAN2. Up to 100 routes are supported.

IP Route IP Route	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **IP Address**

The IP address to match for ongoing routing. Any packets meeting the IP Address and IP Mask settings are routed to the entry configured in the Destination field. When left blank then an IP Address of 255.255.255.255 (all) is used.

- **IP Mask**

The Subnet Mask used to mask the IP Address for ongoing route matching. If blank the mask used is 255.255.255.255 (all).

- A **0.0.0.0** entry in the IP Address and IP Mask fields routes all packets for which there is no other specific IP Route available. The Default Route option with [Services](#)^[333] can be used to do this if a blank IP route is not added.

- **Gateway IP Address:** *Default = Blank*

The address of the gateway where packets for the above address are to be sent. If this field is set to **0.0.0.0** or is left blank then all packets are just sent down to the Destination specified, not to a specific IP Address. This is normally only used to forward packets onto another Router on the local LAN.

- **Destination**

Allows selection of LAN1, LAN2 (if supported) and any configured Service, Logical LAN or Tunnel (L2TP only).

- **Metric:** *Default = 0*

The number of "hops" this route counts as.

- **Proxy ARP:** *Default = Off*

This allows the IP Office to respond on behalf of this IP address when receiving an ARP request.

5.17.2 RIP

Routing Information Protocol (RIP) is a protocol which allows routers within a network to exchange routes of which they are aware approximately every 30 seconds. Through this process, each router adds devices and routes in the network to its routing table.

Each router to router link is called a 'hop' and routes of up to 15 hops are created in the routing tables. When more than one route to a destination exists, the route with the lowest metric (number of hops) is added to the routing table.

When an existing route becomes unavailable, after 5 minutes it is marked as requiring 'infinite' (16 hops). It is then advertised as such to other routers for the next few updates before being removed from the routing table. The IP Office also uses 'split horizon' and 'poison reverse'.

RIP is a simple method for automatic route sharing and updating within small homogeneous networks. It allows alternate routes to be advertised when an existing route fails. Within a large network the exchange of routing information every 30 seconds can create excessive traffic. In addition the routing table held by each IP Office is limited to 100 routes (including static and internal routes).

RIP is supported with IP Office system's from Level 2.0 upwards. The normal default is for RIP to be disabled. It can be enabled on LAN1, LAN2 and individual services.

- **Listen Only (Passive):**

The IP Office listens to RIP1 and RIP2 messages and uses these to update its routing table. However the IP Office does not respond.

- **RIP1:**

The IP Office listens to RIP1 and RIP2 messages. It advertises its own routes in a RIP1 sub-network broadcast.

- **RIP2 Broadcast (RIP1 Compatibility):**

The IP Office listens to RIP1 and RIP2 messages. It advertises its own routes in a RIP2 sub-network broadcast. This method is compatible with RIP1 routers.

- **RIP2 Multicast:**

The IP Office listens to RIP1 and RIP2 messages. It advertises its own routes to the RIP2 multicast address (249.0.0.0). This method is not compatible with RIP1 routers.

Broadcast and multicast routes (those with addresses such as 255.255.255.255 and 224.0.0.0) are not included in RIP broadcasts. Static routes (those in the IP Route table) take precedence over a RIP route when the two routes have the same metric.

5.18 Least Cost Routing Settings



Summary: Least cost routes allow short code matching on the number being dialed from the system rather than the number originally dialed by the user or application.

For IP Office 4.0, Least Cost Routes have been replaced by [ARS](#) ⁴⁰⁶. When an IP Office system is upgraded to IP Office 4.0, the LCR entries are automatically replaced by ARS entries and appropriate short codes.

When a line, user, user rights or system short code results in a number to be dialed off-switch, the resulting telephone number to be dialed can be further processed by matching to Least Cost Route (LCR) short codes.

LCR short codes are grouped in sets. Within each set, the short codes are grouped into tabs called Main Route, Alternate Route 1 and Alternate Route 2. Each tab also has a priority and a timeout setting.

• Using a Time Profile

Each LCR set can have an associated time profile. LCR sets without a time profile are active all the time. LCR sets with a time profile are only active within the times defined by that profile.

• Which Number is Used For Matching

The telephone number output by the original matched short code is checked against the Main Route tab short codes of the active LCR sets.

- If a match is found, that set is used for processing.
- If no match is found, the calls is dialed without LCR.

• Returning Busy

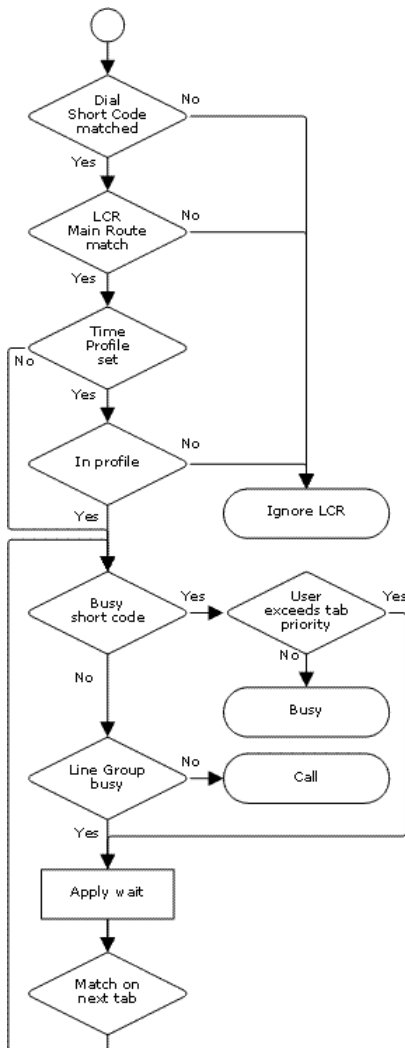
If the LCR short code match is set to the Busy feature:

- If the user's priority is higher than the LCR tabs, the IP Office will immediately look for a matching short code on the next tab and use that short code if found.
- Otherwise the user receives busy tone.

• Switching Outgoing Line Groups

If the LCR short code match is a dial feature, the IP Office will attempt to seize a line from the outgoing line group specified by the LCR short code.

- If a line cannot be seized within the time specified on the LCR tab, the IP Office will look in the next tab for an alternate LCR short code match. If an alternate match is found it is used.



Least Cost Routing Example

Site A has two outgoing line groups. Outgoing line group 0 contains external lines to the public telephone network. Outgoing line group 1 contains private lines to Site B.

Requirements

- **Scenario 1**

The external public number for Site B is 123456. The internal speed dial number is 600. When a user dials 600, the administrator want the call to be routed by the private lines if possible.

- **Scenario 2**

The sales hot line at Site B has the public number 654321. The administrator only want high priority users at Site A to be able to dial that number to test its performance.

Settings

- **System Short Code 1:** 600/123456/Dial/0.

- **System Short Code 2:** 654321/N/Dial/0.

- **User 1:** Priority 2. **User 2:** Priority 4.

Least Cost Route "SiteB"	Main Route	Alternate Route 1
Timeout	10	30
Priority	3	5
Short Codes	123456/N/Dial/1	123456/N/Dial/0
	654321/N/Busy	654321/N/Dial/0

Effects

Scenario 1

When a user dials 123456, it matches system short code 1. That short code specifies dialing Site B via the public lines (Outgoing line group 0).

The number to be dialed is checked against the least cost routing Main Route tabs for any match. In this example a match occurs in the SiteB least cost route. The short code there specifies dialing the number using the private lines (Outgoing line group 1).

If the IP Office cannot seize a line for the call from that group within 10 seconds, it looks for an alternate short code match in Alternate Route 1 tab of the Site B least cost route. In this example that match changes the call to using the public lines (Outgoing line group 0).

Scenario 2

When a user dials 654321, it matches system short code 2. That short code specifies dialing the Site B sale hot line number via the public lines (Outgoing line group 0).

Since this short code is set to a Dial feature, the number to be dialed is checked against the least cost routing Main Route tabs for any match. In this example a match occurs in the SiteB least cost route. The short code there specifies Busy and so returns busy to callers.

User 1 has a priority of 2. They will receive busy tone when they dial 654321.

User 2 has a priority of 4 which is higher than the Main Route tab in the Site B least cost route. Therefore the IP Office will immediately check for a further match in the Alternate Route 1 tab. In this example the short code match for 654321 in the Alternate 1 tab allows the number to be dialed to the public lines.

5.18.1 LCR

Least Cost Routing LCR	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✗.
Software Level	1.0 to 3.2 only.
Mergeable	✓.

- **Name**
The name to identify the LCR set.
- **Time Profile:** *Default = Blank*
Selects a [time profile](#)^[36] that is used to define when this least cost route can be used. If no profile is selected the route settings apply at all times.

5.18.2 Main Route

This tab is used for the initial short code matching. The match is performed on the telephone number outputs by a Line, User, User Rights or System short code that resulted in a number to dial. If a match is found it is used, otherwise the call is dialed using the original short code.

Least Cost Routing Main Route	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✗.
Software Level	1.0 to 3.2 only.
Mergeable	✓.

- **Timeout (secs):** *Default = 30 seconds. Range = 1 to 99999 seconds or 0 (No IP trunk fallback).*
If an LCR short code match is found, the IP Office will attempt to seize a line in the outgoing line group specified by that short code. If, after this timeout period has expired, the IP Office still cannot seize a line, it will look for an alternate short code match in the [Alternate Route 1](#)^[37] tab.
- **Priority:** *Default = 5, Range 1 (lowest) to 5 (highest).*
Normally, if the LCR short code match is a short code set to Busy, the user will receive busy tone. For users whose own [Priority](#)^[26] setting (User | User | Priority) is higher than the Main Route tab's, the IP Office will look for an alternate short code match in the [Alternate Route 1](#)^[37] tab.
- **Allow Bump:** *Default = Off*
When a line indicated by the LCR short code match cannot be seized because lines in that outgoing line group are being used for a multilink PPP data call, this options allows a line to be seized from the data call.
- **Short Code List**
These are the short codes used for matching against the telephone number output Line, User, User Right or System dial short code.
 - The only short code features that should be used in a Least Cost Route short code are: **Dial**, **Dial3K1**, **Dial56K**, **Dial64K**, **DialEmergency**, **DialSpeech**, **DialV110**, **DialV120**, **DialVideo** and **Busy**.
 - The ; character and [] characters cannot be used.
 - Short codes can be added and edited using the **Add**, **Remove** and **Edit** buttons. Alternatively you can right-click on the list of existing short code to add and edit short codes.

5.18.3 Alternate Route 1

This tab of a Least Cost Route is used in the following cases:

- The short code match on the [Main Route](#)^[375] tab is set to Busy but the user has a higher priority than that tab.
- The [Main Route](#)^[375] tab timeout has expired while trying to seize a line from the outgoing line group specified by the short code match on that tab.

In either case the IP Office will look for an alternate short code match on this tab. The match is performed on the telephone number outputs by a Line, User, User Rights or System short code that resulted in a number to dial. If a match is found it is used, otherwise the call receives busy.

Least Cost Routing Alternate Route 1	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✗.
Software Level	1.0 to 3.2 only.
Mergeable	✓.

- **Timeout (secs):** *Default = 30 seconds. Range = 1 to 99999 seconds or 0 (No IP trunk fallback).*
If an LCR short code match is found, the IP Office will attempt to seize a line in the outgoing line group specified by that short code. If, after this timeout period has expired, the IP Office still cannot seize a line, it will look for a alternate short code match in the [Alternate Route 2](#)^[375] tab.
- **Priority:** *Default = 5, Range 1 (lowest) to 5 (highest).*
Normally, if the LCR short code match is a short code set to Busy, the user will receive busy tone. For users whose own [Priority](#)^[268] setting (User | User | Priority) is higher than the Main Route tab's, the IP Office will look for an alternate short code match in the [Alternate Route 2](#)^[375] tab.
- **Allow Bump:** *Default = Off*
When a line indicated by the LCR short code match cannot be seized because lines in that outgoing line group are being used for a multilink PPP data call, this options allows a line to be seized from the data call.
- **Short Code List**
These are the short codes used for matching against the telephone number output Line, User, User Right or System dial short code.
 - The only short code features that should be used in a Least Cost Route short code are: **Dial**, **Dial3K1**, **Dial56K**, **Dial64K**, **DialEmergency**, **DialSpeech**, **DialV110**, **DialV120**, **DialVideo** and **Busy**.
 - The ; character and [] characters cannot be used.
 - Short codes can be added and edited using the **Add**, **Remove** and **Edit** buttons. Alternatively you can right-click on the list of existing short code to add and edit short codes.

5.18.4 Alternate Route 2

This tab of a Least Cost Route is used in the following cases:

- The short code match on the [Alternate Route 1](#) ^[374] tab is set to Busy but the user has a higher priority than that tab.
- The [Alternate Route 1](#) ^[374] tab timeout has expired while trying to seize a line from the outgoing line group specified by the short code match on that tab.

In either case the IP Office will look for an alternate short code match on this tab. The match is performed on the telephone number outputs by a Line, User, User Rights or System short code that resulted in a number to dial. If a match is found it is used, otherwise the call receives busy.

Least Cost Routing Alternate Route 2	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✗.
Software Level	1.0 to 3.2 only.
Mergeable	✓.

- **Timeout (secs)**
Not used. This is the last tab within a Least Cost Route.
- **Priority**
Not used. This is the last tab within a Least Cost Route.
- **Allow Bump:** *Default = Off*
When a line indicated by the LCR short code match cannot be seized because lines in that outgoing line group are being used for a multilink PPP data call, this options allows a line to be seized from the data call.
- **Short Code List**
These are the short codes used for matching against the telephone number output Line, User, User Right or System dial short code.
 - The only short code features that should be used in a Least Cost Route short code are: **Dial**, **Dial3K1**, **Dial56K**, **Dial64K**, **DialEmergency**, **DialSpeech**, **DialV110**, **DialV120**, **DialVideo** and **Busy**.
 - The ; character and [] characters cannot be used.
 - Short codes can be added and edited using the **Add**, **Remove** and **Edit** buttons. Alternatively you can right-click on the list of existing short code to add and edit short codes.

5.19 Account Code Settings



Account codes are commonly used to control cost allocation and out-going call restriction. The account code used on a call is included in the call information output by the system's call log. Incoming calls can also trigger account codes automatically by matching the Caller ID stored with the account code.

Once a call has been completed using an account code, the account code information is removed from the user's call information. This means that redial functions will not re-enter the account code.

The maximum recommended number of accounts codes is 1000.

Setting a User to Forced Account Code

1. Receive the system configuration if one is not opened.
2. In the left-hand panel, click  **User**. The list of existing user is shown in the right-hand panel.
3. Double-click the required user.
4. Select the **Telephony** tab.
5. Tick the **Force Account Code** option.
6. Click **OK**.
7. Merge the configuration.

Forcing Account Code Entry for Specific Numbers

Account code can be set a being required for any dialing that matches a particular short code. This is done by ticking the Force Account Code option found in the short code settings. Note that the account code request happens when the short code match occurs. Potentially this can be in the middle of dialing the external number, therefore the use of X wildcards in the short code to ensure full number dialing is recommended.

Entering Account Codes

The method for entering account codes depends on the type of phone being used. Refer to the relevant telephone User's Guide for details.

• Account Code Button

The [Account Code Entry](#)^[558] action (**User | Button Programming | Emulation | Account Code Entry**) and [Set Account Code](#)^[493] action (**User | Button Programming | Advanced | Set | Set Account Code**) can be assigned to a programmable button on some phones. They both operate the same. The button can be preset with a specific account code or left blank to request account code entry when pressed. The button can then be used to specify an account code before a call or during a call.

• Phone Manager

The IP Office Phone Manager application can be used to enter account codes before or during calls. For full details refer to the Phone Manager documentation.

- To enter an account code before making a call or during a call select **Actions | Account Code**. A valid account code can then be selected from the Account Code drop down.
- The **Account Codes** tab can be used to create icons to speed dial specific numbers and account codes that are regularly used.

• Setting an Account Code using Short Codes

The **Set Account Code** feature allows short codes to be created that specify an account code before making a call.

• [Show Account Code Setting](#)^[166] (**System | Telephony | Telephony**^[166])

This setting controls the display and listing of system account codes:

- When on
 - When entering account codes through Phone Manager, users can select from a drop-down list of available account codes.
 - When entering account codes through a phone, the account code digits are shown while being dialed.
- When off
 - Within Phone Manager the drop-down list of available account codes is not useable, instead account codes must be entered using the Phone Managers PIN Code features.
 - When entering account codes through a phone, the account code digits are replaced by s characters on the display.

5.19.1 Account Code

This tab is used to define an individual account code.

Account Code Account Code	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Account Code**

Enter the account code required. The code can include alphabetic characters for users dialing via Phone Manager. It can also include wildcards; **?** matches a single digit and ***** matches any digits.

- **Caller ID**

A caller ID can be entered and used to automatically assign an account code to calls made to or received from caller ID.

5.19.2 Voice Recording

This tab is used to activate the automatic recording of external calls when the account code is entered at the start of the call or automatically assigned by call ID matching when the call is received.

Call recording requires Voicemail Pro to be installed and running. Call recording also requires available conference resources similar to a 3-way conference.

- IP Office 4.0+ introduces the following changes to recording:
 - Calls to and from IP devices, including those using Direct media, can be recorded.
 - Calls parked or held pause recording until the unparked or taken off hold.
 - Recording is stopped if:
 - User recording stops if the call is transferred to another user.
 - User account code recording stops if the call is transferred to another user.
 - Hunt group recording stops if the call is transferred to another user who is not a member of the hunt group.
 - Incoming call route recording continues for the duration of the call on the system.
- For IP Office 4.1+, the destination mailbox for the recording can be specified.

Account Code Voice Recording	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **Record Outbound:** *Default = None*

Select whether outbound external calls are recorded. Options are On, Mandatory and then various percentages of calls made by the user.

- **On:** Record the call if possible.
- **Mandatory:** If not possible to record, return busy tone to the caller.
- **Record Inbound:** *Default = None, Software level = Up to 3.2 only.*
Select whether inbound external calls are recorded. Requires the account code to be assigned to the call by matching the caller ID associated with the account code on the [Account Code | Account Code](#)^[37] tab. For IP Office 4.0 and higher, recording calls from a particular caller ID can be setup using incoming call route voice recording.
- **Record Time Profile:** *Default = Blank (Any time)*
Used to select a [time profile](#)^[36] during which the settings above are used for call recording. Outside this period calls are not recorded using these settings.
- **Auto Recording Mailbox:** *Default = <None> (Calling user's mailbox), Software level = 4.1+.*
Sets the mailbox into which automatically triggered recordings are placed.
- **Voice Recording Library (Auto):** *Default = Off, Software level = 3.0+.*
When checked, this setting overrides the **Auto Recording Mailbox** setting and marks the recording for collection by the ContactStore for IP Office application. Note that Voicemail Pro still performs the actual recording.

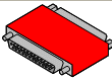
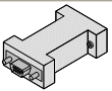
5.20 License



This form is used to display the function, value and status of license keys entered into the IP Office configuration. License keys are 32 character strings uniquely based on the feature they active and the serial number of a Feature Key dongle being used by the IP Office control unit.

IP Office Feature Key dongles are available in several types. Each IP Office system only supports license validation against a single dongle and vice versa. The licenses in the IP Office systems configuration must match the serial number of the Feature Key dongle. Depending on the dongle type, it is installed either directly on the IP Office control unit or onto a PC running the IP Office Feature Key Server application.

- Each IP Office will only support license validation against one feature key dongle.
- If being used, a Feature Key Server PC will only validate licenses for the first IP Office to which it connects after starting.
- For parallel and USB feature keys, the address of the PC hosting the dongle and running the IP Office Feature Key Server software is set by the License Server IP Address setting on the [System | System](#) ^[149] tab. For serial key dongles, the address is set to 0.0.0.0.
- Note that for the IP500 control unit, a smart card Feature Key dongle must be present even if no licensed features are being used. For the IP500 control unit, the dongle fitted controls default operation.
- The serial number and whether the control unit has an local (serial or smart card) or remote (parallel or USB) Feature Key dongle are indicated by the Dongle Serial Number field on the [System | System](#) ^[149] tab.

IP Office Feature Key Dongle		Server PC	License Server IP Address	SOE	IP403	IP406 V1	IP406 V2	IP412	IP500
	Parallel This type of feature key dongle is plugged into the parallel port of a PC running the IP Office Feature Key Server software.	✓	255.255.255.255 or server PC address.	✓	✓	✓	✓	✓	✗
	USB This type of feature key dongle is plugged into the USB port of a PC running the IP Office Feature Key Server software.	✓	255.255.255.255 or server PC address.	✓	✓	✓	✓	✓	✗
	Serial This type of feature key dongle is plugged into the 9-pin serial port on the back of IP Office Small Office Edition and IP406 V2 control units. No separate PC running IP Office Feature Key software is required.	✗	0.0.0.0	✓	✗	✗	✓	✓	✗
	Smart Card This type of feature key dongle, a credit-card sized memory card, is used with the IP500 control unit. No separate PC running IP Office Feature Key software is required.	✗	Not used.	✗	✗	✗	✗	✗	✓

Importing License Keys

It is recommended that licenses are cut and pasted electronically. This removes the chances of errors due to mistyping and misinterpretation of characters fonts. Where multiple licenses need to be added, the CSV import option can be used (**File | Import/Export | Import**). Licenses imported this way may be listed as invalid until the configuration is saved and then reloaded

License License	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✓.

- **License Key**

This field is used to enter the 32-character license key.

- **License Type**

For information only. If the key is recognized, its function will be listed here. Invalid indicates that the License Key has not been recognized as enabling any feature, regardless of the Feature Key dongle serial number. For a list of licenses and their purpose refer to the IP Office Installation manual.

- **License Status**

For information only. This field indicates the current validation status of the license key against the serial number of the Feature Key dongle being used by the IP Office system.

- Unknown is shown for newly entered licenses until the configuration is sent to the IP Office and then retrieved again.
- Valid is shown if the license key matches the Feature Key dongle serial number.
- Invalid is shown if the license key does not match the Feature Key dongle serial number.

- **Instances**

For information only. Some licenses enable a number of port, channels or users. When that is the case, the number of such is indicated here. Multiple licenses for the same feature are usually cumulative.

- **Expiry Date**

For information only. License can be set to expire within a set period from their issue by Avaya. The expiry date is shown here.

- **UMS Web Services License**

For IP Office 4.2+, clicking on the UMS Web Services license in the [group pane](#)⁵⁴ will display a list of users for whom UMS Web Services has been enabled. This dialog can be used to add or remove users from the list.

5.21 Tunnel Settings



Tunneling allows additional security to be applied to IP data traffic. This is useful when sites across an unsecure network such as the public internet. The IP Office supports two methods of tunneling, L2TP and IPSec. Once a tunnel is created, it can be used as the destination for selected IP traffic in the [IP Route](#) table.

Two types of tunneling are supported:

-  [L2TP - Layer 2 Tunneling Protocol](#) ³⁸⁹
PPP (Point to Point Protocol) authentication normally takes place between directly connected routing devices. For example when connecting to the internet, authentication is between the customer router and the internet service provider's equipment. L2TP allows additional authentication to be performed between the routers at each end of the connection regardless of any intermediate network routers. The use of L2TP does not require an IP Office license.
-  [IPSec](#) ³⁸³
IPSec allows data between two locations to be secured using various methods of sender authentication and or data encryption. The use of IPSec requires entry of an IPSec Tunneling license (IP400 IPSec VPN RFA) into the IP Office at each end.

5.21.1 L2TP Tunnel

5.21.1.1 Tunnel

Tunnel Tunnel (L2TP)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	2.0+.
Mergeable	✗.

- **Name:** *Default = Blank.*
A unique name for the tunnel. Once the tunnel is created, the name can be selected as a destination in the IP Route table.
- **Local Configuration**
The account name and password is used to set the PPP authentication parameters.
 - **Local Account Name**
The local user name used in outgoing authentication.
 - **Local Account Password/Confirm Password**
The local user password. Used during authentication.
 - **Local IP Address**
The source IP address to use when originating an L2TP tunnel. By default (un-configured), IP Office uses the IP address of the interface on which the tunnel is to be established as the source address of tunnel.
- **Remote Configuration**
The account name and password is used to set the PPP authentication parameters.
 - **Remote Account Name**
The remote user name that is expected for the authentication of the peer.
 - **Remote Account Password/Confirm Password**
The password for the remote user. Used during authentication.
 - **Remote IP Address**
The IP address of the remote L2TP peer or the local VPN line IP address or the WAN IP address.
- **Minimum Call Time (Mins):** *Default = 60 minutes, Range = 1 to 999.*
The minimum time that the tunnel will remain active.
- **Forward Multicast Messages:** *Default = On*
Allow the tunnel to carry multicast messages when enabled.
- **Encrypted Password:** *Default = Off*
When enabled, the CHAP protocol is used to authenticate the incoming peer.

5.21.1.2 L2TP

Tunnel L2TP	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	2.0+.
Mergeable	✗.

- **Shared Secret/Confirm Password**

User setting used for authentication. Must be matched at both ends of the tunnel. This password is separate from the PPP authentication parameters defined on the [L2TP|Tunnel](#) ^[38] tab.

- **Total Control Retransmission Interval:** *Default = 0, Range = 0 to 65535.*

Time delay before retransmission.

- **Receive Window Size:** *Default = 4, Range = 0 to 65535.*

The number of unacknowledged packets allowed.

- **Sequence numbers on Data Channel:** *Default = On*

When on, adds sequence numbers to L2TP packets.

- **Add checksum on UDP packets:** *Default = On.*

When on, uses checksums to verify L2TP packets.

- **Use Hiding:** *Default = Off*

When on, encrypts the tunnel's control channel.

5.21.1.3 PPP

Tunnel PPP (L2TP)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	2.0+.
Mergeable	✗.

- **CHAP Challenge Interval (secs):** *Default = 0 (Disabled), Range = 0 to 99999 seconds.*

Sets the period between CHAP challenges. Blank or 0 disables repeated challenges. Some software (such as Windows 95 DUN) does not support repeated challenges.

- **Header Compression:** *Default = None*

Select header compression. Options are: IPHC and/or VJ.

- **PPP Compression Mode:** *Default = MPPC*

Select the compression mode for the tunnel connection. Options are: Disable, StacLZS or MPPC.

- **Multilink / QoS:** *Default = Off*

Enable the use of Multilink protocol (MPPC) on the link.

- **Incoming traffic does not keep link up:** *Default = On*

When enabled, the link is not kept up when the only traffic is incoming traffic.

- **LCP Echo Timeout (secs):** *Default = 6, Range = 0 to 99999 seconds.*

When a PPP link is established, it is normal for each end to send echo packets to verify that the link is still connected. This field defines the time between LCP echo packets. Four missed responses in a row will cause the link to terminate.

5.21.2 IP Security Tunnel

5.21.2.1 Main

Tunnel Main (IPSec)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	2.0+.
Mergeable	✗.

- **Name:** *Default = Blank.*
A unique name for the tunnel. Once the tunnel is created, the name can be selected as a destination for traffic in the [IP Route](#) table.
- **Local Configuration**
The IP Address and IP Mask are used in conjunction with each other to configure and set the conditions for this Security Association (SA) with regard to inbound and outbound IP packets.
 - **IP Address**
The IP address or sub-net for the start of the tunnel.
 - **IP Mask**
The IP mask for the above address.
 - **Tunnel Endpoint IP Address**
The local IP address to be used to establish the SA to the remote peer. If left un-configured, IP Office will use the IP address of the local interface on which the tunnel is to be configured.
- **Remote Configuration**
The IP Address and IP Mask are used in conjunction with each other to configure and set the conditions for this Security Association (SA) with regard to inbound and outbound IP packets.
 - **IP Address**
The IP address or sub-net for the end of the tunnel.
 - **IP Mask**
The IP mask for the above address.
 - **Tunnel Endpoint IP Address**
The IP address of the peer to which a SA must be established before the specified local and remote addresses can be forwarded.

5.21.2.2 IKE Policies

Tunnel IKE Policies (IPSec)	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	2.0+.
Mergeable	✗.

- **Shared Secret/Confirm Password**
The password used for authentication. This must be matched at both ends of the tunnel.
- **Exchange Type:** *Default = ID Prot*
Aggressive provides faster security setup but does not hide the ID's of the communicating devices. **ID Prot** is slower but hides the ID's of the communicating devices.
- **Encryption:** *Default = DES CBC*
Select the encryption method used by the tunnel. The options are: **DES CBC**, **3DES** or **Any**.
- **Authentication:** *Default = MD5*
The method of password authentication. Options are: MD5, SHA or Any.
- **DH Group:** *Default = Group 1*
- **Life Type:** *Default = KBytes*
Sets whether **Life** (below) is measured in seconds or kilobytes.
- **Life:** *Range = 0 to 99999999.*
Determines the period of time or the number of bytes after which the SA key is refreshed or re-calculated.

5.21.2.3 IPSec Policies

Tunnel IPSec Policies	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	2.0+.
Mergeable	✗.

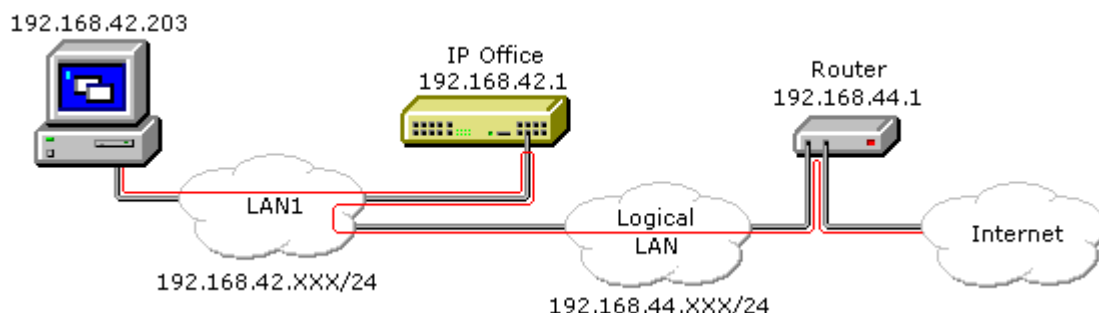
- **Protocol: Default = ESP**
ESP (Encapsulated Security Payload) or **AH** (Authentication Header, no encryption).
- **Encryption: Default = DES**
Select the encryption method used by the tunnel. The options are: **DES CBC**, **3DES** or **Any**.
- **Authentication: Default = HMAC MD5**
The method of password authentication. Options are: **HMAC MD5**, **HMAC SHA** or **Any**.
- **Life Type: Default = KBytes**
Sets whether Life (below) is measured in seconds or kilobytes.
- **Life**
Determines the period of time or the number of bytes after which the SA key is refreshed or re-calculated.

5.22 Logical LAN



IP Office Small Office Edition and IP412 control units support two separate LAN interfaces (LAN1 and LAN2). These are separately addressed and the IP Office's IP route table and firewalls can be used to control traffic between device attached to the two LAN's.

On other IP Office control units only a single LAN (LAN1) is available. A logical LAN allows these systems to support a second separately addressed LAN on the same interface. Traffic between the IP Office LAN1 and the logical LAN can then be controlled by the IP Office's IP route table and firewalls.



Logical LAN Logical LAN	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	2.0+.
Mergeable	✗.

- **Name:** *Default = Blank. Range = Up to 31 characters.*
A unique name for the logical LAN. This name becomes selectable as a destination in the IP Route table.
- **IP Address:** *Default = 0.0.0.0*
The IP address provided by the internet service provider for the logical LAN.
- **IP Mask:** *Default = 0.0.0.0*
The IP address mask provided by the internet service provider for the logical LAN.
- **Gateway IP Address:** *Default = 0.0.0.0*
The IP address of the router on the logical LAN.
- **Gateway Mac Address:** *Default = 00:00:00:00:00:00*
The MAC address of the router. If the MAC address isn't known, from a PC that can ping the router's IP address, use the command `arp -a <ip address>`.
- **Firewall Profile:** *Default = Blank*
This field allows selection of an existing IP Office firewall profile that should be applied to traffic to and from the logical LAN.
- **Enable NAT:** *Default = On (Grayed out).*
NAT is applied to all traffic from the IP Office LAN to the logical LAN. The use of NAT is not compatible with H.323 VoIP operation, therefore a VPN tunnel should also be applied to traffic being routed

5.23 Wireless Settings



The Small Office Edition control unit can act as an 802.11b wireless access point. To do this requires the insertion of an Avaya supplied IP Office wireless card into one of the control unit's PCMCIA slots and entry of a Small Office Edition WiFi license into the configuration. The IP Office Wireless settings can then be configured.

In order to connect to the IP Office LAN, wireless devices must be configured to match the IP Office Wireless settings. Additionally the wireless device must match the control unit's LAN1 or LAN2 network settings unless using IP Office DHCP.

5.23.1 SSID

This tab is used to set the general identity of the wireless connection to the IP Office LAN.

Wireless SSID	
Control Unit	SOE ✓, IP403 ✗, IP406 V1 ✗, IP406 V2 ✗, IP412 ✗, IP500 ✗.
Software Level	2.0+.
Mergeable	✗.

- **Network Name:** *Default = IP Office Wireless.Net*
A unique name used to identify and distinguish the IP Office wireless LAN from other wireless LAN's. This is the wireless LAN's Service Set Identifier (SSID).
- **Wireless Mac Address**
Displays a list of the MAC addresses of the devices currently connected to the wireless LAN.
- **Frequency/Channel:** *Default = 6*
The 802.11b wireless frequency band is sub-divided into a number of channels. In locations where there are multiple wireless LAN's or multiple access points to the same wireless LAN, each access point should use a separate channel. Devices connecting to a wireless LAN will automatically connect to the channel providing the strongest signal.
 - The number of channels available is country specific. In the US channels 1 to 11 are available. In most of Europe, channels 1 to 13 are available. In Japan only channel 14 is available.
 - The channel frequencies overlap. For instance, channel 2 shares part of the same frequency band as channels 1 and 3. In areas with multiple access points or LAN, use widely spaced channels. For example uses channels 1, 6 and 11 on different access points.
- **Accept Any:** *Default = Off*
If on, allows any wireless device to connect to the wireless LAN without having to have a matching wireless network name (SSID) set. When off, only devices configured with a matching wireless network name can connect to the wireless LAN.

5.23.2 Security

This tab allows for additional security through the use of WEP wireless encryption keys. If enabled, in addition to encrypting the wireless traffic, only devices using a matching encryption key can connect to the wireless LAN.

Wireless Security	
Control Unit	SOE ✓, IP403 ✗, IP406 V1 ✗, IP406 V2 ✗, IP412 ✗, IP500 ✗.
Software Level	2.0+.
Mergeable	✗.

- **Encryption:** *Default = Disabled*
Allows selection of 50/64 bit or 128 bit security. Note: 50/64 bit encryption is also known as 40/64 encryption in some locales.
- **Alpha/Hex:** *Default = Hex*
Switch key entry between hexadecimal and alphabetic entry modes.
- **Key 1/4**
Allows entry of the security key and selection of which key is the current key to use.

5.24 User Restrictions Settings

User Restrictions are only available in pre-IP Office 3.2 configurations. For IP Office 3.2 and higher they have been replaced by [User Rights](#)³⁸⁹.

Within Manager, users can be grouped by the types of numbers they are allowed to dial or not allowed to dial. For example, those who are allowed to dial 1900 or international numbers.

The User Restriction form allows named groups of dialing short codes/restrictions to be created. These short codes can then be applied to a user by associating them with the User Restriction name rather than having to recreate the short codes for each user.

To set up a restriction within the User Restriction form

1. Click User Restriction form within the Configuration Tree.
2. Enter a name for the restriction.
3. Click the Short Code List tab and create a short code.
4. Merge the configuration.

To apply a User Restriction to a specific user

1. Click the User form within the Configuration Tree.
2. Double-click the user for whom you want this restriction applied.
3. Within the User tab, click the Restriction drop down box and select the User Restriction you want applied to this user.
4. Merge the configuration.

5.24.1 User Restrictions

User Restrictions are only available in pre-IP Office 3.2 configurations. For IP Office 3.2 and higher they have been replaced by [User Rights](#)^[389].

User Restrictions Restrictions	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✗.
Software Level	2.0 to 3.1 only.
Mergeable	✓.

- **Name:** *Default = Blank*
A name used to identify the set of user restrictions and allow its selection through the **Restrictions** field in each individual user's User settings.
- **Priority:** *Default = 5 (highest), Range 0 to 5*
The priority that should be applied to user calls if routed via a [Least Cost Route](#)^[371]. This overrides the priority of the individual user.
- **Outgoing Call Bar:** *Default = Off.*
When on, bars users making external calls.

5.24.2 Short Codes

User Restrictions are only available in pre-IP Office 3.2 configurations. For IP Office 3.2 and higher they have been replaced by [User Rights](#)^[389].

- **WARNING**
User dialing of emergency numbers must not be blocked by the addition of short codes. If short codes are added, the users ability to dial emergency numbers must be tested and maintained.

Allows entry of short codes for dialing by associated users. These short codes override any match system short codes but not individual user short codes.

User Restrictions Short Codes	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✗.
Software Level	2.0 to 3.1 only.
Mergeable	✓.

5.25 User Rights Settings



User Rights act as templates for users, locking selected user settings to the template value. For most of the settings within the user rights tabs, the following options can be selected from an adjacent drop down list. Note that some settings are grouped and are set and locked as a group.

- **Apply User Rights Value**

Apply the value set in the user rights to all associated users.

- The matching user setting is grayed out and displays a lock symbol.
- Users attempting to change the settings using short codes receive inaccessible tone.
- Within the user's Phone Manager the associated fields are grayed out or hidden.

- **Not Part of User Rights**

Ignore the setting.

Adding User Rights

1. Select **User Rights**.
2. Click and select **User Rights**.
3. Enter a name.
4. Configure the user rights as required.
5. Click **OK**.

Creating User Rights Based on an Existing User

1. Select **User Rights**.
2. In the group pane, right-click and select **New User Rights from User**.
3. Select the user and click **OK**.

Associating User Rights to a User

1. Select **User Rights** or **User**.
2. In the group pane, right-click and select **Apply User Rights to Users**.
3. Select the user rights to be applied.
4. On the **Members of this User Rights** sub tab select the users to which the user rights should be applied as their **Working Hours User Rights**.
5. On the **Members when out of hours** sub tab select which users should use the selected user rights as their out of hours user rights.
6. Click **OK**.

or

1. Select the required user to display their settings in the details pane.
2. Select the **User** tab.
3. Use **Working Hours User Rights** drop-down to select the user rights required.
4. If required a **Working Hours Time Profile** and **Out of Hours User Rights** can be selected.
5. Click **OK**.

Copy User Rights Settings over a User's Settings

This process replaces a user's current settings with those that are part of the selected user rights. It does not associate the user with the user rights.

1. Select  **User Rights** or  **User**.
2. In the group pane, right-click and select **Copy user rights values to users**.
3. Select the user rights to be applied.
4. Click **OK**.

Default User Rights

For defaulted IP Office systems, the following user rights are created as a part of the default configuration. Fields not listed are not part of the user rights.

✓ = Set to On. ✗ = Set to Off. - = Not part of the user rights.

User Rights	Call Center Agent	Boss	Application	Default	IP Hard Phone	Mailbox	Paging	T3
Priority	✓ 5	✓ 5	✓ 5	✓ 5	✓ 5	✓ 5	✓ 5	✓ 5
Voicemail	✓	-	-	-	-	✓	-	-
Voicemail Ringback	✗	✗	✗	✗	✗	✗	-	✗
Outgoing Call Bar	✗	✗	✗	✗	✗	✗	✗	✗
No Answer Time	✓ 0	✓ 0	✓ 0	✓ 0	✓ 0	✓ 0	✓ 0	✓ 0
Transfer Return Time	✓ 0	✓ 0	✓ 0	✓ 0	✓ 0	✓ 0	✓ 0	✓ 0
Individual Coverage Time	✓ 10	✓ 10	✓ 10	✓ 10	✓ 10	✓ 10	✓ 10	✓ 10
Busy on Held	✓	✗	✓	✗	✗	-	-	✗
Call Waiting	✗	✗	✓	✗	✗	✗	✗	✓
Can be Intruded	✗	✗	✗	✗	✗	✗	✗	✗
Cannot be Intruded	✗	✗	✓	✓	✓	✗	✗	✗
Force Login	✓	-	-	-	-	-	-	-
Force Account Code	✗	✗	✗	✗	✗	✗	✗	✗
Button Programming	1: a= 2: b= 4: HGE na 5: DND On 6: Busy	1: a= 2: b= 3: c= 6: DND On 7: Dial *17	-	1: a= 2: b= 3: c=	1: a= 2: b= 3: c= 6: Dial *17	-	-	-
Phone Manager Type	✓ Pro	✓ Lite	✓ Pro	✓ Lite	✓ Lite	✓ Lite	✓ Lite	✓ Lite

5.25.1 User

This tab is used to set and lock various user settings.

User Rights User	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.2+.
Mergeable	✓.

- **Name**

The name for the user rights . This must be set in order to allow the user rights to be selected within the User Rights drop down list on the [User | User](#)^[268] tab of individual users.

- **Locale:** *Default = Blank*

Sets and locks the language used for voicemail prompts to the user, assuming the language is available on the voicemail server. On a digital extension it also controls the display language used for messages from the IP Office to the phone. See [Supported Country and Locale Settings](#)^[800].

- **Priority:** *Default = 5, Range 1 (Lowest) to 5 (Highest)*

Sets and locks the user's priority setting for least cost routing.

- **Do Not Disturb:** *Default = Off*

Sets and locks the user's DND status setting.

- **Voicemail On:** *Default = On*

Moved to the [Voicemail](#)^[399] tab.

- **Voicemail Ringback:** *Default = Off*

Moved to the [Voicemail](#)^[399] tab.

5.25.2 Short Codes

This tab is used to set and lock the user's short code set. The tab operates in the same way as the **User | Short Codes** tab. Where the same short code exists in both the **User | Short Codes** tab and the associated **User Rights | Short Codes** tab, the IP Office will use the user short code.

User and User Rights short codes are only applied to numbers dialed by that user. For example they are not applied to calls forwarded via the user.

- **WARNING**

User dialing of emergency numbers must not be blocked by the addition of short codes. If short codes are added, the users ability to dial emergency numbers must be tested and maintained.

User Rights Short Codes	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.2+.
Mergeable	✓.

Short codes can be added and edited using the **Add**, **Remove** and **Edit** buttons. Alternatively you can right-click on the list of existing short code to add and edit short codes.

5.25.3 Telephony

This tab allows various user telephony settings to be set and locked. These match settings found on the [User | Telephony](#)^[277] tab.

User Rights Telephony	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.2+.
Mergeable	✓.

These settings are divided in to a number of sub-tabs:

- [Call Settings](#)^[392]
- [Supervisor Settings](#)^[393]
- [Multi-line Options](#)^[394]
- [Call Log](#)^[394]

5.25.3.1 Call Settings

User Rights Telephony	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.2+.
Mergeable	✓.

- **No Answer Time:** *Default = Blank (Use system setting), Range = 6 to 99999 seconds.*
Sets how long a call rings the user before following forwarded on no answer if set or going to voicemail. Leave blank to use the system default setting.
- **Transfer return Time (secs):** *Default = Blank (Off), Range 1 to 99999 seconds.*
Sets the delay after which any call transferred by the user, which remains unanswered, should return to the user if possible.
- **Wrap up Time (secs):** *Default = 2 seconds, Range 0 to 99999 seconds.*
Specifies the amount of time after ending one call before another call can ring. You may wish to increase this in a "call center" environment where users may need time to log call details before taking the next call. It is recommended that this option is not set to less than the default of 2 seconds. 0 is used for immediate ringing.
- **Call waiting on/Enable call waiting:** *Default = Off*
For users on phones without appearance buttons, if the user is on a call and a second call arrives for them, an audio tone can be given in the speech path to indicate a waiting call (the call waiting tone varies according to locale). The waiting caller hears ringing rather than receiving busy. There can only be one waiting call, any further calls receive normal busy treatment. If the call waiting is not answered within the no answer time, it follows forward on no answer or goes to voicemail as appropriate. User call waiting is not used for users on phones with multiple call appearance buttons. Call waiting can also be applied to hunt group calls, see [Hunt Group | Hunt Group | Call Waiting](#)^[309].
- **Busy on held/Enable busy on Held:** *Default = On*
If on, when the user has a call on hold, new calls receive busy tone (ringing for incoming analog call) or are diverted to voicemail if enabled, rather than ringing the user. Note this overrides call waiting when the user has a call on hold.

5.25.3.2 Supervisor Settings

User Rights Telephony	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.2+.
Mergeable	✓.

- **Can Intrude:** *Default = Off*
Check this option if the User can interrupt other user's calls. This setting and the setting below are used to control the use of the following short code and button features: Call Intrude, Call Listen, Call Steal and Dial Inclusion.
- **Cannot be Intruded:** *Default = On*
If checked, this user's calls cannot be interrupted or acquired. In addition to the features listed above, this setting also affects whether other users can use their appearance buttons to bridge into a call to which this user has been the longest present user.
- **Force Login:** *Default = Off*
If checked, the user must log in using their Login Code to use an extension. For example, if Force Login is ticked for User A and user B has logged into A's phone, after B logs off A must log back. If Force Login was not ticked, A would be automatically logged back in.
- **Force Account Code:** *Default = Off*
If checked, the user must enter a valid account code to make an external call.
- **Inhibit Off-Switch Forward/Transfer:** *Default = Off*
When enabled, this setting stops the user from transferring or forwarding calls externally. Note that all user can be barred from forwarding or transferring calls externally by the [System | Telephony | Telephony | Inhibit Off-Switch Forward/Transfers](#)^[166] setting.
- **CCR Agent:** *Default = Off, Software level = 4.2+.*
This field is used by the IP Office CCR application to indicate which users are Agents monitored by that application. It also indicate to the IP Office those users who can use other CCR features within the IP Office configuration. If a user is set as an CCR Agent, **Forced Login** is enabled and greyed out from being changed and a warning is given if the user does not have a log in code set.
 - **WARNING**
This setting should not be enabled/disabled for a user by using User Rights associated with a Time Profile. Do so will cause invalid data to be recorded in the IP Office Customer Call Reporter applications database.
 - The number of simultaneous logged in CCR Agents supported by the IP Office is controlled by licenses entered into the configuration. If all CCR Agent licenses on a system have been used, additional agents are prevented from logging in.
- **After Call Work Time:** *Default = System Default, Range = 10 to 999 seconds, Software level = 4.2+.*
CCR Agents (see above) can be automatically put into **After Call Work** (ACW) state after ending a hunt group call. During ACW state, hunt group calls are not presented to the user. If set to **System Default**, the value set in [Default After Call Work](#)^[192] ([System | CCR](#))^[192] is used.
- **Automatic After Call Work:** *Default = Off, Software level = 4.2+.*
For CCR Agents with **Automatic After Call Work** enabled, this value sets the duration of the ACW period.
- **Outgoing Call Bar:** *Default = Off*
When set, bars the user from making external calls.
- **Coverage Group:** *Default = <None>, Software level = 5.0+*
If a group is selected, the IP Office will not use voicemail to answer the users unanswered calls. Instead the call will continue ringing until either answered or the caller disconnects. For external calls, after the users no answer time, the call is also presented to the users who are members of the selected Coverage Group. For further details refer to [Coverage Groups](#)^[73].

5.25.3.3 Multi-line Options

User Rights Telephony	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.2+.
Mergeable	✓.

- **Individual Coverage Time (secs):** *Default = 10 seconds, Range 1 to 99999 seconds.*
This function sets how long the phone will ring at your extension before also alerting at any call coverage users. This time setting should not be equal to or greater than the No Answer Time.

5.25.3.4 Call Log

User Rights Telephony	
Control Unit	SOE ✗, IP403 ✗, IP406 V1 ✗, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	5.0+.
Mergeable	✓.

- **Centralized Call Log:** *Default = System Default (On)* 
This setting allows the use of centralized call logging to be enabled or disabled on a per user basis. The default is to match the system setting **Default Centralized Call Log On** ^[171] ([System | Telephony | Call Log](#) ^[171]). The other options are **On** or **Off** for the individual user. If off is selected, the call log shown on the users phone is the local call log stored by the phone.
- **Groups:** *Default = None selected.* 
This section contains a list of hunt groups on the IP Office system. If the system setting **Log Missed Huntgroup Calls** ^[166] ([System | Telephony | Call Log](#) ^[166]) has been enabled, then missed calls for those groups selected are shown as part of the users call log. The missed calls are any missed calls for the hunt group, not just group calls presented to the user and not answered by them.

5.25.4 Button Programming

This tab is used to set and lock the user's programmable button set. When locked, the user cannot use **Admin** or **Admin1** buttons on their phone to override any button set by their user rights.

Buttons not set through the user rights can be set through the user's own settings.

When **Apply user rights value** is selected, the tab operates in the same manner as the [User | Button Programming](#) tab.

User Rights Button Programming	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.2+.
Mergeable	✓.

Adding Blank Buttons

There are scenarios where users are able to program their own buttons but you may want to force certain button to be blank. This can be done through the user's associated User Rights as follows:

1. Assign the action **Emulation | Inspect** to the button. Enter some spaces as the button label.
2. When pressed by the user, this button will not perform any action. However it cannot be overridden by the user.

5.25.5 Menu Programming

This tab is used to set and lock the user's programmable button set.

When **Apply User Rights value** is selected, the tab operates in the same manner as the [User | Menu Programming](#) tab.

User Rights Menu Programming	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.2-4.2.
Mergeable	✓.

5.25.6 Phone Manager

This tab is used to set and lock which parts of Phone Manager the associated users can use or adjust.

User Rights Phone Manager	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.2+.
Mergeable	✓.

- **Allow user to modify Phone Manager settings:** *Default = On*

This setting is used with the Phone Manager Status Options, Screen Pop Options and Hide Options. It controls whether those options are applied every time the user starts Phone Manager or only the first time the user starts Phone Manager.

- If this setting is enabled, then the IP Office configuration setting of those options are only applied the first time a user starts Phone Manager on a PC. Those settings become part of the user's Phone Manager profile on that PC. They can be changed by the user through Phone Manager. On subsequent Phone Manager starts the Manager settings are ignored.
- If this setting is not enabled, the IP Office configuration settings are applied every time the user starts Phone Manager and cannot be overridden by the user.

- **Agent Mode:** *Default = Off*

This option controls the setting of the Agent Mode option on the **Configure Preferences | Agent Mode** tab within Phone Manager Pro. When enabled, the user has additional toolbar controls for Busy Wrap Up, Busy Not Available and Select Group. Note that the options on the Phone Manager Pro Agent Mode tab can be grayed out from user changes by the Agent Mode setting in Configuration Options below.

- **Phone Manager Type:** *Default = Lite*

Determines the mode in which the user's copy of the Phone Manager application operates. This setting cannot be changed by the user. * For pre-3.2 IP Office systems this setting is located on the [User | User](#)^[268] tab.

- **Lite**

Basic Phone Manager mode. This mode does not require any licenses.

- **Pro**

Advanced Phone Manager mode that enables a range of additional functions. This mode requires an available Phone Manager Pro license, otherwise the application will run in Phone Manager Lite mode.

- **Phone Manager PC Softphone**

This is the VoIP IP phone mode of Phone Manager Pro. This mode requires both an available Phone Manager Pro license and a Phone Manager Pro IP Audio Enabled license. The user must be associated with an VoIP extension within the IP Office configuration.

- **Pro Telecommuter:** *Software level = 4.1+.*

This version of Phone Manager Pro is supported with Phone Manager 4.1+. It allows the user to make and receive calls via an external phone specified at Phone Manager log in. This mode requires an available Phone Manager Pro license, otherwise the application will run in Phone Manager Lite mode.

- **Enable VoIP:** *Default = Off*

This option only appears if the selected Phone Manager Type is Phone Manager PC Softphone. It enables or disables the matching setting on the user's Phone Manager PC Softphone.

- **Configuration Options**

These options allow the user access to the indicated configure preferences tabs within Phone Manager.

- The controllable tabs for Phone Manager Lite are **Telephone** and **Do Not Disturb**. For IP Office 4.0+, the **Mobile Twinning** option on the **Forwarding** tab is also controllable (the twinning number remains editable even if the **Mobile Twinning** option has been restricted).
- The additional controllable tabs for Phone Manager Pro and Phone Manager PC Softphone are **Screen Pop**, **Compact Mode**, **Agent Mode**, **Voicemail** (**Voicemail** and **Voicemail Ringback** controls only).

- **Screen Pop Options**

These options allow selection of the Phone Manager Pro/Phone Manager PC Softphone screen pop options Ringing, Answering, Internal, External and Outlook. The Allow user to modify Phone Manager settings option controls whether these settings are applied only when Phone Manager is first started or every time Phone Manager is started.

- **Phone Manager Status Options**

These options allow selection of the tabs to show within the call history area of the user's Phone Manager. The tabs selectable for Phone Manager are **All**, **Missed**, **Status** and **Messages**. The additional tabs selectable for Phone Manager Pro and PC Softphone are **Incoming**, **Outgoing** and **Account Code**. The Allow user to modify Phone Manager settings option controls whether these settings are applied only when Phone Manager is first started or every time Phone Manager is started.

- **Hide Options**

These options allow selection of the Phone Manager Pro/Phone Manager PC Softphone options Hide on close and Hide on no calls. The Allow user to modify Phone Manager settings option controls whether these settings are applied only when Phone Manager is first started or every time Phone Manager is started.

5.25.7 Twinning

This tab is used to set and lock the following settings relating to the use of mobile twinning. Use of mobile twinning requires entry of a mobile twinning license. This tab is no longer available for IP Office 4.2+.

User Rights Twinning	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.2 to 4.1 only.
Mergeable	✓.

- **Mobile Dial Delay**
Sets and locks the dial delay applied to calls eligible for mobile twinning.
- **Hunt group calls eligible for mobile twinning**
Sets whether mobile twinning is applied to hunt group calls.
- **Forwarded calls eligible for mobile twinning**
Sets whether mobile twinning is applied to forwarded calls.

5.25.8 User Rights Membership

The tabs display the users associated with the user rights. and allows these to be changed.

User Rights User Rights Membership	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.2+.
Mergeable	✓.

- **Members of this User Rights**
This tab indicates those users associated with the user rights. If the user has an associated Working hours time profile, their association to the user rights applies only during the periods defined by the time profile. If the user does not have an associated Working hours time profile, they are associated with the user rights at all times.
- **Members when out of service**
This tab indicates those users associated with the user rights outside the time periods defined by their Working hours time profile. The Members when out of service tab is not populated unless there are time profiles available within the configuration.

5.25.9 Voicemail

The tabs display the users associated with the user rights. and allows these to be changed.

User Rights User Rights Membership	
Control Unit	SOE  , IP403  , IP406 V1  , IP406 V2  , IP412  , IP500  .
Software Level	5.0+.
Mergeable	 .

- **Voicemail On** *Default = On*

When on, the mailbox is used by the IP Office to answer the user's unanswered calls or calls when the user's extension returns busy. Note that selecting off does not disable use of the user's mailbox. Messages can still be forward to their mailbox and recordings can be placed in it. The mailbox can also still be accessed to collect messages.

- **Voicemail Ringback:** *Default = Off*

When enabled and a new message has been received, the voicemail server calls the user's extension to attempt to deliver the message each time the telephone is put down. Voicemail will not ring the extension more than once every 30 seconds.

- **DTMF Breakout**

When a caller is directed to voicemail to leave a message, they can be given the option to be transferred to a different extension. The greeting message needs to be recorded telling the caller the options available. The extension numbers that they can be transferred to are entered in the fields below. For IP Office 5.0+, these system default values can be set for these numbers and are used unless a different number is set within these user settings.

- **Reception / Breakout (DTMF 0)**

The number to which a caller is transferred if they press **0** while listening to the mailbox greeting rather than leaving a message (***0** on embedded voicemail).

- For systems set to Intuity emulation mode, the mailbox user can also access this option when collecting their messages by dialing ***0**.
- If the mailbox has been reached through a call flow containing a **Leave Mail** action, the option provided when **0** is pressed are:
 - For IP Office mode, the call follows the **Leave Mail** action's **Failure** or **Success** results connections depending on whether the caller pressed **0** before or after the record tone.
 - For Intuity mode, pressing **0** always follows the **Reception / Breakout (DTMF 0)** setting.

- **Breakout (DTMF 2)**

The number to which a caller is transferred if they press **2** while listening to the mailbox greeting rather than leaving a message (***2** on embedded voicemail). Pre-IP Office 5.0 this option is not support for Voicemail Pro running in IP Office mailbox mode.

- **Breakout (DTMF 3)**

The number to which a caller is transferred if they press **3** while listening to the mailbox greeting rather than leaving a message (***3** on embedded voicemail). Pre-IP Office 5.0 this option is not support for Voicemail Pro running in IP Office mailbox mode.

5.26 Auto Attendant Settings



The IP Office Small Office Edition, IP406 V2 and IP500 control units support embedded voicemail. This is setup by adding an Avaya embedded voicemail memory card to the control unit and then selecting Embedded Voicemail as the Voicemail Type on the [System | Voicemail](#) ^[164] tab.

- This tab and its settings are hidden unless the IP Office has been configured to use embedded voicemail on the [System | Voicemail](#) ^[164] tab.
- For full details on configuration and operation of Embedded Voicemail auto-attendants refer to the [IP Office Embedded Voicemail Installation Manual](#).

The IP406 V2 and IP500 support up to 4 simultaneous calls to embedded voicemail services. The Small Office Edition supports up to 10 simultaneous calls to embedded voicemail depending on available voice compression channels. A call from an IP device to voicemail uses two voice compression channels on the Small Office Edition.

- For pre-IP Office 4.1 systems up to 4 auto-attendant services are supported.
- For IP Office 4.1 and higher systems up to 40 auto-attendant services are supported. Due to this increase in the number of possible auto attendant, the method of automatic short code creation for recording prompts has been amended.

In addition to basic mailbox functionality, embedded voicemail can also provide auto-attendant operation. Each auto attendant can use existing time profiles to select the greeting given to callers and then provide follow on actions relating to the key presses 0 to 9, * and #.

• Time Profiles

Each auto attendant can use up to three existing [time profiles](#) ^[361], one for Morning, Afternoon and Evening. These are used to decide which greeting is played to callers. They do not change the actions selectable by callers within the auto attendant. If the time profiles overlap or create gaps, then the order of precedence used is morning, afternoon, evening.

• Greetings

Four different greetings are used for each auto attendant. One for each time profile period. This is then always followed by the greeting for the auto-attendant actions. By default a number of system short codes are automatically created to allow the recording of these greetings from an IP Office extension. See below.

• Actions

Separate actions can be defined for the DTMF keys 0 to 9, * and #. Actions include transfer to a specified destination, transfer to another auto-attendant transfer to a user extension specified by the caller (dial by number) and replaying the greetings.

- IP Office 4.0+ supports the **Fax** action. This can be used to reroute fax calls when fax tone is detected by the auto-attendant.
- IP Office 5.0+ supports the **Dial by Name** action.

• Short Codes

Adding an auto attendant automatically adds a number of system short codes. These use the Auto Attend short code feature. These short codes are used to provide dialing access to record the auto attendant greetings.

- For pre-IP Office 4.1 systems, 4 system short codes are added for each auto attendant. These use a telephone number of the form **AA:Name.1** where **Name** is replaced by the Auto Attendant name.
- For IP Office 4.1+ systems, 4 system short codes (*81XX, *82XX, *83XX and *84XX) are added for use with all auto attendants, one each for the morning, afternoon, evening and menu options greetings. These use a telephone number of the form **AA:N.1** where **N** is the replaced with the auto attendant number when dialing.
- You can add additional short codes using either form of telephone number to suit the customer requirements.

• Routing Calls to the Auto Attendant

The telephone number format **AA:Name** can be used to route callers to an auto attendant. It can be used in the destination field of incoming call routes and telephone number field of short codes set to the Auto Attend feature.

5.26.1 Auto Attendant

This tab is used to define the name of the auto attendant service and the time profiles that should control which auto attendant greetings are played.

Auto Attendant Auto Attendant	
Control Unit	SOE ✓, IP403 ✗, IP406 V1 ✗, IP406 V2 ✓, IP412 ✗, IP500 ✓.
Software Level	2.0+.
Mergeable	Pre-3.2 ✗, 3.2+ ✓.

- Name:** *Range = Up to 12 characters*
 This field sets the name for the auto-attendant service. External calls can be routed to the auto attendant by entering AA:Name in the destination field of an Incoming Call Route.
- Maximum Inactivity:** *Default = 8 seconds; Range = 1 to 20 seconds, Software level = 3.0+.*
 This field sets how long after playing the prompts the Auto Attendant should wait for a valid key press. If exceeded, the caller is either transferred to the Fallback Extension set within the Incoming Call Route used for their call or else the caller is disconnected.
- Enable Local Recording:** *Default = On, Software level = 4.0+ (Q2 2007 Maintenance release).*
 When off, use of short codes to record auto-attendant prompts is blocked. The short codes can still be used to playback the greetings.
- Dial by Name Match Order:** *Default = First Name/Last Name, Software level = 5.0+.*
 Determines the name order used for the the Embedded Voicemail Dial by Name function. The options are **First then Last** or **Last then First**.
- AA Number:** *Software level = 4.1+.*
 This number is assigned by the IP Office and cannot be changed. It is used in conjunction with short codes to access the auto attendant service or to record auto attendant greetings.
- Morning/Afternoon/Evening/Menu Options:**
 Each auto-attendant can consist of three distinct time periods, defined by associated time profiles. A greeting can be recorded for each period. The appropriate greeting is played to callers and followed by the Menu Options greeting which should list the available actions.
 - Time Profile**
 The time profile that defines each period of auto-attendant operation. When there are overlaps or gaps between time profiles, precedence is given in the order morning, afternoon and then evening.
 - Short code**
 These fields indicate the system short codes automatically created to allow recording of the time profile greetings and the menu options prompt.
 - Recording Name:** *Default = Blank. Range = Up to 31 characters, Software level = 4.0+ (Q2 2007 Maintenance release).*
 This field appears next to the short code used for manually recording auto-attendant prompts. It is only used is using pre-recorded wav files as greeting rather than manually recording greetings using the indicated short codes. If used, note that the field is case sensitive and uses the name embedded within the wav file file header rather than the actual file name.
 - For IP Office 4.0 this field is only useable for IP Offices being managed through the [Avaya Integrated Management \(AIM\)](#)^[856] application. As part of the Auto Attendant template this field defines the name of the file that should sent to the IP Office system when the template is merged with that IP Office system's configuration settings. The .wav file is automatically converted to the required format for the control unit before being transferred.
 - For IP Office 4.1+ this field can be used with all systems supporting embedded voicemail. The utility for converting .wav files to the correct format is provided with Manager and can be launched via [File | Advanced | LVM Greeting Utility](#)^[129]. Files then need to be manually transferred to the embedded voicemail memory card. For full details refer to the IP Office Embedded Voicemail Installation manual.

5.26.2 Actions

This tab defines the actions available to callers dependant on which DTMF key they press. To change an action, select the appropriate row and click **Edit**. When the key is configured as required click **OK**.

Auto Attendant Actions	
Control Unit	SOE  , IP403  , IP406 V1  , IP406 V2  , IP412  , IP500  .
Software Level	2.0+.
Mergeable	Pre-3.2  , 3.2+  .

- **Key**

The standard telephone dial pad keys, 0 to 9 plus * and #.

- For IP Office 4.0+ the option **Fax** is available. This can be set to a Blind Transfer to the required fax destination and will then be triggered by fax tone detection. If left as **Not Defined**, fax calls will follow the incoming call routes fallback settings once the auto-attendant Maximum Inactivity Time set on the [Auto Attendant | Auto Attendant](#) ^[40] tab is reached.

- **Action**

The following actions can be assigned to each key.

- **Not Defined**

The corresponding key takes no action.

- **Blind Transfer:** *Software level = 4.0+.*

Transfer the call to the selected destination. This is an unsupervised transfer, if the caller is not answered they will be handled as per a direct call to that number.

- **Dial by Name:** *Software level = 5.0+.*

Callers are asked to dial the name of the user they require and then press #. The recorded name prompts of matching users are then played back for the caller to make a selection. The name order used is set by the **Dial by Name Match Order** setting on the [Auto Attendant](#) ^[40] tab. Note the name used is the user's **Full Name** if set, otherwise their **User Name** is used. Users without a recorded name prompt or set to **Ex Directory** are not included. Users can record their name by accessing their mailbox and dialing *05.

- **Dial By Number:** *Software level = 4.0+.*

This option allows callers with DTMF phones to dial the extension number of the user they require. No destination is set for this option. The prompt for using this option should be included in the auto attendant Menu Options greeting. A uniform length of extension number is required for all users and hunt group numbers.

- **Transfer to Attendant:** *Software level = 4.0+.*

This action can be used to transfer calls to another existing auto attendant.

- **Transfer to Operator:** *Software level = Up to 3.2 only.*

Transfer the caller to the selected destination. Operates the same as the Normal Transfer option below.

- **Normal Transfer**

Transfer the caller to the selected destination. This is an unsupervised transfer, if the caller is not answered they will be handled as per a direct call to that number. If no destination is set, the caller can dial the user extension number that they require.

- **Replay Greeting**

Replay the auto-attendant greetings again.

- **Destination**

Sets the destination for the action:

- Destination can be a user, a hunt group or a short code.
- If the destination field is left blank, callers can dial the user extension number that they require. Note however that no prompt is provided for this option so it should be included in the auto attendant Menu Options greeting.

5.27 Authorization Codes



Authorization codes are not shown by default. Manager must be modified in order to support authorization codes. Similarly in order to record authorization codes used with calls in the IP Office SMDR, the IP Office Delta Server software must be modified.

Each authorization code is associated with a particular user or user rights set. The user or users associated with the user rights, can then dial numbers which are set to trigger forced authorization code entry. Once a code is entered, the short code settings of the user or user rights with which the code is associated are used to completed the call.

This can be used to allow authorized users to make otherwise restricted calls from any extension without first having to log in to that extension and then log out after the call. Authorization code usage can be recorded along with the call details by the IP Office Delta Server in its SMDR output, including valid/invalid code entry and the code used.

Overview

- A user dials a number that matches a short code set to **Force Authorization Code**.
- The user is prompted to enter an authorization code.
- They dial their authorization code. If a matching entry is found in **Authorization Codes** entries the system checks the corresponding user or user right (in that order). Note that the user or user right checked does not necessarily need to be connected with the user dialing or the user whose extension is being used to make the call.
 - The dial string is checked against the short codes with the matching user or user rights.
 - If it matches a dial short code or no short code the call is allowed, otherwise it is blocked. Note that the short code is not processed, it is just checked for a match.
 - If multi-tier authorization codes are required there must be blocking (busy) short codes (or a wild card '?')

Example

A restaurant has a number of phones in publicly accessible areas and so want to control what calls can be made. They want the phones to anyone to make allow local calls, restrict restaurant staff to locale and cell phone (044...) numbers while the manager can dial local, cell phone and long distance (01...) numbers).

ARS Table	Authorization Codes
In the Main (50) ARS table, they add the following short codes: • 044XXXXXXXXXX / 044N / Dial / Force Auth Code • 01XXXXXXXXXX / 01N / Dial / Force Auth Code	They have two authorization codes configured. • 2008 is associated with a set of User Rights called Cell. • 1983 is associate with a set of User Rights called LDandCell.
User Rights	
Cell	LDandCell
• 044N / . / Dial Allows calls to cell phone numbers. • 01N / . / Busy Blocks calls to long distance numbers. • ? / . / Busy Block any other calls that require an authorization code.	• 044N / . / Dial Allows calls to cell phone numbers. • 01N / . / Dial Allows calls to long distance numbers. • ? / . / Busy Block any other calls that require an authorization code.

It is recommended to use short codes that use X characters to match the full number of characters to be dialed. That ensures that authorization code entry is not triggered until the full number has been dialed rather than mid-dialing. For example 09 numbers are premium rate in the UK, so you would create a 09XXXXXXXX / N / Dial short code set to Forced Authorization. In the associated user or user right short code it is recommended to use 09N type short codes.

For IP Office 4.0+ systems, system short codes that route to ARS will not have their **Force Authorization Code** setting used. However short codes within an ARS table will have their **Force Authorization Code** setting used.

• **WARNING: Changing PC Registry Settings**

Avaya accepts no liability for any issues arising from the editing of a PC's registry settings. If you are in any doubt about how to perform this process you should not proceed. It is your responsibility to ensure that the registry is correctly backed up before any changes are made.

Enabling Authorization Codes in Manager

To enable support for authorization codes within Manager requires a change to the Manager PC registry settings. Once this change is made, various authorization code related features are visible when Manager is restarted and a configuration from a 3.2 or higher system is loaded.

1. Close Manager.
2. Locate the registry key **HKEY_CURRENT_USER\Software\Avaya\IP400\Manager\EnableAuthorisationCodes** and change its value from **0** to **1**.
3. Restart Manager and load a configuration from an IP Office 3.2 or higher system.

Enabling Authorization Codes in Delta Server

The use of authorization codes can be included in the SMDR output logged by the IP Office Delta Server application. Again this requires changes to the registry of the PC running the Delta Server application.

1. Open the registry and locate the **HKEY_LOCAL_MACHINE\Software\Avaya\CCCServer\Setup** registry keys.
2. Add two new **DWORD** registry keys and set their values to 1. They are:
 - **AllowAuthorization**
 - **ShowAllowAuthorization**
3. Open the browser to the Delta Server configuration screens.
4. Select SMDR. An **Add Authorization Fields to SMDR** option should now be available. Select this to enable logging of authorization codes to the SMDR log file.

Authorization codes are only logged to the SMDR log file. Two new fields are added to the end of each call log record in the SMDR log file. The first new field is the authorization code used or n/a if no authorization code was used. The second field is 1 for valid authorization or 0 for invalid authorization.

Forcing Authorization Codes

There are two methods to force a user to enter an authorization code in order to complete dialing an external call.

- **To Force Authorization Codes on All External Calls**
A user can be required to enter an authorization code for all external calls. This is done by selecting **Force Authorization Code**^[279] ([User](#) | [Telephony](#) | [Supervisor Settings](#)^[279]).
- **To Force Authorization Codes on Specific Calls**
To require entry of an authorization code on a particular call or call type, the Force Authorization Code option should be selected in the short code settings. This can be used in user, user rights or system short codes in order to apply its effect to a user, group of users or all users respectively. You need to ensure that the user cannot dial the same number by any other method that would by pass the short code, for example with a different prefix.

Entering an Authorization Code

Where possible, when an authorization code is required, the user can enter it through their phones display. However this is not possible for all type of phone, for example it is not possible with analog phones and Avaya XX01 or XX02 phones. The users of these device must either enter the authorization code using Phone Manager or by using a short code set to the Set Authorization Code feature immediately before making the call.

When entry of an authorization code is triggered, the user can enter any authorization code with which they are either directly associated or associated through their current user rights.

Note

1. If account code entry is setup for a particular number, calls forwarded or transferred to that number will also trigger account code entry.
2. On systems using line appearances to BRI trunk channels to make outgoing calls, account code entry may not be triggered. This can be resolved by adding a short code such as [9]XN;/Dial/XN/0 (adjust the prefix and line group as necessary).

Authorization Code Authorization Code	
Control Unit	SOE ✓, IP403 ✗, IP406 V1 ✗, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	3.2+.
Mergeable	✓.

- **Authorization Code:** *Range = Up to 12 digits.*

The digits used for the authorization code. Each code must be unique. Wildcards are not useable with authorization codes.

- **User Rights**

This field is used to select the user right with which the authorization code is associated. The authorization code can then be used to authorize calls made by users currently associated with that set of user rights.

- **User**

This field is used to select a user with which the authorization code is associated. The authorization code can then be used to authorize calls made by that user.

5.28 ARS



ARS (Alternate Route Selection) is used by IP Office 4.0+. It replaces LCR (Least Cost Routing) used by previous releases of IP Office. It also replaces the need to keep outgoing call routing short codes in the system short codes.

When a dialed number matches a short code that specifies that the number should be dialled, there are two methods by which the routing of the outgoing call can be controlled.

- **Routing Calls Directly to a Line**

Every line and channel belongs has an Outgoing Group ID setting. Several lines and channels can have belong to the same Outgoing Group ID. Within short codes that should be routed via a line within that group, the required Outgoing Group ID is specified in the short code's Line Group ID setting.

- **Routing Calls via ARS**

The short code for a number can specify an ARS form as the destination. The final routing of the call is then controlled by the setting available within that ARS form.

ARS Features

- **Secondary Dial Tone**

The first ARS form to which a call is routed can specify whether the caller should receive secondary dial tone.

- **Out of Service Routing**

ARS forms can be taken out of service, rerouting any calls to an alternate ARS form while out of service. This can be done through the configuration or using short codes.

- **Out of Hours Routing**

ARS forms can reroute calls to an alternate ARS form outside the hours defined by an associated time profile.

- **Priority Routing**

Alternate routes can be made available to users with sufficient priority if the initial routes specified in an ARS form are not available. For users with insufficient priority, a delay is applied before the alternate routes become available.

- **Line Types**

ARS can be used with all line types except Small Community Network (SCN) trunks.

- For IP Office 4.2+, a SIP line is treated as busy and can follow alternate routes based on the SIP line setting [Call Initiation Timeout](#)^[243]. Previously a SIP line was only seen as busy if all the configured channels were in use.
- IP lines use the NoUser Source Number setting H323SetupTimerNoLCR to determine how long to wait for successful connection before treating the line as busy and following ARS alternate routing. For IP Office 4.2+ this is now set through the IP line option [Call Initiation Timeout](#)^[230].

- **Small Community Network**

Calls to SCN users are always routed using the appropriate SCN trunk. ARS can be configured for SCN numbers but will only be used if the SCN call fails due to congestion or network failure. However if the SCN becomes available before ARS finds an alternate route then SCN is used. This also applies to calls made across the SCN using the [Break Out](#)^[440] feature.

- **Main Route**

The ARS form 50, named "Main" cannot be deleted. For defaulted IP Office systems it is used as a default route for outgoing calls.

Routing Calls to ARS

1. Create the ARS form.
2. Create the required system, user or user rights short code to match the user dialing.
 - 2.1. In the Telephone Number field define the digits that will be used to match a short code in the ARS form.
 - 2.2. Use the Line Group ID field drop-down to select the ARS form required for routing the call.

Example ARS Operation

Default ARS

The simplest example for ARS operation are the settings applied to defaulted IP Office 4.0 systems. These vary between MU-Law systems and A-LAW systems.

A-Law IP Office Systems

This set of defaults is applied to A-Law systems, typically supplied to locales other than North America. The defaults allow any dialing that does not match an internal number to be routed off-switch as follows:

1. System Short Code - ? / . / Dial / 50:Main

The default system short code ? will match any dialing for which no other user, user rights or system short code match is found. This short code is set to route all the digits dialed to ARS form 50.

2. ARS Form - 50:Main

This form contains just a single short code.

· ? / . / Dial 3K1 / 0

This short code matches any digits passed to the ARS form. It then dials the digits out on the first available line within line group 0 (the default outgoing line group for all lines).

MU-Law IP Office Systems

This set of defaults is applied to MU-Law systems, typically supplied to locales in North America. The defaults route any dialing prefixed with a 9 to the ARS and secondary dial tone.

1. System Short Code - 9N / N / Dial / 50:Main

The default system short code 9N is used to match any dialing that is prefixed with a 9. It passes any digits following the 9 to ARS form 50.

2. ARS Form - 50:Main

This form has secondary dial tone enabled. It contains a number of short codes which all pass any matching calls to the first available line within line group 0 (the default outgoing line group for all lines). Whilst all these short code route calls to the same destination, having them as separate items allows customization if required. The short codes are:

· 11 / 911 / Dial Emergency / 0

This short code matches an user dialing 911 for emergency services.

· 911 / 911 / Dial Emergency / 0

This short code matches an user dialing 9911 for emergency services.

· 0N; / 0N / Dial 3K1 / 0

This short code matches any international calls.

· 1N; / 1N / Dial 3K1 / 0

This short code matches any national calls.

· XN; / N / Dial 3K1 / 0

This short code matches 7 digit local numbers.

· XXXXXXXXXX / N / Dial 3K1 / 0

This short code matches 10 digit local numbers.

5.28.1 ARS

Each ARS form contains short codes which are used to match the result of the short code that triggered use of the ARS form, ie. the Telephone Number resulting from the short code is used rather than the original number dialed by the user.

ARS ARS	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	4.0+.
Mergeable	✓.

- **ARS Route ID**
This value is automatically assigned and cannot be edited.
- **Route Name:** *Default = Blank, Range = Up to 15 characters.*
The name is used for reference and is displayed in other areas when selecting which ARS to use.
- **Dial Delay Time:** *Default = System. Range = 1 to 30 seconds.*
This settings defines how long ARS should wait for further dialing digits before assuming that dialing is complete and looking for a short code match against the ARS form short codes. When set to **System**, the system's [Dial Delay Time](#) ^[168] ([System | Telephony | Telephony](#) ^[168]) value is used.
- **Secondary Dial Tone:** *Defaults = Off.*
When on, this setting instructs the IP Office to play secondary dial tone to the user. The tone used is set by the field below.
 - The tone used is set as either **System Tone** (normal dial tone) or **Network Tone** (secondary dial tone). Both tone types are generated by the IP Office in accordance with the [system specific locale setting](#) ^[808]. Note that in some locales normal dial tone and secondary dial tone are the same.
 - When **Secondary Dial Tone** is selected, the ARS form will return tone until it receives digits with which it can begin short code matching. Those digits can be the result of user dialing or digits passed by the short code which invoked the ARS form. For example with the following system short codes:
 - In this example, the 9 is stripped from the dialed number and is not part of the telephone number passed to the ARS form. So in this case secondary dial tone is given until the user dials another digit or dialing times out.
 - **Code:** 9N
 - **Telephone Number:** N
 - **Line Group ID:** 50 Main
 - In this example, the dialed 9 is included in the telephone number passed to the ARS form. This will inhibit the use of secondary dial tone even if secondary dial tone is selected on the ARS form.
 - **Code:** 9N
 - **Telephone Number:** 9N
 - **Line Group ID:** 50 Main
- **Check User Call Barring:** *Default = Off*
If enabled, the dialing user's **Outgoing Call Bar** setting and any user short codes set to the function **Barred** are checked to see whether they are appropriate and should be used to bar the call.
- **In Service:** *Default = On*
This field is used to indicate whether the ARS form is in or out of service. When out of service, calls are rerouted to the ARS form selected in the **Out of Service Route** field.
 - Short codes can be used to take an ARS form in and out of service. This is done using the short code features [Disable ARS Form](#) ^[464] and [Enable ARS Form](#) ^[467] and entering the ARS Route ID as the short code **Telephone Number** value.
- **Out of Service Route:** *Default = None.*
This is the alternate ARS form used to route calls when this ARS form is not in service.
- **Time Profile:** *Default = None.*
Use of a ARS form can be controlled by an associate time profile. Outside the hours defined within the time profile, calls are rerouted to an alternate ARS form specified in the Out of Hours Route drop-down. Note that the Time Profile field cannot be set until an Out of Hours Route is selected.
- **Out of Hours Route:** *Default = None.*
This is the alternate ARS form used to route calls outside the hours defined within the [Time Profile](#) ^[361] selected above.
- **Short Codes**
Short codes within the ARS form are matched against the "Telephone Number" output by the short code that routed the call to ARS. The IP Office then looks for another match using the short codes with the ARS form.

- Only short codes using the following features are supported within ARS: **Dial**, **Dial Emergency**, **Dial Speech**, **Dial 56K**, **Dial64K**, **Dial3K1**, **DialVideo**, **DialV110**, **DialV120** and **Busy**.
- Multiple short codes with the same **Code** field can be entered so long as they have differing **Telephone Number** and or **Line Group ID** settings. In this case when a match occurs the IP Office will use the first match that points to a route which is available.
- **Alternate Route Priority:** *Default = 3. Range = 1 (low) to 5 (high).*

If the routes specified by this form are not available and an **Alternate Route** has been specified, that route will be used if the users priority is equal to or higher than the value set here. User priority is set through the **User | User** form and by default is **5**. If the users priority is lower than this value, the **Alternate Route Wait Time** is applied. This field is grayed out and not used if an ARS form has not been selected in the **Alternate Route** field.

 - If the caller's dialing matches a short code set to the **Barred** function, the remains at that short code and is not escalated in any way.
- **Alternate Route Wait Time:** *Default = 30 seconds, Range = Off, 1 to 60 seconds.*

If the routes specified by this form are not available and an **Alternate Route** has been specified, users with insufficient priority to use the alternate route immediately must wait for the period defined by this value. During the wait the user hears camp on tone. If during that period a route becomes available it is used. This field is grayed out and not used if an ARS form has not been selected in the Alternate Route field.
- **Alternate Route:** *Default = None.*

This field is used when the route or routes specified by the short codes are not available. The routes it specifies are checked in addition to those in this ARS form and the first route to become available is used.

5.28.2 Cause Codes and ARS

ARS routing to digital trunks can be affected by signalling from the trunk. The response to cause codes received from the line is as follows:

- **Reroute with ARS**

The following cause codes cause ARS to no longer target the line group (unless it is specified by an alternate ARS route).

Code	Cause Code
1	Unallocated Number.
2	No route to specific transit network / (5ESS) Calling party off hold.
3	No route to destination. / (5ESS) Calling party dropped while on hold.
4	Send special information tone/(NI-2) Vacant Code.
5	Misdialed trunk prefix.
8	Preemption / (NI-2) Prefix 0 dialed in error.
9	Preemption, cct reserved/ (NI-2) Prefix 1 dialed in error.
10	(NI-2) Prefix 1 not dialed.
11	(NI-2) Excessive digits received call proceeding.
22	Number Changed.
28	Invalid Format Number.
29	Facility Rejected.
50	Requested Facility Not Subscribed.
52	Outgoing calls barred.
57	Bearer Capability Not Authorized.
63	Service or Option Unavailable.
65	Bearer Capability Not Implemented.
66	Channel Type Not Implemented.
69	Requested Facility Not Implemented.
70	Only Restricted Digital Information Bearer Capability Is Available.
79	Service Or Option Not Implemented.
88	Incompatible.
91	Invalid Transit Network Selection.
95	Invalid Message.
96	Missing Mandatory IE.
97	Message Type Nonexistent Or Not Implemented.
98	Message Not Implemented.
99	Parameter Not Implemented.
100	Invalid IE Contents.
101	Msg Not Compatible.
111	Protocol Error.
127	Interworking Unspecified.

- **Stop ARS**

The following cause codes stop ARS targeting completely.

Code	Cause Code
17	Busy.
21	Call Rejected.
27	Destination Out of Order.

- **No Affect**

All other cause codes do not affect ARS operation.

5.28.3 ARS Operation

The diagram below illustrates the default ARS routing applied to systems defaulted to the United States system locale. In summary:

- Any dialing prefixed with 9 will match the default system short code **9N**.
- That short code routes calls to the default ARS form **50:Main**.
- The short codes in that ARS form route all calls to an available line that has its **Outgoing Group ID** set to **0**.

The table describes in more detail the process that the IP Office has applied to the user's dialing, in this example 91555707392200.

The user dials...	
9	- The Dial Delay Count is zero, so the IP Office begins looking for short code matches in the system and user's short codes immediately. - Since there is only one match, the 9N system short code, it is used immediately. - The 9N short code is set to route the call to the ARS form Main. It only passes those digits that match the N part of the dialing, ie. the 9 is not passed to the ARS, only any further digits dialed by the user. Secondary Dial Tone is selected in the ARS form. Since no digits for ARS short code matching have been received, secondary dial tone is played to the user.
1	- Having received some digits, the secondary dial tone stops. - The ARS form short codes are assessed for matches. - The 11 and 1N; short codes are possible matches. - The 911 and 0N; short codes are not possible matches. - The XN; and XXXXXXXXXXN; short codes are also not matches because the 1N; short code is already a more exact match. - Since there is more than one possible match, the IP office waits for further digits to be dialed.
555	- The 11 short code is no longer a possible match. The only match is left is the 1N; short code. - The ; in the short code tells the IP Office to wait for the Dial Delay Time to expire after the last digit it received before assuming that dialing has been completed. This is necessary for line providers that expect to receive all the routing digits for a call 'en bloc'. The user can also indicate they have completed dialing by pressing #.
707392200	- When the dialing is completed, a line that has its Outgoing Group ID set to 0 (the default for any line) is seized. - If no line is available, the alternate route settings would applied if they had been configured.

5.28.3.1 ARS Short Codes

The short codes in the default ARS form have the following roles:

Code	Feature	Telephone Number	Line Group ID	Description
11	Dial Emergency	911	0	These two short codes are used to route emergency calls. Note that the E911 ^[42b] settings may override the routing to attempt to send the emergency call by a particular line if possible. However a Dial Emergency call is never blocked. If the required line is not available the IP Office will use the first available line. Similarly calls using Dial Emergency ignore any outgoing call bar settings that would be normally applied to the user.
911	Dial Emergency	911	0	
0N;	Dial 3K1	0N	0	Matches international numbers.
1N;	Dial 3K1	1N	0	Matches national numbers.
XN;	Dial 3K1	N	0	Matches 7 digit local numbers.
XXXXXXXXX XN;	Dial 3K1	N	0	Matches 10 digit local numbers.

ARS Short Code Settings

Short Code

Code

0N;

Feature

Dial

▼

Telephone Number

0N

Line Group Id

1

▼

Locale

▼

Force Account Code

☐

- **Code**
The digits used for matching to the user dialing.
- **Feature**
ARS short codes can use any of the **Dial** short code features or the **Barred** feature. When a **Barred** short code is matched, the call will not proceed any further.
- **Telephone Number**
The number that will be output to the line as the result of the short code being used as the match for the user dialing. [Short code characters](#) ^[42b] can be used such as N to match any digits dialed for N or X in the **Code**.
- **Line Group ID**
The line group from which a line should be seized once short code matching is completed. Another ARS form can also be specified as the destination.
- **Locale**
Not used for outgoing external calls.
- **Forced Account Code**
If enabled, the user will be prompted to enter a valid account code before the call can continue. The account code must match one set in the IP Office configuration.

5.28.3.2 Simple Alternate Line Example

Using the [default ARS settings](#)^[41], despite having several short codes in the ARS form, all outgoing calls are actually routed the same way using the same trunks. However, by having separate short codes for different call types present, it is easy to change the routing of each call type if required.

For this example, the customer has separate sets of lines for local calls and for national/international calls. These have been configured as follows:

- The lines for local and emergency calls have been left with the default **Outgoing Group ID** of **0**.
- The lines for national and international calls have been set with the **Outgoing Group ID** of **1**.

The default ARS can be configured to match this by just changing the **Line Group ID** settings of the default ARS short codes to match.

The screenshot displays the ARS configuration interface with three main panels and several annotations:

- Short Code Panel (9x):**
 - Code: 9N
 - Feature: Dial
 - Telephone Number: N
 - Line Group Id: 50: Main
 - Locale: (empty)
 - Force Account Code: ☐
- Line Settings Panel (77):**
 - Line Number: 5
 - Card/Module: 2
 - Port: 9
 - Telephone Number: (empty)
 - Incoming Group ID: 0
 - Outgoing Group ID: 1** (highlighted with a blue box and an arrow pointing to the ARS table)
 - Outgoing channels: 1
 - Voice channels: 1
- ARS Panel (Y):**
 - ARS Route Id: 50
 - Route Name: Main
 - Dial Delay Time: System Default (4)
 - In Service: ☒ (Out of Service Route: <None>)
 - Time Profile: <None> (Out of Hours Route: <None>)
 - Secondary Dial tone: ☒ SystemTone
 - Check User Call Barring: ☒
 - Table:**

Code	Telephone Number	Feature	Line Group Id
11	911	Dial Emergency	0
911	911	Dial Emergency	0
0N;	0N	Dial 3K1	1
1N;	1N	Dial 3K1	1
XN;	N	Dial 3K1	0
XXXXXXXXXXN	N	Dial 3K1	0
 - Alternate Route Priority Level: 3
 - Alternate Route Wait Time: 30 (Additional Route: <None>)

Annotations include blue arrows connecting the 'Line Group Id' in the Short Code panel to the 'Line Group Id' in the ARS table, and the 'Outgoing Group ID' in the Line Settings panel to the 'Line Group Id' in the ARS table.

5.28.3.3 Simple Call Barring

All ARS short codes use one of the **Dial** short code features. The exception is the **Barred** short code feature. This can be selected for ARS short codes that match dialing that is not allowed.

In the example below, any user dialing an international number will be routed to the **Barred** short code. This prevents the dialing of external numbers prefixed with 0.

The screenshot displays the ARS configuration interface. On the left, there are two 'Short Code' configuration panels. The top panel is for a 'Dial' feature with Code '9N', Telephone Number 'N', and Line Group Id '50: Main'. The bottom panel is for a 'Barred' feature with Code '0N;', Telephone Number '0N', and Line Group Id '0'. On the right, the 'ARS' configuration panel is shown. It includes fields for ARS Route Id (50), Route Name (Main), Dial Delay Time (System Default (4)), In Service (checked), Time Profile (<None>), Secondary Dial tone (SystemTone), Check User Call Barring (checked), Out of Service Route (<None>), and Out of Hours Route (<None>). Below these fields is a table of short codes:

Code	Telephone Number	Feature	Line Group Id
11	911	Dial Emergency	0
911	911	Dial Emergency	0
0N;	0N	Barred	0
1N;	1N	Dial 3K1	0
XN;	N	Dial 3K1	0
XXXXXXXXXXN	N	Dial 3K1	0

Below the table, there are fields for Alternate Route Priority Level (3) and Alternate Route Wait Time (30), both pointing to an Alternate Route (<None>). Blue arrows indicate the flow from the 'Dial' and 'Barred' short code panels to the ARS configuration panel.

- To restrict a user from making any outgoing external calls, use the user's [Outgoing Call Bar](#) ^[279] option.

5.28.3.4 User Priority Escalation

User priority can be used to alter call routing when the required route is not available.

In this example, international calls are initially targeted to seize a line in outgoing line group 1. However an alternate route has been defined which will be used if no line in line group 1 is available. The fallback ARS form allows international calls to seize a line from line group 0. Whether this is done immediately or after a delay is set by whether the users priority is high enough.

Short Code

Code: 9N

Feature: Dial

Telephone Number: N

Line Group Id: 50: Main

Locale:

Force Account Code: ☐

User

Name: Extn201

Password:

Confirm Password:

Full Name: Extn201

Extension: 201

Locale:

Priority: 5

☐ Ex Directory

ARS

ARS Route Id: 50

Route Name: Main

Dial Delay Time: System Default (4)

In Service: ☒ Out of Service Route: <None>

Time Profile: <None> Out of Hours Route: <None>

Code	Telephone Number	Feature	Line Group Id
11	911	Dial Emergency	0
911	911	Dial Emergency	0
0N;	0N	Dial 3K1	1
1N;	1N	Dial 3K1	1
XN;	N	Dial 3K1	0
XXXXXXXXXXN	N	Dial 3K1	0

Alternate Route Priority Level: 3

Alternate Route Wait Time: 20

Alternate Route: Fallback

ARS

ARS Route Id: 51

Route Name: Fallback

Dial Delay Time: System Default (4)

In Service: ☒ Out of Service Route: <None>

Time Profile: <None> Out of Hours Route: <None>

Code	Telephone Number	Feature	Line Group Id
11	911	Dial Emergency	0
911	911	Dial Emergency	0
0N;	0N	Dial 3K1	0
1N;	1N	Dial 3K1	1
XN;	N	Dial 3K1	0
XXXXXXXXXXN	N	Dial 3K1	0

5.28.3.5 Time Base Routing

Time profiles can be used to switch call routing from one ARS form to another.

In the example below, a time profile has been define that sets the hours for normal operation. Outside the times set in the time profile, the other ARS form is used. This other ARS form only allows local and emergency calls.

The diagram illustrates the configuration of Time Base Routing. It shows two ARS (Automatic Route Selection) forms and a Time Profile configuration.

Short Code 9x

Code: 9N
Feature: Dial
Telephone Number: N
Line Group Id: 50: Main
Locale:
Force Account Code: ☐

Time Profile

Name: Office Hours

Time Entry List

Start Time	End Time	Recurrence
07:30	19:00	Monday To Friday

ARS 50

ARS Route Id: 50
Route Name: Main
Dial Delay Time: System Default (4)
In Service: ☒
Secondary Dial tone: ☒
SystemTone:
Check User Call Barring: ☒
Out of Service Route: <None>
Time Profile: Office Hours
Out of Hours Route: Closed

Code	Telephone Number	Feature	Line Group Id
11	911	Dial Emergency	0
911	911	Dial Emergency	0
0N;	0N	Dial 3K1	0
1N;	1N	Dial 3K1	0
XN;	N	Dial 3K1	0
XXXXXXXXXXN	N	Dial 3K1	0

Alternate Route Priority Level: 3
Alternate Route Wait Time: 30
Additional Route: <None>

ARS 52

ARS Route Id: 52
Route Name: Closed
Dial Delay Time: System Default (4)
In Service: ☒
Secondary Dial tone: ☒
SystemTone:
Check User Call Barring: ☒
Out of Service Route: <None>
Time Profile: Office Closed
Out of Hours Route: <None>

Code	Telephone Number	Feature	Line Group Id
11	911	Dial Emergency	0
911	911	Dial Emergency	0
0N;	0N	Barred	0
1N;	1N	Barred	0
XN;	N	Dial 3K1	0
XXXXXXXXXXN	N	Dial 3K1	0

Alternate Route Priority Level: 3
Alternate Route Wait Time: 30
Additional Route: <None>

5.28.3.6 Account Code Restriction

The short codes within an ARS form can be individually set to require an account code before allowing any call that matches it to proceed.

In the example below, the short code for international calls has been set to require the user to enter an account code. A valid account code must be dialed to continue with the call.

The screenshot displays the configuration interface for ARS (Automatic Route Selection) in IP Office Phone Manager. It includes two side panels for 'Short Code' configuration and a central 'ARS' configuration panel.

Top Left Short Code Panel:

- Code: 9N
- Feature: Dial
- Telephone Number: N
- Line Group Id: 50: Main
- Locale: [Dropdown]
- Force Account Code: ☐

Bottom Left Short Code Panel:

- Code: 0N;
- Feature: Dial 3K1
- Telephone Number: 0N
- Line Group Id: 0
- Locale: [Dropdown]
- Force Account Code: ☒

Central ARS Panel:

- ARS Route Id: 50
- Route Name: Main
- Dial Delay Time: System Default (4)
- In Service: ☒ → Out of Service Route: <None>
- Time Profile: <None> → Out of Hours Route: <None>
- Secondary Dial tone: ☒ SystemTone
- Check User Call Barring: ☒

Code	Telephone Number	Feature	Line Group Id
11	911	Dial Emergency	0
911	911	Dial Emergency	0
0N;	0N	Dial 3K1	0
1N;	1N	Dial 3K1	0
XN;	N	Dial 3K1	0
XXXXXXXXXXN	N	Dial 3K1	0

Buttons: Add..., Remove, Edit...

Alternate Route Priority Level: 3

Alternate Route Wait Time: 30 → Alternate Route: <None>

- If a user should always enter an account code to make any external call, the user option **Force Account Code** ^[279] should be used.
- When using account codes to restrict calls rather than just track calls it is recommended that **Show Account Codes** ^[168] is disabled. This stops the list of available account codes being shown by IP Office Phone Manager.

5.28.3.7 Tiered ARS Forms

It is possible for an ARS short code in one form to have another ARS form as its destination. Dialing that matches the short code is then subject to further matching against the short codes in the other ARS form.

In the example below, the user wants different routing applied to international calls based on the country code dialed. To do that in the default ARS form would introduce a large number of short codes in the one form, making maintenance difficult.

So the short code matching calls with the international dialing prefix 0 has been set to route matching calls to another ARS form. That form contains short codes for the different country dialing codes of interest plus a default for any others.

Short Code

Code: 9N
Feature: Dial
Telephone Number: N
Line Group Id: 50: Main
Locale:
Force Account Code: ☐

ARS

ARS Route Id: 50
Route Name: Main
Dial Delay Time: System Default (4)
In Service: ☒
Time Profile: <None>
Secondary Dial tone: SystemTone
Check User Call Barring: ☒
Out of Service Route: <None>
Out of Hours Route: <None>

Code	Telephone Number	Feature	Line Group Id
11	911	Dial Emergency	0
911	911	Dial Emergency	0
0N;	0N	Dial 3K1	51:International
1N;	1N	Dial 3K1	0
XN;	N	Dial 3K1	0
XXXXXXXXXXN	N	Dial 3K1	0

Alternate Route Priority Level: 3
Alternate Route Wait Time: 30
Alternate Route: <None>

ARS

ARS Route Id: 51
Route Name: International
Dial Delay Time: System Default (4)
In Service: ☒
Time Profile: <None>
Secondary Dial tone: SystemTone
Check User Call Barring: ☒
Out of Service Route: <None>
Out of Hours Route: <None>

Code	Telephone Number	Feature	Line Group Id
0N;	0N	Dial 3K1	1
044N;	044N	Dial 3K1	2
0353N;	0353N	Dial 3K1	2
045N;	045N	Barred	2

5.28.3.8 Planning ARS

Using the methods shown in the previous examples, it is possible to achieve ARS that meets most requirements. However the key to a good ARS implementation is planning.

A number of questions need to be assessed and answered to match the IP Office's call routing to the customer's dialing.

- **What**
What numbers will be dialed and what needs to be output by the IP Office. What are the different call tariffs and the dialing codes.
- **Where**
Where should calls be routed.
- **Who**
Which users should be allowed to use the call routes determined by the previous questions.
- **When**
When should outgoing external calls be allowed. Should barring be applied at any particular times? Does the routing of calls need to be adjusted for reasons such as time dependant call tariffs.

5.29 E911 System Settings



The central office routes 911 emergency calls into a dedicated emergency network. The calls are then distributed to the correct emergency operator by using either the automatic line identification information (ALI) received with the emergency call or the registered billing address of the line on which the call was made.

E911 is system whereby emergency calls are routed through an E911 Adjunct with adds additional location information to the call based on the . Support for this is only available on control units shipped with a U-Law default and set to United States locale.

The use of E911 may be mandatory in some locations and may include the provision of an adjunct owned and managed by a third party or the central office.

Dial Emergency Short Codes

On all IP Office systems, regardless of locale, system and or ARS short codes using the Dial Emergency feature should be created for any required emergency service numbers. Those short codes should be useable by all users from all extensions. Those short codes should route the calls to suitable lines. If the system uses prefixes for external dialing, the dialing of emergency numbers with and without the prefix should be allowed. Note that the blocking of emergency numbers or the routing of emergency numbers to a intermediate destination other than the emergency network may be against local and nation laws.

For systems with a United States locale, the Dial Emergency short code acts differently. Calls matched to Dial Emergency short codes are routed using the details contained in the E911 forms. This routing will then be either via installed E911 Adjunct equipment or via grouped set of trunks and extensions called zones.

• Emergency Dialing without an E911 Adjunct

If E911 is not enabled, all emergency calls are routed using the zones configured on the [E911 | Zones](#)^[422] form. By default all lines and all extensions are added to a default zone and the first available line is used for emergency calls.

1. Ensure that the appropriate Dial Emergency short codes have been configure either in system short codes or in an ARS form.
2. The lines used to route an extension's emergency calls must be correctly registered to the physical location of the extension.
3. Create E911 Zones for each registered location. Include the extensions and lines that serve that location in the zones settings.

• Emergency Dialing with an E911 Adjunct

An E911 adjunct is an additional piece of equipment. It holds a database of location information based on the base extension number passed to it by the IP Office. Connection from the IP Office is by loop-start analog trunks. The adjunct is then connected to the central office's 911 emergency network by CAMA (Centralized Automatic Message Accounting) trunks.

When E911 is enabled and operating, all Dial Emergency calls are routed to the adjunct. The base extension ID is used to add the appropriate location information to the calls ALI before passing it to the emergency network.

- If Dial Emergency calls cannot be routed to the E911 adjunct due to congestion, the IP Office will automatically fallback to using the E911 Zones.
- The E911 adjunct includes an alarm switch that can be connected to an IP Office analog extension port. Dial Emergency calls will fallback to using E911 Zones if the E911 adjunct indicates an alarm.

If you are using E911 with an E911 Adjunct, the following needs to be administered:

1. Ensure that the appropriate **Dial Emergency** short codes have been configure either in system short codes or in an ARS form.
2. On the E911 Adjunct tab select **Enable**.
3. In the Adjunct Trunks list select those trunks that are connected to the E911 Adjunct.
4. In the Alarm Station field, indicate the extension number of the user to which the E911 adjunct's alarm connection has been connected.
 - On an operator or security extension, a programmable button can be set to monitor the status of this user. That button will then indicate in use (busy) when the E911 adjunct is in its alarm state.
5. E911 Zones should still be configured. These are used if the IP Office cannot seize one of the Adjunct Trunks or the Alarm Station is busy (indicating a fault with the E911 adjunct connections).

5.29.1 E911 Adjunct

The settings on this tab relate to the use of an E911 adjunct if installed.

Dial Emergency calls routed to the E911 adjunct include the extension ID of the extension on the IP Office system. This is used to lookup information stored in a database on the E911 Adjunct and then send that information to the central office. The extension ID of each extension is shown on the Extension | Extn tab.

- To call an extension using its Extension ID number, the short code feature Dial Physical Extn by ID can be used. This is normally provided by the default short code *71*N# when N can be replaced by the required extension ID.

E911 System E911 Adjunct Settings	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

- Enable:** *Default = Off (Not Selected)*
 When selected, all Dial Emergency calls are routed via the selected Adjunct Trunks and includes the extension ID of the dialing extension. This may differ from the extension number of the user current logged in at that extension if hot desking is being used.
- Alarm Station:** *Default = Blank*
 This is an analog extension port on the IP Office system, connected to the alarm switch provided on the E911 adjunct. When the E911 adjunct detects an error, for example disconnection of the CAMA trunks, it will indicate this by taking the alarm connection off-hook, making the analog extension busy.
 - When an alarm occurs and is indicated to the IP Office by the alarm station being busy, the IP Office will reroute Dial Emergency calls using the [E911 | Zones](#) ⁴²² settings.
 - To monitor the status of the alarm connection a user should be associated with the analog extension (one should exist by default). Another user such as the reception desk or security desk can then be provided with a programmable button set to the action User and the appropriate user. That button will then indicate busy when the alarm connection is in an alarm state.
- Adjunct Trunks:**
 This section lists all the analog and digital trunks (except VoIP trunks) available on the IP Office system. Only the trunks which are connected to the E911 Adjunct should be selected.

5.29.2 Zones

Zones are used for Dial Emergency calls on US systems where no E911 adjunct is installed. They are also used when a trunk to an install E911 adjunct cannot be seized or the E911 adjunct is indicating an alarm through its alarm station being off-hook (busy).

Zones allow extensions in the same location to be grouped and to have the external trunks registered to the same location associated with them. This billing address of those trunks or other information held by the trunk provider can then be used identify the correct emergency center that should respond to Dial Emergency calls from extensions in that zone.

The extension number used for this function is the Base Extension number set through the Extension | Extn tab. This allows the physical extension to be correctly identified even if currently being used by a hot desking user with a different associated extension number.

A zone named Default is maintained by the IP Office. By default all extensions and lines are included in this zone. This zone can be edited but cannot be removed. Any extension included in another zone and then removed is automatically placed back into the Default zone. Trunks can be deleted as some trunks will not be public trunks suitable for emergency calls.

- To call an extension using its Base Extension number, the short code feature Dial Physical Extn by Number can be used. This is normally provided by the default short code *70*N# when N can be replaced by the required Base Extension number.

E911 System Zones	
Control Unit	SOE ✓, IP403 ✓, IP406 V1 ✓, IP406 V2 ✓, IP412 ✓, IP500 ✓.
Software Level	1.0+.
Mergeable	✗.

This tab shows the existing E911 zones, the number of stations (extensions) and trunks in each zone and the base extension numbers of the extensions. The settings can be edited by clicking on an existing zone and selecting Edit. A new zone can be created by selecting Add.

- **Name:** *Default = Default, Range = Up to 15 characters.*
Allows a unique name to be assigned to each zone.
- **Stations:** *Default = Contains all Extension ID's*
Lists the extensions in the zone. Click **Add** to add and remove extensions. To just remove extensions, select the extension or extensions and click Remove. Extensions removed from any zone are automatically included in the Default zone and cannot be removed from that zone except by inclusion in another zone. Each extension can only be included in one zone.
- **Trunks:** *Default = Blank*
List the trunks associated with the zone. Click **Add** to add and remove trunks. To just remove trunks, select the trunk or trunks and click Remove. Each trunk can only be included in one zone. Dial emergency calls will seize the first available trunk. If no available trunk can be seized, the call will fallback to using the routing indicated with the Line Group ID of the Dial Emergency short code and final to using any available analog or digital trunk.

Chapter 6.

Short Codes

6. Short Codes

The IP Office uses short codes to match the number dialed to an action. The number dialed or part of the number dialed can be used as parameter for the feature.

- **WARNING**

User dialing of emergency numbers must not be blocked by the addition of short codes. If short codes are added, the users ability to dial emergency numbers must be tested and maintained.

Examples

The method of detailing a short codes settings lists the short code fields separated by a /.

- ***17/?U/VoicemailCollect**

A user dialing ***17** is connected to voicemail.

- ***14*N#/N/FollowMeTo**

If a user dials ***14*210#** at their own extension, their calls are redirected to extension 210.

Dialing Short Codes

The following types of short code applied to on-switch dialing. The result may be an action to be performed by the IP Office, a change to the user's settings or a number to be dialed. The order below is the order of priority in which they are used when applied to user dialing.

- **User Short Codes**

These are useable by the specific user only.

- **User Rights/User Restrictions Short Codes**

These are useable by any users associated with the user rights or restrictions in which they are set. They can be overridden by individual user short codes.

- User and User Rights short codes are only applied to numbers dialed by that user. For example they are not applied to calls forwarded via the user.

- **System Short Codes**

These are available to all users on the IP Office system. They can be overridden by user or user rights short codes.

Post-Dialing Short Codes

When any the short code above result in a number to be dialed, further short code can be applied to that number to be dialed. This is done using the following types of short codes.

- **ARS (Alternate Route Selection) Short Codes**

The short code that matches dialing can specify that the resulting number should be passed to an ARS form. The ARS form can specify which routes should be used for the call by using further short code matches and also provide option to use other ARS forms based on other factors such as time and availability of routes. In IP Office 4.0+ ARS has replaced Least Cost Routes.

- **Least Cost Route Short Codes**

Least Cost Routes are used by pre-4.0 IP Office system only. On these systems any short code that results in a number to be dialed, has is telephone number further checked for a match against LCR short codes. Time profiles can be used to control when particular sets of LCR short codes are used.

- **Transit Network Selection (TNS) Short Codes**

Used on T1 ISDN trunks set to use AT&T as the Provider. Applied to the digits presented following any other short code processing.

Incoming Number Short Codes

On certain types of trunks short codes can be applied to the incoming digits received with calls.

- **Line Short Codes**

These short codes are used to translate incoming digits received with calls. The stage at which they are applied varies between different line types and may be overridden by an extension number match.

6.1 Short Code Fields and Characters

Each short code, regardless of its type, has the following fields:

- **Short Code:** *Default = Blank, Range = Up to 31 characters.*
The digits which if matched trigger use of the short code. Characters can also be used to create short codes which cannot be dialed from a phone but can be dialed from application speed dials. However some characters have special meaning, see the table below.
- **Telephone Number:** *Default = Blank, Range = Up to 32 characters.*
The number output by the short code. When necessary, this is used as parameter for the selected short code Feature. See the table below for the special characters that can be used here.
- **Line Group ID:** *Default = 0*
This field is used for short codes that result in a number to be dialed. It acts as a drop-down from which either an outgoing line group or, for IP Office 4.0+, an ARS form can be selected.
- **Feature:** *Default = Dial*
This sets the action performed by the short code when used. See [Short Code Features](#)^[437].
- **Locale:** *Default = Blank*
Features that transfer the caller to Voicemail Lite (pre-IP Office 5.0 only) or Voicemail Pro can indicate the language locale required for prompts. This is subject to the language being supported and installed on the voicemail server.
- **Force Account Code:** *Default = Off*
When selected, for short codes that result in the dialing of a number, the user is prompted to enter a valid account code before the call is allowed to continue.

Short Code Field Characters

- **? - Default Match**
Used on its own to create a short code match in the absence of any other short code match. Only supported as a system short code except for ?D below. For example, the system short code ?/./Dial/0 will route any dialing for which no other match is found to outgoing line group 0. See [? Short Codes](#)^[437].
- **?D - Default Number Dialing**
This character combination makes a call to the defined phone number as soon as the user goes off-hook. See [? Short Codes](#)^[437].
- **N - Match Any Digits**
Matches any dialed digits (including none). The Dial Delay Time or a following matching character is used to resolve when dialing is complete.
- **X - Match a Digit**
Matches a single digit. When a group of X's is used, the short code matches against the total number of X's.
- **[] - Secondary Dial Tone Trigger**
For pre-4.0 IP Office systems used to trigger secondary dial tone. Not used for IP Office 4.0+. See [Secondary Dial Tone](#)^[438].
- **; - Receive Sending Complete**
When used this must be the last character in the short code string. If the Dial Delay Count is 0, a ; instructs the system to wait for the number to be fully dialed, using the Dial Delay Time or the user dialing #, before acting on the short code. If the Dial Delay Count is non-zero, the dialing is only evaluated when # is pressed.
 - The majority of North-American telephony services use en-bloc dialing. Therefore the use of a ; is recommended at the end of all dialing short codes that use an N. This is also recommended for all dialing where secondary dial tone short codes are being used.

Telephone Number Field Characters

- **A - Allow Outgoing CLI**

Allow the calling party number sent with the call to be used. This character may be required by service providers in some locales.

- **C - Use Called Number Field**

Place any following digits in the outgoing call's Called number field rather than the Keypad field.

- **D - Wait for Connect**

Wait for a connect message before sending any following digits as DTMF.

- **E - Extension Number**

Replace with the extension number of the dialing user. Note that if a call is forwarded this will be the replaced with the extension number of the forwarding user.

- **I - Use Information Packet**

Send data in an Information Packet rather than Set-up Packet.

- **K - Use Keypad Field**

Place any following digits in the outgoing call's Keypad field rather than the Called Number field. Only supported on ISDN and QSIG.

- **L - Last Number Received**

Use the last number received.

- **N - Dialed Digit Wildcard Match**

Substitute with the digits used for the **N** or **X** character match in the Short Code number field.

- **p - Priority**

IP Office 4.2+: The [priority](#)^[34] of a call is normally assigned by the Incoming Call Route or else is **1-Low** for all other calls. [Dial Extn](#)^[45] short codes can use **p(x)** as a suffix to the **Telephone Number** to change the priority of a call. Allowable values for **x** are **1**, **2** or **3** for low, medium or high priority respectively.

- In situations where calls are queued, high priority calls are placed before calls of a lower priority. This has a number of effects:

- Mixing calls of different priority is not recommended for destinations where Voicemail Pro is being used to provided queue ETA and queue position messages to callers since those values will no longer be accurate when a higher priority call is placed into the queue. Note also that Voicemail Pro will not allow a value already announced to an existing caller to increase.
- If the addition of a higher priority call causes the queue length to exceed the hunt group's [Queue Length Limit](#)^[31], the limit is temporarily raised by 1. This means that calls already queued are not rerouted by the addition of a higher priority call into the queue.

- **S - Calling Number**

Place any following digits into the outgoing call's calling number field.

- **Outgoing CLI Warning**

Changing the outgoing CLI for calls requires the line provider to support that function. You must consult with your line provider before attempting to change the outgoing CLI, failure to do so may result in loss of service. If changing the outgoing CLI is allowed, most line providers required that the outgoing CLI used matches a number valid for return calls on the same trunks. Use of any other number may cause calls to be dropped or the outgoing CLI to be replaced with a valid number.

- Changing the outgoing CLI on calls using SIP trunks is not supported.

- On mobile twinned calls, if the original party information is used or a specific calling party information CLI is set, that number overrides setting the outgoing CLI using short codes.

- **SS - Pass Through Calling Number**

Pass through the Calling Party Number. For example, to provide the incoming ICLID at the far end of a VoIP connection, a short code ? with telephone number .SS should be added to the IP line.

- **i - National**

Both the **S** and **SS** characters can be followed by an **i**, that is **Si** and **SSi**. Doing this sets the calling party number plan to ISDN and number type to National. This may be required for some network providers.

- **t - Allowed Call Duration**

Set the maximum duration in minutes for a call plus or minus a minute. Follow the character with the number of minutes in brackets, for example **t(5)**.

- **U - User Name**

Replace with the User Name of the dialing user. Used with voicemail.

- **W - Withhold Outgoing CLI**

Withhold the sending of calling ID number. Operation is service provider dependent. Not supported on SIP lines.

- **Y - Wait for Call Progress Message**

Wait for a Call Progress or Call Proceeding message before sending any following digits as DTMF. For example, the Y character would be necessary at a site where they have signed up with their telephone service provider to withhold international dialing until a DTMF pin/account number is entered that initiates the call progress/proceeding message.

- **@ - Use Sub Address Field**

Enter any following digits into the sub-address field.

- **. - Dialed Digits**

Replace with the full set of dialed digits that triggered the short code match.

- **, - One Second Pause**

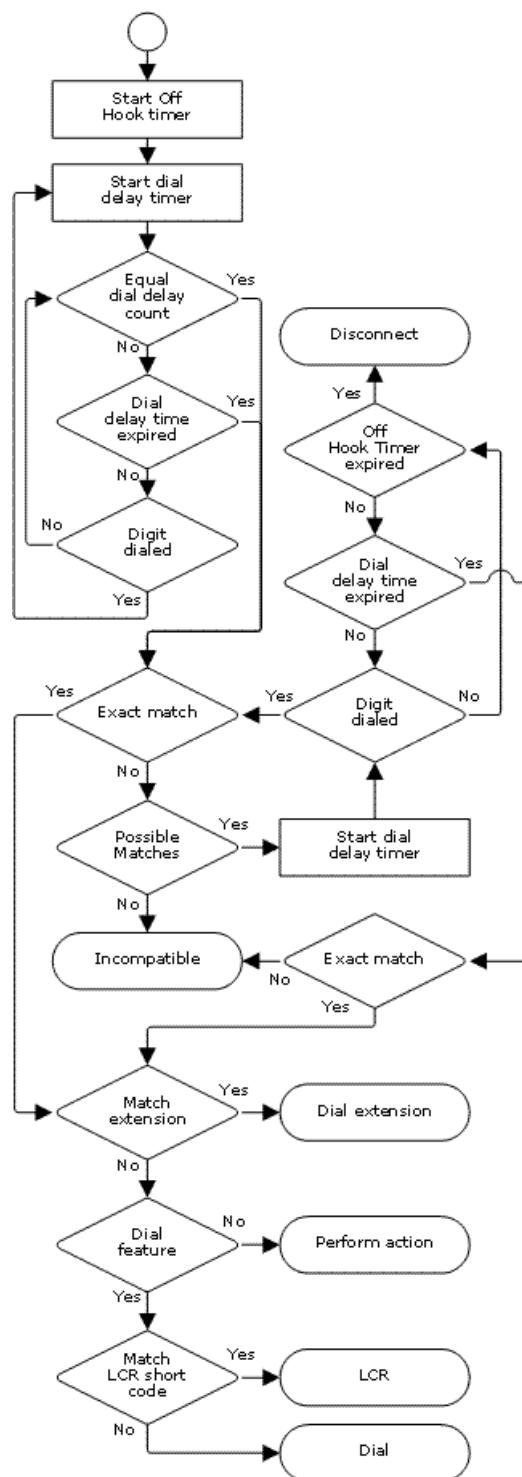
Add a one second pause in DTMF dialing.

- **" " - Non IP Office Characters**

Use to enclose any characters that should not be interpreted as possible short code special characters by the IP Office. For example characters being passed to the voicemail server.

6.2 User Dialing

Summary: Looks at how the IP Office looks for possible short code matches to user dialing.



The following IP Office settings influence user dialing.

- **Dial Delay Count:** *Default = 0 (US/Japan), 4 (ROW)*
This value sets the number of digits dialed before the IP Office looks for a short code match.
- **Dial Delay Time:** *Default = 4000ms (US/Japan), 1000ms (ROW)*
This value sets the maximum allowed interval between the dialing of each digit. If exceeded, the IP Office looks for a short code match even if the Dial Delay Count has not been reached.
- **Off-Hook Timer:** *Length Fixed by locale.*
When a user goes off-hook, the IP Office starts a 30 second off-hook timer (10 seconds in Italy). If the off-hook timer expires before a short code match occurs, the user is disconnected.

The following rules are used when short code matching is performed for user dialing:

- A short code is used immediately an exact match is found unless followed by a ;.
- If no match is found but partial matches exist, the user can continue dialing.
- If no match or partial matches are found, incompatible is returned.
- The following precedence is used to determine which short codes are used:
 - Extension number matches override all short codes.
 - User short codes override user rights and system short codes.
 - User Rights short code matches override system short codes.
- When multiple exact matches occur,
 - The match with the most specified digits rather than wildcards is used.
 - If there are still more than one match, the match with the most exact length is used. This means X wildcards will override N when both match.

6.3 Application Dialing

Numbers speed dialed by IP Office applications such as Phone Manager and SoftConsole are treated differently. Since the digits are received en bloc as a single group, they can override some short code matches. The same applies to short codes used within IP Office configuration settings such as Incoming Call Route destinations.

Example:

- Telephone Number: 12345678
- Short Code 1: 1234XX/207/DialExtn
- Short Code 2: 12345678/210/DialExtn

If dialed manually by the user, as soon as they have dialed 123456 a match to short code 1 occurs. They can never dial short code 2.

If dial using a Phone Manager speed dial, 12345678 is sent as a string and a match to short code 2 occurs.

Partial Dialing

If the application dialing does not trigger an exact match, the user can dial additional digits through their extension. The processes for normal user dialing are applied.

Non-Digit Short Codes

Short codes can be created that use alphabetic characters instead of numbers. While these short codes cannot be dialed from a phone, they can be dialed using application speed dials and settings. However characters that are interpreted as special short code characters will still be interpreted as such.

6.4 Secondary Dial Tone

Some locales prefer to provide users with secondary dial tone once they have started dialing external calls. This dial tone is heard by the user until they have completed dialing and a trunk is seized at which point call progress tones are provided by the trunk, or camp on/busy tone is provided by the IP Office if the required trunk cannot be seized.

IP Office 4.0 and Higher

For IP Office 4.0 and higher, the use of secondary dial tone is provided through the **Secondary Dial Tone** check box option on the [ARS](#) ^[408] form to which the call is routed. When on, this setting instructs the IP Office to play secondary dial tone to the user.

- The tone used is set as either **System Tone** (normal dial tone) or **Network Tone** (secondary dial tone). Both tone types are generated by the IP Office in accordance with the [system specific locale setting](#) ^[800]. Note that in some locales normal dial tone and secondary dial tone are the same.
- When **Secondary Dial Tone** is selected, the ARS form will return tone until it receives digits with which it can begin short code matching. Those digits can be the result of user dialing or digits passed by the short code which invoked the ARS form. For example with the following system short codes:
 - In this example, the 9 is stripped from the dialed number and is not part of the telephone number passed to the ARS form. So in this case secondary dial tone is given until the user dials another digit or dialing times out.
 - **Code:** 9N
 - **Telephone Number:** N
 - **Line Group ID:** 50 Main
 - In this example, the dialed 9 is included in the telephone number passed to the ARS form. This will inhibit the use of secondary dial tone even if secondary dial tone is selected on the ARS form.
 - **Code:** 9N
 - **Telephone Number:** 9N
 - **Line Group ID:** 50 Main

Pre-4.0 IP Office Secondary Dial Tone

Pre-4.0 IP Office systems provided dial tone through the use of the short code feature Secondary Dial Tone and the [] special characters. For example, on a system where 9 is used as a prefix for external dialing, the system short code 9/. Secondary Dial Tone/0 will trigger secondary dial tone when users dial a number prefixed with 9. This method is not supported by IP Office 4.0 which provides ARS forms for the control of outgoing calls.

In order to allow further digit matching, the digits dialed are put back through short code matching against any short codes that start with [n] where n is the digit used to trigger the system secondary dial tone short code.

- On all systems where secondary dial tone is used, a ; should also be used in dialing short codes that contain N.

For example:

- System Short Codes
 - 9/.SecondaryDialTone
 - [9]0N;/Dial/0
- User Short Code
 - [9]0N;/Busy/0

The user dials 90114445551234. The 9 matches the system secondary dial tone short code and unlike other short codes this is applied immediately. The user's dialing is put through short code matching again using the normal order of precedence but matched to possible short codes beginning [9]. In this case the user's [9]0N; short code would take precedence over the system [9]0N; short code.

6.5 ? Short Codes

The ? character is normally used in two ways;

- **Default Short Code Matching**

On IP Office systems outside North America, the system short code ?/.Dial/0 is added as a default short code. This short code provides a match for any dialing to which there is no other match. Therefore, on systems with this short code, the default is that any unrecognized number will be dialed to Outgoing Line Group 0.

- A ? short code used in user or user rights short codes is overridden by a ? system short code.

- **Hot-Line Dialing**

A user short code ?D can be used to perform a short code action immediately the user extension goes off-hook. This is supported with Dial type short code features (except **Dial Direct Hotline**). Typically it is used with door, lift and lobby phones to immediately connect the phone to a number such as the operator or reception.

The ? character can appear in the **Telephone Number** field of a short code. This is done with short codes using the **VoicemailCollect** feature. In this instance the ? character is not interpreted by the IP Office, it is used by the voicemail server.

6.6 Short Code Matching Examples

The following examples are not meant as practical examples. However they are simple to implement and test on a real system without conflicting with its normal operation. They illustrate the interaction between different short codes in resolving which short code is an exact match. They assume that extension numbers are in the 200 to 299 range.

The term 'dials' means dialing the indicated digit or digits without the inter-digit Dial Delay Time expiring.

The term 'pause' means a wait that exceeds the inter-digit Dial Delay Time.

Scenario 1		
Short Code 1 = 60/203/DialExtn. Dial Delay Count = 0. Dial Delay Time = 4 seconds.		
Test	Dialing	Effect
1	8	No possible match, incompatible returned immediately
2	6	No exact match but there is a potential match, so the system waits. When the Dial Delay Time expires, no exact match is found so incompatible is returned.
3	60	Exact match to Short Code 1. Extension 203 called immediately.
4	61	No possible match, the system returns incompatible.

Scenario 2		
Short Code 1 = 60/203/DialExtn. Short Code 2 = 601/210/Dial Extn. Dial Delay Count = 0. Dial Delay Time = 4 seconds.		
Test	Dialing	Effect
1	8	No possible match, incompatible returned immediately
2	60	Exact match to Short Code 1. Extension 203 called immediately.
3	601	Exact match to Short Code 1 as soon as the 0 is dialed. The user cannot manually dial 601. The only way they can dial 601 is using a Phone Manager speed dial set to dial that string.

Scenario 3		
Short Code 1 = 60/203/DialExtn. Short Code 2 = 601/210/Dial Extn. Dial Delay Count = 3. Dial Delay Time = 4 seconds.		
Test	Dialing	Effect
1	8	Insufficient digits to trigger matching. The system waits for additional digits or for Dial Delay Time to expire. When Dial Delay Time expires, no possible match is found so incompatible is returned.
2	60	Insufficient digits to trigger matching. The system waits for additional digits or for Dial Delay Time to expire. When Dial Delay Time expires, matching started and exact match to Short Code 1 occurs. .
3	601	Third digit triggers matching. Exact match to Short Code 2. Extension 210 dialed immediately.
4	60#	# is treated as a digit and as the third digit triggers matching. No exact match found. The system returns incompatible.

Scenario 4

Short Code 1 = 60;/203/DialExtn.

Short Code 2 = 601/210/Dial Extn.

Dial Delay Count = 3. Dial Delay Time = 4 seconds.

Test	Dialing	Effect
1	8	Insufficient digits to trigger matching. The system waits for additional digits or for Dial Delay Time to expire. When Dial Delay Time expires, no possible match is found so incompatible is returned.
2	6	Insufficient digits to trigger matching. The system waits for additional digits or for the interdigit Dial Delay Time to expire. If the Dial Delay Time expires, a potential match exists to a short code that uses ; so the system waits for an additional digit until the off-hook timer expires.
3	60	As above but an additional digit now may create a match. If 1 is dialed, it creates an exact match to Short Code 2 and is used immediately. If 0, * or 2 to 9 is dialed, no possible match exists. The system returns incompatible. If the next digit is a #, it is treated as signaling dialing complete rather than being a digit. Short code 1 becomes an exact match and is used immediately.
4	601	Third digit triggers matching. Exact match to Short Code 2. Extension 210 dialed immediately.

Scenario 5

Short Code 1 = 601/203/DialExtn.

Short Code 2 = 60N/210/Dial Extn.

Dial Delay Count = 0. Dial Delay Time = 4 seconds.

Test	Dialing	Effect
1	6	No exact match but there is a potential match, so the system waits for additional dialing. If the Dial Delay Time expires, no exact match is found so incompatible is returned.
2	60	Potential match to both short codes. The system waits for additional dialing. If the Dial Delay Time expires, Short Code 2 becomes an exact match with N blank.
3	601	Exact match to Short Code 1. Used immediately
4	602	Exact match to Short Code 2. Used immediately.

Scenario 6

Short Code 1 = 601/203/DialExtn.

Short Code 2 = 60N/210/Dial Extn.

Short Code 3 = 60X/207/DialExtn.

Dial Delay Count = 0. Dial Delay Time = 4 seconds.

Test	Dialing	Effect
1	6	No exact match but there are potential matches so the system waits for additional dialing. If the Dial Delay Time expires, no exact match has occurred so incompatible is returned.
2	60	Potential match to all short codes. System waits for additional dialing. If the Dial Delay Time expires, Short Code 2 becomes an exact match with N blank. If a digit is dialed, Short Code 3 becomes a more exact match and is used.
3	601	Exact match all short code, however Short Code 1 is treated as being more exact (more matching digits) and is used immediately
4	602	Exact match to short codes 2 and 3, however the Short Code 3 is treated as being more exact (length match) and is used immediately.

Scenario 7

Short Code 1 = 601/203/DialExtn.

Short Code 2 = 60N/210/Dial Extn.

Short Code 3 = 6XX/207/DialExtn.

Dial Delay Count = 0. Dial Delay Time = 4 seconds.

Test	Dialing	Effect
1	6	No exact match but there are potential matches so the system waits for additional dialing. If the Dial Delay Time expires, no exact match has occurred so incompatible is returned.
2	60	Potential match to all short codes. System waits for additional dialing. If the Dial Delay Time expires, Short Code 2 becomes an exact match with N blank. If a digit is dialed, Short Code 3 becomes an more exact match and is used.
3	601	Exact match all short code, however Short Code 1 is treated as being more exact (more matching digits) and is used immediately
4	602	Exact match to short codes 2 and 3, however the Short Code 2 is treated as being more exact (more matching digits) and is used immediately.
5	612	Exact match to Short Code 3.

6.7 Default System Short Code List

Most IP Office control units are available in A-Law and MU-Law models. Typically MU-Law models are supplied to North American locales, A-Law models are supplied to the rest of the world. In addition to the using different default companding for digital lines and phone, A-Law and MU-Law models support different default short codes.

The following table lists the default system short codes present in an IP Office 5.0+ system's configuration.

Short Code	Telephone Number	Feature	A-Law	MU-Law
*00	Blank	Cancel All Forwarding ^[450]	✓	✓
*01	Blank	Forward Unconditional On ^[477]	✓	✓
*02	Blank	Forward Unconditional Off ^[477]	✓	✓
*03	Blank	Forward On Busy On ^[475]	✓	✓
*04	Blank	Forward On Busy Off ^[475]	✓	✓
*05	Blank	Forward On No Answer On ^[476]	✓	✓
*06	Blank	Forward On No Answer Off ^[476]	✓	✓
*07*N#	N	Forward Number ^[474]	✓	✓
*08	Blank	Do Not Disturb On ^[467]	✓	✓
*09	Blank	Do Not Disturb Off ^[467]	✓	✓
*10*N#	N	Do Not Disturb Exception Add ^[466]	✓	✓
*11*N#	N	Do Not Disturb Exception Del ^[466]	✓	✓
*12*N#	N	Follow Me Here ^[471]	✓	✓
*13*N#	N	Follow Me Here Cancel ^[472]	✓	✓
*14*N#	N	Follow Me To ^[472]	✓	✓
*15	Blank	Call Waiting On ^[449]	✓	✓
*16	Blank	Call Waiting Off ^[449]	✓	✓
*17	?U	Voicemail Collect ^[502]	✓	✓
*18	Blank	Voicemail On ^[504]	✓	✓
*19	Blank	Voicemail Off ^[504]	✓	✓
*20*N#	N	Set Hunt Group Night Service ^[494]	✓	✓
*21*N#	N	Clear Hunt Group Night Service ^[453]	✓	✓
*22*N#	N	Suspend Call ^[500]	✓	✗
*23*N#	N	Resume Call ^[489]	✓	✗
*24*N#	N	Hold Call ^[479]	✓	✗
*25*N#	N	Retrieve Call ^[490]	✓	✗
*26		Clear CW ^[452]	✓	✗
*27*N#	N	Hold CW ^[480]	✓	✗
*28*N#	N	Suspend CW ^[500]	✓	✗
*29	Blank	Toggle Calls ^[501]	✓	✓
*30	Blank	Call Pickup Any ^[444]	✓	✓
*31	Blank	Call Pickup Group ^[445]	✓	✓
*32*N#	N	Call Pickup Extn ^[444]	✓	✓
*33*N#	N	Call Queue ^[447]	✓	✓
*34N;	N	Hold Music ^[480]	✓	✓
*35*N#	N	Extn Login ^[469]	✓	✓
*36	Blank	Extn Logout ^[469]	✓	✓
*37*N#	N	Park Call ^[485]	✓	✓
*38*N#	N	Unpark Call ^[501]	✓	✓
*39	1	Relay On ^[488]	✓	✓
*40	1	Relay Off ^[488]	✓	✓
*41	1	Relay Pulse ^[489]	✓	✓
*42	2	Relay On ^[488]	✓	✓
*43	2	Relay Off ^[488]	✓	✓
*44	2	Relay Pulse ^[489]	✓	✓
*45*N#	N	Acquire Call ^[448]	✓	✓
*46	Blank	Acquire Call ^[448]	✓	✓
*47	Blank	Conference Add ^[454]	✓	✓
*48	Blank	Voicemail Ringback On ^[505]	✓	✓

Short Code	Telephone Number	Feature	A-Law	MU-Law
*49	Blank	Voicemail Ringback Off ^[505]	✓	✓
*50	Blank	Forward Huntgroup On ^[473]	✓	✓
*51	Blank	Forward Huntgroup Off ^[473]	✓	✓
*52	Blank	Cancel or Deny ^[452]	✓	✓
*53*N#	N	Call Pickup Members ^[446]	✓	✓
*57*N#	N	Forward On Busy Number ^[474]	✓	✓
*70	Blank	Call Waiting Suspend ^[449]	✓	✗
*70*N#	N	Dial Physical Extn By Number ^[462]	✗	✓
*71*N#	N	Dial Physical Extn By ID ^[462]	✗	✓
9000	"MAINTENANCE"	Relay On ^[488]	✓	✓
*91N;	N".1"	Record Message ^[487]	✓	✓
*92N;	N".2"	Record Message ^[487]	✓	✓
9N	N	Dial ^[455]	✗	✓
?	.	Dial ^[455]	✓	✗

Additional short codes of the form *DSSN, *SDN, *SKN, these are used by the IP Office system for internal functions and should not be removed or altered. Short codes *#N and **N may also visible, these are used for ISDN functions in Scandinavian locales.

For IP Office 4.2+, the default ***34** short code for music on hold has changed to ***34N;**.

Default auto attendant short codes of the form ***81XX**, ***82XX**, ***83XX** and ***84XX** are only added when an [Embedded Voicemail auto attendant](#) ^[400] is added to the IP Office's configuration.

6.8 Short Code Features

This following section details the available IP Office short code features.

Acquire Call ^[438]	Dial Inclusion ^[460]	Hunt Group Disable ^[481]
AOC Previous Call ^[439]	Dial Paging ^[461]	Hunt Group Enable ^[481]
AOC Reset Total ^[439]	DialPhysicalExtensionByNumber ^[462]	Last Number Redial ^[482]
AOC Total ^[439]	DialPhysicalNumberByID ^[462]	MCID Activate ^[482]
Auto Attendant ^[440]	Dial Speech ^[463]	Mobile Twinned Call Pickup ^[482]
Barred ^[441]	Dial V110 ^[463]	Off Hook Station ^[483]
Break Out ^[440]	Dial V120 ^[463]	Outgoing Call Bar Off ^[484]
Busy ^[441]	Dial Video ^[463]	Outgoing Call Bar On ^[484]
Busy On Held ^[441]	Disable ARS Form ^[464]	Park Call ^[485]
Call Intrude ^[442]	Disable Internal Forwards ^[464]	Private Call ^[485]
Call Listen ^[443]	Disable Internal Forward Unconditional ^[464]	Private Call Off ^[486]
Call Pickup Any ^[444]	Disable Internal Forward Busy or No Answer ^[465]	Private Call On ^[486]
Call Pickup Extn ^[444]	Display Msg ^[465]	Priority Call ^[487]
Call Pickup Line ^[445]	Do Not Disturb Exception Add ^[466]	Record Message ^[487]
Call Pickup Group ^[445]	Do Not Disturb Exception Delete ^[466]	Relay On ^[488]
Call Pickup Members ^[446]	Do Not Disturb On ^[467]	Relay Off ^[488]
Call Pickup User ^[446]	Do Not Disturb Off ^[467]	Relay Pulse ^[489]
Call Queue ^[447]	Enable ARS Form ^[467]	Resume Call ^[489]
Call Record ^[447]	Enable Internal Forwards ^[468]	Retrieve Call ^[490]
Call Steal ^[448]	Enable Internal Forward Unconditional ^[468]	Ring Back When Free ^[490]
Call Waiting On ^[449]	Enable Internal Forward Busy or No Answer ^[468]	Secondary Dial Tone ^[491]
Call Waiting Off ^[449]	Extn Login ^[469]	Set Absent Text ^[492]
Call Waiting Suspend ^[449]	Extn Logout ^[469]	Set Account Code ^[493]
Cancel All Forwarding ^[450]	Flash Hook ^[470]	Set Authorization Code ^[493]
Cancel Ring Back When Free ^[450]	FNE ^[470]	Set Hunt Group Night Service ^[494]
Channel Monitor ^[450]	Follow Me Here ^[471]	Set Hunt Group Out Of Service ^[494]
Clear Call ^[452]	Follow Me Here Cancel ^[472]	Set Inside Call Seq ^[495]
Clear CW ^[452]	Follow Me To ^[472]	Set No Answer Time ^[497]
Clear Hunt Group Night Service ^[453]	Forward Hunt Group Calls On ^[473]	Set Mobile Twinning Number ^[496]
Clear Hunt Group Out Of Service ^[453]	Forward Hunt Group Calls Off ^[473]	Set Mobile Twinning On ^[496]
Clear Quota ^[454]	Forward Number ^[474]	Set Mobile Twinning Off ^[496]
Change Login Code ^[451]	Forward On Busy Number ^[474]	Set Outside Call Seq ^[497]
Conference Add ^[454]	Forward On Busy On ^[475]	Set Ringback Seq ^[498]
Conference Meet Me ^[454]	Forward On Busy Off ^[475]	Set Wrap Up Time ^[498]
CW ^[454]	Forward On No Answer On ^[476]	Shut Down Embedded Voicemail ^[499]
Dial ^[455]	Forward On No Answer Off ^[476]	Suspend Call ^[500]
Dial 3K1 ^[456]	Forward Unconditional On ^[477]	Suspend CW ^[500]
Dial 56K ^[456]	Forward Unconditional Off ^[477]	Toggle Calls ^[501]
Dial 64K ^[456]	Group Listen Off ^[478]	Unpark Call ^[501]
Dial CW ^[457]	Group Listen On ^[478]	Voicemail Collect ^[502]
Dial Direct ^[458]	Headset Toggle ^[479]	Voicemail Node ^[503]
Dial Direct Hot Line ^[458]	Hold Call ^[479]	Voicemail On ^[504]
Dial Emergency ^[459]	Hold CW ^[480]	Voicemail Off ^[504]
Dial Extn ^[459]	Hold Music ^[480]	Voicemail Ringback On ^[505]
Dial Fax ^[460]		Voicemail Ringback Off ^[505]

For each feature the following are listed:

- **Telephone Number:** The parameter required for the short code feature.
- **Default Short Code:** Whether the short code feature is used by any default system short code.
- **Phone Manager Control:** Whether the same action can be performed by a user control within Phone Manager application.
- **SoftConsole Control:** Whether the same action can be performed by a user control within the SoftConsole application.
- **Programmable Button Control:** Whether the same action can be assigned to a programmable button.
- **Toggle Short Codes**
Previously the [Set Hunt Group Night Service](#) ^[494], [Set Hunt Group Out of Service](#) ^[494] and [Hunt Group Enable](#) ^[481] short code features toggled. That behaviour is not supported in 4.0+.

6.8.1 Acquire Call

See [Call Steal](#) ⁴⁴⁸.

6.8.2 AOC Previous Call

Display of advice of charge information is only supported on T3 phones, T3 IP phones and Phone Manager.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **IP Office Software Level:** 4.0+.

6.8.3 AOC Reset Total

Display of advice of charge information is only supported on T3 phones, T3 IP phones and Phone Manager.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **IP Office Software Level:** 4.0+.

6.8.4 AOC Total

Display of advice of charge information is only supported on T3 phones, T3 IP phones and Phone Manager.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **IP Office Software Level:** 4.0+.

6.8.5 Auto Attendant

This feature is used with embedded voicemail on Small Office Edition, IP406 V2 and IP Office 500 systems. It allows the recording of the greetings used by auto-attendant services and the transfer of calls to that auto attendant. This feature was previously called **Record Greeting**.

- **Telephone Number:** ✓
 - For pre-IP Office 4.1, the number takes the form **AA:Name.x** where **Name** is the auto-attendant service name and **x** is the greeting (1 = morning, 2 = afternoon, 3 = evening and 4 = options menu). The .x part can be omitted in which case the short code is used to connect the caller to the named auto attendant service.
 - For IP Office 4.1+ each auto attendant is assigned a number. This can be used in numbers that take the form **AA:N.x**, where **N** is the auto attendant number and **x** is the greeting (1 = morning, 2 = afternoon, 3 = evening and 4 = options menu). The .x part can be omitted in which case the short code is used to connect the caller to the named auto attendant service.
- **Default Short Code:** ✓ See [Configuration Settings | Auto Attendant](#)^[400].
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **IP Office Software Level:** 2.0+.

6.8.6 Break Out

This feature is usable within an IP Office [Small Community Network](#)^[792]. It allows a user on one system in the network to specify that the following dialing be processed by another IP Office system on the network as if the user dialed it locally on that other system. This feature is not supported for SIP extensions.

For pre-IP Office 5.0 systems, this feature requires the IP Offices to have **Advanced Small Community Networking** licenses.

- **Telephone Number:** The IP Address or Name of the IP Office system, using * characters in place of . characters.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** [BkOut](#)^[566]
- **IP Office Software Level:** 4.0+.

Example

On a system, to break out via a system called RemoteSwitch with the IP Address 192.168.42.3, either of the following short codes could be used.

Example 1

- **Code:** *80*N#
- **Telephone Number:** N
- **Feature:** Break Out

Example 2

- **Code:** *81
- **Telephone Number:** RemoteSwitch
- **Feature:** Break Out

Example 1 allows break out using any remote switch by dialing its IP address, for example *80*192*168*42*3#. Example 2 does this for a specific remote system by dialing just *81.

6.8.7 Barred

This short code feature can be used for call barring by using the short code as the call destination. This short code feature was previously called **Busy**. It has been renamed but its function has not changed.

When used in an [ARS form](#) ⁽⁴⁰⁶⁾ that has been configured with an Alternate Route, for callers whose dialing has matched the short code no further routing is applied.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **IP Office Software Level:** 1.0+.

6.8.8 Busy On Held

When on, busy on held returns busy to new calls when the user has an existing call on hold. This short code feature is useful when a user does not want to be distracted by an additional incoming call when they have a call on hold.

- **Telephone Number:** ✓ Y or 1 for on, N or 0 for off.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [BusyH](#) ⁽⁵⁶⁸⁾
- **IP Office Software Level:** 1.0+.

Example: Turning Busy on Held on

If on, when the user has a call on hold, new calls receive busy tone (ringing if analog) or are diverted to Voicemail if enabled, rather than ringing the user. Note: this overrides call waiting when the user has a call on hold.

- **Short Code:** *12
- **Telephone Number:** Y
- **Feature:** BusyOnHeld

Example: Turning Busy on Held off

Another short code must be created to turn the Busy on Held feature off. If off, when the user has a call on hold, new calls will still get directed to the user.

- **Short Code:** *13
- **Telephone Number:** N
- **Feature:** BusyOnHeld

6.8.9 Call Intrude

This feature intrudes on the existing connected call of the specified target extension. All call parties are put into a conference and can talk to and hear each other. Use of this feature is subject to the Can Intrude status of the intruder and the Cannot be Intruded status of the target.

A Call Intrude attempt to a user who is idle becomes a [Priority Call](#) ^[487].

- Note that this feature requires conference resources from the IP Office system for the duration of the intrusion.
- IP Office 4.0+ provides privacy features that allow users to indicate that a call cannot be intruded on. See [Private Calls](#) ^[746].
- For IP Office 4.2+, intruding onto an a user doing silent monitoring ([Call Listen](#) ^[443]) is turned into a silent monitoring call.

- **Telephone Number:** ✓ Target extension number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✓ Actions | Intrude.
- **Programmable Button Control:** ✓ [Intru](#) ^[576]
- **See also:** [Call Listen](#) ^[443], [Dial Inclusion](#) ^[466].
- **IP Office Software Level:** 1.0+.

6.8.10 Call Listen

This feature allows a user to monitor another user's call without being heard. Monitoring is different from call intrusion. Note that this feature requires conference resources from the IP Office system for the duration of the intrusion.

- **WARNING**

Monitoring is not enabled by default. The use of monitoring is may be subject to local laws and regulations. Before enabling monitoring you must ensure that you have complied with all applicable local laws and regulations. Failure to do so may result in severe penalties.

Monitoring can be accompanied by a tone heard by all parties. Use of the tone is controlled by the [Beep on Listen](#)^[169] setting on the [System | Telephony | Tones & Music](#)^[169] tab. The default for this setting is on. This is the only indication of monitoring, if enabled, given to the monitored user. There is no phone display indication of monitoring.

The use of call listen is dependant on:

- The target being a member of the group set as the user's [Monitor Group](#)^[279] ([User | Telephony | Supervisor Settings](#))^[279].
 - The Can Intrude setting of the user listening and the Cannot be Intruded setting of the target. Monitoring is independent of the settings of the third party to the call if they are internal.
 - This feature uses IP Office conference resources. If insufficient conference resource are available it will not be possible to use this feature.
 - For IP Office 4.0+ a number of new features are supported for call listening:
 - Users can be given privacy features that allow them to indicate that a call cannot be monitored. See [Private Calls](#)^[740].
 - IP extensions can be monitored including those using direct media. Previously the monitoring of IP extensions could not be guaranteed.
 - The monitoring call can be initiated even if the target user is not currently on a call and remains active until the monitoring user clears the monitoring call.
 - The user who initiated the call listen can also record the call.
 - For IP Office 4.2+, intruding onto an a user doing silent monitoring ([Call Listen](#)^[443]) is turned into a silent monitoring call.
 - 1600 Series phones with a user button can initiate listening using that button if the target user meets the criteria for listening.
-
- **Telephone Number:** ✓ Target extension number (extension must be local).
 - **Default Short Code:** ✗
 - **Phone Manager Control:** ✗
 - **SoftConsole Control:** ✗
 - **Programmable Button Control:** ✓ [Listn](#)^[571]
 - **See also:** [Call Intrude](#)^[442], [Dial Inclusion](#)^[460].
 - **IP Office Software Level:** 1.0+.

Example

User 'Extn205' wants to be able to monitor calls received by members of the Hunt Group 'Sales'.

1. For user 'Extn205', in the [Monitor Group](#)^[279] ([User | Telephony | Supervisor Settings](#))^[279] list box select the hunt group.
2. Ensure that **Can Intrude** is checked.
3. Create a user short code to allow Extn205 to start monitoring.
 - **Short Code:** *99*N#
 - **Telephone Number:** N
 - **Line Group ID:** 0.
 - **Feature:** CallListen
4. For each member of the hunt group, check that their **Cannot be Intruded** setting is unchecked.
5. Now when a member of the 'Sales' hunt group is on a call, Extn205 can replace N in the short code with the extension number of that member and monitor their call.

6.8.11 Call Pickup Any

Pick up the first available ringing call.

- **Telephone Number:** ✗
- **Default Short Code:** ✔ *30
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✔ [PickA](#)^[574]
- **See also:** [Call Pickup Extn](#)^[444], [Call Pickup Group](#)^[445], [Call Pickup Members](#)^[446], [Acquire Call](#)^[446], [Call Pickup Line](#)^[445], [Call Pickup User](#)^[446].
- **IP Office Software Level:** 1.0+.

Example

Below is an example of the short code setup:

- **Short Code:** *30
- **Feature:** CallPickupAny

6.8.12 Call Pickup Extn

Pick up a ringing call from a specific extension.

- **Telephone Number:** ✔ Target extension number.
- **Default Short Code:** ✔ *32*N#
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✔ [CpkUp](#)^[574]
- **See also:** [Call Pickup Any](#)^[444], [Call Pickup Group](#)^[445], [Call Pickup Members](#)^[446], [Acquire Call](#)^[446], [Call Pickup Line](#)^[445], [Call Pickup User](#)^[446].
- **IP Office Software Level:** 1.0+.

Example

This short code is a default within the Manager configuration. N represents the specific extension. For example, if a user dials *32*201#, they will pick up the call coming into extension 201.

- **Short Code:** *32*N#
- **Telephone Number:** N
- **Feature:** CallPickupAny

6.8.13 Call Pickup Group

Pick up a call ringing any hunt group of which the user is a member.

- **Telephone Number:** ✗
- **Default Short Code:** ✔ *31
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✔ [PickG](#)^[57b]
- **See also:** [Call Pickup Any](#)^[444], [Call Pickup Extn](#)^[444], [Call Pickup Members](#)^[446], [Acquire Call](#)^[448], [Call Pickup Line](#)^[448], [Call Pickup User](#)^[446].
- **IP Office Software Level:** 1.0+.

Example

Below is an example of the short code setup.

- **Short Code:** *31
- **Feature:** CallPickupGroup

6.8.14 Call Pickup Line

Pick up an incoming call which is alerting, parked or held. The pickup uses the Line Appearance ID specified in Telephone Number field of the short code. It cannot be used to pickup conferenced calls. The normal user intrusion features are not applied to this pickup feature. This feature is not supported on T3 phones.

- **Telephone Number:** ✔ Target Line Appearance ID.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **See also:** [Call Pickup Any](#)^[444], [Call Pickup Extn](#)^[444], [Call Pickup Group](#)^[445], [Call Pickup Members](#)^[446], [Acquire Call](#)^[448], [Call Pickup User](#)^[446].
- **IP Office Software Level:** 4.0+ (Added in the IP Office 4.0 Q2 2007 maintenance release).

Example

This short code is a default within the Manager configuration. N represents the specific Line Appearance ID.

- **Short Code:** *99*N#
- **Telephone Number:** N
- **Feature:** CallPickupLine

6.8.15 Call Pickup Members

This feature can be used to pick up a ringing or queuing call at an extension that is a member of the Hunt Group specified. The call picked up does not have to be a hunt group call.

- **Telephone Number:** ✓ Group number or "Group name".
- **Default Short Code:** ✓ *53*N#
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [PickM](#)^[575]
- **See also:** [Call Pickup Any](#)^[444], [Call Pickup Extn](#)^[444], [Call Pickup Group](#)^[445], [Acquire Call](#)^[446], [Call Pickup Line](#)^[445], [Call Pickup User](#)^[446].
- **IP Office Software Level:** 1.0+.

Example

Below is an example of the short code setup. N represents the extension number of the Hunt Group. For example, if a user dials *53*500#, they will pick up the call coming into extension 500 (the hunt group's extension).

- **Short Code:** *53*N#
- **Telephone Number:** N
- **Feature:** CallPickupMembers

6.8.16 Call Pickup User

Pick up an incoming call which is alerting, parked or held. The pickup uses the user extension number specified in Telephone Number field of the short code. If there are multiple calls, priority is given to picking up alerting, then parked and then held in that order of priority. It cannot be used to pickup conferenced calls. The normal user intrusion features are not applied to this pickup feature. This feature is not supported on T3 phones.

- **Telephone Number:** ✓ Target user extension number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **See also:** [Call Pickup Any](#)^[444], [Call Pickup Extn](#)^[444], [Call Pickup Group](#)^[445], [Call Pickup Members](#)^[446], [Acquire Call](#)^[446], [Call Pickup Line](#)^[445].
- **IP Office Software Level:** 4.0+ (Added in the IP Office 4.0 Q2 2007 maintenance release).

Example

N represents the specific user.

- **Short Code:** *99*N#
- **Telephone Number:** N
- **Feature:** CallPickupUser

6.8.17 Call Queue

Queue the current call to the destination phone, even when the destination phone is busy. This is the same as a transfer except it allows you to transfer to a busy phone.

- **Telephone Number:** ✓ Target extension number.
- **Default Short Code:** ✓ *33*N#
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [Queue](#) ^[576]
- **IP Office Software Level:** 1.0+.

Example

Below is an example of the short code setup. N represents the extension the caller wishes to queue for. For example, if a user dials *33*201# while connected to a caller, this caller will be queued for extension 201.

- **Short Code:** *33*N#
- **Telephone Number:** N
- **Feature:** CallQueue

6.8.18 Call Record

This feature allows you to record a conversation. To use this requires Voicemail Pro. Refer to your local regulations in relation to the recording of calls.

- This feature uses IP Office conference resources. If insufficient conference resource are available it will not be possible to use this feature.

IP Office 4.0+ provides privacy features that allow users to indicate that a call should not be recorded. See [Private Calls](#) ^[740].

- **Telephone Number:** ✓ Target extension number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [Recor](#) ^[576]
- **IP Office Software Level:** 1.0+.

Example: Record your own extension's call

To use this short code, the user should place the call on hold and dial *55. They will automatically be reconnected to the call when recording begins.

- **Short Code:** *55
- **Telephone Number:** None
- **Feature:** CallRecord

6.8.19 Call Steal

This function can be used with or without a specified user target.

- If the specified target has alerting calls, the function will connect to the longest waiting call.
 - If the specified target has no alerting calls but does have a connected call, the function will take over the connected call, disconnecting the original user. This usage is subject to the **Can Intrude** setting of the user and the **Cannot Be Intruded** setting of the target. The feature is independent the intrude settings of the third party to the call.
 - If no target is specified, the function attempts to reclaim the users last transferred call if it has not been answered or has been answered by voicemail.
-
- **Telephone Number:** ✓ Target extension number or blank for last call transferred.
 - **Default Short Code:** ✓ *45*N# and *46
 - **Phone Manager Control:** ✓ Actions | Reclaim
 - **SoftConsole Control:** ✓ Actions | Reclaim Call.
 - **Programmable Button Control:** ✓ [Acquire](#) ⁵⁶⁶
 - **IP Office Software Level:** 2.1 ✓, 3.0DT ✓, 3.0 ✓, 3.1 ✓, 3.2 ✓, 4.0 ✓, 4.1 ✓.

Example: Taking Over a Call

In this example, N represents the extension to be taken over. For example, if a user dials *45*201#, they will take over the current call on extension 201.

- **Short Code:** *45*N#
- **Telephone Number:** N
- **Feature:** Call Steal

Example: Reclaiming a Call

This short code reclaims the last call from your extension. This function is useful when you want to catch a call you have just missed that has gone off to Voicemail.

- **Short Code:** *46
- **Feature:** Call Steal

6.8.20 Call Waiting On

Enables call waiting on the user's extension. When on, if the user receives a second call when already on a call, they hear a call waiting tone in the speech path.

Call waiting settings are ignored for users with multiple call appearance buttons. In this case the appearance buttons are used to indicate additional calls. Call waiting is automatically applied for users with 'internal twinned' phones.

- **Telephone Number:** ✗
- **Default Short Code:** ✔ *15
- **Phone Manager Control:** ✔
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✔ [CWOOn](#)^[578]
- **See also:** [Call Waiting Off](#)^[449], [Call Waiting Suspend](#)^[449].
- **IP Office Software Level:** 1.0+.

Example

Below is a sample of the short code setup.

- **Short Code:** *15
- **Feature:** CallWaitingOn

6.8.21 Call Waiting Off

Disables call waiting on the user's extension. Call waiting may be applied for users with internal twinned phones regardless of their call waiting settings.

- **Telephone Number:** ✗
- **Default Short Code:** ✔ *16
- **Phone Manager Control:** ✔
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✔ [CWOOff](#)^[578]
- **See also:** [Call Waiting On](#)^[449], [Call Waiting Suspend](#)^[449].
- **IP Office Software Level:** 1.0+.

Example

Below is a sample of the short code setup.

- **Short Code:** *16
- **Feature:** Call Waiting Off

6.8.22 Call Waiting Suspend

For phones using call waiting, this feature temporarily disables call waiting for the duration of the user's next call.

- **Telephone Number:** ✗
- **Default Short Code:** ✔ *70 (A-Law only)
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✔ [CWSus](#)^[579]
- **See also:** [Call Waiting On](#)^[449], [Call Waiting Off](#)^[449].
- **IP Office Software Level:** 1.0+.

Example

Below is a sample of the short code setup. This short code is a default within the Manager configuration.

- **Short Code:** *70
- **Feature:** CallWaitingSuspend

6.8.23 Cancel All Forwarding

This feature cancels all forms of forwarding on the user's extension including "Follow Me" and "Do Not Disturb".

- **Telephone Number:** ✗
- **Default Short Code:** ✔ *00
- **Phone Manager Control:** ✔
- **SoftConsole Control:** ✔
- **Programmable Button Control:** ✔ [FwdOf](#)^[579]
- **See also:** [Forward On Busy On](#)^[475], [Forward On Busy Off](#)^[475], [Forward On No Answer On](#)^[476], [Forward On No Answer Off](#)^[476], [Forward Unconditional On](#)^[477], [Forward Unconditional Off](#)^[477], [Do Not Disturb On](#)^[467], [Do Not Disturb Off](#)^[467].
- **IP Office Software Level:** 1.0+.

Example

Below is a sample of the short code setup.

- **Short Code:** *00
- **Feature:** CancelCallForwarding

6.8.24 Cancel Ring Back When Free

Cancels any existing ring back (also known as callback) set by the user.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✔ [RBak-](#)^[580]
- **See also:** [Ring Back When Free](#)^[490].
- **IP Office Software Level:** 1.0+.

Example: Cancel Ring Back When Free

This example Short Code will cancel Ring Back When Free on the specified extension. N represents the target extension from which you have set a ring back. For example, if Paul has set a ring back on extension 201, he must dial *84*201# to cancel that ring back request.

- Short Code: *84*N#
- Telephone Number: N
- Feature: CancelRingBackWhenFree

6.8.25 Channel Monitor

For Avaya use only.

- **IP Office Software Level:** 1.0+.

6.8.26 Change Login Code

Allows a user to change their log in code.

- **Telephone Number:** ✓ The user's current and new log in codes separated by a *, see the examples below.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **IP Office Software Level:** 4.2+ (Also added to IP Office 4.1 2008Q2 Maintenance release).

Example

The user has a **Login Code** of **1234** and wants to change it to **5678**. To use the short code below below, the user must dial ***60*1234*5678#**.

- **Short Code:** *60*N#
- **Telephone Number:** N
- **Feature:** Change Login Code.

Example

For a user with no login code currently set, they can still use the short code to set a login code. For example using the short code created above to set their login code to 1234 they should dial ***60**1234#**.

Example

System phone users can also use this short code to change the login code of an other user. For example 403 is configured as a [System Phone](#)^[749] with a login code of **1234**. User 410 has forgotten their login code and needs it changed. User 403 can do this by dialing the following:

- ***60*410*1234*<new code>#**

6.8.27 Clear After Call Work

This feature can be used by users who have been configured as CCR agents. It allows them to dial a short code to exit the After Call Work (ACW) state as reported by the IP Office Customer Call Reporter (CCR) application.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [ACW](#) ^[562]
- **See also:** [Start After Call Work](#) ^[501].
- **IP Office Software Level:** 4.2 4Q 2008 Maintenance release+.

6.8.28 Clear Call

This feature can be used to end the current call.

- **Telephone Number:** ✗
- **Default Short Code:** ✓ *52
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ [Clear](#) ^[582]
- **IP Office Software Level:** 1.0+.

Example

Below is a sample of the short code setup. This example could be used in a situation where you are doing a supervised transfer and the party to be transferred to does not want to take the call. In this scenario, you can put the call on hold and dial *52. This will clear the last connected call (for example the party who has just refused the transfer), and retrieve the original call or dial tone.

- **Short Code:** *52
- **Feature:** Deny/ClearCall

6.8.29 Clear CW

This feature is most commonly used to end the user's current call and answer the waiting call. Note: Call waiting settings are ignored for users with multiple call appearance buttons.

- **Telephone Number:** ✗
- **Default Short Code:** ✓ *26 (A-Law only)
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [ClrCW](#) ^[582]
- **IP Office Software Level:** 1.0+.

Example

Below is a sample of the short code setup.

- **Short Code:** *26
- **Feature:** ClearCW

6.8.30 Clear Hunt Group Night Service

This feature changes the specified hunt group from 'Night Service' mode to 'In Service' mode. This will not override a hunt group in night service due to a time profile.

- **Telephone Number:** ✓ Hunt group extension number. For IP Office 4.0+, if left blank, the short code will affect all hunt groups of which the user is a member.
- **Default Short Code:** ✓ *21*N#
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ HGNS-^[583]
- **See also:** [Clear Hunt Group Out Of Service](#)^[453], [Set Hunt Group Night Service](#)^[494], [Set Hunt Group Out Of Service](#)^[494].
- **IP Office Software Level:** 1.0+.

Example

Below is a sample of the short code setup. N represents the telephone number of the hunt group to be taken out of "Night Service" mode and placed into "In Service" mode. For example, when *21*201# is dialed, the hunt group associated with extension 201 will be taken out of "Night Service" mode.

- **Short Code:** *21*N#
- **Telephone Number:** N
- **Feature:** ClearHuntGroupNightService

6.8.31 Clear Hunt Group Out Of Service

This feature changes the specified hunt group from 'Out of Service' mode to 'In Service' mode. This will not override a hunt group in night service due to a time profile.

- **Telephone Number:** ✓ Hunt group extension number. For IP Office 4.0+, if left blank, the short code will affect all hunt groups of which the user is a member.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ HGOS-^[583]
- **See also:** [Clear Hunt Group Night Service](#)^[453], [Set Hunt Group Night Service](#)^[494], [Set Hunt Group Out Of Service](#)^[494].
- **IP Office Software Level:** 1.0+.

Example

Below is a sample short code using the Clear Hunt Group Out Of Service feature. N represents the telephone number of the hunt group to be taken out of "Out of Service" mode. For example, when *55*201# is dialed, the hunt group associated with extension 201 will be placed into "In Service" mode.

- **Short Code:** *55*N#
- **Telephone Number:** N
- **Feature:** ClearHuntGroupOutOfService

6.8.32 Clear Quota

This feature refreshes the time quota for all services or a specific service.

- **Telephone Number:** ✓ "Service name" or "" (all services).
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [Quota](#) ^[584]
- **IP Office Software Level:** 1.0+.

6.8.33 Conference Add

Places any calls the user has on hold into a conference with the user. This feature is useful for impromptu conferences.

- **Telephone Number:** ✗
- **Default Short Code:** ✓ *47
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [Conf+](#) ^[584]
- **See also:** [Conference Meet Me](#) ^[454].
- **IP Office Software Level:** 1.0+.

Example

Below is a sample of the short code setup.

- **Short Code:** *47
- **Feature:** ConferenceAdd

6.8.34 Conference Meet Me

This feature allows a user to join a specific conference.

For pre-IP Office 5.0 systems, this function is not supported on IP500 systems without an **IP500 Upgrade Standard to Professional** license.

- **Telephone Number:** ✓ Conference number. This can be an alphanumeric value up to 15 characters.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [CnfRv](#) ^[585]
- **See also:** [Conference Add](#) ^[454].
- **IP Office Software Level:** 1.0+.

6.8.35 CW

Pick up the waiting call. This feature provides same functionality as pressing the Recall or Hold key on the phone. Unlike the Clear CW feature, this feature does not disconnect you from the existing call when the second call is picked up.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **IP Office Software Level:** 1.0+.

6.8.36 Dial

This short code feature allows users to dial the number specified to an outside line.

- **Telephone Number:** ✓ Telephone number.
- **Default Short Code:** ✓ Various depending on locale.
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ [Dial](#) ^[58]
- **See also:** [Dial Direct](#) ^[458], [Dial Emergency](#) ^[459], [Dial Extn](#) ^[459], [Dial Inclusion](#) ^[460], [Dial Paging](#) ^[461].
- **IP Office Software Level:** 1.0+.

Example: Creating a Speed Dial

In this example, users entering 401 on their telephone key pad will dial the New Jersey Office on 212 555 0000.

- **Short Code:** 401
- **Telephone Number:** 2125550000

Example: Replace Outgoing Caller ID

This short code is useful in a "call center" environment where you do not want customers to have access to the number of your direct line; you want the general office number displayed. The sample short code below will force the outgoing caller ID to display 123. Note: The usability of this feature is dependent upon your local service provider.

- **Short Code:** ?
- **Telephone Number:** .s123

Example: External Dialing Prefix

The short code is for dialing a prefix for an outside line N represents the external number you want to call.

- **Short Code:** 9N
- **Telephone Number:** N

Example: Blocking Caller ID

This is for blocking Caller ID for external calls. This feature can be applied to specific external numbers or to all out going calls. In most situations, the company will choose to block the caller ID for all external calls or leave it available for all external calls.

- **Short Code:** 9N
- **Telephone Number:** NW

Example: Maximum Call Length

The character t can be used in dialing short codes to set the maximum allowed duration of a call. For example, the following short code will dial a number but then disconnect the call after 20 minutes (plus or minus a minute).

- **Short Code:** 9N
- **Telephone Number:** Nt(20)

6.8.37 Dial 3K1

Sets the ISDN bearer capabilities to 3.1Khz audio call.

- **Telephone Number:** ✓ Telephone number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [D3K1](#) 5887
- **IP Office Software Level:** 1.0+.

6.8.38 Dial 56K

Sets the ISDN bearer capabilities to 56Kbps data call.

- **Telephone Number:** ✓ Telephone number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [D56K](#) 5887
- **IP Office Software Level:** 1.0+.

6.8.39 Dial 64K

Sets the ISDN bearer capabilities to 64Kbps data call.

- **Telephone Number:** ✓ Telephone number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [D64K](#) 5887
- **IP Office Software Level:** 1.0+.

6.8.40 Dial CW

Call the specified extension number and force call waiting indication on if the extension is already on a call.

If the user has call appearance buttons programmed, call waiting will not get activated. The next incoming call will appear on an available call appearance button. When there are no available call appearance buttons, the next incoming call will receive busy tone.

- **Telephone Number:** ✓ Extension number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [DCW](#) ⁵⁸⁹
- **IP Office Software Level:** 1.0+.

Example

N represents the extension number to be dialed. For example, a user dialing *97*201# will force call waiting indication on at extension 201 if extension 201 is already on a call.

- **Short Code:** *97*N#
- **Telephone Number:** N
- **Feature:** DialCW

6.8.41 Dial Direct

Call the extension specified and force automatic answer if supported by the telephone type.

- **Telephone Number:** ✓ Extension number
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [Direct](#) ^[589]
- **See also:** [Dial Paging](#) ^[461].
- **IP Office Software Level:** 1.0+.

Example

This allows the extension specified to be automatically answered. N represents the extension that will be forced to automatically answer. For example, when a user dials *83*201#, extension 201 will be forced to automatically answer the call.

- **Short Code:** *83*N#
- **Telephone Number:** N
- **Feature:** DialDirect

6.8.42 Dial Direct Hot Line

When the line appearance is mapped to a short code using the DialDirectHotLine short code feature, no secondary dial tone is generated and the number is dialed directly. This feature should not be confused with the hot line feature enabled using [?D](#) ^[431] short codes.

- **Telephone Number:** ✓
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **IP Office Software Level:** 3.0+.

Example

Below is a sample short code using the DialDirectHotLine feature. The short code *83* should then be set as the prefix for the particular line required.

- **Short Code:** *83*
- **Telephone Number:** .
- **Feature:** DialDirectHotLine

6.8.43 Dial Emergency

Dials the number specified regardless of any call barring applicable to the user.

On all IP Office systems, regardless of locale, system and or ARS, short codes using the Dial Emergency feature should be created for any required emergency service numbers. Those short codes should be useable by all users from all extensions. Those short codes should route the calls to suitable lines. If the system uses prefixes for external dialing, the dialing of emergency numbers with and without the prefix should be allowed. Note that the blocking of emergency numbers or the routing of emergency numbers to a intermediate destination other than the emergency network may be against local and national laws.

For systems with a United States locale, the Dial Emergency short code acts differently. Calls matched to Dial Emergency short codes are routed using the details contained in the [E911 forms](#)^[420]. This routing will then be either via installed E911 Adjunct equipment or via grouped set of trunks and extensions called zones.

- **Telephone Number:** ✓ Telephone number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [Emrgy](#)^[590]
- **IP Office Software Level:** 1.0+.

6.8.44 Dial Extn

This feature can be used to dial an internal extension number (user or hunt group).

- **Telephone Number:** ✓ Extension number.
 - IP Office 4.2+ can use **p(x)** as a suffix to the **Telephone Number** to change the [priority](#)^[345] of a call. Allowable values for **x** are **1**, **2** or **3** for low, medium or high priority respectively. For example **Np(1)**.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **See also:** [Dial Direct](#)^[450], [Dial Paging](#)^[461], [DialPhysicalExtensionByNumber](#)^[462], [DialPhysicalNumberByID](#)^[462].
- **IP Office Software Level:** 1.0+.

Example: Dial on Pick up

The following user short code dials the extension specified the moment the user's handset is picked up.

- **Short Code:** ?D
- **Telephone Number:** 201
- **Line Group ID:** 0
- **Feature:** DialExtn

6.8.45 Dial Fax

This feature is used to route fax calls via [T38 Fax Relay](#)^[732].

- **Telephone Number:** ✓ Fax destination number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **IP Office Software Level:** 5.0+.

Example:

In this example, the line group ID matches the URI configured on a SIP line that has been configured for T38 Fax Relay.

- **Short Code:** 6N
- **Telephone Number:** N"@192.16.42.5"
- **Line Group ID:** 17
- **Feature:** Dial Fax

6.8.46 Dial Inclusion

This feature intrudes on the existing call of the specified target extension. The intruder and the target extension can then talk but cannot be heard by the other party. This can include intruding into a conference call, where the conference will continue without the intrusion target.

During the intrusion all parties hear a repeated intrusion tone. When the intruder hangs-up the original call parties are reconnected.

Use of this feature is subject to the Can Intrude status (configured in Manager via the User form's [Telephony](#)^[277] tab) of the intruder and the target extension (the extension to be intruded upon).

Attempting to hold a dial inclusion call simply ends the intrusion part of the call. The inclusion cannot be parked.

- **Telephone Number:** ✓ Target extension number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [Inclu.](#)^[590]
- **See also:** [Call Intrude](#)^[442].
- **IP Office Software Level:** 1.4+.

Example

N represents the extension to be intruded upon. For example, if a user dials *97*201# while extension 201 is on a call, then the user is intruding into extn. 201's current call.

- **Short Code:** *97*N#
- **Telephone Number:** N
- **Feature:** DialInclusion

6.8.47 Dial Paging

This feature makes a page call to an extension or group. The target extension or group members must support page calls (that is be able to auto-answer calls).

- **Telephone Number:** ✓ Extension or group number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✓ (Groups only)
- **Programmable Button Control:** ✓ [Page](#)^[592]
- **See also:** [Dial Direct](#)^[458].
- **IP Office Software Level:** 1.0+.

Paging Limits

The table below lists the maximum recommended size for paging groups.

IP Office Control Unit	Software Level	
	4.0+	3.2
IP500	64	–
IP412	48	24
IP406 V2	32	16
Small Office Edition	16	16
IP406 V1	–	16
IP403	–	16

6.8.48 Dial Physical Extension By Number

Dial a specified extension number regardless of the current user logged in at that extension and any forwarding, follow me or do not disturb settings applied by the current extension user. Note that the extension number used is the Base Extension number set against the extension configuration settings.

- **Telephone Number:** ✓ Base Extension number.
- **Default Short Code:** ✓ *70*N# (MU-Law only)
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [PhyEx](#) ^[593]
- **See also:** [Dial Physical Number By ID](#) ^[462], [Priority Call](#) ^[487].
- **IP Office Software Level:** 1.4+.

Example

The example below allows the extension with the base extension number 200 to be called regardless of the extension number of the user currently logged in at that extension.

- **Short Code:** *97
- **Telephone Number:** 201
- **Feature:** DialPhysicalExtnByNumber

6.8.49 Dial Physical Number By ID

Dial a specific extension using its system ID. This may be necessary in hot desking environments where some extensions have been created with no default extension number. Without an extension number, a call can not be made to that extension unless a short code is created.

- **Telephone Number:** ✓ Extension ID
- **Default Short Code:** ✓ *71*N# (MU-Law only)
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [DialP](#) ^[593]
- **See also:** [DialPhysicalExtensionByNumber](#) ^[462], [Priority Call](#) ^[487].
- **IP Office Software Level:** 1.4+.

Example

In the above example, if the telephone at extension ID 16 is not associated with an extension number, a user can dial *97 to connect to that phone. This may be useful in hot desking environments where some extensions may not have a dedicated base extension number.

- **Short Code:** *97
- **Telephone Number:** 16
- **Feature:** DialPhysicalNumberByID

6.8.50 Dial Speech

This feature allows a short code to be created to force the outgoing call to use the Speech bearer capability.

- **Telephone Number:** ✓ Telephone number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [DSpch](#) ^[594]
- **IP Office Software Level:** 1.0+.

6.8.51 Dial V110

Sets the ISDN bearer capabilities to V110. The call is presented to local exchange as a "Data Call".

- **Telephone Number:** ✓ Telephone number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [DV110](#) ^[594]
- **IP Office Software Level:** 1.0+.

6.8.52 Dial V120

Sets the ISDN bear capabilities using V.120. .

- **Telephone Number:** ✓ Telephone number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [DV120](#) ^[595]
- **IP Office Software Level:** 1.0+.

6.8.53 Dial Video

The call is presented to the local exchange as a "Video Call".

- **Telephone Number:** ✓ Telephone number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [Dvide](#) ^[596]
- **IP Office Software Level:** 1.0+.

6.8.54 Disable ARS Form

This feature can be used to put an ARS form out of service. It can be used with ARS forms for which an Out of Service Route has been configured in Manager. The short code feature Enable ARS Form can be used to return an ARS form to in service.

- **Telephone Number:** ARS form number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **See also:** [Enable ARS Form](#)^[467]
- **IP Office Software Level:** 4.0+.

6.8.55 Disable Internal Forwards

This feature turns off the forwarding of internal calls for the user. It applies to Forward Unconditional, Forward on Busy and Forward on No Answer.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✗
- **See also:** [Disable Internal Forward Unconditional](#)^[464], [Disable Internal Forward Busy or No Answer](#)^[465], [Cancel All Forwarding](#)^[450], [Enable Internal Forwards](#)^[468], [Enable Internal Forward Unconditional](#)^[468], [Enable Internal Forward Busy or No Answer](#)^[468].
- **IP Office Software Level:** 3.2+.

6.8.56 Disable Internal Forward Unconditional

This feature turns off the forwarding of internal calls for the user. It applies to Forward Unconditional only.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✗
- **See also:** [Disable Internal Forwards](#)^[464], [Disable Internal Forward Busy or No Answer](#)^[465], [Cancel All Forwarding](#)^[450], [Enable Internal Forwards](#)^[468], [Enable Internal Forward Unconditional](#)^[468], [Enable Internal Forward Busy or No Answer](#)^[468].
- **IP Office Software Level:** 3.2+.

6.8.57 Disable Internal Forward Busy or No Answer

This feature turns off the forwarding of internal calls for the user. It applies to Forward on Busy and Forward on No Answer.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✔
- **SoftConsole Control:** ✔
- **Programmable Button Control:** ✗
- **See also:** [Disable Internal Forwards](#)^[464], [Disable Internal Forward Unconditional](#)^[464], [Cancel All Forwarding](#)^[450], [Enable Internal Forwards](#)^[468], [Enable Internal Forward Unconditional](#)^[468], [Enable Internal Forward Busy or No Answer](#)^[468].
- **IP Office Software Level:** 3.2+.

6.8.58 Display Msg

Allows the sending of special functions to DS port display phone extensions.

- **Telephone Number:** ✔ The telephone number takes the format **xxxx;[0]nnn/ppppppp** where:
 - **xxx** is the target extension.
 - **nnn** is the Definity feature number of the emulation feature.
 - Abbreviated Dial (129), Abbreviated Dial Pause (130), Abbreviated Dial Program (7), Abbreviated Dial Stop (148), Account Code Entry (128), ACD Agent Statistics (147), ACD Stroke Count (135), AD Special Function Mark (142), AD Special Function Wait (149), AD Special Functions (145), AD Suppress (146), Automatic Callback (6), Automatic Intercom (139), Call Forwarding All (8), Call Park (9), Call Park To Other Extension (143), Call Pickup (132), Cancel Leave Word Calling (133), Consult (134), Dial Intercom (140), Directed Call Pickup (136), Send All Calls (10), Stored Number View (150).
 - **ppppppp** is the parameter data if required.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✔ [Displ](#)^[595]
- **IP Office Software Level:** 1.0+.

6.8.59 Do Not Disturb Exception Add

This feature adds a number to the user's "Do Not Disturb Exception Numbers List". This can be an internal extension number or external ICLID. Calls from that number, except hunt group calls, will ignore the user's Do Not Disturb setting. For further details see [Do Not Disturb \(DND\)](#)^[752] in the Telephone Features section.

- **Telephone Number:** ✓ Telephone number or ICLID. Up to 31 characters.
For ICLID numbers any prefix added by the IP Office system must also be included.
- **Default Short Code:** ✓ *10*N#
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ [DNDX+](#)^[599]
- **See also:** [Do Not Disturb Exception Delete](#)^[468], [Do Not Disturb On](#)^[467], [Do Not Disturb Off](#)^[467].
- **IP Office Software Level:** 1.0+.

Example

N represents the number to be added to the user's "Do Not Disturb Exception List". For example, when a user has DND turned on and dials *10*4085551234#, incoming calls from telephone number (408) 555-1234. All other calls, except those numbers on the exception list hear busy tones or are redirected to voicemail if available.

- **Short Code:** *10*N#
- **Telephone Number:** N
- **Feature:** DoNotDisturbExceptionAdd

Example

In this example, the last number received by the user is added to their exception list.

- **Short Code:** *99
- **Telephone Number:** L
- **Feature:** DoNotDisturbExceptionAdd

6.8.60 Do Not Disturb Exception Delete

This feature removes a number from the user's "Do Not Disturb Exception List". For further details see [Do Not Disturb \(DND\)](#)^[752] in the Telephone Features section.

- **Telephone Number:** ✓ Telephone number or ICLID.
- **Default Short Code:** ✓ *11*N#
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ [DNDX-](#)^[599]
- **See also:** [Do Not Disturb Exception Add](#)^[468], [Do Not Disturb On](#)^[467], [Do Not Disturb Off](#)^[467].
- **IP Office Software Level:** 1.0+.

Example

N represents the number to be deleted from the user's "Do Not Disturb Exception List". For example, when a user has DND turned on and the telephone number (408) 555-1234 in their "Do Not Disturb Exception List", dialing *10*4085551234# will remove this phone number from the list. Incoming calls from (408) 555-1234 will no longer be allowed through; instead they will hear busy tone or be redirected to voicemail if available.

- **Short Code:** *11*N#
- **Telephone Number:** N
- **Feature:** DoNotDisturbExceptionDel

6.8.61 Do Not Disturb On

This feature puts the user into 'Do Not Disturb' mode. When on, all calls, except those from numbers in the user's exception list hear busy tones or are redirected to voicemail if available. For further details see [Do Not Disturb \(DND\)](#) ^[752].

- **Telephone Number:** ✗
- **Default Short Code:** ✓ *08
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ [DNDOOn](#) ^[600]
- **See also:** [Do Not Disturb Off](#) ^[467], [Do Not Disturb Exception Add](#) ^[466], [Do Not Disturb Exception Delete](#) ^[466].
- **IP Office Software Level:** 1.0+.

Example

Below is a sample of the short code setup.

- **Short Code:** *08
- **Feature:** DoNotDisturbOn

6.8.62 Do Not Disturb Off

Cancels the user's 'do not disturb' mode if set. For further details see [Do Not Disturb \(DND\)](#) ^[752] in the Telephone Features section.

- **Telephone Number:** ✗
- **Default Short Code:** ✓ *09
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ [DNDOF](#) ^[600]
- **See also:** [Do Not Disturb On](#) ^[467], [Do Not Disturb Exception Add](#) ^[466], [Do Not Disturb Exception Delete](#) ^[466].
- **IP Office Software Level:** 1.0+.

Example

This short code is a default within the Manager configuration. Below is a sample of the short code setup.

- **Short Code:** *09
- **Feature:** DoNotDisturbOff

6.8.63 Enable ARS Form

This feature can be used to put an ARS form in service. It can be used with ARS forms that have been put out of service through Manager or the use of a Disable ARS Form short code.

- **Telephone Number:** ARS form number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **IP Office Software Level:** 4.0+

6.8.64 Enable Internal Forwards

This feature turns on the forwarding of internal calls for the user. It applies to Forward Unconditional, Forward on Busy and Forward on No Answer.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✔
- **SoftConsole Control:** ✔
- **Programmable Button Control:** ✗
- **See also:** [Disable Internal Forwards](#)^[464], [Disable Internal Forward Unconditional](#)^[464], [Disable Internal Forward Busy or No Answer](#)^[465], [Cancel All Forwarding](#)^[450], [Enable Internal Forward Unconditional](#)^[465], [Enable Internal Forward Busy or No Answer](#)^[465].
- **IP Office Software Level:** 3.2+.

6.8.65 Enable Internal Forward Unconditional

This feature turns on the forwarding of internal calls for the user. It applies to Forward Unconditional only.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✔
- **SoftConsole Control:** ✔
- **Programmable Button Control:** ✗
- **See also:** [Disable Internal Forwards](#)^[464], [Disable Internal Forward Unconditional](#)^[464], [Disable Internal Forward Busy or No Answer](#)^[465], [Cancel All Forwarding](#)^[450], [Enable Internal Forwards](#)^[465], [Enable Internal Forward Busy or No Answer](#)^[465].
- **IP Office Software Level:** 3.2+.

6.8.66 Enable Internal Forward Busy or No Answer

This feature turns on the forwarding of internal calls for the user. It applies to Forward on Busy and Forward on No Answer.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✔
- **SoftConsole Control:** ✔
- **Programmable Button Control:** ✗
- **See also:** [Disable Internal Forwards](#)^[464], [Disable Internal Forward Unconditional](#)^[464], [Disable Internal Forward Busy or No Answer](#)^[465], [Cancel All Forwarding](#)^[450], [Enable Internal Forwards](#)^[465], [Enable Internal Forward Unconditional](#)^[465].
- **IP Office Software Level:** 3.2+.

6.8.67 Extn Login

This feature allows a user to take over ownership of an extension. This requires the user to have a [Login Code](#) ^[279] ([User | Telephony | Supervisor Settings](#) ^[279]).

- Note that on some phones, for example IP DECT phones, the dialed digits are displayed and recorded and may include the log in code used.
- Login codes of up to 15 digits are supported with [Extn Login](#) ^[602] buttons. Login codes of up to 31 digits are supported with [Extn Login](#) ^[469] [short code](#) ^[469].
- **Telephone Number:** ✓ Extension Number*Login Code.
If just a single number is dialed containing no * separator, the IP Office assumes that the extension number to use is the physical extension's [Base Extension](#) ^[256] number and that the number dialed is the log in code.
- **Default Short Code:** ✓ *35*N#
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [Login](#) ^[602]
- **See also:** [Extn Logout](#) ^[469].
- **IP Office Software Level:** 1.0+.

Example: Individual Hot Desking

Based on the above sample short code, Paul (extension 204) can go to another phone (even if it is already logged in by another user) and log in as extension 204 by simply dialing 299. Once Paul has logged into this phone, extension 204 is logged out at Paul's original phone. For Paul to make use of this short code, his log in code must match that configured in the above short code. When Paul logs out of the phone he has "borrowed", his original extension will automatically be logged back in.

- **Short Code:** 299
- **Telephone Number:** 204*1234
- **Feature:** Extnlogin

Example: Log In

The default short code for logging into a phone is configured as shown below. N represents the users extension number followed by a * and then their log in code, for example *35*401*123#.

- **Short Code:** *35*N#
- **Telephone:** N
- **Feature:** ExtnLogin

6.8.68 Extn Logout

This feature logs the user off the phone at which they are logged in.

For IP Office 4.0 and higher this feature cannot be used by a user who does not have a log in code or by the default associated user of an extension unless they are set to forced log in.

- **Telephone Number:** ✗
- **Default Short Code:** ✓ *36
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [Logout](#) ^[602]
- **See also:** [Extn Login](#) ^[469].
- **IP Office Software Level:** 1.0+.

Example

Below is a sample short code using the Extn Logout feature. This short code is a default within the Manager configuration.

- **Short Code:** *36
- **Feature:** ExtnLogout

6.8.69 Flash Hook

This feature sends a hook flash signal to the currently connected line if it is an analog line.

- **Telephone Number:** ✗ Pre-IP Office 4.0/ ✓ IP Office 4.0+: Optional
For IP Office 4.0 and higher, the telephone number field can be used to set the transfer destination number for a [Centrex Transfer](#)^[768]. In this case the use of the short code Forced Account Code and Forced Authorization Code are not supported and the Line Group Id must match the outgoing line to the Centrex service provider.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [Flash](#)^[603]
- **IP Office Software Level:** 1.4+.

Example

Below is a sample short code using the Flash Hook feature.

- **Short Code:** *96
- **Feature:** FlashHook

6.8.70 FNE

This short code feature is used for [Mobile Call Control](#)^[714] and [one-X Mobile Client](#)^[717] support.

- **Telephone Number:** ✓
This number sets the required FNE function. For a list of supported functions see [one-X Mobile Control](#)^[717].
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **IP Office Software Level:** 4.2+.

6.8.71 Follow Me Here

Causes calls to the extension number specified to be redirected to the extension initiating the 'Follow Me Here'. If the redirected call receives a busy tone or is not answered, then the call behaves as though the User's extension had failed to answer. For further details see [Follow Me](#) ^[754] in the Telephone Features section.

- **Telephone Number:** ✓ Extension to redirect to the dialing extension.
- **Default Short Code:** ✓ *12*N#
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [Here+](#) ^[604]
- **See also:** [Follow Me Here Cancel](#) ^[472], [Follow Me To](#) ^[472].
- **IP Office Software Level:** 1.0+.

Example

This feature is used at the Follow Me destination. N represents the extension number of the user wanting their calls redirected to that destination. For example, User A's extension is 224. However they are working at extension 201 and want their calls redirected there. If the following short code is available, they can do this by dialing *12*224# at extension 201.

- **Short Code:** *12*N#
- **Telephone Number:** N
- **Feature:** FollowMeHere

6.8.72 Follow Me Here Cancel

Cancels any Follow Me set on the specified extension. This action can only be performed at the extension to which the Follow Me Here is targetted. For further details see [Follow Me](#)^[754] in the Telephone Features section.

- **Telephone Number:** ✓ Extension being redirected to the dialing extension.
- **Default Short Code:** ✓ *13*N#
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [Here](#)-^[604]
- **See also:** [Follow Me Here](#)^[471], [Follow Me To](#)^[472].
- **IP Office Software Level:** 1.0+.

Example

This feature is used at the Follow Me destination. N represents the extension number of the user whose calls are being redirected to that destination. For example, User A's extension is 224. However they are working at extension 201 and so have set a Follow Me on their own extension to redirect their calls to 201. If the following short code is available, they can cancel the Follow Me by dialing *13*224# at extension 201.

- **Short Code:** *13*N#
- **Telephone Number:** N
- **Feature:** FollowMeHereCancel

6.8.73 Follow Me To

Causes calls to the extension to be redirected to the Follow Me destination extension specified. For further details see [Follow Me](#)^[754] in the Telephone Features section.

- **Telephone Number:** ✓ Target extension number or blank (cancel Follow Me To)
- **Default Short Code:** ✓ *14*N#
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ [FoTo](#)^[605]
- **See also:** [Follow Me Here](#)^[471], [Follow Me Here Cancel](#)^[472].
- **IP Office Software Level:** 1.0+.

Example

This feature is used at the extension that wants to be redirected. N represents the extension number to which the user wants their calls redirected. For example, User A's extension is 224. However they are working at extension 201 and want their calls redirected there. If the following short code is available, they can do this by dialing *14*201# at extension 224.

- **Short Code:** *14*N#
- **Telephone Number:** N
- **Feature:** FollowMeTo

6.8.74 Forward Hunt Group Calls On

Forward the user's hunt group calls (internal and external) to their forward number when the user has Forward Unconditional active. For further details see [Forward Unconditional](#) ^[756] in the Telephone Features section.

This option is only applied for calls to **Sequential** and **Rotary** type hunt groups. Calls from other types of hunt group types are not presented to the user when they have Forward Unconditional active. Note also that hunt group calls cannot be forwarded to another hunt group.

- **Telephone Number:** ✗
- **Default Short Code:** ✔ *50
- **Phone Manager Control:** ✔
- **SoftConsole Control:** ✔
- **Programmable Button Control:** ✔ [FwdH+](#) ^[606]
- **See also:** [Forward Hunt Group Calls Off](#) ^[473], [Forward Unconditional On](#) ^[477], [Forward Unconditional Off](#) ^[477].
- **IP Office Software Level:** 1.0+.

Example

This short code is useful if the hunt group member temporarily uses another workstation and so does not require a permanent extension change.

- **Short Code:** *50
- **Feature:** ForwardHuntgroupCallsOn

6.8.75 Forward Hunt Group Calls Off

This feature cancels the forwarding of the user's hunt group calls. For further details see [Forward Unconditional](#) ^[756] in the Telephone Features section.

- **Telephone Number:** ✗
- **Default Short Code:** ✔ *51
- **Phone Manager Control:** ✔
- **SoftConsole Control:** ✔
- **Programmable Button Control:** ✔ [FwdH-](#) ^[606]
- **See also:** [Forward Hunt Group Calls On](#) ^[473], [Forward Unconditional On](#) ^[477], [Forward Unconditional Off](#) ^[477].
- **IP Office Software Level:** 1.0+.

Example

Below is a sample of the short code setup.

- **Short Code:** *51
- **Feature:** ForwardHuntgroupCallsOff

6.8.76 Forward Number

Sets the number to which the user's calls are redirected. This can be an internal or external number. The number is still subject to the user's call barring settings. For further details see [Forward Unconditional](#)^[756] in the Telephone Features section.

This feature does not activate forwarding; it only sets the number for the forwarding destination.

This number is used for all forward types; Forward Unconditional, Forward on Busy and Forward on No Answer, unless the user has a separate Forward on Busy Number set for forward on busy and forward on no answer functions.

- **Telephone Number:** ✓ Telephone number.
- **Default Short Code:** ✓ *07*N#
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ [FwdNo](#)^[607]
- **See also:** [Forward On Busy Number](#)^[474].
- **IP Office Software Level:** 1.0+.

Example

N represents the forward destination. For example, if extension 224 wants to set the forwarding number to extension 201, the user can dial *07*201#.

- **Short Code:** *07N*#
- **Telephone Number:** N
- **Feature:** ForwardNumber

6.8.77 Forward On Busy Number

Sets the number to which the user's calls are forwarded when Forward on Busy or Forward on No Answer are on. If no Forward on Busy Number is set, those functions use the Forward Number.

This feature does not activate the forwarding, it only sets the number for the forwarding destination.

- **Telephone Number:** ✓ Telephone number.
- **Default Short Code:** ✓ *57*N#
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ [FwBNo](#)^[607]
- **See also:** [Forward Number](#)^[474].
- **IP Office Software Level:** 1.0+.

Example

N represents the extension number to be forwarded to. For example, if Paul (whose extension is 224) wants to set the forwarding number for his 'Forward on Busy' and/or 'Forward on No Answer' feature to extension 201, Paul can dial *57*201# followed by the short code for the forwarding function.

- **Short Code:** *57N*#
- **Telephone Number:** N
- **Feature:** ForwardOnBusyNumber

6.8.78 Forward On Busy On

This feature enables forwarding when the user's extension is busy. It uses the Forward Number destination or, if set, the Forward on Busy Number destination.

If the user has call appearance buttons programmed, the system will not treat them as busy until all the call appearance buttons are in use.

For IP Office 3.2 and higher, Forward Internal (User | Forwarding) can also be used to control whether internal calls are forwarded.

- **Telephone Number:** ✗
- **Default Short Code:** ✔ *03
- **Phone Manager Control:** ✔
- **SoftConsole Control:** ✔
- **Programmable Button Control:** ✔ [FwBOn](#) ^[609]
- **See also:** [Forward On Busy Off](#) ^[475], [Cancel All Forwarding](#) ^[450], [Enable Internal Forward Busy or No Answer](#) ^[468].
- **IP Office Software Level:** 1.0+.

Example

Below is a sample of the short code setup.

- **Short Code:** *03
- **Feature:** ForwardOnBusyOn

6.8.79 Forward On Busy Off

This feature cancels forwarding when the user's extension is busy.

- **Telephone Number:** ✗
- **Default Short Code:** ✔ *04
- **Phone Manager Control:** ✔
- **SoftConsole Control:** ✔
- **Programmable Button Control:** ✔ [FwBOF](#) ^[609]
- **See also:** [Forward On Busy On](#) ^[475], [Cancel All Forwarding](#) ^[450].
- **IP Office Software Level:** 1.0+.

Example

Below is a sample of the short code setup.

- **Short Code:** *04
- **Feature:** ForwardOnBusyOff

6.8.80 Forward On No Answer On

This feature enables forwarding when the user's extension is not answered within the period defined by their No Answer Time. It uses the Forward Number destination or, if set, the Forward on Busy Number destination.

For IP Office 3.2 and higher, Forward Internal (User | Forwarding) can also be used to control whether internal calls are forwarded.

- **Telephone Number:** ✗
- **Default Short Code:** ✔ *05
- **Phone Manager Control:** ✔
- **SoftConsole Control:** ✔
- **Programmable Button Control:** ✔ [FwNOOn](#)^[610]
- **See also:** [Forward On No Answer Off](#)^[470], [Cancel All Forwarding](#)^[450].
- **IP Office Software Level:** 1.0+.

Example

Below is a sample of the short code setup. Remember that the forwarding number for this feature uses the 'Forward on Busy Number'.

- **Short Code:** *05
- **Feature:** ForwardOnNoAnswerOn

6.8.81 Forward On No Answer Off

This feature cancels forwarding when the user's extension is not answered.

- **Telephone Number:** ✗
- **Default Short Code:** ✔ *06
- **Phone Manager Control:** ✔
- **SoftConsole Control:** ✔
- **Programmable Button Control:** ✔ [FwNOOff](#)^[610]
- **See also:** [Forward On No Answer On](#)^[470].
- **IP Office Software Level:** 1.0+.

Example

Below is a sample of the short code setup.

- **Short Code:** *06
- **Feature:** ForwardOnNoAnswerOff

6.8.82 Forward Unconditional On

This feature enables forwarding of all calls, except group calls, to the Forward Number set for the user's extension. To also forward hunt group calls, Forward Hunt Group Calls On must also be used. For further details see [Forward Unconditional](#) ^[756] in the Telephone Features section.

For IP Office 3.2 and higher, Forward Internal (User | Forwarding) can also be used to control whether internal calls are forwarded.

- **Telephone Number:** ✗
- **Default Short Code:** ✓
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ [FwUOn](#) ^[611]
- See also: [Forward Unconditional Off](#) ^[477].
- **IP Office Software Level:** 1.0+.

Example

Remember that this feature requires having a forward number configured.

- **Short Code:** *01
- **Feature:** ForwardUnconditionalOn

6.8.83 Forward Unconditional Off

This feature cancels forwarding of all calls from the user's extension. Note: This does not disable Forward on No Answer and or Forward on Busy if those functions are also on. For further details see [Forward Unconditional](#) ^[756] in the Telephone Features section.

- **Telephone Number:** ✗
- **Default Short Code:** ✓ *02
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ [FwUOf](#) ^[611]
- See also: [Forward Unconditional On](#) ^[477].
- **IP Office Software Level:** 1.0+.

Example

Below is a sample of the short code setup.

- **Short Code:** *02
- **Feature:** ForwardUnconditionalOff

6.8.84 Group Listen Off

Disables the group listen function for the user's extension. See [Group Listen On](#) ^[478].

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [GroupListenOn](#) ^[613]
- **IP Office Software Level:** 4.1+.

Example

Below is a sample short code using the Group Listen Off feature.

- **Short Code:** *27
- **Feature:** GroupListenOff

6.8.85 Group Listen On

Using group listen allows callers to be heard through the phone's handsfree speaker but to only hear the phone's handset microphone. When group listen is enabled, it modifies the handsfree functionality of the user's phone in the following manner

- When the user's phone is placed in handsfree / speaker mode, the speech path from the connected party is broadcast on the phone speaker but the phone's base microphone is disabled.
- The connected party can only hear speech delivered via the phone's handset microphone.
- Group listen is not supported for IP phones or when using a phone's **HEADSET** button.
- Currently connected calls are not affected by changes to this setting. If group listen is required it must be selected before the call is connected.

This enables listeners at the user's phone to hear the connected party whilst limiting the connected party to hear only what is communicated via the phone handset.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [GroupListenOn](#) ^[613]
- **IP Office Software Level:** 4.1+.

Example

Below is a sample short code using the Group Listen Off feature.

- **Short Code:** *28
- **Feature:** GroupListenOn

6.8.86 Headset Toggle

Toggles between the use of a headset and the telephone handset.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [HdSet](#)^[615]
- **IP Office Software Level:** 1.4+.

Example

Below is a sample short code using the Headset Toggle feature. This short code can be used to toggle the feature on/off. If an Avaya supported headset is connected to your telephone, this short code can be used to toggle between using the headset and the telephone handset.

- **Short Code:** *55
- **Feature:** HeadsetToggle

6.8.87 Hold Call

This uses the Q.931 Hold facility, and "holds" the incoming call at the ISDN exchange, freeing up the ISDN B channel. The Hold Call feature "holds" the current call to a slot. The current call is always automatically placed into slot 0 if it has not been placed in a specified slot. Only available if supported by the ISDN exchange.

- **Telephone Number:** ✓ Exchange hold slot number or blank (slot 0).
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [Hold](#)^[615]
- **See also:** [Hold CW](#)^[480], [Hold Music](#)^[480], [Suspend Call](#)^[500].
- **IP Office Software Level:** 1.0+.

Example

Below is a sample short code using the Hold Call feature. This short code is a default within the Manager configuration. N represents the exchange hold slot number you want to hold the call on. For example, while connected to a call, dialing *24*3# will hold the call onto slot 3 on the ISDN.

- **Short Code:** *24*N#
- **Telephone Number:** N
- **Feature:** HoldCall

6.8.88 Hold CW

This uses the Q.931 Hold facility, and "holds" the incoming call at the ISDN exchange, freeing up the ISDN B channel. The Hold CW feature "holds" the current call to an exchange slot and answers the call waiting. The current call is always automatically placed into slot 0 if it has not been placed in a specified slot. Only available if supported by the ISDN exchange.

- **Telephone Number:** ✓ Exchange slot number or blank (slot 0).
- **Default Short Code:** ✓ *27*N# (A-Law only)
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [HoldCW](#) ^[616]
- **See also:** [Hold Call](#) ^[479], [Suspend Call](#) ^[500].
- **IP Office Software Level:** 1.0+.

Example

Below is a sample short code using the Hold CW feature.

- **Short Code:** *27*N#
- **Feature:** HoldCW

6.8.89 Hold Music

This feature allows the user to check the system's music on hold. See [Music On Hold](#) ^[746] for more information.

- **Telephone Number:** *Optional.*
IP Office 4.2+ (not Small Office Edition) supports up to 4 hold music sources, numbered 1 to 4. 1 represents the [System Source](#) ^[169]. 2 to 4 represent the [Alternate Sources](#) ^[169]. If no number is specified, the default system source is assumed.
- **Default Short Code:** ✓
 - For IP Office 4.2+, ***34N**; where *N* is the number of the hold music source required, see above.
 - For pre-IP Office 4.2, ***34**. If a system is upgraded from pre-4.2 to 4.2+, existing hold music short codes may need to be modified.
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [Music](#) ^[616]
- **IP Office Software Level:** 1.0+.

Example

Below is a sample short code using the Hold Music feature. This short code is a default within the Manager configuration.

- **Short Code:** *34N;
- **Feature:** HoldMusic

6.8.90 Hunt Group Disable

This feature disables the user's membership of the specified hunt group. They will no longer receive call to that hunt group until their membership is enabled again. To use this feature, you must already belong to the hunt group. See also [Hunt Group Enable](#)^[48].

- **Telephone Number:** ✓ Group number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ [HGDIs](#)^[618]
- **See also:** [Hunt Group Enable](#)^[48].
- **IP Office Software Level:** 1.0+.

Example

N represents the hunt group number from which the user wants to be disabled from. For example, if Paul wants to be disabled from the Sales hunt group (extn. 500), he needs to dial *90*500#.

- **Short Code:** *90*N#
- **Telephone Number:** N
- **Feature:** HuntGroupDisable

6.8.91 Hunt Group Enable

This feature enables the user's membership of a hunt group so they can begin to receive calls to the specified hunt group. To use this feature, the user must already belong to the hunt group. This short code can not be used to add someone to a hunt group, that must be done within Manager's [Hunt Group](#)^[309] form.

- **Telephone Number:** ✓ Group number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ [HGEEna](#)^[617]
- **See also:** [Hunt Group Disable](#)^[48].
- **IP Office Software Level:** 1.0+.

Previously in IP Office 3.2 the Set Hunt Group Night Service, Set Hunt Group Out of Service and Hunt Group Enable short code features toggled. That behaviour is not supported in 4.0 and higher.

Example

This short code can be used to turn the feature on. N represents the hunt group number for which the user wants to start receiving calls. For example, if Paul is already a member of the sales hunt group (extn. 500) but has changed his availability status for that hunt group using hunt group disable, he can make himself available for receiving calls to the Sales hunt group again by dialing *91*500#.

- **Short Code:** *91*N#
- **Telephone Number:** N
- **Feature:** HuntGroupEnable

6.8.92 Last Number Redial

This feature allows an extension to redial the last number they dialed.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **IP Office Software Level:** 3.0+.

6.8.93 MCID Activate

This feature should only be used in agreement with the ISDN service provider and the appropriate local legal authorities. It allows users with [Can Trace Calls](#)^[279] ([User | Telephony | Supervisor Settings](#)^[279]) set to trigger a malicious call trace of their previous call at the ISDN exchange. Refer to [Telephone Features Malicious Call Tracing](#)^[736] for further details.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** Advanced | Miscellaneous | MCID Activate.
- **IP Office Software Level:** 4.0+.

6.8.94 Mobile Twinned Call Pickup

This short code feature allows the user to pickup a call ringing or connected at the destination of their mobile twinning number. This short code can only be used from the primary extension which is being used for the twinning operation.

Note that the use of mobile twinning requires entry of a Mobile Twinning license and may be subject to a time profile.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **See also:** [Set Mobile Twinning Number](#)^[496], [Set Mobile Twinning On](#)^[496], [Set Mobile Twinning Off](#)^[496].
- **IP Office Software Level:** 3.2+.

6.8.95 Off Hook Station

Enables or disables whether the user's extension acts as a fully handsfree unit. Typically this is used when the answering and clearing of calls is done through an application such as Phone Manager. This feature is also configurable via Phone Manager. For more details see [Off Hook Station](#) ^[277] ([User | Telephony | Call Settings](#) ^[277]).

- **Telephone Number:** ✓ "Y" for on or "N" for off.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ [OHStn](#) ^[624]
- **IP Office Software Level:** 1.0+.

Example: Turning the off hook station off

- **Short Code:** *99
- **Telephone Number:** N
- **Feature:** OffHookStation

Example: Turning the off hook station on

- **Short Code:** *98
- **Telephone Number:** Y
- **Feature:** OffHookStation

6.8.96 Outgoing Call Bar Off

Allows a user to switch off their outgoing call bar status. The short code user must enter their log in code, if set, in order to be successful.

- If you add a short code using this feature to a system it is recommended that you also assign a login code to the [No User](#)^[75b] user to prevent the short code being used to change the status of that user.
- **Telephone Number:** ✓ The user's log in code.
 - [System phone](#)^[749] users can use <target user>*<system phone user's login code>.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **IP Office Software Level:** 4.1+ (Added to IP Office 4.1 2008Q2 Maintenance release).

Example

The user has a **Login Code** of **1234**. To use the short code below below, the user must dial ***59*1234#**.

- **Short Code:** *59*N#
- **Telephone Number:** N
- **Feature:** Outgoing Call Bar Off.

Example

A user set as a [System Phone](#)^[749] can also switch off the Outgoing Call Bar status of another user. This is done using their own login code. For example the system phone 401 with login code 1234 can switch off the outgoing call bar status of extension 403 as follows:

- ***59*403*1234**

6.8.97 Outgoing Call Bar On

Allows a user to switch on their outgoing call bar status.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **IP Office Software Level:** 4.1+ (Added to IP Office 4.1 2008Q2 Maintenance release).

Example

To use the short code below below, the user must dial ***58**.

- **Short Code:** *58
- **Telephone Number:** <blank>
- **Feature:** Outgoing Call Bar On.

6.8.98 Park Call

Parks the user's current call into the specified park slot number. The call can then be retrieved by other extensions (refer to the appropriate telephone user guide). While parked the caller hears music on hold if available.

Park Timeout ^[160] ([System | Telephony | Telephony](#) ^[160]) controls how long a call will remain parked. When this expires the call will recall to the parking user if they are idle or when they next become idle. The recall call will continue ring and does follow any forwards or go to voicemail.

The '[Unpark Call](#)' ^[50] feature can be used to retrieve calls from specific park slots.

- **Telephone Number:** ✓ Park slot number.
If no park slot number is specified when this short code is used, the system automatically assigns a park slot number based on the extension number of the user parking the call plus one digit 0 to 9.
 - Park slot numbers can be up to 9 characters in length.
- **Default Short Code:** ✓ *37*N#
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ [Park](#) ^[62]
- **See also:** [Unpark Call](#) ^[50].
- **IP Office Software Level:** 1.0+.

Example

This short code is a default within the Manager configuration. This short code can be used to toggle the feature on/off. N represents the park slot number in which the call will be parked. For example, if a user wants to park a call to slot number 9, the user would dial *37*9#. The call will be parked there until retrieved by another extension or the original extension.

- **Short Code:** *37*N#
- **Telephone Number:** N
- **Feature:** ParkCall

6.8.99 Private Call

Short codes using this feature toggle on or off private call status.

When on, any subsequent calls cannot be intruded on, bridged into or silently monitored until the user's private call status is switched off.

Note that use of private calls is separate from the user's intrusion settings. If a user is set to **Cannot be Intruded**, switching private calls off does not affect that status. To allow private calls to be used to fully control the user status, **Cannot be Intruded** should be disabled for that user.

Private call status can also be switched on or off using a short code features [Private Call On](#) ^[48] and [Private Call Off](#) ^[48] feature or a programmed button set to the [Private Call](#) ^[62] action.

- **Telephone Number:** Optional. Number to dial for private call.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **IP Office Software Level:** 4.0+.

6.8.100 Private Call Off

Short codes using this feature turn off private call status for the user if set. The short code features [Private Call](#)^[486] and [Private Call On](#)^[486] can be used to turn private call on.

When on, any subsequent calls cannot be intruded on, bridged into or silently monitored until the user's private call status is switched off.

Note that use of private calls is separate from the user's intrusion settings. If a user is set to **Cannot be Intruded**, switching private calls off does not affect that status. To allow private calls to be used to fully control the user status, **Cannot be Intruded** should be disabled for that user.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** [Advanced | Call | Private Call.](#)^[628]
- **IP Office Software Level:** 4.0+.

6.8.101 Private Call On

Short codes using this feature turn on the private call settings for the user regardless.

When on, any subsequent calls cannot be intruded on, bridged into or silently monitored until the user's private call status is switched off.

Note that use of private calls is separate from the user's intrusion settings. If a user is set to **Cannot be Intruded**, switching private calls off does not affect that status. To allow private calls to be used to fully control the user status, **Cannot be Intruded** should be disabled for that user.

Private call status can be switched off using a short code with the [Private Call Off](#)^[486] feature or a programmed button set to the Private Call action. To enable private call status for a single following call only the [Private Call](#)^[486] short code feature should be used.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** [Advanced | Call | Private Call.](#)^[628]
- **IP Office Software Level:** 4.0+.

6.8.102 Priority Call

This feature allows the user to call another user even if they are set to 'do not disturb'. Priority calls to a user without DND will follow forwarding and follow me settings but will not go to voicemail.

- **Telephone Number:** ✓ Extension number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [PCall](#)^[627]
- **See also:** [DialPhysicalExtensionByNumber](#)^[462], [DialPhysicalNumberByID](#)^[462].
- **IP Office Software Level:** 1.0+.

Example

N represents the extension number to be called, despite the extension being set to 'do not disturb'. For example, if extension 201 has 'do not disturb' enabled, a user can dial *71*201# and still get through. This short code is useful for companies that frequently use the 'do not disturb' feature and can be given to Managing Directors or people who may need to get through to people regardless of their 'do not disturb' status.

- **Short Code:** *71*N#
- **Telephone Number:** N
- **Feature:** PriorityCall

6.8.103 Record Message

This short code feature is used to record hunt group announcements on Embedded Voicemail, see [Hunt Group | Announcements](#)^[323]. For IP Office 5.0+ it is also used to record mailbox user name prompts for the [auto attendant](#)^[402] **Dial by Name** function.

- **Telephone Number:** ✓
 - For a hunt group queue announcement, use the hunt group extension number followed by **".1"**.
 - For a hunt group still queue announcement, use the hunt group extension number followed by **".2"**.
 - For a mailbox user name prompt, use the user extension number followed by **".3"**.
- **Default Short Code:** ✓ *91N; and *92N;
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **IP Office Software Level:** 4.0+.

Example

For a hunt group with extension number 300, the default short codes ***91N; / Record Message / N".1"** and ***92N; / Record Message / N".2"** can be used to allow recording of the announcements by dialing ***91300#** and ***92300#**.

To allow users to record their own name prompt, the short code ***99# / Record Message / E."3"** can be used. The **E** is replace by the extension number of the dialing user.

6.8.104 Relay On

This feature closes the specified switch in the system's external output (EXT O/P) port.

- **Telephone Number:** ✓ Switch number (1 or 2).
- **Default Short Code:** ✓ *39 (Switch 1), *42 (Switch 2), *9000*
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ [Rely+](#)^[629]
- **See also:** [Relay Off](#)^[488], [Relay Pulse](#)^[489].
- **IP Office Software Level:** 1.0+.

Example

This short code is a default within the Manager configuration. This short code is useful for companies that have external devices, such as door controls, connected to the IP Office switch. Based on this sample short code, a user dialing *42 is closing switch number 2 to activate an external device.

- **Short Code:** *42
- **Telephone Number:** 2
- **Feature:** RelayOn

Analog Modem Control

On systems with an analog trunk card and on the Small Office edition, the first analog trunk can be set to answer V.32 modem calls. This is done by selecting the Modem Enabled option on the [analog line settings](#)^[196] or using the default short code *9000* to toggle this service on or off. This short code uses the **RelayOn** feature with the Telephone Number set to "MAINTENANCE". Note that the short code method is always returned to off following a reboot or if used for accessing the system date and time menu.

6.8.105 Relay Off

This feature opens the specified switch in the system's external output (EXT O/P) port.

- **Telephone Number:** ✓ Switch number (1 or 2).
- **Default Short Code:** ✓ *40 (Switch 1), *43 (Switch 2)
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ [Rely-](#)^[629]
- **See also:** [Relay On](#)^[488], [Relay Pulse](#)^[489].
- **IP Office Software Level:** 1.0+.

Example

This short code is a default within the Manager configuration. This short code is useful for companies that have external devices, such as door controls, connected to the IP Office switch. Based on this sample short code, a user dialing *43 is opening switch number 2 to activate an external device.

- **Short Code:** *43
- **Telephone Number:** 2
- **Feature:** RelayOff

6.8.106 Relay Pulse

This feature closes the specified switch in the system's external output (EXT O/P) port for 5 seconds and then opens the switch.

- **Telephone Number:** ✓ Switch number (1 or 2).
- **Default Short Code:** ✓ *41 (Switch 1), *44 (Switch 2)
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ [Relay](#) ^[630]
- **See also:** [Relay On](#) ^[480], [Relay Off](#) ^[480].
- **IP Office Software Level:** 1.0+.

Example

This short code is a default within the Manager configuration. This short code is useful for companies that have external devices, such as door controls, connected to the IP Office switch. Based on this sample short code, a user dialing *44 is opening switch number 2 to activate an external device.

- **Short Code:** *44
- **Telephone Number:** 2
- **Feature:** RelayPulse

6.8.107 Resume Call

Resume a call previously suspended to the specified ISDN exchange slot. The suspended call may be resumed from another phone/ISDN Control Unit on the same line.

- **Telephone Number:** ✓ Exchange suspend slot number.
- **Default Short Code:** ✓ *23*N# (A-Law only)
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [Resum](#) ^[63]
- **See also:** [Suspend Call](#) ^[500].
- **IP Office Software Level:** 1.0+.

Example

Below is sample short code using the Resume Call feature. N represents the exchange slot number from which the call has been suspended. For example, if a user has suspended a call on slot number 4, this user can resume that call by dialing *23*4#.

- **Short Code:** *23*N#
- **Telephone Number:** N
- **Feature:** ResumeCall

6.8.108 Retrieve Call

Retrieves a call previously held to a specific ISDN exchange slot.

- **Telephone Number:** ✓ Exchange hold slot number.
- **Default Short Code:** ✓ *25*N# (A-law only)
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [Retriv](#) ^[63]
- **See also:** [Hold Call](#) ^[47].
- **IP Office Software Level:** 1.0+.

Example

Below is sample short code using the Retrieve Call feature. N represents the exchange slot number from which the call has been placed on hold. For example, if a user has placed a call hold on slot number 4, the user can resume that call by dialing *25*4#.

- **Short Code:** *25*N#
- **Telephone Number:** N
- **Feature:** RetrieveCall

6.8.109 Ring Back When Free

This feature sets a ringback on the specified extension. This sets a 'ringback when free' on an extension currently on a call or a 'ringback when next used' for an extension that is free but does not answer.

When the target extension is next used or ends its current call, the users is rung and when they answer a call is made to the target extension.

- **Telephone Number:** ✓ Target extension number.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [RBak+](#) ^[63]
- **See also:** [Cancel Ring Back When Free](#) ^[45].
- **IP Office Software Level:** 1.0+.

Example

N represents the target extension from which you want to receive the callback. For example, if you call extension 201 but the line is busy, hang up and then dial *71*201#. When extension 201 disconnects from its current call, your phone will ring. Once you pick up the phone, extension 201's line will start ringing to indicate an incoming call.

- **Short Code:** *71*N#
- **Telephone Number:** N
- **Feature:** RingBackWhenFree

6.8.110 Secondary Dial Tone

Secondary dial tone is a system feature to generate a secondary dial tone after the user has begun dialing an external number. This dial tone is then played until the number dialing and an external trunk seized.

For IP Office 4.0 and higher the use of this short code feature has been replaced by the Secondary Dial Tone check box option on ARS forms.

For pre-4.0 IP Office systems secondary dial tone is triggered through the use of the secondary dial tone short code feature.

- **Telephone Number:** ✓ Digit which triggers secondary dial tone.
- **Default Short Code:** ✓ 9 (MU-Law only)
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **IP Office Software Level:** 1.0+.

Example

For pre-4.0 IP Office systems secondary dial tone works in two parts. The following system short code will trigger secondary dial tone. To use it to trigger secondary dial tone and then continue dialing, other user, user rights and system short codes should begin with [9].

- **Short Code:** 9
- **Telephone Number:** .
- **Feature:** Secondary Dial Tone

6.8.111 Set Absent Text

This feature can be used to select the user's current absence text. This text is then displayed to internal callers who have suitable display phones or IP Office applications. It doesn't change the user's status.

The text is displayed to callers even if the user has forwarded their calls or is using follow me. Absence text is supported across a Small Community Network (SCN).

The absence text message is limited to 128 characters. Note however that most amount displayed will depend on the caller's device or application.

- **Telephone Number:** ✓ The telephone number should take the format "*y,n,text*" where:
 - *y* = 0 or 1 to turn this feature on or off.
 - *n* = the number of the absent statement to use, see the list below:

• 0 = None.	• 4 = Meeting until.	• 8 = With cust. til.
• 1 = On vacation until.	• 5 = Please call.	• 9 = Back soon.
• 2 = Will be back.	• 6 = Don't disturb until.	• 10 = Back tomorrow.
• 3 = At lunch until.	• 7 = With visitors until.	• 11 = Custom.
 - *text* = any text to follow the absent statement.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [Absnt](#) 636
- **IP Office Software Level:** 1.0+.

Example

The following short code can be used to turn an absent text message on:

- **Short Code:** *88
- **Telephone Number:** "1,5,my assistant on 208"
- **Line Group ID:** 0
- **Feature:** SetAbsentText

Example

The following short code could be used to turn this facility off. In the Telephone Number the first 0 is used to turn this facility off and the second 0 is used to select the absent statement "None".

- **Short Code:** *89
- **Telephone Number:** "0,0"
- **Line Group ID:** 0
- **Feature:** SetAbsentText

6.8.112 Set Account Code

This short code feature is used to allow system users to enter a valid account code prior to making a phone call. This short code feature is essential for allowing analog phone users to enter account codes. Once this short code is set up, any account code can be used in conjunction with it.

- **Telephone Number:** ✓ A valid account code.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ [Acct.](#) ⁶³⁷
- **IP Office Software Level:** 2.1+.

Example

In this example, N represents any valid account code. For the purpose of this example, we will imagine the account code to be 1234. Once this short code is created, a user can dial 11*1234# to get a dial tone for dialing the restricted telephone number or the phone number needing to be tracked for billing purposes.

- **Short code:** 11*N#
- **Telephone Number:** N
- **Feature:** SetAccountCode

6.8.113 Set Authorization Code

This short code feature is only available on systems configured to use authorization codes. See [Authorization Codes](#) ⁴⁰³. The feature is used to allow a user to enter a valid authorization code prior to making a phone call.

This short code feature is essential for allowing analog phone users to enter authorization codes. Note that the authorization code must be associated with the user or the user rights to which the user belongs.

- **Telephone Number:** ✓ A valid authorization code.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✗
- **IP Office Software Level:** 3.2+.

6.8.114 Set Hunt Group Night Service

This feature puts the specified hunt group into 'Night Service' mode.

- **Telephone Number:** ✓ Hunt group extension number.
For IP Office 4.0+, if left blank, the short code will affect all hunt groups of which the user is a member.
- **Default Short Code:** ✓ *20*N#
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [HGNS+](#) ^[638]
- **See also:** [Set Hunt Group Out Of Service](#) ^[494], [Clear Hunt Group Night Service](#) ^[453], [Clear Hunt Group Out Of Service](#) ^[453].
- **IP Office Software Level:** 1.0+.

Previously in IP Office 3.2 the Set Hunt Group Night Service, Set Hunt Group Out of Service and Hunt Group Enable short code features toggled. That behaviour is not supported in 4.0 and higher.

Example

This short code is a default within the Manager configuration. N represents the telephone number of the hunt group to be placed into "Night Service" mode. For example, when *20*201# is dialed, the hunt group associated with extension 201 will be placed into "Night Service" mode.

- **Short Code:** *20*N#
- **Telephone Number:** N
- **Feature:** SetHuntGroupNightService

6.8.115 Set Hunt Group Out Of Service

This feature manually puts the specified hunt group into 'Out of Service' mode.

If a time profile has also been defined to control hunt group night service, the action may vary:

- **Pre-4.0 IP Office**
Set Hunt Group Out of Service cannot be used to override a hunt group put into night service by a time profile.
- **4.0 IP Office and Higher**
This option can be used to override a time profile and change a hunt group from night service to out of service.
- **Telephone Number:** ✓ Hunt group extension number.
For IP Office 4.0+, if left blank, the short code will affect all hunt groups of which the user is a member.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [HGOS+](#) ^[639]
- **IP Office Software Level:** 1.0+.
Previously the [Set Hunt Group Night Service](#) ^[494] and [Set Hunt Group Out of Service](#) ^[494] short code features toggled. That behaviour is not supported in 4.0 and higher.

Example

Below is a sample short code using the Set Hunt Group Out Of Service feature. N represents the telephone number of the hunt group to be placed into "Out of Service" mode. For example, when *56*201# is dialed, the hunt group associated with extension 201 will be placed into "Out of Service" mode.

- **Short Code:** *56*N#
- **Telephone Number:** N
- **Feature:** SetHuntGroupOutOfService

6.8.116 Set Inside Call Seq

This feature allows the user to select the ringing used on their extension for internal calls. The number entered corresponds to the ring pattern required. This is 0 for Default Ring, 1 for RingNormal, 2 for RingType1, etc. For more information on selectable ringing patterns, see Ring Tones.

Use of this short code function is applicable to analog phone users only. The distinctive ring used by DS port phones is fixed by the phone type.

- **Telephone Number:** ✓ Number corresponding to the desired ring pattern. See [Ring Tones](#)^[745].
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [ICSeq](#)^[646]
- **See also:** [Set Ringback Seq](#)^[498], [Set Inside Call Seq](#)^[495].
- **IP Office Software Level:** 1.0+.

Example

This Short Code allows a user to change their inside call pattern. N represents the number corresponding to the Call Sequence the user wishes to choose, the numbering starts at 0 selecting Default Ring, 1 selects Ring Normal, 2 selects RingType1, etc. For example, if a user wants to set her/his internal ring pattern to RingType1, the user would dial *80*2# because 2 corresponds to RingType1. This short code is useful for distinguishing an external call from an internal one simply by the ring tone.

- **Short Code:** *80*N#
- **Telephone Number:** N
- **Feature:** SetInsideCallSeq

6.8.117 Set Mobile Twinning Number

This short code feature can be used to set a mobile twinning number. The destination can be any external number the user is able to dial normally. It should include any prefix if necessary.

Note that the use of mobile twinning requires entry of a Mobile Twinning license and may be subject to a time profile.

- **Telephone Number:** ✓ Twinning destination.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **See also:** [Set Mobile Twinning On](#)^[496], [Set Mobile Twinning Off](#)^[496], [Mobile Twinned Call Pickup](#)^[482].
- **IP Office Software Level:** 3.2+.

6.8.118 Set Mobile Twinning On

This short code feature turns on the user's mobile twinning. It requires a mobile twinning number to have been set for the user. That can be done through using the [Set Mobile Twinning Number](#)^[496] short code feature or through the [User | Twinning](#)^[297] tab within Manager.

Note that the use of mobile twinning requires entry of a Mobile Twinning license and may be subject to a time profile.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **See also:** [Set Mobile Twinning Off](#)^[496], [Set Mobile Twinning Number](#)^[496], [Mobile Twinned Call Pickup](#)^[482].
- **IP Office Software Level:** 3.2+.

6.8.119 Set Mobile Twinning Off

This short code feature turns off the user's mobile twinning.

Note that the use of mobile twinning requires entry of a Mobile Twinning license and may be subject to a time profile.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **See also:** [Set Mobile Twinning On](#)^[496], [Set Mobile Twinning Number](#)^[496], [Mobile Twinned Call Pickup](#)^[482].
- **IP Office Software Level:** 3.2+.

6.8.120 Set No Answer Time

This short code feature allows the user to change their [No Answer Time](#)^[277] ([User](#) | [Telephony](#) | [Call Settings](#)^[277]).

- **Telephone Number:** ✓ Time in seconds.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [NATim](#)^[642]
- **See also:** [Set Wrap Up Time](#)^[498].
- **IP Office Software Level:** 1.0+.

Example

This short code allows a user to change the length of time they have to answer the phone before it goes to divert or voicemail. N represents the number of seconds. For example, if a user wants to set the allocated answer interval to 15 seconds, the following information needs to be entered: *81*15#.

- **Short Code:** *81*N#
- **Telephone Number:** N
- **Feature:** SetNoAnswerTime

6.8.121 Set Outside Call Seq

This feature allows the user to select the ringing used on their extension for external calls. The number entered corresponds to the ring pattern required. This is 0 for Default Ring, 1 for RingNormal, 2 for RingType1, etc. For more information on selectable ringing patterns, see Ring Tones. Use of this short code function is applicable to analog phone users only. The distinctive ring used by DS port phones is fixed by the phone type.

- **Telephone Number:** ✓ Number corresponding to the desired ring pattern. See [Ring Tones](#)^[745].
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [OCSeq](#)^[642]
- **See also:** [Set Ringback Seq](#)^[498], [Set Outside Call Seq](#)^[497].
- **IP Office Software Level:** 1.0+.

Example

This short code allows a user to change the ringing tone for an external call. N represents the number corresponding to the Call Sequence the user wishes to choose, the numbering starts at 0 selecting Default Ring, 1 selects RingNormal, 2 selects RingType1, etc. For example, if a user wants to set her/his ring pattern for external calls to RingType1, the user would dial *81*2# because 2 corresponds to RingType1. This short code is useful for distinguishing an external call from an internal one simply by the ring tone.

- **Short Code:** *81*N#
- **Telephone Number:** N
- **Feature:** SetOutsideCallSeq

6.8.122 Set Ringback Seq

This feature allows the user to select the ringing used on their extension for ringback calls. The number entered corresponds to the ring pattern required. This is 0 for Default Ring, 1 for RingNormal, 2 for RingType1, etc. For more information on selectable ringing patterns, see Ring Tones.

Use of this short code function is applicable to analog phone users only. The distinctive ring used by DS port phones is fixed by the phone type.

- **Telephone Number:** ✓ Number corresponding to the desired ring pattern. See [Ring Tones](#)^[745].
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [RBSeq](#)^[642]
- **See also:** [Set Outside Call Seq](#)^[497], [Set Inside Call Seq](#)^[495].
- **IP Office Software Level:** 1.0+.

Example

This short code allows a user to change the ringing tone for a ringback call. N represents the number corresponding to the ring tone the user wishes to choose, the numbering starts at 0 selecting Default Ring, 1 selects RingNormal, 2 selects RingType1, etc. For example, if a user wants to set her/his ring pattern for ringback calls to RingType1, the user would dial *81*2# because 2 corresponds to RingType1. This short code is useful for distinguishing a ringback call from any other call simply by the ring tone.

- **Short Code:** *81*N#
- **Telephone Number:** N
- **Feature:** SetRingbackSeq

6.8.123 Set Wrap Up Time

Allows users to change their [Wrap-up Time](#)^[277] ([User | Telephony | Call Settings](#)^[277]) setting, which specifies the amount of time, after disconnecting from a call, before the user can take another call.

- **Telephone Number:** ✓ Time in seconds.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [WUTim](#)^[643]
- **See also:** [Set No Answer Time](#)^[497].
- **IP Office Software Level:** 1.0+.

Example

N represents the number of seconds. For example, if a user wants to set her/his wrap up time to 8 seconds, this user would dial *82*5#. This short code is useful in a "call center" environment where users may need time to log call details before taking the next call. If set to 0 the user does not receive any calls. It is recommended that this option is not set to less than the default of 2 seconds.

- **Short Code:** *82*N#
- **Telephone Number:** N
- **Feature:** SetWrapUpTime

6.8.124 Shutdown Embedded Voicemail

Allows the Embedded Voicemail service to be closed down without having to switch off the IP Office. Once shutdown the Embedded Voicemail memory card can be safely removed.

The short code has the following effects:

- 1.Immediately disconnect all current users within embedded voicemail. This is not a polite shutdown
- 2.Mark the embedded voicemail as inactive so that it will not receive any new calls.
- 3.Shutdown the file system so that the call data is correctly written to the flash card.
- 4.Extinguish the **C/F** LED on the IP406 V2 or IP 500 when it is safe to remove the memory card.

Once Embedded Voicemail is shutdown, it is restarted by reinsertion of a memory card.

- **Telephone Number:** ✖
- **Default Short Code:** ✖
- **Phone Manager Control:** ✖
- **SoftConsole Control:** ✖
- **Programmable Button Control:** ✖
- **IP Office Software Level:** 4.0+ (Added in the IP Office 4.0 Q2 2007 maintenance release).

6.8.125 Suspend Call

This feature uses the Q.931 Suspend facility. It suspends the incoming call at the ISDN exchange, freeing up the ISDN B channel. The call is placed in exchange slot 0 if a slot number is not specified.

- **Telephone Number:** ✓ Exchange slot number or blank (slot 0).
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [Suspe](#)^[644]
- **See also:** [Resume Call](#)^[489].
- **IP Office Software Level:** 1.0+.

6.8.126 Suspend CW

This feature uses the Q.931 Suspend facility. Suspends the incoming call at the ISDN exchange and answer the call waiting. The call is placed in exchange slot 0 if a slot number is not specified. Only available when supported by the ISDN exchange.

- **Telephone Number:** ✓ Exchange slot number or blank (slot 0).
- **Default Short Code:** ✓ *28*N# (A-Law only)
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [SusCW](#)^[644]
- **See also:** [Resume Call](#)^[489].
- **IP Office Software Level:** 1.0+.

Example

Sample short code using the Suspend CW feature.

- **Short Code:** *28*N#
- **Feature:** Suspend CW

6.8.127 Start After Call Work

This feature can be used by users who have been configured as CCR agents. It allows them to dial a short code to enter the After Call Work (ACW) state as reported by the IP Office Customer Call Reporter (CCR) application.

- **Telephone Number:** ✗
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [ACW](#) ^[562]
- **See also:** [Clear After Call Work](#) ^[452].
- **IP Office Software Level:** 4.2 4Q 2008 Maintenance release+.

6.8.128 Toggle Calls

This feature cycles through each call that the user has on hold on the IP Office system. This feature is useful when a user with a single-line telephone has several calls on hold and needs to respond to each one in turn.

- **Telephone Number:** ✗
- **Default Short Code:** ✓ *29
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✓ [Togg](#) ^[648]
- **IP Office Software Level:** 1.0+.

Example

Below is sample short code using the Toggle Calls feature (via Manager).

- **Short Code:** *29
- **Feature:** ToggleCalls

6.8.129 Unpark Call

Retrieve a parked call from a specified system park slot. In pre-3.2 IP Office this feature was called Ride Call.

- **Telephone Number:** ✓ System park slot number.
- **Default Short Code:** ✓ *38*N#
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ [Ride](#) ^[648]
- **See also:** [Park Call](#) ^[488].
- **IP Office Software Level:** 1.0+.

Example

Below is a sample short code using the Unpark Call feature. N represents the park slot number in which the call you want to retrieve was parked. For example, if a user parked a call to slot number 9, you can retrieve that call by dialing *38*9#.

- **Short Code:** *38*N#
- **Telephone Number:** N
- **Feature:** Unpark Call

6.8.130 Voicemail Collect

This feature connects to the voicemail system. Normally the telephone number field is used to indicate the name of the mailbox to be accessed, for example "?Extn201" or "#Extn201".

- ? indicates 'collect messages'.
- # indicates 'leave a message'. It also instructs the voicemail server to give a brief period of ringing before connecting the caller. The # can be omitted for immediate connection.
- " " quotation marks must be used to enclose the number being sent to the voicemail server. Any text not enclosed by quote marks will be treated as short code wildcards to be interpreted and replaced by the IP Office.

When using Voicemail Pro, names of specific call flow start points can also be used to directly access those start points via a short code. In these cases, ? is not used and # is only used if ringing is required before the start point's call flow begins.

Note: Short codes using the Voicemail Collect feature, with either "Short Codes.name" and "#Short Codes.name" entries in the Telephone Number field are automatically converted to the Voicemail Node feature and name.

- **Telephone Number:** ✓ See above.
- **Default Short Code:** ✓ *17
- **Phone Manager Control:** ✓
- **SoftConsole Control:** ✓
- **Programmable Button Control:** ✓ [VMCol](#) ⁽⁶⁵²⁾
- **See also:** [Voicemail On](#) ⁽⁵⁰⁴⁾, [Voicemail Off](#) ⁽⁵⁰⁴⁾, [Voicemail Node](#) ⁽⁵⁰³⁾.
- **IP Office Software Level:** 1.0+.

Example: Retrieve Messages from Specific Mailbox

This short code allows a user to retrieve messages from the mailbox of the hunt group 'Sales'. This usage is not supported on Voicemail Pro running in Intuity emulation mode unless a custom call flow has been created for the hunt group, refer to the Voicemail Pro help.

- **Short Code:** *99
- **Telephone Number:** "?Sales"
- **Feature:** VoicemailCollect

Example: Record Message to Specific Mailbox

To allow users to deposit a message directly to Extn201's Voicemail box. This short code is useful when you know the person is not at her/his desk and you want to immediately leave a message rather than call the person and wait to be redirected to voicemail.

- **Short Code:** *201
- **Telephone Number:** "#Extn201"
- **Feature:** VoicemailCollect

Example: Accessing a Specific Voicemail Pro Module

This short code can be used in instances where you have a conference bridge set up on the IP Office and a module has been created via Voicemail Pro to access this conference bridge. A short code can be created for internal access to the module. In the sample short code below, the telephone number field contains the name of the module. In this example, if a short burst of ringing is required before connecting the module, "#conferenc" would be used as the telephone number.

- **Short Code:** *100
- **Telephone Number:** "conferenc"
- **Feature:** VoicemailCollect

6.8.131 Voicemail Node

Similar to Voicemail Collect but used for calls being directed to a Voicemail Pro Short Codes start point. Useful if you have set up a short code start point with Voicemail Pro and want to give direct internal access to it.

- **Telephone Number:** ✓ Voicemail Pro Short Code start point name without quotation marks.
- **Default Short Code:** ✗
- **Phone Manager Control:** ✗
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✗
- **See also:** [Voicemail Collect](#) ⁵⁰².
- **IP Office Software Level:** 2.0+.

Example

Having created a short codes start point call flow called Sales, the following IP Office short code can be used to route calls to that call flow:

- **Short Code:** *96
- **Telephone Number:** Sales
- **Feature:** VoicemailNode

6.8.132 Voicemail On

This feature enables the user's voicemail mailbox to answer calls which ring unanswered or arrive when the user is busy.

- **Telephone Number:** ✗ None.
- **Default Short Code:** ✔ *18
- **Phone Manager Control:** ✔
- **SoftConsole Control:** ✔
- **Programmable Button Control:** ✔ [VMOOn](#)^[653]
- **See also:** [Voicemail Off](#)^[504].
- **IP Office Software Level:** 1.0+.
For IP Office 3.2, the Voicemail On and Voicemail Ringback On short code features toggled. For IP Office 4.0 and higher they no longer toggle.

Example

This short code can be used to toggle the feature on.

- **Short Code:** *18
- **Feature:** VoicemailOn

6.8.133 Voicemail Off

This feature disables the user's voicemail mailbox box from being used to answer calls. It does not disable the voicemail mailbox being used as the target for other functions such as call recording or messages forwarded from other mailboxes.

- **Telephone Number:** ✗ None.
- **Default Short Code:** ✔ *19
- **Phone Manager Control:** ✔
- **SoftConsole Control:** ✔
- **Programmable Button Control:** ✔ [VMOOff](#)^[653]
- **See also:** [Voicemail On](#)^[504].
- **IP Office Software Level:** 1.0+.

Example

Below is a sample of the short code setup.

- **Short Code:** *19
- **Feature:** VoicemailOff

6.8.134 Voicemail Ringback On

This feature enables voicemail ringback to the user's extension. Voicemail ringback is used to call the user when they have new voicemail messages. The ringback takes place each time the extension is used. This feature is useful for users who do not have voicemail light/button indicators on their telephone.

If the user has been configured to receive message waiting indication for any hunt groups, a separate voicemail ringback will occur for each such group and for the users own mailbox.

- **Telephone Number:** ✗
- **Default Short Code:** ✔ *48
- **Phone Manager Control:** ✔
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✔ [VMRB+](#) ^[654]
- **See also:** [Voicemail Ringback Off](#) ^[505].
- **IP Office Software Level:** 1.0+.
For IP Office 3.2, the Voicemail On and Voicemail Ringback On short code features toggled. For IP Office 4.0 and higher they no longer toggle.

Example

This short code can be used to turn the feature on.

- **Short Code:** *48
- **Feature:** VoicemailRingbackOn

6.8.135 Voicemail Ringback Off

This feature disables voicemail ringback to the user's extension. This feature is also available on Phone Manager.

- **Telephone Number:** ✗
- **Default Short Code:** ✔ *49
- **Phone Manager Control:** ✔
- **SoftConsole Control:** ✗
- **Programmable Button Control:** ✔ [VMRB-](#) ^[654]
- **See also:** [Voicemail Ringback On](#) ^[505].
- **IP Office Software Level:** 1.0+.

Example

Below is a sample of the short code setup.

- **Short Code:** *49
- **Feature:** VoicemailRingbackOff

Chapter 7.

Button Programming

7. Button Programming

This section covers the IP Office actions that can be assigned to programmable buttons on Avaya phones. This assignment can be done through the IP Office configuration using Manager and for some functions using the phone itself.

- **Appearance Functions**

The functions **Call Appearance**, **Bridged Appearance**, **Coverage** and **Line Appearance** are collectively known as "appearance functions". For full details of their operation and usage refer to the [Key and Lamp Operation](#) ⁽⁶⁵⁶⁾ section. The following restrictions must be observed for the correct operation of phones.

IP Office Software	
IP Office 2.1 or 3.0DT	On systems running <u>IP Office 2.1 or 3.0DT</u> software, the <u>first programmable button must be set as a call appearance button</u> . This requirement is necessary for the correct operation of phone functions such as call log.
IP Office 3.0+	For systems running <u>IP Office 3.0 or higher</u> (excluding 3.0DT), the <u>first 3 programmable buttons must be set as call appearance buttons</u>. This requirement is necessary for the correct operation of functions such as transfer, conference and call log. • On phones with only two physical programmable buttons both buttons <u>must</u> be used as call appearance buttons. • On 1600 Series phones, all the appearance buttons must be programmed as a continuous block with no gaps between the appearance buttons.
IP Office 4.2+	T3 phones support Line Appearance buttons only and are exempt from the above rules.
IP Office 5.0+	IP Office 5.0+ allows users have line appearances programmed before call appearances. This option is only supported by users using 1600 Series phones.

- **Phone Support**

Note that not all functions are supported on all phones with programmable buttons. Where possible exceptions have been indicated.

- Actions that use status feedback are only supported on buttons that provide that feedback through lamps or icons.

7.1 Programming Buttons

7.1.1 Programming Buttons with Manager

Using IP Office Manager, if only button programming changes are required, the configuration changes can be merged back to the IP Office system without requiring a reboot.

- **Appearance Functions**

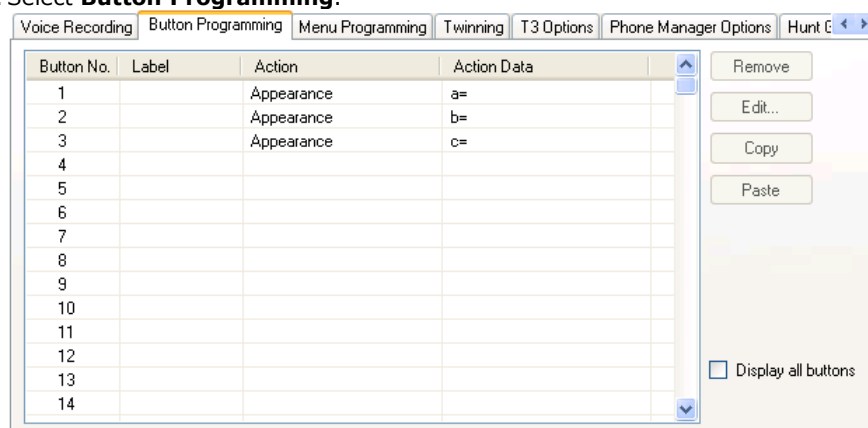
The functions **Call Appearance**, **Bridged Appearance**, **Coverage** and **Line Appearance** are collectively known as "appearance functions". For full details of their operation and usage refer to the [Key and Lamp Operation](#) ⁽⁶⁵⁶⁾ section. The following restrictions must be observed for the correct operation of phones.

IP Office Software	
IP Office 2.1 or 3.0DT	On systems running <u>IP Office 2.1 or 3.0DT</u> software, the <u>first programmable button must be set as a call appearance button</u> . This requirement is necessary for the correct operation of phone functions such as call log.
IP Office 3.0+	For systems running <u>IP Office 3.0 or higher</u> (excluding 3.0DT), the <u>first 3 programmable buttons must be set as call appearance buttons</u> . This requirement is necessary for the correct operation of functions such as transfer, conference and call log. • On phones with only two physical programmable buttons both buttons <u>must</u> be used as call appearance buttons. • On 1600 Series phones, all the appearance buttons must be programmed as a continuous block with no gaps between the appearance buttons.
IP Office 4.2+	T3 phones support Line Appearance buttons only and are exempt from the above rules.
IP Office 5.0+	IP Office 5.0+ allows users have line appearances programmed before call appearances. This option is only supported by users using 1600 Series phones.

1. Using Manager load the current configuration from the IP Office.

2. Select the  **User** required to display their configuration details.

3. Select **Button Programming**.



Button No.	Label	Action	Action Data
1		Appearance	a=
2		Appearance	b=
3		Appearance	c=
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			

- The number of button displayed is based on the phone associated with the user when the configuration was loaded. This can be overridden by selecting **Display All Buttons**. This may be necessary for users who switch between different phones using hot desking or have an expansion unit attached to their phone.

4. For the required button, either select the button and then click **Edit** or double-click the button.

5. Edit the settings as required. Use the ... button to display the menu for selecting the required button action. Select the action and set the action data, then click **OK**.

Button Programming

Please select the required action:

Dial
Group
User
Emulation ->
Advanced ->
Appearance ->

Bridged Appearance
Appearance
Coverage Appearance
Line Appearance

Action: Bridged Appearance

Action Data: BRogers:206 2

OK Cancel Help

6. Click **OK**. Repeat for any other buttons.
7. Click **OK**.

An alternate method for the above programming is to right-click on the various fields. To do this start with the **Action** field, then **Action Data** and then **Label** if required.

7.1.2 Programming Button via the Menu Key

On 4412D+, 4424D+, 4612IP, 4624IP, 6408D, 6416D, 6424D phones the **Menu**  button can be used to program some functions against other buttons. This programming also includes programmable buttons on any associated add-on units associated with the phone. Buttons already programmed as appearance buttons cannot be altered using these methods.

- A [Self-Administer](#) ^[634] button can also be added to allow the phone user to program the functions on their other buttons, see [Self-Administer](#) ^[634].
- For IP Office 4.2+, T3 phone users can also program buttons using a Menu function, see [T3 Self-Administration](#) ^[514].

Setting a Button to Dial a Number

This process sets the selected programmable button to the [Dial](#) ^[587] function in the IP Office configuration.

1. With the phone idle and on-hook, press **MENU** .
2. Press  and select **PROG**.
3. Enter the number required. The left-most display button can be used to backspace and the right-most display button can be used to **Clear** the whole number.
4. Press the programmable button against which the number should be set.
5. If the button is already programmed, options to replace (**Repla**), keep (**Keep**) or delete (**Delet**) the buttons existing programming appear. Select the option required.
6. The message **BUTTON PROGRAMMED!** indicates that the button is now programmed. Select **Cont** and then press **Exit** .

Setting a Button to a Switch Function

This process allows users to program their own [Group](#) ^[612], [User](#) ^[649] and [Park](#) ^[625] slot monitor buttons. It also allows the programming of [Dial](#) ^[587] and [Flash Hook](#) ^[603] buttons.

1. With the phone idle and on-hook, press **Menu**  twice.
2. Press  and select **ProgA**.
3. Press  and select **DSS**.
4. Use the  and  buttons to display the function required. Press the display button below the function to select it.
5. If the function requires a telephone number value set, enter the number. The left-most display button can be used to backspace and the right-most display button can be used to **Clear** the whole number.
6. Press the programmable button against which the number should be set.
7. If the button is already programmed, options to replace (**Repla**), keep (**Keep**) or delete (**Delet**) the buttons existing programming appear. Select the option required.
8. The message **BUTTON PROGRAMMED!** indicates that the button is now programmed. Select **Cont** and then press **Exit** .

Setting Buttons to Admin Function

Phones with a **Menu**  key can program a range of self-administer functions onto their programmable buttons. These are:

[Dir - Directory.](#) 

[Drop - Drop.](#) 

[HFAns - Internal Auto-Answer.](#) 

[Timer - Timer.](#) 

[AutCB - Automatic Callback.](#) 

[Prog - Abbreviated Dial Program.](#) 

[CFrwd - Call Forwarding All.](#) 

[CPark - Call Park.](#) 

[SAC - Send All Calls.](#) 

[TmDay - Time of Day.](#) 

[Admin - Self-Administer.](#) 

[Acct - Account Code Entry.](#) 

[AD - Abbreviated Dial.](#) 

[Park - Call Park to Other Extn.](#) 

[GrpPg - Group Paging.](#) 

[CPkUp - Call Pickup.](#) 

[DPkUp - Directed Call Pickup.](#) 

[RngOf - Ringer Off.](#) 

[Spres - AD Suppress.](#) 

[HdSet - Headset Toggle.](#) 

[HGNS+ - Set Hunt Group Night Service.](#) 

This is the same set of functions that can be programmed by users with a button set to Self-Administer (see [Self-Administer](#) ).

1. With the phone idle and on-hook, press **Menu** .
2. Press  twice and select **Admin**.
3. Use the  and  keys to display the function required and then select it by pressing the display button below the feature.
 - Selecting **Expl?** changes the display from short name mode to long name mode. In this mode the full names of the features are displayed. Select **SHORTMODE** to return to that mode.
4. If the function requires a telephone number value set, enter the number. The left-most display button can be used to backspace and the right-most display button can be used to **Clear** the whole number.
5. Press the programmable button against which the number should be set.
6. If the button is already programmed, options to replace (**Repla**), keep (**Keep**) or delete (**Delet**) the buttons existing programming appear. Select the option required.
7. The message **BUTTON PROGRAMMED!** indicates that the button is now programmed. Select **Cont** and then press **Exit** .

7.1.3 Programming Button via an Admin Button

The **Admin**^[634] (also called **Self-Administer**^[634]) function can be assigned to a programmable button on a user's phone. That button then allows the user to program functions against other programmable buttons on their phone, except those already set as appearance buttons.

- **Admin** buttons are only supported on **2410, 2420, 4406D+, 4412D+, 4424D+, 4606IP, 4612IP, 4624IP, 5410, 5420, 6408D, 6416D** and **6424D**.
- On **4412D+, 4424D+, 4612IP, 4624IP, 6408D, 6416D, 6424D** phones:
 - **Admin** can be permanently accessed via **Menu** , , , **Admin**.
 - **Admin1** can be permanently accessed via **Menu** , **Menu** , , **ProgA**, , , **DSS**.

Using an Admin Button

1. With the phone idle and on-hook, press the button programmed to **Admin** or **Admin1**.
2. The list of available functions is shown. Use the  and  buttons to move through the list.
 - Selecting **Expl?** changes the display from short name mode to long name mode. In this mode the full names of the features are displayed. Select **SHORTMODE** to return to that mode.
3. Select the function required.
4. If the function requires a telephone number value set, enter the number. The left-most display button can be used to backspace and the right-most display button can be used to Clear the whole number.
5. Press the programmable button against which the number should be set. On phones with multiple pages of buttons use the  and  button to select the required page before pressing the button to program.
6. If the button is already programmed, options to replace, keep or delete the button's existing programming appear. Select the option required.
7. The message **BUTTON PROGRAMMED!** indicates that the button is now programmed.
8. Select **Cont.** and then press **Exit** or lift the handset to go off-hook.

7.1.4 T3 Self-Administration

IP Office 4.2+ supports functions for T3 phone users to be able to program their own buttons. This is similar to the existing [Self-Administer](#) ^[634] button supported on other phones but is configured and accessed via different methods.

The user accesses button programming through Menu -> Settings -> Button programming. This function is not available by default, instead it must be configured as available for the user using the method detailed below.

Once enabled, the user is able to configure the following functions on buttons:

Function	Description
empty	Returns the button to its normal default function.
Account Code	Allows the user to enter an account code before or during a call. The account code can be preset or entered after the button press. See the Account Code Entry ^[558] function.
Callback	Set a callback from the currently dialed extension number. See the Automatic Callback ^[564] function.
Call list	Displays a list of calls received. See the Call List ^[570] function.
Call Tracing	Activate malicious call tracing. See the MCID Activate ^[623] function and Malicious Call Tracing (MCID) ^[738] .
Dial	Dial a preset number or partial number that can be completed after the button press. See the Dial ^[587] function.
Dial Intercom	Make a page call to the selected target if it supports handsfree answer. See Dial Intercom ^[591] .
Directory	Display the IP Office directory. See the Directory ^[598] function.
Do not disturb	Toggle the phone between do not disturb on and off. See the Send All Calls ^[638] function.
Follow me here	Activate/cancel follow me here. See the Follow Me Here ^[604] function.
Forward unconditional	Activate/cancel forward all calls. See the Forward Unconditional On ^[611] function.
Group Paging	Page a group of phones. See the Group Paging ^[614] function.
Group Membership	Enable/disable the user membership of a group or all groups. See the Hunt Group Enable ^[617] function.
Group State	Change a hunt group's out of service status. See the Set Hunt Group Out of Service ^[639] function.
Headset	Switch between handset and headset modes. See the Headset Toggle ^[618] function.
Internal Auto-Answer	Auto connect internal calls after a single tone. See the Internal Auto-answer ^[620] function.
Login	Access the menu for phone log in. See the Extn Login ^[602] function.
Logout	Log out from the phone. See the Extn Logout ^[602] function.
Night Service	Change a hunt group's night service status. See the Set Hunt Group Night Service ^[638] function.
Paging	Page an extension or group. See the Dial Paging ^[592] function.
Pickup	Answer a call alerting on the system. See the Call Pickup ^[574] function.
Pickup Member	Answer a call alerting the hunt group of which the user is a member. See the Call Pickup Members ^[575] function.
Twinning	Switch mobile twinning on/off and set the twinning destination. Also used to pull a call answered at the twinned number back to the user's primary extension. See the Twinning ^[648] function.
User	Monitor the status of a user. Also used to call them or to pickup calls alerting them. See the User ^[649] function.
Visual Voice	Create a visual voice access button. See Visual Voice ^[651] .
Voicemail	Equivalent to the Voicemail Collect ^[652] function.
Voicemail on/off	Switch the use of the user's mailbox to answer unanswered calls on/off. See the Voicemail On ^[653] function.

The user will need to be made aware of which physical buttons can be programmed as this varies between the different T3 phones. See [T3 Compact](#) ^[547], [T3 Classic](#) ^[548] and [T3 Comfort](#) ^[549].

Configuring a T3 User for Button Programming

1. Using Manager, receive the configuration from the system.
2. Select the T3 user and then select **Menu Programming**.
3. Set the action for one of the menus to **Self-Administer**.
4. Send the configuration back to the IP Office.

5. The user will now be able to access button programming from their phone via **Menu -> Settings -> Button programming**.

7.1.5 Customizing Text Labels

On Avaya phones where the programmable button has an adjacent display area, a text label is displayed to indicate the button's function.

Each function has a default label. However this default label can be replaced by a custom text label of up to 13 characters (A-Z, a-z, 0-9 plus ., *, - and #). This custom label can be entered either by the user from their phone or through the IP Office configuration.

Entering a Custom Label from a Phone

This option is supported on 2410, 2420, 4610, 4620, 4621, 4625, 5410, 5420, 5610, 5620 and 5621 phones.

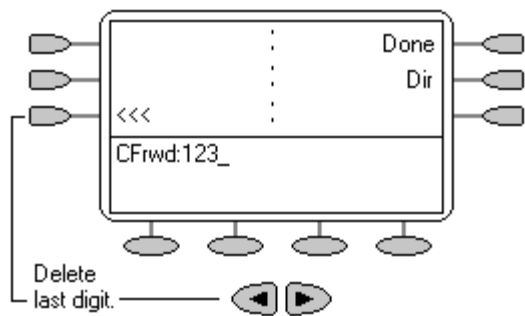
1. First exit any other phone menu mode and ensure that the phone is idle.
2. The next step depends on the type of phone:
 - **2410, 5410:** Press any  key below the display. The press  **Label**.
 - **2420, 5420:** Press  **Label**.
 - **IP Phones:** Press  Options. Press  and then  **Feature Button Labeling**.
3. The options may vary slightly between phone types but are similar.
 -  **Edit** or **Relabel feature buttons** allows you replace the current labels, see the steps below.
 -  **Inspect** or **View default labels** displays the default labels.
 -  **Restore** or **Restore default labels** replaces any custom labels with the default labels.
 -  **Done** exits the button labelling options.
4. Press  **Edit**.
5. Select the function key whose label you wish to change.
6. Begin entering the **New Label** text using the telephone keypad.
 - Each number key is marked with the letters it provides. You may have to press the key more than once depending on the character required. For example, the key **6** is also marked as **M**, **N** and **O**. To enter an **O**, re-press the **6** key until an **O** is displayed.
 - If the next character you want is on another key, simply key the next character.
 - If the next character you want to enter is on the same key just used, press  to move the cursor right and then enter the character.
 - Pressing the ***** key once enters a **.** (period). Pressing it twice enters a *****.
 - Pressing the **#** key once enters a **-** (dash). Pressing it twice enters a **#**.
 - By default the first letter entered and the first letter after any space are entered in upper-case whilst all other character are entered in lower-case. To change the case of the current character press  **Case**.
 - To enter a space press  **Space**.
 - Use the  key to move the cursor one space right.
 - If you make a mistake, use **Backspace** to delete the character to the left of the cursor.
 - If you have made a mistake in the middle of a character string and do not wish to backspace and re-enter all the characters use the  key to step back to one character before the point where you wish to edit. Either insert the new character or press **Backspace** to delete the character to the left of the cursor.
 - Press  **Clear** to delete all the current text.
7. When the new name is set as required, press **Save**. To return to the label options screen without saving the changes, press **Cancel**.
8. Select another button to re-label or press  **Done**.

7.1.6 Interactive Button Menus

For IP Office 4.0 and higher, a number of changes have been made to the behaviour of some functions (see the table below) on large screen Avaya display phones.

The new behaviour applies to functions that require an extension number but where the button has been configured without a specific number. In this case pressing the button allows the user to see and set the current number value, using the Directory function if necessary to select the required number.

For example the **Emulation | Call Forwarding All** appears as follows:



The <<< and **Done** controls only appear when a number is already set or when a valid number has been entered. Press **Done** or # to complete entry. The **Dir** option allows user and or group selection using the IP Office internal directory.

Functions that use the interactive menu are:

Feature	Directory lists...	Feature	Directory lists...
Automatic Intercom ^[563]	Users	Follow Me Here Cancel ^[604]	Users
Acquire Call/Call Steal ^[560]	Users	Follow Me Here ^[604]	Users
Call Forwarding All ^[569]	Users	Follow Me To ^[603]	Users
Call Intrude ^[570]	Users	Forward Number ^[607]	Users/Groups
Call Park to Other Extension ^[573]	Users	Forward Busy Number ^[607]	Users/Groups
Dial Inclusion ^[590]	Users	Group Paging ^[614]	Users/Groups
Dial Intercom ^[591]	Users	Leave Word Calling ^[621]	Users/Groups
Directed Call Pickup ^[597]	Users/Groups	Priority Calling ^[627]	Users/Groups

- [User](#) ^[649] and [Group](#) ^[612] buttons can be used to indicate the required user or hunt group only if those buttons are on an associated button module. **User** and **Group** buttons on the users extension are not accessible while the interactive button menu is being displayed.
- For functions supported across Small Community Networks, the directory will include SCN users and advertised hunt groups.

7.2 Phone Details

The table below lists the feature phones supported by IP Office. Note that the range of phones supported varies with the IP Office control unit software level. For some phones the annotation 24 (4x6) or similar is used. This can be read as 24 programmable buttons, typically arranged as 4 screen pages with 6 physical buttons.

Phone	Programmable Buttons	Call Appearances	Button Type	Add-On	Software Level
1 1603 ^[52]	✓ 3	✓		-	4.2 Q4 '08+
2 1603SW ^[52]	✓ 3	✓		-	5.0+
3 1608 ^[52]	✓ 8	✓		-	4.2 Q4 '08+
4 1616 ^[52]	✓ 16	✓		BM32 ^[51]	4.2 Q4 '08+
5 2010	✗ -	✗	-	-	1.0-3.0DT
6 2030 ^[52]	✓ 8	✗		20DS ^[52]	1.0-3.0DT
7 2050 ^[52]	✓ 8	✗		20DS ^[52]	1.0-3.0DT
8 20CC ^[52]	✓ 8	✗		20DS ^[52]	1.0-3.0DT
9 20DT	✗ 0	✗	-	-	1.0-4.2
10 2402D ^[52]	✓ 2 (+12)	✓		-	3.0+
11 2410D ^[52]	✓ 12 (2x6)	✓		-	3.0+
12 2420 ^[52]	✓ 24 (3x8)	✓		EU24	1.4+
13 3616 ^[53]	✓ 6	✓	1.....	-	2.0+
14 3620 ^[53]	✓ 6	✓	1.....	-	3.2+
15 3626 ^[53]	✓ 6	✓	1.....	-	2.0+
16 3641 ^[53]	✓ 12	✓	1.....	-	4.0+
17 3645 ^[53]	✓ 12	✓	1.....	-	4.0+
18 3701	✗ 0	✗	-	-	3.1+
19 3711	✗ 0	✗	-	-	3.1+
20 3720	✗ 0	✗	-	-	5.0+
21 3725	✗ 0	✗	-	-	5.0+
22 3810 ^[53]	✓ 4	✓	-	-	2.1+
23 4406D ^[53]	✓ 6	✓		-	1.0+
24 4412D ^[53]	✓ 24	✓		4450 ^[53]	1.0+
25 4424D ^[53]	✓ 24	✓		4450 ^[53]	1.0+
26 4601 ^[53]	✓ 2	✓		-	3.0+
27 4602IP ^[53]	✓ 2	✓		-	1.3+
28 4602SW ^[53]	✓ 2	✓		-	1.3+
29 4606 ^[53]	✓ 6	✓		-	1.0-3.2
30 4610SW ^[54]	✓ 24 (4x6)	✓		-	3.0+
31 4612 ^[54]	✓ 12	✓		-	1.0-3.2
32 4620 ^[54]	✓ 24 (2x12)	✓		EU24BL	1.4+
33 4621 ^[54]	✓ 24 (2x12)	✓		EU24BL	3.1+
34 4624 ^[53]	✓ 24	✓		-	1.0-3.2
35 4625 ^[54]	✓ 24 (2x12)	✓		EU24BL	3.2+
36 5402 ^[52]	✓ 2 (+12)	✓		-	3.0+
37 5410 ^[52]	✓ 12 (2x6)	✓		-	3.0+
38 5420 ^[52]	✓ 24 (3x8)	✓		EU24	3.0+
39 5601 ^[53]	✓ 2	✓		-	3.0+
40 5602IP ^[53]	✓ 2	✓		-	3.0+
41 5602SW ^[53]	✓ 2	✓		-	3.0+
42 5610SW ^[54]	✓ 24 (4x6)	✓		-	3.0+
43 5620 ^[54]	✓ 24 (2x12)	✓		EU24BL	3.0+
44 5621 ^[54]	✓ 24 (2x12)	✓		EU24BL	3.2+
45 6408D ^[54]	✓ 8	✓		-	1.0+
46 6416D ^[54]	✓ 16	✓		XM24	1.0+
47 6424D ^[54]	✓ 24	✓		XM24	1.0+
48 9040 ^[54]	✓ 8 (2x4)	✓		-	1.0-3.2
49 T3 Compact ^[54]	✓ 4	✓ Line only. *		T3 DSS	3.1+
50 T3 Classic ^[54]	✓ 10	✓ Line only. *	(4 plus icons)	T3 DSS	3.1+

Phone		Programmable Buttons		Call Appearances	Button Type	Add-On	Software Level
51	T3 Comfort ⁵⁴⁹	✓	22	✓ <i>Line only.*</i>	 (10 plus icons)	T3 DSS	3.1+
52	T3 IP Compact ⁵⁴⁷	✓	4	✓ <i>Line only.*</i>		T3 DSS	3.2+
53	T3 IP Classic ⁵⁴⁸	✓	10	✓ <i>Line only.*</i>	 (4 plus icons)	T3 DSS	3.2+
54	T3 IP Comfort ⁵⁴⁹	✓	22	✓ <i>Line only.*</i>	 (10 plus icons)	T3 DSS	3.2+

- A number of phones only have two physical programmable buttons. On systems running IP Office 3.0 or higher (excluding 3.0DT) these button should only be used as call appearance buttons.
- The 2402 and 5402 phones have an additional 12 programmable slots that can be accessed by pressing **FEATURE**.
- *T3 and T3 IP phones support line appearance buttons only and only for IP Office 4.2+.

7.2.1 Phone Add-Ons

The following add-on's can be used to provide some Avaya phones with additional programmable buttons. Those additional buttons can then be used for key & lamp functions.

- Those marked  symbol support programmable buttons but those buttons cannot be used as appearance buttons.
- Those marked  symbol support programmable buttons which can be used as appearance buttons.
- **4450:**  +60 (50 x , 10 x )
Add-on for 4412D+ and 4424D+ phones. Provides an additional 60 programmable buttons with a single lamp - red except for the bottom two rows which are green. Due to the single lamp not recommended for appearance functions as not all button states can be indicated. Up to two 4450 units can be connected to an existing phone. A maximum of 2 unit as supported per DS module or control unit. A maximum of 8 units total are supported on an IP Office system.
- **BM32:**  +32 
Add-on for the 1616 that provides two columns of 16 buttons. Up to 3 BM32 modules are supported with any 1616. For IP Office 5.0, up to a maximum of 32 BM32 modules total are supported the IP Office system. For pre-IP Office 5.0 systems, only a total of 16 BM32 modules is supported.
- **EU24:**  +24 (2x12)  
Add-on for the 2420, 4620, 4620SW, 4625, 5420, 5620, 5620SW and 5621. Provides an additional 24 programmable buttons. Button display icons are on two switchable pages with 12 icons on each page. Connects direct to the phone. One per phone. Maximum of eight per IP Office system.
- **EU24BL:**  +24 (2x12)  
As per the EU24 above but with a backlight function to match the 4621. Not supported on the 2420 and 5420.
- **XM24:**  +24 
Add-on for 6416D and 6424D phones. Provides an additional 24 programmable buttons. Connects direct to phone. One per phone. Maximum of two per IP Office DS module or control unit.
- **T3 DSS:**  +36 LED
Up to 3 of these units can be connected to any of the IP Office T3 phones. Each provides an additional 36 programmable buttons. Each button includes a single red status LED. Connection of the T3 DSS varies:
 - With non-IP models, the first T3 DSS connects directly to a link port on the phone. No additional power supplies are required.
 - With T3 IP Models, the first T3 DSS connects to a DSS Link Unit fitted to the phone. A power supply is required for the DSS.
- **20DS:**  +42 
Add-on for 2030, 2050 and 20CC phones. One per phone. Provides an additional 42 programmable buttons with dual-color lamps.

For IP Office 4.2 2Q 2009+, the following combined limits are applicable to the support of button modules. Excluding T3 DSS modules only, where different types of button module are being used on the same system, in addition to the individual limits above, the maximum combined number of buttons per system is 512, regardless of whether the buttons are programmed or not.

7.2.2 Button Types

Key & lamp operation requires Avaya phones with programmable buttons. These are found on the majority of Avaya phones supported by IP Office.

The list below shows different programmable button types and the phones on which they are found.

-  **1603, 1608, 1616**
Programmable button with twin lamps.
-  **2030**
Programmable button with no lamp.
-  **2050, 20CC, 20DS**
Programmable button with dual-color lamp (red or green).
-  **4406D, 4412D, 4424D, 4606, 4612, 4624 Phones**
Programmable button with twin lamps. For appearance functions the red lamp is used to indicate the current selected button.
-  **4412 Phone**
Programmable button with no lamps. Found on the last 12 buttons on the Avaya 4412 phone.
-  **4450 Phone Add-On**
Programmable buttons with a single lamp (either red or green). Not recommended for appearance functions as not all button states can be indicated.
-  **4601, 5601**
Programmable button with single red lamp.
-  **6408D, 6416D, 6424D Phones and XM24 Add-On**
Programmable button with twin lamps. For appearance functions the red lamp is used to indicate the current selected button.
-  **2410D, 2420, 5410, 5420, EU24**
Display key with adjacent icon and text label display area. For appearance functions an _ underscore on the text label is used to indicate the current selected button.
-  **0:01 4610SW, 4620, 4621, 4625, 5610SW, 5620, 5621**
Display key with adjacent icon and text label display area. For appearance functions a * symbol is used to indicate the current selected button.
-  **2402D, 4602, 4602SW, 5402, 5602, 5602SW Phones**
Display key with adjacent icon display area but no text label display. For appearance functions a * symbol is used to indicate the current selected button.
 - The **2402D** and **5402** have an additional 12 programmable buttons. These are accessed by pressing **FEATURE** and then any key from **0** to **9**, ***** and **#**. These additional buttons are not suitable for appearance functions.
-  **Transtalk 9040**
Display keys with icon display area above. For appearance functions a ◀ icon is used to indicate the current selected button.
-  **3616, 3620, 3626**
Accessed by pressing **LINE** followed by the required button number.
-  **3641, 3645**
Accessed by pressing **LINE** or **FCN** followed by the required button number.
-   **T3 Compact, T3 Classic and T3 Comfort**
4, 10 and 18 buttons respectively which a combination of buttons having indicator lamps. On each phone 0, 4 and 10 of those button are located below the display and use display icons to indicate their status if applicable.

7.2.3 1603, 1608, 1616

These phones support 3, 8 or 16 programmable buttons respectively.

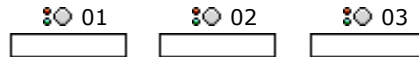
For the 1616, additional buttons can be added using a BM32 module. Use of a BM32 requires the associated phone to be powered by a 1600 Series power supply unit rather than PoE. For IP Office 5.0, up to 3 BM32's are supported with any 1616 with up to a maximum of 32 BM32's on the IP Office system.

For IP Office 5.0+, IP Office Manager is able to pass user button information to a DESI application on the same PC. This allows printing of labels using the label text set within the IP Office configuration. Currently on 1600 Series phones and BM32 button modules are supported by DESI.

- **1603:** IP Office 4.2 Q4 2008+. **1603SW:** IP Office 5.0.



1603

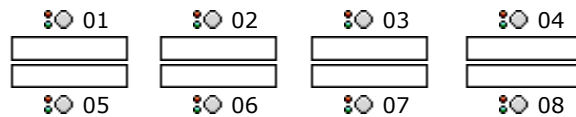


As the 1603 variants only have 3 programmable buttons, those buttons should only be used for call appearance buttons.

- **1608:** IP Office 4.2 Q4 2008+.



1608



The appearance buttons on 1608/1616 phones must be programmed as a continuous block starting from button 1.

- **1616:** IP Office 4.2 Q4 2008+.



1616

01	
02	
03	
04	
05	
06	
07	
08	
09	
10	
11	
12	
13	
14	
15	
16	

The appearance buttons on 1608/1616 phones must be programmed as a continuous block starting from button 1.

7.2.4 2030

This phone has 8 programmable buttons. They do not include any status indicator lamps.

- **2030:** Up to IP Office 3.0DT.



7.2.5 2050 and 20CC

These phones have 8 programmable buttons. Each button includes a dual status indicator lamp.

- **2050:** Up to IP Office 3.0DT only.
- **20CC:** Up to IP Office 3.0DT only.



7.2.6 20DS

This add-on is used with 2030, 2050 and 20CC phones. It provides an additional 42 programmable buttons with dual status indicator lamps. The unit requires a power supply and is connected to the next DT port on the same expansion module as the phone with which it is associated.

- **20DS:** Up to IP Office 3.0DT only.



☐	09	☐	23	☐	37
☐	10	☐	24	☐	38
☐	11	☐	25	☐	39
☐	12	☐	26	☐	40
☐	13	☐	27	☐	41
☐	14	☐	28	☐	42
☐	15	☐	29	☐	43
☐	16	☐	30	☐	44
☐	17	☐	31	☐	45
☐	18	☐	32	☐	46
☐	19	☐	33	☐	47
☐	20	☐	34	☐	48
☐	21	☐	35	☐	49
☐	22	☐	36	☐	50

7.2.7 2402D, 5402D

These phones only have two physical programmable buttons with no display text labels. For systems running IP Office 3.0 or higher (excluding 3.0DT) these buttons should only be used for call appearance buttons.

Display icons are used for status indication with a * used for current selected appearance button indication. For appearance functions, these only display active, alerting, held here and current selected button. They do not display in use elsewhere and on hold elsewhere.

Another 12 programmable buttons (buttons 4 to 15) are accessed by the user pressing **FEATURE** and then any key from **0** to **9**, ***** and **#**.

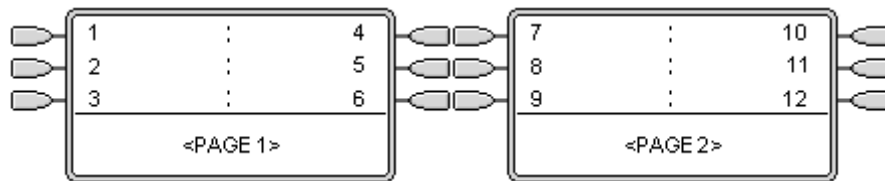
- **2402D:** IP Office 3.0+.
- **5402D:** IP Office 3.0+.



7.2.8 2410, 5410

These phones have 6 physical display keys that provide 12 programmable buttons arranged in two pages. The ◀ and ▶ keys are used to switch the display between different button display pages as shown below.

- **2410/5410:** IP Office 3.0+.



7.2.9 2420, 5420

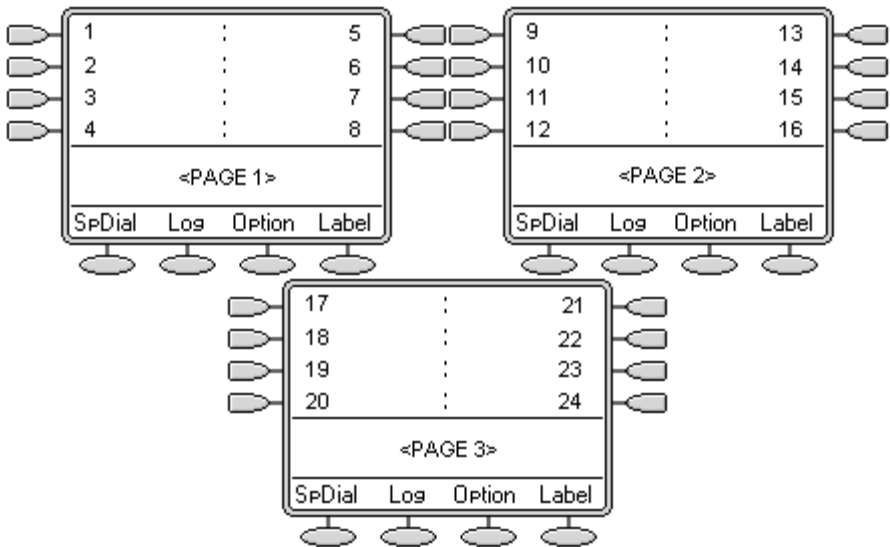
These phones have 8 physical display keys and 24 programmable buttons. The ◀ and ▶ keys are used to switch the display between different button display pages as shown below.

These phones support two modes of button display, selected by the user through the phone (press **Option** -> **Display Mode** -> **Call Center Mode**).

- **2420:** IP Office 2.1+.
- **5420:** IP Office 3.0+.

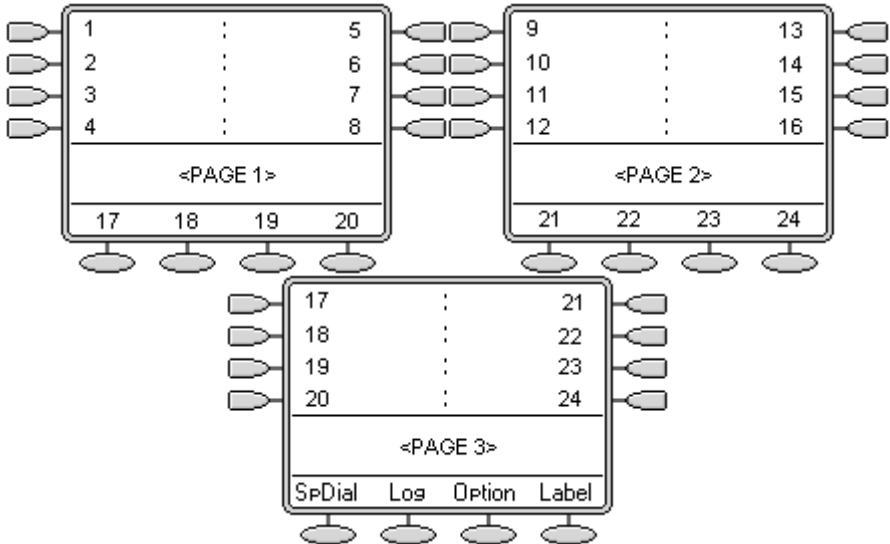


Normal Mode



Call Center Mode

In this mode, several of the programmable button position are repeated and replace the normal functions on the base on the phone display.



7.2.10 3616, 3620, 3626

These phones support 6 programmable buttons. These are accessed by pressing **LINE** and then 1 to 6 when the phone is off hook. The **FCN** options are not re-programmable.

- **3616:** IP Office 2.1+.
- **3626:** IP Office 3.2+.
- **3620:** IP Office 3.2+.



<u>IP Office</u> <u>Button</u>	<u>3616/3626</u> <u>Button</u>
1	LINE + 1
2	LINE + 2
3	LINE + 3
4	LINE + 4
5	LINE + 5
6	LINE + 6

The following should be noted with these phones:

- 'In use' is indicated by the button number being shown. The same indication is used for 'In use elsewhere' and 'On Hold elsewhere' are not distinguished from 'In use'.
- 'Alerting' and 'Held here' are indicated by the button number flashing.
- No indication is shown when the 3616 or 3626 is idle. Only an alerting call will override idle.
- When off hook, the phones do not give any abbreviated ringing to indicate an alerting button.

7.2.11 3641, 3645

These phones support up to 12 programmable buttons (the IP Office option within the phone menu must be selected, otherwise only 6 programmable buttons are provided). These are accessed by pressing **LINE** or **FCN** and then 1 to 6 when the phone is off hook.

- **3641/3645:** IP Office 4.0+.*

*Supported from the IP Office 4.0 Q2 2007 Maintenance release onwards.



<u>IP Office Button</u>	<u>3641/3645 Button</u>
1	LINE 1
2	LINE 2
3	LINE 3
4	LINE 4
5	LINE 5
6	LINE 6
7	FCN 1
8	FCN 2
9	FCN 3
10	FCN 4
11	FCN 5
12	FCN 6

The following should be noted with these phones:

- 'In use' is indicated by the button number being shown. The same indication is used for 'In use elsewhere' and 'On Hold elsewhere' are not distinguished from 'In use'.
- 'Alerting' and 'Held here' are indicated by the button number flashing.
- No indication is shown when the 3616 or 3626 is idle. Only an alerting call will override idle.
- When off hook, the phones do not give any abbreviated ringing to indicate an alerting button.

7.2.12 3810

This phone supports 4 programmable buttons.

- **3810:** IP Office 2.1+.



<u>IP Office Button</u>	<u>3810 Button</u>
8	1
9	2
1	3
2	4

Note that the correspondence between IP Office button numbers and the phone buttons is not logical. If call appearance buttons are programmed, only the first two will be useable and will appear as buttons 3 and 4 on the actual phone.

Line, bridged and call appearance buttons would need to be programmed as IP Office buttons 8 and 9 and would appear on buttons 1 and 2 on the phone. If all four buttons are required as call appearances, then buttons 1 to 9 must be programmed as call appearance buttons in the configuration.

7.2.13 4406D+, 4606

These phones has 6 programmable buttons with twin lamps; one green, one red.

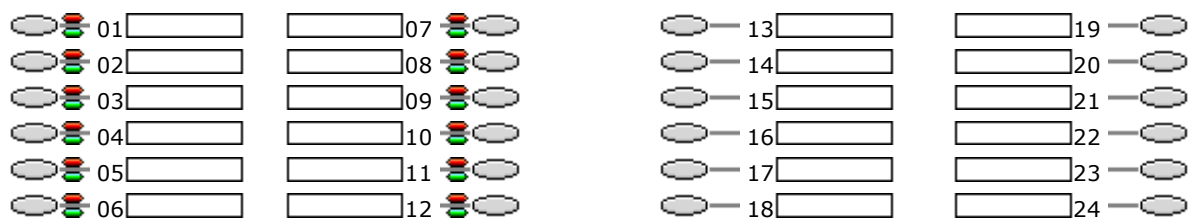
- **4406D+:** IP Office 2.1+.
- **4606:** Up to IP Office 3.2 only.



7.2.14 4412D+

This phone has 24 programmable buttons. The first 12 have twin lamps; one green, one red. The last 12 buttons do not include lamps.

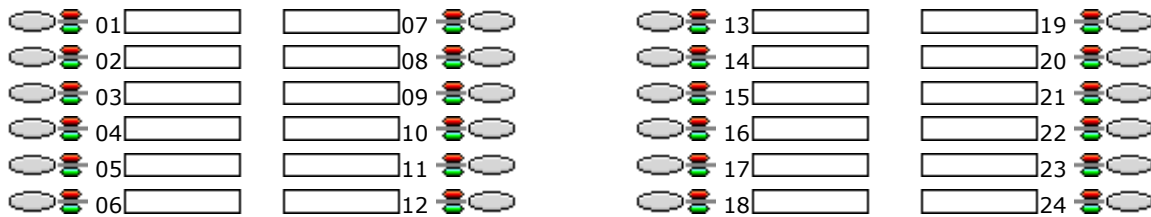
- **4412D+**: IP Office 2.1+.



7.2.15 4424D+, 4624

These phones have 24 programmable buttons with twin lamps; one green, one red. Note: No more than 10 4424D+ units are supported on any DS30 module. This restriction does not apply to DS16 V2 units.

- **4424D+:** IP Office 2.1+.
- **4624:** Up to IP Office 3.2 only.



7.2.16 4450

Add-on for 4412D+ and 4424D+ phones. Provides an additional 60 programmable buttons with single lamps. Up to two 4450 units can be connected to an existing phone. Not recommended for appearance functions as the current selected button and on hold elsewhere are not indicated. A maximum of 2 unit as supported per DS module or control unit. A maximum of 10 units total are supported on an IP Office system. The 4450 buttons cannot indicate on hold elsewhere.

- **4450:** IP Office 1.0+.

In the button maps below, note that the bottom two rows break the normal pattern of button numbering.



4450x1

25	35	45	55	65
26	36	46	56	66
27	37	47	57	67
28	38	48	58	68
29	39	49	59	69
30	40	50	60	70
31	41	51	61	71
32	42	52	62	72
33	43	53	63	73
34	44	54	64	74
75	77	79	81	83
76	78	80	82	84

4450x2

 085	 095	 105	 115	 125
 086	 096	 106	 116	 126
 087	 097	 107	 117	 127
 088	 098	 108	 118	 128
 089	 099	 109	 119	 129
 090	 100	 110	 120	 130
 091	 101	 111	 121	 131
 092	 102	 112	 122	 132
 093	 103	 113	 123	 133
 094	 104	 114	 124	 134
 135	 137	 139	 141	 143
 136	 138	 140	 142	 144

7.2.17 4601, 5601

These phones have two programmable buttons, each with a single red lamp. For systems running IP Office 3.0 or higher (excluding 3.0DT) these buttons should only be used for call appearance buttons.

- **4601:** IP Office 3.0+.
- **5601:** IP Office 3.0+.



7.2.18 4602, 4602SW, 5602, 5602SW

These phones only have two programmable buttons. For systems running IP Office 3.0 or higher (excluding 3.0DT) these buttons should only be used for call appearance buttons.

Display icons are used for status indication with a * used for current selected appearance button indication. These only display active, alerting, held here and current selected button. They do not display in use elsewhere and on hold elsewhere.

- **4602IP/4602SW:** IP Office 2.1+.
- **5602IP/5602SW:** IP Office 3.0+.



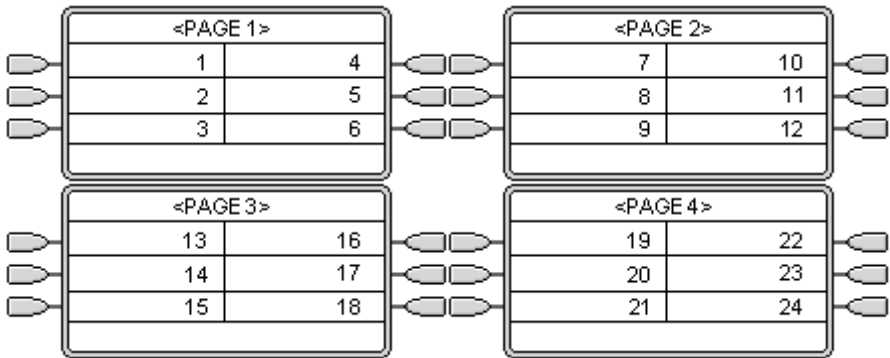
 * 1

 * 2

7.2.19 4610SW, 5610SW

These phones have 6 physical display keys that provide 24 programmable buttons arranged in 4 pages. The ◀ and ▶ keys are used to switch the display between different button display pages as shown below.

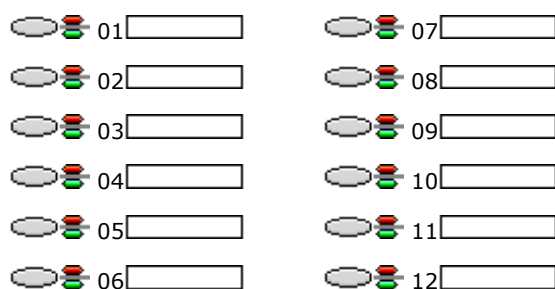
- 4610/5610: IP Office 3.1+.



7.2.20 4612

This phone has 12 programmable buttons with twin lamps; one green, one red.

- **4612:** Up to IP Office 3.2 only.



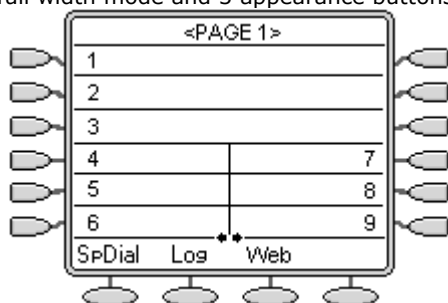
7.2.21 4620, 4620SW, 4621, 4625, 5620, 5620SW, 5621

These phones have 12 physical display keys that provide 24 programmable buttons arranged in two pages. The ◀ and ▶ keys are used to switch the display between different button display pages as shown below.

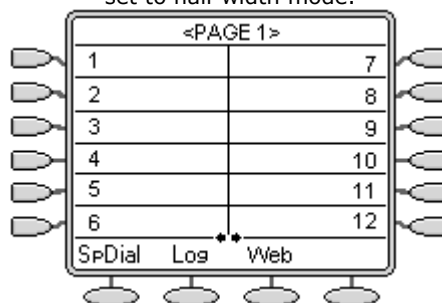
- **4620/4620SW:** IP Office 2.1+.
- **4621:** IP Office 3.1+.
- **4625SW:** IP Office 3.2+.
- **5620/5620SW:** IP Office 3.1+.
- **5621:** IP Office 3.2+.

By default appearance actions use a full screen width display line and can be accessed by the display key on either side. The numbering of buttons and the number of display pages available is adjusted accordingly up 4 pages. The appearance buttons can be changed to half-width mode from the phone by pressing **Options -> Application Options -> Call Appearance Width**.

Button numbering with call appearance width set to full width mode and 3 appearance buttons.



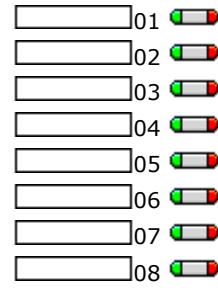
Button numbering with call appearance width set to half width mode.



7.2.22 6408D

This phone has 8 programmable buttons. Each button includes twin lamps; one red, one green.

- **6408D:** IP Office 2.1+.



7.2.23 6416D

This phone has 16 programmable buttons. Each button includes twin lamps; one red, one green.

- **6416D:** IP Office 2.1+.



Programmable buttons.

01	09
02	10
03	11
04	12
05	13
06	14
07	15
08	16

7.2.24 6424D

This phone has 24 programmable buttons. Each button includes twin lamps; one red, one green.

- **6424D:** IP Office 2.1+.



Programmable buttons.

	01		09
	02		10
	03		11
	04		12
	05		13
	06		14
	07		15
	08		16
			17
			18
			19
			20
			21
			22
			23
			24

7.2.25 9040

The 9040 has four display keys. These relate to two rows of display labels shown above, **1** to **4** and **A** to **D**. A < symbol is shown next to the currently selected row of labels, selection can be switched using the ^ shift key.

- **9040:** Pre IP Office 2.1 only.



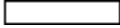
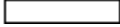
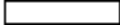
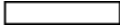
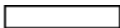
9040 display buttons labeled **1** to **4** correspond with IP Office user buttons 1 to 4. 9040 display buttons labeled **A** to **D** correspond with IP Office user buttons 8 to 11.

It is only possible to use 9040 buttons 1, 2, A and B (buttons 1, 2, 8 and 9 in the IP Office configuration) as appearance buttons. If all four of those buttons are required as call appearances, then buttons 1 to 9 must be programmed as call appearance buttons in the configuration. However button 3 and 4 on the handset will become disabled.

7.2.26 T3 Compact/T3 IP Compact

This phone has eight buttons on the right-hand edge, however only 4 (those numbered below) are programmable buttons, the remainder are fixed feature buttons. Note that some of the programmable buttons have default features and, if not programmed to a specific function in the IP Office configuration, they will perform their default function.

- **T3 Compact:** IP Office 3.1+.
- **T3 IP Compact:** IP Office 3.2+.

		Handsfree/Monitoring
	 01	Call List
	 02	Voicemail
	 03	Do Not Disturb
	 04	Forward Unconditional
		Menu
		Redial
		Hold



7.2.27 T3 Classic/T3 IP Classic

This phone supports 10 programmable buttons (those numbered below). Note that some of the programmable buttons have default features and, if not programmed to a specific function in the IP Office configuration, they will perform their default function.

- **T3 Classic:** IP Office 3.1+.
- **T3 IP Classic:** IP Office 3.2+.

The four buttons below the display act as two pages of four using the display above. The four buttons on page one can be programmed and match IP Office buttons 1 to 4. The other page cannot be programmed. In addition, some of the buttons in the two columns of buttons on the right can be programmed.

01	02	03	04		
				05	Call List
		Handsfree		06	Voicemail
		Mute		07	Headset
		Menu		08	Do Not Disturb
		Redial		09	Forward Unconditional
		Hold		10	Directory



7.2.28 T3 Comfort/T3 IP Comfort

This phone supports 22 programmable buttons (those numbered below). Note that some of the programmable buttons have default features and, if not programmed to a specific function in the IP Office configuration, they will perform their default function.

- **T3 Comfort:** IP Office 3.1+.
- **T3 IP Comfort:** IP Office 3.2+.

The ten buttons below the display act as eight pages of ten using the display above. The ten buttons on page one can be programmed and match IP Office buttons 1 to 10. The other pages cannot be programmed. In addition, some of the buttons in the three columns of buttons on the right can be programmed.

01	02	03	04	05
06	07	08	09	10
		17 Paging	11 Call List	
Handsfree		18 Pickup	12 Voicemail	
Mute		19 Group Enable	13 Headset	
Menu		20 Group Night Service	14 DND	
Redial		21 Follow me Here	15 Forward All	
Hold		22 Door	16 Directory	



7.3 Actions

The following sections provide details for each of the button actions supported by IP Office. For each the following details are listed:

- **IP Office Software Level**
Indicates the IP Office software levels on which the action is supported.
- **Action**
Indicates the selection path to the action from within the list of actions displayed in IP Office Manager.
- **Action Data**
Indicates the type of data required by the action. For some actions no data is required while for others action data may be optional. The option to enter the data after pressing the button is not available for all phones, see [Interactive Button Menus](#) ^[516].
- **Default Label**
This is the default text label displayed if possible on phones which provide a display area next to programmable buttons. Alternate labels can be specified in the IP Office configuration or entered by the phone user (see [Customizing Text Labels](#) ^[515]). Note that for buttons with action data set, the action data may also be displayed as part of the default label.
- **Toggles**
Indicates whether the action toggles between two states, typically on or off.
- **Status Indication**
Indicates whether the button provides status indication relevant to the feature if the button has status lamps or display.
 - If the **Status Indication** is listed as **Required** it indicates that the button action is only supported on programmable buttons that can provide status indication.
- **User Admin**
This item indicates that users with a [Self-Administer](#) ^[634] button can assign the action to other buttons themselves.
- **Phone Support** ^[517]
This is only a general indication of support or otherwise of an action by phones within particular series. On phones with 3 or less programmable buttons those button can only be used for the [Call Appearance](#) ^[563] action. In addition some actions are only supported on phones where the programmable buttons provide status indication and or a display for data entry once the feature is invoked.

Table of Button Programming Actions

The following tables list the actions available for programmable buttons on IP Office.

- **Login Code Required**

For IP Office 4.0+, some function may require the user to enter their log in code. This typically applies when the action data is left blank for entry when the button is pressed.

General

Action	Action Data	IPO	Default Label
Dial ^[587]	Any number.	1.0+	Dial
Group ^[612]	"Group name" in quote marks.	1.0+	<Group name>
Park ^[625]	Park slot ID (alphanumeric).	1.0 to 3.2	Park
User ^[649]	"User name" in quote marks.	1.0+	<User name>

Appearance

Action	Action Data	IPO	Default Label
Appearance ^[563]	None.	3.0+	a=
Bridged Appearance ^[567]	User name and call appearance button number.	3.0+	<user name> <appearance label>
Coverage Appearance ^[586]	User name.	3.0+	<user name>
Line Appearance ^[622]	Line appearance ID.	3.0+	Line

Emulation

Action	Action Data	IPO	Default Label
Abbreviated Dial ^[55ᄁ]	Any number.	1.0+	AD
Abbreviated Dial Pause ^[55ᄁ]	None.	1.0+	Pause
Abbreviated Dial Program ^[55ᄁ]	None.	1.0+	Prog
Abbreviated Dial Stop ^[55ᄁ]	None.	1.0+	Stop
Account Code Entry ^[55ᄁ]	Account code or blank for entry when pressed.	1.0+	Acct
ACD Agent Statistics ^[55ᄁ]	None.	1.0+	Stats
ACD Stroke Count ^[55ᄁ]	None.	1.0+	Count
AD Special Function Mark ^[56ᄁ]	None.	1.0+	Mark
AD Special Function Wait ^[56ᄁ]	None.	1.0+	Wait
AD Special Functions ^[56ᄁ]	None.	1.0+	Sfunc
AD Suppress ^[56ᄁ]	None.	1.0+	Spres
Automatic Callback ^[56ᄁ]	None.	1.0+	AutCB
Automatic Intercom ^[56ᄁ]	User number or name.	1.0+	Iauto
Call Forwarding All ^[56ᄁ] 	Any number or blank for entry when pressed.	1.0+	CFrwd
Call Park ^[57ᄁ]	Park slot ID (alphanumeric) or blank for menu of slots in use.	1.0+	CPark
Call Park To Other Extension ^[57ᄁ]	User number.	1.0+	RPark
Call Pickup ^[57ᄁ]	None.	1.0+	CpkUp
Cancel Leave Word Calling ^[58ᄁ]	None.	1.0+	CnLWC
Consult ^[58ᄁ]	None.	1.0+	Cnslt
Dial Intercom ^[59ᄁ]	User number or name or blank for entry when pressed.	1.0+	Idial
Directed Call Pickup ^[59ᄁ]	User number or name or group number or name or or blank for entry when pressed..	1.0+	DpkUp
Directory ^[59ᄁ]	None.	1.0+	Dir
Drop ^[60ᄁ]	None.	1.0+	Drop
Group Paging ^[61ᄁ]	User or group number or name or blank for entry when pressed.	1.0+	GrpPg
Headset Toggle ^[61ᄁ]	None or FF (IP Office 4.1+).	1.4+	HdSet
Inspect ^[61ᄁ]	None.	1.0+	Inspt
Internal Auto-Answer ^[62ᄁ]	None.	1.0+	HfAns
Leave Word Calling ^[62ᄁ]	None.	1.0+	LWC
Manual Exclude ^[62ᄁ]	None.	1.0+	Excl
Priority Calling ^[62ᄁ]	None.	1.0+	Pcall
Ringer Off ^[63ᄁ]	None.	1.0+	RngOf
Self-Administer ^[63ᄁ] 	Blank or 1 or 2 (IP Office 4.1+).	1.0+	Admin
Send All Calls ^[63ᄁ]	None.	1.0+	SAC
Stored Number View ^[64ᄁ]	None.	1.0+	BtnVu
Time of Day ^[64ᄁ]	None.	1.0+	TmDay
Timer ^[64ᄁ]	None.	1.0+	Timer
Twinning ^[64ᄁ]	None.	3.2+	Twinning
Visual Voice ^[65ᄁ]	None.	4.0+	Voice

Advanced

Action	Action Data	Category	IPO	Default Label
Acquire Call ^[560]	User number or blank for last call transferred.	Call	1.1+	Acquire
After Call Work ^[562]			4.2+	
Break Out ^[566]	System name or IP address or blank for selection when pressed.	Dial	4.0+	BkOut
Busy ^[568]	None.	Busy	1.1+	Busy
Busy On Held ^[568]	0 (off) or 1 (on).	Busy	1.1+	BusyH
Call Intrude ^[570]	User number or blank for entry when pressed.	Call	1.1+	Intru
Call List ^[570]	None.	Call	3.1+	LIST
Call Listen ^[571]	User number.	Call	1.1+	Listn
Call Pickup Any ^[574]	None.	Call	1.1+	PickA
Call Pickup Group ^[575]	None.	Call	1.1+	PickG
Call Pickup Members ^[575]	Group number or name.	Call	1.1+	PickM
Call Queue ^[576]	User number.	Call	1.1+	Queue
Call Record ^[576]	None.	Call	1.1+	Recor
Call Steal ^[577]	User number or blank for last call transferred.	Call	1.1+	Steal
Call Waiting Off ^[578]	None.	Call	1.1+	CWOff
Call Waiting On ^[578]	None.	Call	1.1+	CWOn
Call Waiting Suspend ^[579]	None.	Call	1.1+	CWSus
Cancel All Forwarding ^[579]	None.	Call	1.1+	FwdOf
Cancel Ring Back When Free ^[580]	None.	Miscellaneous	1.0+	RBak-
Channel Monitor ^[581]	Channel number.	Call	1.1+	ChMon
Clear Call ^[582]	None.	Call	1.1+	Clear
Clear CW ^[582]	None.	Call	1.1+	ClrCW
Clear Hunt Group Night Service ^[583]	Group number.	Call	1.1+	HGNS-
Clear Hunt Group Out Of Service ^[583]	Group number.	Call	1.1+	HNOS-
Clear Quota ^[584]	"Service name" within quote marks or "" for all services.	Call	1.1+	Quota
Conference Add ^[584]	None.	Call	1.1+	Conf+
Conference Meet Me ^[585]	Conference name or number.	Call	1.1+	CnfRv
Dial 3K1 ^[587]	Any number.	Dial	1.1+	D3K1
Dial 56K ^[588]	Any number.	Dial	1.1+	D56K
Dial 64K ^[588]	Any number.	Dial	1.1+	D64K
Dial CW ^[589]	User number.	Dial	1.1+	DCW
Dial Direct ^[589]	User number or name or blank for entry when pressed.	Dial	1.1+	Dirct
Dial Emergency ^[590]	Any number.	Dial	1.1+	Emrgy
Dial Inclusion ^[590]	User number or name or blank for entry when pressed.	Dial	1.4+	Inclu
Dial Paging ^[592]	User or group number or name or blank for entry when pressed.	Dial	1.1+	Page
Dial Physical Extn by Number ^[593]	Extension port Base Extension number.	Dial	1.4+	PhyEx
Dial Physical Extn by ID ^[593]	Extension port ID number.	Dial	1.4+	DialP
Dial Speech ^[594]	Any number.	Dial	1.1+	DSpch
Dial V110 ^[594]	Any number.	Dial	1.1+	DV110
Dial V120 ^[595]	Any number.	Dial	1.1+	DV120
Dial Video ^[596]	Any number.	Dial	1.1+	Dvide
Display Msg ^[595]	Command string.	Dial	1.0+	Displ
Do Not Disturb Exception Add ^[599]	Any number.	Do Not Disturb	1.1+	DNDX+
Do Not Disturb Exception Delete ^[599]	Any number.	Do Not Disturb	1.1+	DNDX-
Do Not Disturb Off ^[600]	None.	Do Not Disturb	1.1+	DNDOf

Action	Action Data	Category	IPO	Default Label
Do Not Disturb On ^[600]	None.	Do Not Disturb	1.1+	DNDOn
Extn Login ^[602]	None.	Extension	1.1+	Login
Extn Logout ^[602]	None.	Extension	1.1+	Logof
Flash Hook ^[603]	None.	Miscellaneous	1.4+	Flash
Follow Me Here ^[604] 	User number.	Follow Me	1.1+	Here+
Follow Me Here Cancel ^[604]	User number or blank for entry when pressed.	Follow Me	1.1+	Here-
Follow Me To ^[605] 	User name or user number or blank for entry when pressed.	Follow Me	1.1+	FolTo
Forward Hunt Group Calls On ^[606]	None.	Forward	1.1+	FwdH+
Forward Hunt Group Calls Off ^[606]	None.	Forward	1.1+	FwdH-
Forward Number ^[607] 	Any number or, IP Office 4.0+, blank for entry when pressed.	Forward	1.1+	FwdNo
Forward On Busy Number ^[607] 	Any number or, IP Office 4.0+, blank for entry when pressed.	Forward	1.1+	FwBNo
Forward On Busy Off ^[609]	None.	Forward	1.1+	FwBOF
Forward On Busy On ^[609]	None.	Forward	1.1+	FwBOn
Forward On No Answer Off ^[610]	None.	Forward	1.1+	FwNOF
Forward On No Answer On ^[610]	None.	Forward	1.1+	FwNOn
Forward Unconditional Off ^[611]	None.	Forward	1.1+	FwUOf
Forward Unconditional On ^[611]	None.	Forward	1.1+	FwUOn
Group Listen On ^[613]	None	Extension	4.1+	GroupListenOn
Hold Call ^[615]	ISDN Exchange slot number.	Hold	1.1+	Hold
Hold CW ^[616]	None.	Hold	1.1+	HoldCW
Hold Music ^[616]	None.	Hold	1.1+	Music
Hunt Group Disable ^[618]	Group number or name or blank for all groups.	Hunt Group	1.1+	HGDis
Hunt Group Enable ^[617]	Group number or name or blank for all groups.	Hunt Group	1.1+	HGEna
MCID Activate ^[623]	None.	Miscellaneous	4.0+	MCID
Off Hook Station ^[624]	None.	Miscellaneous	1.1+	OHStn
Park Call ^[626]	Park slot number.	Call	1.0 to 3.2	Park
Priority Call ^[627]	User number or name.	Call	1.1+	PCall
Private Call ^[628]	None.	Call	4.0+	PrivC
Relay Off ^[629]	1 or 2.	Relay	1.1+	Rely-
Relay On ^[629]	1 or 2.	Relay	1.1+	Rely+
Relay Pulse ^[630]	1 or 2.	Relay	1.1+	Relay
Resume Call ^[631]	ISDN Exchange slot number.	Call	1.1+	Resum
Retrieve Call ^[631]	ISDN Exchange slot number.	Call	1.1+	Retriv
Ring Back When Free ^[632]	None.	Miscellaneous	1.1+	RBak+
Set Absent Text ^[636]	String for selected message and custom text.	Set	1.1+	Absnt
Set Account Code ^[637]	Blank or valid account code.	Set	2.1+	Acct
Set Hunt Group Night Service ^[638]	Group number.	Set	1.1+	HGNS+
Set Hunt Group Out Of Service ^[639]	Group number.	Set	1.1+	HGOS+
Set Inside Call Seq ^[640]	Value 0 to 10.	Set	1.1+	ICSeq
Set Night Service Group ^[640]	Group number.	Set	4.2+	SetNSG
Set No Answer Time ^[642]	Time in seconds (range 6 to 99999).	Set	1.1+	NATim
Set Outside Call Seq ^[642]	Value 0 to 10.	Set	1.1+	OCSeq
Set Out of Service Group ^[643]	Group number.	Set	4.2+	SetOOSG
Set Ringback Seq ^[642]	Value 0 to 10.	Set	1.1+	RBSeq

Action	Action Data	Category	IPO	Default Label
Set Wrap Up Time ^[643]	Time in seconds (range 0 to 99999).	Set	1.1+	WUTim
Suspend Call ^[644]	ISDN Exchange slot number.	Suspend	1.1+	Suspe
Suspend CW ^[644]	ISDN Exchange slot number.	Suspend	1.1+	SusCW
Toggle Calls ^[646]	None.	Call	1.1+	Toggl
Unpark Call ^[648]	Park slot ID (alphanumeric).	Call	1.1+	Ride
Voicemail Collect ^[652]	See notes.	Voicemail	1.1+	VMCol
Voicemail Off ^[653]	None.	Voicemail	1.1+	VMOff
Voicemail On ^[653]	None.	Voicemail	1.1+	VMon
Voicemail Ringback Off ^[654]	None.	Voicemail	1.1+	VMRB-
Voicemail Ringback On ^[654]	None.	Voicemail	1.1+	VMRB+

7.3.1 Abbreviated Dial

This function allows quick dialing of a stored number.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Abbreviated Dial.
- **Action Data:** Telephone number or partial number.
 - **Full Number**
The number is dialled.
 - **Partial Number**
The partial number is dialled and the user can then complete dialing the full number.
- **Default Label:** AD.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✓.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✓	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓*	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓*			• T3/T3 IP Series: ✗
- *✗ Not 1603, 2402, 4601, 4602, 5402, 5601 and 5602 models.

7.3.2 Abbreviated Dial Pause

Not supported. Provided for CTI emulation only. Allows a user to enter a pause character when programming an abbreviated dial.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Abbreviated Dial Pause.
- **Action Data:** None.
- **Default Label:** Pause.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.3 Abbreviated Dial Program

Not supported. Provided for CTI emulation only. Allows a user to program abbreviated dialing numbers against other programmable buttons. This function cannot be used to overwrite call appearance buttons.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Abbreviated Dial Program.
- **Action Data:** None.
- **Default Label:** Prog.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  .
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✗	• 5600 Series: ✗
• 1600 Series: ✗	• 3700 Series: ✗	• 5400 Series: ✗	• 6400 Series: ✗
• 20 Series: ✗	• 3810: ✗	• 4600 Series: ✗	• 9040: ✗
• 2400 Series: ✗			• T3/T3 IP Series: ✗

7.3.4 Abbreviated Dial Stop

Not supported. Provided for CTI emulation only. Allows a user to enter a stop character when programming an abbreviated dial.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Abbreviated Dial Stop.
- **Action Data:** None.
- **Default Label:** Stop.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗

- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.5 Account Code Entry

Enter an account code for a call. This button can be used before dialing a number or during a call.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Account Code Entry.
- **Action Data:** Optional. If an code is set it must match an account code set in the account codes list. If no account code is set, the phone display will request entry of a valid code. This option is not supported on XX02 phones.
- **Default Label:** Acct.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  .
- **Phone Support:** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- **Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

- **T3 Phones:**
 - **Classic/Comfort icon:** Displays **1234**.
 - **DSS Link LED:** None.

7.3.6 ACD Agent Statistics

Not supported. Provided for CTI emulation only.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> ACD Agent Statistics.
- **Action Data:** None.
- **Default Label:** Stats.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗

- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.7 ACD Stroke Count

Not supported. Provided for CTI emulation only.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> ACD Stroke Count.
- **Action Data:** None.
- **Default Label:** Count.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✓.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗

- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.8 Acquire Call

See [Call Steal](#) ^[577].

7.3.9 AD Special Functions

Not supported. Provided for CTI emulation only. Allows a user to enter a special character (mark, pause suppress, wait) when entering an abbreviated dial.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> AD Special Functions.
- **Action Data:** None.
- **Default Label:** Sfunc.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** ^[634] ✗.

- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.10 AD Special Function Mark

Not supported. Provided for CTI emulation only. Allows a user to enter a mark character when programming abbreviated dial.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> AD Special Function Mark.
- **Action Data:** None.
- **Default Label:** Mark.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** ^[634] ✗.

- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.11 AD Special Function Wait

Not supported. Provided for CTI emulation only. Allows a user to enter a Wait for Dial Tone character when programming an abbreviated dial.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> AD Special Function Wait.
- **Action Data:** None.
- **Default Label:** Wait.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** ^[634] ✗.
- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

- **Analog:** ✗
 - **1600 Series:** ✓*
 - **20 Series:** ✓
 - **2400 Series:** ✓
 - **3600 Series:** ✗
 - **3700 Series:** ✗
 - **3810:** ✓
 - **4400 Series:** ✓
 - **5400 Series:** ✓
 - **4600 Series:** ✓*
 - **5600 Series:** ✓*
 - **6400 Series:** ✓
 - **9040:** ✓
 - **T3/T3 IP Series:** ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.12 AD Suppress

Suppresses the display of dialed digits on the telephone display. Dialed digits are replaced with an **s** character.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> AD Suppress.
- **Action Data:** None.
- **Default Label:** Spres.
- **Toggles:** ✓.
- **Status Indication:** ✓.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	<Label>◀	<Label>	Green on.
- Off.	<Label>	<Label>	Off.

- **User Admin:** ^[634] ✗.
 - **Phone Support** ^[517]
- Note that support for particular phone models is also dependant on the IP Office software level.

- **Analog:** ✗
 - **1600 Series:** ✓*
 - **20 Series:** ✓
 - **2400 Series:** ✓
 - **3600 Series:** ✗
 - **3700 Series:** ✗
 - **3810:** ✓
 - **4400 Series:** ✓
 - **5400 Series:** ✓
 - **4600 Series:** ✓*
 - **5600 Series:** ✓*
 - **6400 Series:** ✓
 - **9040:** ✓
 - **T3/T3 IP Series:** ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.13 After Call Work

This button is used by users configured as an **CCR Agent** ^[279] ([User | Telephony | Supervisor Settings](#) ^[279]) and working with the IP Office Customer Call Reporter (CCR) application. It shows the CCR agent their current After Call Work (ACW) status and allow them to manually change status. While in ACW state, the agent will not receive hunt group calls.

CCR Agents can be automatically put into and taken out of ACW by the IP Office if the user is configured for **Automatic After Call Work** ^[279] ([User | Telephony | Supervisor Settings](#) ^[279]). Those users must have an **After Call Work** button.

- **IP Office Software Level:** 4.2+.
- **Action:** Advanced -> Miscellaneous -> After Call Work
- **Action Data:** None.
- **Default Label:** ACWrk.
- **Toggles:** ✓.
- **Status Indication:** ✓ *Required.*

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	<Label>◀	<Label>	Green on.
- Off.	<Label>	<Label>	Off.

- **User Admin:** ^[634] ✗.

- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

- **Analog:** ✗
- **1600 Series:** ✓*
- **20 Series:** ✗
- **2400 Series:** ✓*
- **3600 Series:** ✗
- **3700 Series:** ✗
- **3810:** ✗
- **4400 Series:** ✗
- **5400 Series:** ✓*
- **4600 Series:** ✓*
- **5600 Series:** ✓*
- **6400 Series:** ✗
- **9040:** ✗
- **T3/T3 IP Series:** ✓

- *: Not 1603, 2402, 4601, 4602, 5402, 5601 and 5602.

7.3.14 Appearance

Creates a call appearance button. This can be used to answer and make calls. Users with multiple call appearance buttons can handle multiple calls. For full details refer to the IP Office Key & Lamp Manual.

Call appearance functions, assigned to buttons that do not have status lamps or icons, are automatically disabled until the user logs in at a phone with suitable buttons.

For IP Office 3.2+, appearance buttons can be set with a ring delay if required or to not ring. This does not affect the visual alerting displayed next to the button. The delay uses the user's **Ring Delay** (User | Telephony | Multi-line Options) setting.

Note that on 4620, 4621, 4625 and 5621 phones, buttons set to call appearance can occupy the full screen width, using the button on either side of the display line for operation and adjusting the numbering of all other buttons accordingly.

The appearance buttons can be changed to half-width mode from the phone by pressing **Options -> Application Options -> Call Appearance Width**.

- **IP Office Software Level:** 3.0+.
- **Action:** Appearance -> Appearance.
- **Action Data:** Optional text label.
- **Default Label:** a=.
- **Toggles:** ✗.
- **Status Indication:** ✓ *Required.* See [Call Appearance Button Indication](#).
- **User Admin:** ✗.
- **Phone Support**

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✓	• 4400 Series: ✓	• 5600 Series: ✓
• 1600 Series: ✓	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✗	• 3810: ✓	• 4600 Series: ✓	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗

7.3.15 Automatic Callback

Sets a ringback on the extension being called. When the target extension ends its current call, the ringback user is rung (for their set No Answer Time/Allocated Answer Interval) and if they answer, a new call is made to the target extension.

Ringback can also be cleared using the [Cancel Ring Back When Free](#) ^[580] function.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Automatic Callback.
- **Action Data:** None.
- **Default Label:** AutCB.
- **Toggles:** ✓.
- **Status Indication:** ✓.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	<Label>◀	<Label>	Green on.
- Off.	<Label>	<Label>	Off.

- **User Admin:** ^[634] ✓.
- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.16 Automatic Intercom

Call an extension and have the call automatically answered on speaker phone after 3 beeps. The extension called must support a handsfree speaker. If the extension does not have a handsfree microphone then the user must use the handset if they want to talk. If the extension is not free when called, the call is presented as a normal call on a call appearance button if available.

- For IP Office 4.2 Q4 maintenance release and higher this feature can be used as part of [handsfree announced transfers](#) ^[711].
- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Automatic Intercom.
- **Action Data:** User number or name. For IP Office 4.0+ this field can be left blank for number entry when pressed.
 - For IP Office 4.0+, on large display phones, if configured without a preset target this type of button will display an [interactive button menu](#) ^[516] for target selection.
- **Default Label:** Iauto.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** ^[634] ✗.
- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗

- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

- **T3 Phones:**
 - **Classic/Comfort icon:** Displays  followed by the set number.
 - **DSS Link LED:** None.

7.3.17 Break Out

This feature is usable within an IP Office [Small Community Network](#)^[792]. It allows a user on one system in the network to specify that the following dialing be processed by another IP Office system on the network as if the user dialed it locally on that other system.

On phones with a multi-line display, if the target IP Office system is not specified in the button settings, a menu of the available systems in the network is displayed from which a selection can be made.

For pre-IP Office 5.0 systems, this feature requires the IP Offices to have **Advanced Small Community Networking** licenses.

- **IP Office Software Level:** 4.0+.
- **Action:** Advanced -> Dial -> Break Out.
- **Action Data:** Optional. The system name or IP address of the required IP Office system can be specified. If no system name or IP address is set, on display phones a list of systems within the Small Community Network is displayed when the button is pressed.
- **Default Label:** BkOut.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**^[634] ✗.
- **Phone Support**^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✓	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓*	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓*			• T3/T3 IP Series: ✗
- *✗ Not 1603, 2402, 4601, 4602, 5402, 5601 and 5602 models.

7.3.18 Bridged Appearance

Creates an appearance button that follows the state of another user's call appearance button. The bridged appearance can be used to make and answer calls on behalf of the call appearance user. For full details refer to the IP Office Key & Lamp Manual.

The bridged appearance button user must also have at least one call appearance button programmed.

Bridged appearance functions, assigned to buttons that do not have status lamps or icons, are automatically disabled until the user logs in at a phone with suitable buttons.

For IP Office 3.2+, appearance buttons can be set with a ring delay if required or to not ring. This does not affect the visual alerting displayed next to the button. The delay uses the user's [Ring Delay](#) ^[281] ([User](#) | [Telephony](#) | [Multi-line Options](#) ^[281]) setting.

Note that on 4620, 4621, 4625 and 5621 phones, buttons set to call appearance can occupy the full screen width, using the button on either side of the display line for operation and adjusting the numbering of all other buttons accordingly. The appearance buttons can be changed to half-width mode from the phone by pressing **Options -> Application**

Options -> Call Appearance Width.

- **IP Office Software Level:** 3.0+.
- **Action:** Appearance -> Bridged Appearance.
- **Action Data:** User name and call appearance button number.
- **Default Label:** <user name><call appearance label>.
- **Toggles:** **X**.
- **Status Indication:** **✓** Required. See [Bridge Appearance Button Indication](#) ^[668].
- **User Admin:** ^[634] **X**.
- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: X	• 3600 Series: ✓	• 4400 Series: ✓	• 5600 Series: ✓
• 1600 Series: ✓	• 3700 Series: X	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: X	• 3810: ✓	• 4600 Series: ✓	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: X

7.3.19 Busy

Not used.

7.3.20 Busy On Held

When on, busy on held returns busy to new calls while the user has an existing call on hold.

While this feature can be used by users with appearance keys, it is not recommended as this overrides the basic call handling intent of appearance keys.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Busy -> Busy on Held.
- **Action Data:** 1 for on, 0 for off.
- **Default Label:** BusyH.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.21 Call Forwarding All

Switches forward unconditional on and sets the forward number to the number specified or prompts the user to enter a number if none is specified.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Call Forwarding All.
- **Action Data:** Telephone number or blank for entry when pressed.
 - For IP Office 4.0+, on large display phones, if configured without a preset target this type of button will display an [interactive button menu](#)^[516] for target selection.
 - If blank, the phone displays the user's current forward number and allows it to be changed if required. This option is not supported on XX02 phone models.
 - If blank, IP Office 4.0+ user's with a log in code will be prompted to enter that code to use this function.
- **Default Label:** CFrwd.
- **Toggles:** ✓.
- **Status Indication:** ✓.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	<Label> ^[634]	<Label>	Green on.
- Off.	<Label>	<Label>	Off.

- **User Admin:**^[634] ✗.

- **Phone Support**^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.22 Call Intrude

Intrudes on the existing call of the specified target extension. All call parties are put into a conference and can talk. Use of this feature is subject to the **Can Intrude** status of the intruder and the **Cannot be Intruded** status of the other call parties.

If the target is idle, the function is changed to a normal call.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Call Intrude.
- **Action Data:** User number or blank for entry when pressed.
 - For IP Office 4.0+, on large display phones, if configured without a preset target this type of button will display an [interactive button menu](#) ^[516] for target selection.
- **Default Label:** Intru.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** ^[634] ✗.
- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.23 Call List

This function is only supported for T3 phones. It provides access to a list of received calls.

- **IP Office Software Level:** 3.1+.
- **Action:** Advanced -> Call -> Call List.
- **Action Data:** None.
- **Default Label:** LIST.
- **Toggles:** ✗.
- **Status Indication:** ✓ *Required*.
- **User Admin:** ^[634] ✗.
- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✗	• 5600 Series: ✗
• 1600 Series: ✗	• 3700 Series: ✗	• 5400 Series: ✗	• 6400 Series: ✗
• 20 Series: ✗	• 3810: ✗	• 4600 Series: ✗	• 9040: ✗
• 2400 Series: ✗			• T3/T3 IP Series: ✓
- **T3 Phones:**
 - **Classic/Comfort icon:** Displays **LIST**.
 - **DSS Link LED:** On when calls are in the list. Flashes when new calls are in the list.

7.3.24 Call Listen

This feature allows a user to monitor another conversation without being heard. It requires the user being monitored to be a member of the group set as the button user's **Monitor Group** ^[279] ([User | Telephony Supervisor Settings](#) ^[279]) in the IP Office configuration. The use of call listen is also controlled by the **Can Intrude** setting of the user and the **Cannot Be Intruded** settings of the target. It is not affected by the settings of the third party to the call if they are internal.

- **Warning:** The use of monitoring may be subject to local and national restrictions. This feature should only be used in compliance with those restrictions.
- **Note:** On pre-4.0 IP Office systems, IP phone extensions can be used to monitor but cannot be monitored.
- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Call Listen.
- **Action Data:** User number.
- **Default Label:** Listn.
- **Toggles:** X.
- **Status Indication:** X.
- **User Admin:** ^[634] X.
- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: X	• 3600 Series: X	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: X	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: X
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.25 Call Park

Allows the user to park and unpark calls. The button can be used in two ways, either associated with a specified park slot number or unspecified.

- When associated with a specific park slot number, the button will park and unpark calls from that park slot and indicate when a call is parked in that park slot.
- When not associated with a specific park slot number, the button will park calls by assigning them a park slot number based on the users extension number. For example, for extension XXX, the first parked call is assigned to park slot XXX0, the next to XXX1 and so on up to XXX9. The button will indicate when there are parked calls in any of those slots.
- With a call connected, pressing the button will park that call using a park slot number assigned by the system based on the extension number.
- With no call connected, pressing the button will display details of any calls parked by the extension and allow their retrieval.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Call Park.
- **Action Data:** Optional. Either blank or a specific park slot number.
- Park slot numbers can be up to 9 characters in length.
- **Default Label:** CPark.
- **Toggles:** ✓.
- **Status Indication:** ✓.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- Calls parked by extension	CPark◆	CPark	Green flash.
- Call Parked by other extension	CPark	CPark	Red flash.
- No parked calls	CPark	CPark	Off.

- **User Admin:**  ✓.

- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

- **Analog:** ✗
 - **1600 Series:** ✓*
 - **20 Series:** ✓
 - **2400 Series:** ✓*
 - **3600 Series:** ✗
 - **3700 Series:** ✗
 - **3810:** ✓
 - **4400 Series:** ✓
 - **5400 Series:** ✓*
 - **4600 Series:** ✓*
 - **5600 Series:** ✓*
 - **6400 Series:** ✓
 - **9040:** ✓
 - **T3/T3 IP Series:** ✗
- *Not 1603, 2402, 4601, 4602, 5402, 5601 and 5602.

7.3.26 Call Park To Other Extension

Allows the user to park their current call against another user's extension. The parked call indication on that extension is then activated according to the telephone type.

If the target extension has a Call Park button with no specific park slot number, the parked call will be indicated by that button and can be unparked from the list of parked calls shown when that button is pressed.

- **Pre-IP Office 4.0**

The park slot number assigned to the parked call is based on the number of the extension against which the call is being parked. For example, calls parked against extension 203 are assigned park slot ID 2030, 2031 and so on up to 2039 depending on the number of calls parked.

- **IP Office 4.0+**

The park slot number assigned to the parked call is based on the number of the extension parking the call. For example, calls parked by extension 201 are assigned the park slot ID 2010, 2011 and so on up to 2019 depending on the number of calls parked.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Call Park to Other Extension.
- **Action Data:** User number. For IP Office 4.0+ this field can be left blank for number entry when pressed.
 - For IP Office 4.0+, on large display phones, if configured without a preset target this type of button will display an [interactive button menu](#) ^[516] for target selection.
- **Default Label:** RPark ("Park" in pre-4.0 IP Office).
- **Toggles:** ✗ Pre-4.0/✓ 4.0+.
- **Status Indication:** ✗ Pre-4.0/✓ 4.0+.

This is the status indication on the extension parking the call.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- Parked Call	RPark◆	RPark	Green flash.
- No parked call	RPark	RPark	Off.

- **User Admin:** ^[634] ✓.

- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

- **Analog:** ✗
- **1600 Series:** ✓*
- **20 Series:** ✓
- **2400 Series:** ✓*
- **3600 Series:** ✗
- **3700 Series:** ✗
- **3810:** ✓
- **4400 Series:** ✓
- **5400 Series:** ✓*
- **4600 Series:** ✓*
- **5600 Series:** ✓*
- **6400 Series:** ✓
- **9040:** ✓
- **T3/T3 IP Series:** ✗

- *Not 1603, 2402, 4601, 4602, 5402, 5601 and 5602.

7.3.27 Call Pickup

Answer an alerting call on the system.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Call Pickup.
- **Action Data:** None.
- **Default Label:** CpkUp.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✓.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗

- **Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

- **T3 Phones:** Displays a menu for entry of the extension number from which to pickup a call.
 - **Classic/Comfort icon:** Displays .
 - **DSS Link LED:** None.

7.3.28 Call Pickup Any

Pick up the first available ringing call on the system.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Call Pickup Any.
- **Action Data:** None.
- **Default Label:** PickA.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗

- **Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

- **T3 Phones:** Displays a list of call ringing from which the user can select a call to answer.
 - **Classic/Comfort icon:** Displays .
 - **DSS Link LED:** None.

7.3.29 Call Pickup Group

Pick up a call ringing any hunt group of which the user is a member.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Call Pickup Group.
- **Action Data:** None.
- **Default Label:** PickG.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

- **T3 Phones:** Displays a list of calls ringing the hunt group from which the user can select which call to answer.
- **Classic/Comfort icon:** Displays  followed by group name.
- **DSS Link LED:** None.

7.3.30 Call Pickup Members

This feature can be used to pick up any call to an extension that is a member of the hunt group specified. The call picked up does not have to be a hunt group call.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Call Pickup Members.
- **Action Data:** Group number or name.
- **Default Label:** PickM.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

- **T3 Phones:** Displays a list of calls ringing the hunt group from which the user can select which call to answer.
- **Classic/Comfort icon:** Displays  followed by group name.
- **DSS Link LED:** None.

7.3.31 Call Queue

Transfer the call to the target extension if free or busy. If busy the call is queued to wait for the phone to become free. This is similar to transfer except it allows you to transfer calls to a busy phone.

If the target

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Call Queue.
- **Action Data:** User number.
- **Default Label:** Queue.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.32 Call Record

This feature allows you to record a conversation and requires Voicemail Pro to be installed. An advice of recording warning will be given if configured on the voicemail system. The recording is placed in the mailbox specified by the user's **Manual Recording Mailbox** setting. Call recording also requires available conference resources similar to a three-party conference.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Call Record.
- **Action Data:** None.
- **Default Label:** Recor.
- **Toggles:** ✗.
- **Status Indication:** ✓.
- **User Admin:**  ✗.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.33 Call Steal

This function can be used with or without a specified user target.

- If the specified target has alerting calls, the function will connect to the longest waiting call.
- If the specified target has no alerting calls but does have a connected call, the function will take over the connected call, disconnecting the original user. This usage is subject to the **Can Intrude** setting of the **Call Steal** user and the **Cannot Be Intruded** setting of the target. The feature is independent the intrude settings of the third party to the call.
- If no target is specified, the function attempts to reclaim the users last ringing or transferred call if it has not been answered or has been answered by voicemail.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Call Steal.
- **Action Data:** User number or blank for last call transferred.
- **Default Label:** Acquir
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.34 Call Waiting Off

Switches call waiting off for the user. This button function is obsolete, the [Call Waiting On](#)^[578] button function toggles on/off and indicates current status.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Call Waiting Off.
- **Action Data:** None.
- **Default Label:** CWOFF.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**^[634] ✗.

- **Phone Support**^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

- **Analog:** ✗
- **1600 Series:** ✓*
- **20 Series:** ✓
- **2400 Series:** ✓
- **3600 Series:** ✗
- **3700 Series:** ✗
- **3810:** ✓
- **4400 Series:** ✓
- **5400 Series:** ✓
- **4600 Series:** ✓*
- **5600 Series:** ✓*
- **6400 Series:** ✓
- **9040:** ✓
- **T3/T3 IP Series:** ✗

- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.35 Call Waiting On

Enables call waiting on the user's extension. When the user is on a call and another call arrives, they will hear a call waiting tone. Note: Call waiting does not operate for user's with call appearance buttons. See [Call Waiting](#)^[747].

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Call Waiting On.
- **Action Data:** None.
- **Default Label:** CWOOn.
- **Toggles:** ✓.
- **Status Indication:** ✓.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	<Label>◀	<Label>	Green on.
- Off.	<Label>	<Label>	Off.

- **User Admin:**^[634] ✗.

- **Phone Support**^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

- **Analog:** ✗
- **1600 Series:** ✓*
- **20 Series:** ✓
- **2400 Series:** ✓
- **3600 Series:** ✗
- **3700 Series:** ✗
- **3810:** ✓
- **4400 Series:** ✓
- **5400 Series:** ✓
- **4600 Series:** ✓*
- **5600 Series:** ✓*
- **6400 Series:** ✓
- **9040:** ✓
- **T3/T3 IP Series:** ✗

- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.36 Call Waiting Suspend

Disables call waiting, if on, for the duration of the extension's next call.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Call Waiting Suspend.
- **Action Data:** None.
- **Default Label:** CWSus.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** ^[634] ✗.
- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗

- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.37 Cancel All Forwarding

Cancels forward unconditional, forward on busy, forward on no answer, follow me and do not disturb if any of those are active on the user's extension.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Cancel All Forwarding.
- **Action Data:** None.
- **Default Label:** FwdOf.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** ^[634] ✗.
- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗

- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.38 Cancel Leave Word Calling

Not supported. Provided for CTI emulation only. Cancels the last Leave Word Calling message originated by the user.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Cancel Leave Word Calling.
- **Action Data:** None.
- **Default Label:** ChLWC.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** ^[634] ✗.
- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- **Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

7.3.39 Cancel Ring Back When Free

Cancels any existing ringback set by the user, see [Ring Back When Free](#) ^[632]. Note the Ring Back When Free buttons provide both status indication of when set and toggle to cancel or set ringback when free.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Miscellaneous -> Cancel Ring Back When Free.
- **Action Data:** None.
- **Default Label:** RBak-.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** ^[634] ✗.
- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- **Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

7.3.40 Channel Monitor

For Avaya use only.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Channel Monitor.
- **Action Data:** *Channel*.
- **Default Label:** ChMon.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗

- **Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

7.3.41 Clear Call

This feature can be used to end the last call put on hold. This can be used in scenarios where a first call is already on hold and simply ending the second call will cause an unsupervised transfer of the first call.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Clear Call.
- **Action Data:** None.
- **Default Label:** Clear.
- **Toggles:** **X**.
- **Status Indication:** **X**.
- **User Admin:**  **X**.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: X	• 3600 Series: X	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: X	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: X

- **Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

7.3.42 Clear CW

End the user's current call and answer any call waiting. Requires the user to also have call waiting indication on. This function does not work for users with multiple call appearance buttons.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Clear CW.
- **Action Data:** None.
- **Default Label:** ClrCW.
- **Toggles:** **X**.
- **Status Indication:** **X**.
- **User Admin:**  **X**.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: X	• 3600 Series: X	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: X	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: X

- **Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

7.3.43 Clear Hunt Group Night Service

Changes the specified hunt group from 'Night Service' mode to 'In Service' mode.

This button function is obsolete. The [Set Hunt Group Night Service](#)^[638] function can be used to toggle a group in/out of service and provides lamp status indication.

Note: If the hunt group has been placed into night service mode by an associated time profile, this function cannot override that night service mode.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Clear Hunt Group Night Service.
- **Action Data:** Group number.
 - IP Office 4.0+: If left blank, the button will affect all hunt groups of which the user is a member.
- **Default Label:** HGNS-.
- **Toggles:** X.
- **Status Indication:** X.
- **User Admin:**^[634] X.
- **Phone Support**^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: X	• 3600 Series: X	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: X	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: X
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.44 Clear Hunt Group Out Of Service

Changes the specified hunt groups status from 'Out of Service' mode to 'In Service' mode.

This button function is obsolete. The [Set Hunt Group Out Of Service](#)^[639] function can be used to toggle a group in/out of service and provides lamp status indication.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Clear Hunt Group Out of Service.
- **Action Data:** Group number.
 - IP Office 4.0+: If left blank, the button will affect all hunt groups of which the user is a member.
- **Default Label:** HGOS-.
- **Toggles:** X.
- **Status Indication:** X.
- **User Admin:**^[634] X.
- **Phone Support**^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: X	• 3600 Series: X	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: X	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: X
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.45 Clear Quota

Quotas can be assigned to IP Office on outgoing calls to data services such as internet connections. The quota defines the number of minutes available for the service within a time frame set within the service, for example each day, each week or each month.

The Clear Quota function can be used to reset the quota for a specific IP Office service or for all IP Office services.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Clear Quota.
- **Action Data:** Service name" or "" (all services).
- **Default Label:** Quota.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗

- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.46 Conference Add

Places all the calls the user has on hold into a conference with the user.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Conference Add.
- **Action Data:** None.
- **Default Label:** Conf+.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗

- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.47 Conference Meet Me

This feature allows a user to join a specific numbered conference. By default, ad hoc conferences are assigned numbers starting from 100 for the first conference in progress. Therefore specifying a number away from this range ensure that the conference joined is not an ad hoc conference started by other users.

For pre-IP Office 5.0 systems, this function is not supported on IP500 systems without an **IP500 Upgrade Standard to Professional** license.

For IP Office 4.1+ this button has been enhanced. A currently connected caller can be transferred into the conference by pressing **TRANSFER**, then the Conference Meet Me button and **TRANSFER** again to complete the transfer. This allows the user to place callers into the conference specified by the button without being part of the conference call themselves. This option is only support on Avaya phones with a fixed **TRANSFER** button (excluding T3 and T3 IP phones).

- **IP Office Software Level:** 1.1+.
 - **Action:** Advanced -> Call -> Conference Meet Me.
 - **Action Data:** Conference number. This can be an alphanumeric value up to 15 characters.
 - **Default Label:** CnfMM.
 - **Toggles:** ✗.
 - **Status Indication:** Pre-4.1 ✗/4.1+ ✓.
- For IP Office 4.1+, buttons programmed for conference meet me will indicate when the conference is in progress.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- Conference In Use.	CnfMM	CnfMM	Green on.
- Conference Idle.	CnfMM	CnfMM	Off.

- **User Admin:**  ✗.

- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.48 Consult

Not supported. Provided for CTI emulation only.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Consult.
- **Action Data:** None.
- **Default Label:** Cnslt.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.

- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.49 Coverage Appearance

Creates a button that alerts when a call to the specified covered user is unanswered after that user's Individual Coverage Timer expires. The call coverage appearance button can be used to answer that call. For full details refer to the IP Office Key & Lamp Manual.

The call coverage appearance button user must also have at least one call appearance button programmed. The covered user does not need to be using call appearance buttons.

Coverage appearance functions, assigned to buttons that do not have status lamps or icons, are automatically disabled until the user logs in at a phone with suitable buttons.

For IP Office 3.2+, appearance buttons can be set with a ring delay if required or to not ring. This does not affect the visual alerting displayed next to the button. The delay uses the user's [Ring Delay](#) ^[281] ([User](#) | [Telephony](#) | [Multi-line Options](#) ^[281]) setting.

Note that on 4620, 4621, 4625 and 5621 phones, buttons set to call appearance can occupy the full screen width, using the button on either side of the display line for operation and adjusting the numbering of all other buttons accordingly.

The appearance buttons can be changed to half-width mode from the phone by pressing **Options -> Application Options -> Call Appearance Width**.

- **IP Office Software Level:** 3.0+.
- **Action:** Appearance -> Coverage Appearance.
- **Action Data:** User name.
- **Default Label:** <user name>.
- **Toggles:** ✗.
- **Status Indication:** ✓. See [Coverage Button Indication](#) ^[672].
- **User Admin:** ^[634] ✗.
- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✓	• 4400 Series: ✓	• 5600 Series: ✓
• 1600 Series: ✓	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✗	• 3810: ✓	• 4600 Series: ✓	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗

7.3.50 Dial

This action is used to dial the number contained in the Telephone Number field. A partial number can be entered for the user to complete. On buttons with a text label area, **Dial** followed by the number is shown.

- **IP Office Software Level:** 1.0+.
- **Action:** Dial.
- **Action Data:** Telephone number or partial telephone number.
- **Default Label:** Dial.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support** 
 - Note that support for particular phone models is also dependant on the IP Office software level.
 - **Analog:** ✗
 - **1600 Series:** ✓*
 - **20 Series:** ✓
 - **2400 Series:** ✓
 - **3600 Series:** ✗
 - **3700 Series:** ✗
 - **3810:** ✓
 - **4400 Series:** ✓
 - **5400 Series:** ✓
 - **4600 Series:** ✓*
 - **5600 Series:** ✓*
 - **6400 Series:** ✓
 - **9040:** ✓
 - **T3/T3 IP Series:** ✗
 - *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.
- **T3 Phones:**
 - **Classic/Comfort icon:** Displays the telephone number set.
 - **DSS Link LED:** None.

7.3.51 Dial 3K1

The call is presented to local exchange as a "3K1 Speech Call". Useful in some where voice calls cost less than data calls.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Dial -> Dial 3K1.
- **Action Data:** Telephone number.
- **Default Label:** D3K1.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support** 
 - Note that support for particular phone models is also dependant on the IP Office software level.
 - **Analog:** ✗
 - **1600 Series:** ✓*
 - **20 Series:** ✓
 - **2400 Series:** ✓
 - **3600 Series:** ✗
 - **3700 Series:** ✗
 - **3810:** ✓
 - **4400 Series:** ✓
 - **5400 Series:** ✓
 - **4600 Series:** ✓*
 - **5600 Series:** ✓*
 - **6400 Series:** ✓
 - **9040:** ✓
 - **T3/T3 IP Series:** ✗
 - *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.52 Dial 56K

The call presented to local exchange as a "Data Call".

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Dial -> Dial 56K.
- **Action Data:** Telephone number.
- **Default Label:** D56K.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- **Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

7.3.53 Dial 64K

The call is presented to local exchange as a "Data Call".

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Dial -> Dial 64K.
- **Action Data:** Telephone number.
- **Default Label:** D64K.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- **Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

7.3.54 Dial CW

Call the specified extension number and force call waiting indication on if the extension is already on a call. The call waiting indication will not work if the extension called has multiple call appearance buttons in use.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Dial -> Dial CW.
- **Action Data:** User number.
- **Default Label:** DCW.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support:**  ✗.

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.55 Dial Direct

Call an extension and have the call automatically answered on speaker phone after 3 beeps. The extension called must support a handsfree speaker. If the extension does not have a handsfree microphone then the user must use the handset if they want to talk. If the extension is not free when called, the call is presented as a normal call on a call appearance button if available.

- For IP Office 4.2 Q4 maintenance release and higher this feature can be used as part of [handsfree announced transfers](#) .
- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Dial -> Dial Direct.
- **Action Data:** User number or name or blank for entry when pressed.
 - If left blank, the **Dial Direct** button can be used with **User**  buttons to specify the target.
- **Default Label:** Direct.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support:**  ✗.

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.56 Dial Emergency

Dials the number specified regardless of any outgoing call barring applicable to the user.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Dial -> Dial Emergency.
- **Action Data:** Telephone number.
- **Default Label:** Emrgy.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗

- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.57 Dial Inclusion

Intrudes on the existing connected call of the specified target extension. The intruder and the target extension can then talk but cannot be heard by the other party. If the target extension is free the button makes a normal call.

During the intrusion all parties hear a repeated intrusion tone. When the intruder hangs-up the original call parties are reconnected.

Use of this feature is subject to the **Can Intrude** status of the intruder and the **Cannot be Intruded** status of the other call parties if internal.

- **IP Office Software Level:** 1.4+.
- **Action:** Advanced -> Dial -> Dial Inclusion.
- **Action Data:** User number or name or blank for user selection.
 - For IP Office 4.0+, on large display phones, if configured without a preset target this type of button will display an [interactive button menu](#)  for target selection.
- **Default Label:** Inclu.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗

- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.58 Dial Intercom

Call an extension and have the call automatically answered on speaker phone after 3 beeps. The extension called must support a handsfree speaker. If the extension does not have a handsfree microphone then the user must use the handset if they want to talk. If the extension is not free when called, the call is presented as a normal call on a call appearance button if available.

- For IP Office 4.2 Q4 maintenance release and higher this feature can be used as part of [handsfree announced transfers](#) ^[711].
- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Dial Intercom.
- **Action Data:** User number or name or blank for number entry when pressed.
 - For IP Office 4.0+, on large display phones, if configured without a preset target this type of button will display an [interactive button menu](#) ^[516] for target selection.
- **Default Label:** Idial.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** ^[634] ✗.
- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗

- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

- **T3 Phones:**
 - **Classic/Comfort icon:** Displays  followed by the set number.
 - **DSS Link LED:** None.

7.3.59 Dial Paging

Makes a paging call to an extension or group specified. If no number is specified, this can be dialed after pressing the button. The target extension or group members must be free and must support handsfree auto-answer in order to hear the page.

On Avaya phones with a **CONFERENCE** button, a paged user can convert the page call into a normal call by pressing that button.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Dial -> Dial Paging.
- **Action Data:** User number or name or group number or name or blank for number entry when pressed.
- **Default Label:** Page.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support:** 

Note that support for particular phone models is also dependant on the IP Office software level.

- **Analog:** ✗
 - **1600 Series:** ✓*
 - **20 Series:** ✓
 - **2400 Series:** ✓
 - **3600 Series:** ✗
 - **3700 Series:** ✗
 - **3810:** ✓
 - **4400 Series:** ✓
 - **5400 Series:** ✓
 - **4600 Series:** ✓*
 - **5600 Series:** ✓*
 - **6400 Series:** ✓
 - **9040:** ✓
 - **T3/T3 IP Series:** ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.
- **T3 Phones:**
 - **Classic/Comfort icon:** Displays  followed by target number if set.
 - **DSS Link LED:** None.

Paging Limits

The table below lists the maximum recommended size for paging groups.

IP Office Control Unit	Software Level	
	4.0+	3.2
IP500	64	–
IP412	48	24
IP406 V2	32	16
Small Office Edition	16	16
IP406 V1	–	16
IP403	–	16

7.3.60 Dial Physical Extn by Number

Call the specified extension using its Base Extension number setting. This is regardless of the current user logged in at that extension and any forwarding, follow me or do not disturb settings applied by the extension user. This function requires the extension to be assigned a default extension number in the IP Office configuration. If the extension does not have a default extension number, [Dial Physical Extn by ID](#)^[593] should be used.

- **IP Office Software Level:** 1.4+.
- **Action:** Advanced -> Dial -> Dial Physical Extn By Number.
- **Action Data:** Extension port base extension number.
- **Default Label:** PhyEx.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** ^[634] ✗.
- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.61 Dial Physical Extn by ID

Call the specified extension, if free, regardless of the current user logged in at that extension and any forwarding, follow me or do not disturb settings applied by the extension user. This function uses the port ID shown in the IP Office configuration.

- **IP Office Software Level:** 1.4+.
- **Action:** Advanced -> Dial -> Dial Physical Extn By ID.
- **Action Data:** Extension port ID number.
- **Default Label:** DialP.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** ^[634] ✗.
- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.62 Dial Speech

This feature allows a short code to be created to force the outgoing call to use the Speech bearer capability.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Dial -> Dial Speech.
- **Action Data:** Telephone number.
- **Default Label:** DSpch.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- **Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

7.3.63 Dial V110

The call is presented to local exchange as a "Data Call".

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Dial -> Dial V110.
- **Action Data:** Telephone number.
- **Default Label:** DV110.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- **Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

7.3.64 Dial V120

The call is presented to local exchange as a "Data Call".

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Dial -> Dial V120.
- **Action Data:** Telephone number.
- **Default Label:** DV120.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗

- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.65 Display Msg

Allows the sending of special functions to feature phones.

- **IP Office Software Level:** 1.0+.
- **Action:** Advanced -> Dial -> Display Msg.
- **Action Data:** The telephone number takes the format `xxxx;[0]nnn/ppppppp` where:
 - `xxx` is the target extension.
 - `nnn` is the Definity feature number of the emulation feature.
 - Abbreviated Dial (129), Abbreviated Dial Pause (130), Abbreviated Dial Program (7), Abbreviated Dial Stop (148), Account Code Entry (128), ACD Agent Statistics (147), ACD Stroke Count (135), AD Special Function Mark (142), AD Special Function Wait (149), AD Special Functions (145), AD Suppress (146), Automatic Callback (6), Automatic Intercom (139), Call Forwarding All (8), Call Park (9), Call Park To Other Extension (143), Call Pickup (132), Cancel Leave Word Calling (133), Consult (134), Dial Intercom (140), Directed Call Pickup (136), Send All Calls (10), Stored Number View (150).
 - `ppppppp` is the parameter data if required. .
- **Default Label:** Displ.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗

- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.66 Dial Video

The call is presented to the local exchange as a "Video Call".

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Dial -> Dial Video.
- **Action Data:** Telephone number.
- **Default Label:** Dvide.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** ^[634] ✗.
- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- **Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

7.3.67 Directed Call Pickup

Pickup a call ringing at a specific extension or hunt group.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Directed Pickup.
- **Action Data:** User number or name or group number or name or blank for number entry when pressed.
 - For IP Office 4.0+, on large display phones, if configured without a preset target this type of button will display an [interactive button menu](#) ^[516] for target selection.
- **Default Label:** DpkUp.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** ^[634] ✗.
- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗

- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.68 Directory

A **Dir** button provides access to various directories and allows telephone number selection by dialed name matching. The directories available for searching depend on the phone type, see [User Directory Access](#)^[713]. Once the user has selected a directory, dialing on the dial pad letter keys is used to display matching names, with controls for scrolling through the matching names and for calling the currently displayed name.

The method of name matching is controlled by the [Dial by Name](#)^[166] ([System | Telephony | Telephony](#))^[166] setting in the IP Office configuration:

- **With Dial By Name on**
Matching is done against all the dial keys pressed. For example, dialing 527 matches names starting with JAS (for example "Jason") and KAR (for example "Karl"). Only the first 50 matches are displayed.
- **With Dial By Name off**
Matching is done against the first letter only. For example pressing 5 displays names beginning with J. Press 5 again displays names beginning with K. Only the first 50 matches are displayed. This mode is not supported by IP Office 5.0+.

Name dialing functions on IP Office assume that the phone is using the standard ITU keypad as follows:



- **Dialing Spaces**
For names that include spaces, the method of indicating a space has changed in IP Office 5.0.
 - **Pre-IP Office 5.0**
To enter a name with a space, nothing is dialed for the space. For example "John S..." is dialed as 56467.
 - **IP Office 5.0+**
To enter a name with a space, the 0 key is used for the space. For example "John S..." is dialed as 564607.

- **IP Office Software Level:** 1.0+.

- **Action:** Emulation -> Directory.

- **Action Data:** None.

- **Default Label:** Dir.

- **Toggles:** X.

- **Status Indication:** X.

- **User Admin:**^[634] X.

- **Phone Support**^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: X	• 3600 Series: X	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: X	• 5400 Series: ✓*	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓*			• T3/T3 IP Series: ✓

- *X Not 1603, 2402, 4601, 4602, 5402, 5601 and 5602 models.

- **T3 Phones:**

- **Classic/Comfort icon:** Displays

- **DSS Link LED:** None.

7.3.69 Do Not Disturb Exception Add

Adds a number to the user's "Do Not Disturb Exception List". This can be the number of an internal user or a number to match the CLI of a particular external caller. Calls from that number, except hunt group calls, will ignore the user's Do Not Disturb setting. For further details see [Do Not Disturb \(DND\)](#) ^[752] in the Telephone Features section.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Do Not Disturb -> Do Not Disturb Exception Add.
- **Action Data:** Telephone number or CLI. Up to 31 characters. For CLI numbers any prefix added by the IP Office system must also be included.
- **Default Label:** DNDX+.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** ^[634] ✗.
- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- **Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

7.3.70 Do Not Disturb Exception Delete

Removes a number from the user's "Do Not Disturb Exception List". This can be the number of an internal user or a number to match the CLI of a particular external caller.

- **IP Office Software Level:** 1.1+.
 - **Action:** Advanced -> Do Not Disturb -> Do Not Disturb Exception Delete.
 - **Action Data:** Telephone number or CLI.
 - **Default Label:** DNDX-.
 - **Toggles:** ✗.
 - **Status Indication:** ✗.
 - **User Admin:** ^[634] ✗.
 - **Phone Support** ^[517]
- Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- **Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

7.3.71 Do Not Disturb Off

Cancels the user's 'do not disturb' mode if set. This button function is largely obsolete as the [do not disturb on](#)^[606] function toggles on/off and indicates the button status.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Do Not Disturb -> Do Not Disturb On.
- **Action Data:** None.
- **Default Label:** DNDOf.
- **Toggles:** **X**.
- **Status Indication:** **X**.
- **User Admin:**^[634] **X**.
- **Phone Support**^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: X	• 3600 Series: X	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: X	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: X
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.72 Do Not Disturb On

Acts the same as [Send All Calls](#)^[635]. Note that for T3 phones, a **Do Not Disturb On** button programmed through the phone will be shown as a **Send All Call** button in the IP Office Manager configuration.

7.3.73 Drop

This action is supported on phones which do not have a permanent **Drop** button.

- For a currently connected call, pressing **Drop** disconnects the call. When drop is used to end a call, silence is returned to the user rather than dial tone. This is intended operation, reflecting that **Drop** is mainly intended for use by call center headset users.
- If the user has no currently connected call, pressing **Drop** will redirect a ringing call using the user's **Forward on No Answer** setting if set or otherwise to voicemail if available.
- For a conference call, on phones with a suitable display, **Drop** can be used to display the conference parties and select which party to drop from the conference.

- **IP Office Software Level:** 1.0+.

- **Action:** Emulation -> Drop.

- **Action Data:** *None*.

- **Default Label:** Drop.

- **Toggles:** ✗.

- **Status Indication:** ✗.

- **User Admin:**  ✓.

- **Phone Support:** .

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✗
• 1600 Series: ✗	• 3700 Series: ✗	• 5400 Series: ✗	• 6400 Series: ✗
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✗	• 9040: ✓
• 2400 Series: ✗			• T3/T3 IP Series: ✗

7.3.74 Extn Login

This feature allows user configured with a log in code to take over ownership of an physical extension. That user's associated extension number becomes the number of the extension while they are logged in along with all their user settings (if appropriate to the phone type).

If the user logging in was already logged in or associated with another phone, they will be automatically logged out that phone.

When used, the user will be prompted to enter their extension number and then their log in code. Login codes of up to 15 digits are supported with **Extn Login** buttons. Login codes of up to 31 digits are supported with **Extn Login** short codes.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Extension -> Extn Login.
- **Action Data:** None.
- **Default Label:** Login.
- **Toggles:** ✓.
- **Status Indication:** ✓.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	<Label>◀	<Label>	Green on.
- Off.	<Label>	<Label>	Off.

- **User Admin:** ⁶³⁴✗.

- **Phone Support** ⁵¹⁷

Note that support for particular phone models is also dependant on the IP Office software level.

- **Analog:** ✗
 - **1600 Series:** ✓
 - **20 Series:** ✓
 - **2400 Series:** ✓*
 - **3600 Series:** ✗
 - **3700 Series:** ✗
 - **3810:** ✓
 - **4400 Series:** ✓
 - **5400 Series:** ✓*
 - **4600 Series:** ✓*
 - **5600 Series:** ✓*
 - **6400 Series:** ✓
 - **9040:** ✓
 - **T3/T3 IP Series:** ✗
- *✗ Not 2402, 4601, 4602, 5402, 5601 and 5602 models.

7.3.75 Extn Logout

Logs out a user from the phone. The phone will return to its normal default user, if an extension number is set against the physical extension settings in the configuration. Otherwise it takes the setting of the **NoUser** user. This action is obsolete as **Extn Login** ⁶⁰² can be used to log out an existing logged in user.

If the user who logged out was the default user for an extension, dialing *36 will associate the extension with the user unless they are set to forced log in.

For IP Office 4.0 and higher this feature cannot be used by a user who does not have a log in code.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Extension -> Extn Logout.
- **Action Data:** None.
- **Default Label:** Logof.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** ⁶³⁴✗.
- **Phone Support** ⁵¹⁷

Note that support for particular phone models is also dependant on the IP Office software level.

- **Analog:** ✗
 - **1600 Series:** ✓*
 - **20 Series:** ✓
 - **2400 Series:** ✓
 - **3600 Series:** ✗
 - **3700 Series:** ✗
 - **3810:** ✓
 - **4400 Series:** ✓
 - **5400 Series:** ✓
 - **4600 Series:** ✓*
 - **5600 Series:** ✓*
 - **6400 Series:** ✓
 - **9040:** ✓
 - **T3/T3 IP Series:** ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.76 Flash Hook

Sends a hook flash signal to the currently connected line if that line is an analog line. For IP Office 4.0+ this can be used for a Centrex Transfer for calls on lines from a Centrex service provider.

- **IP Office Software Level:** 1.4+.
- **Action:** Advanced -> Miscellaneous -> Flash Hook.
- **Action Data:** *Optional*.
Normally this field is left blank. For IP Office 4.0+ it can contain the destination number for a Centrex Transfer for external calls on a line from a Centrex service provider.
- **Default Label:** Flash.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** ^[634] ✗.
- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.77 Follow Me Here

Causes calls to the extension number specified, to be redirected to this user's extension. IP Office 4.0+ user's with a log in code will be prompted to enter that code when using this function.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Follow Me -> Follow Me Here.
- **Action Data:** User name or user number. For IP Office 4.0+ this field can be left blank for number entry when pressed.
 - For IP Office 4.0+, on large display phones, if configured without a preset target this type of button will display an [interactive button menu](#) ^[516] for target selection.
- **Default Label:** Here+.
- **Toggles:** **X**.
- **Status Indication:** **X**.
- **User Admin:** ^[634] **X**.
- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: X	• 3600 Series: X	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: X	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: X
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.
 - **T3 Phones:**
 - **Classic/Comfort icon:** Displays  followed by the user name.
 - **DSS Link LED:** On when active.

7.3.78 Follow Me Here Cancel

Cancels any 'Follow Me Here' set on the specified extension. Only works if entered at the extension to which the extension's calls are being sent by the follow me action.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Follow Me -> Follow Me Here Cancel.
- **Action Data:** User number or blank for number entry when pressed.
 - For IP Office 4.0+, on large display phones, if configured without a preset target this type of button will display an [interactive button menu](#) ^[516] for target selection.
- **Default Label:** Here-.
- **Toggles:** **X**.
- **Status Indication:** **X**.
- **User Admin:** ^[634] **X**.
- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: X	• 3600 Series: X	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: X	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: X
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.79 Follow Me To

Leaving the extension blank prompts the user to enter the extension to which their calls should be redirected.

IP Office 4+ user's with a log in code will be prompted to enter that code when using this function.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Follow Me -> Follow Me To.
- **Action Data:** User name or user number or blank for number entry when pressed. If already enabled the button cancels the **Follow Me To**.
 - For IP Office 4.0+, on large display phones, if configured without a preset target this type of button will display an [interactive button menu](#) ^[516] for target selection.
- **Default Label:** FolTo.
- **Toggles:** ✓.
- **Status Indication:** ✓.

On/off status indication is provided if the button is programmed with a user name or number.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	<Label>◀	<Label>	Green on.
- Off.	<Label>	<Label>	Off.

- **User Admin:** ^[634] ✗.
- **Phone Support:** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

- **Analog:** ✗
 - **1600 Series:** ✓*
 - **20 Series:** ✓
 - **2400 Series:** ✓*
 - **3600 Series:** ✗
 - **3700 Series:** ✗
 - **3810:** ✓
 - **4400 Series:** ✓
 - **5400 Series:** ✓*
 - **4600 Series:** ✓*
 - **5600 Series:** ✓*
 - **6400 Series:** ✓
 - **9040:** ✓
 - **T3/T3 IP Series:** ✗
- *✗ Not 1603, 2402, 4601, 4602, 5402, 5601 and 5602 models.

7.3.80 Forward Hunt Group Calls Off

Cancels the forwarding of the user's hunt group calls. This function is largely obsolete since the button function [Forward Hunt Group Calls On](#) ^[606] toggles on/off and indicates status.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Forward -> Forward Hunt Group Calls Off.
- **Action Data:** None.
- **Default Label:** FwdH-.
- **Toggles:** **X**.
- **Status Indication:** **X**.
- **User Admin:** ^[634] **X**.

- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

- **Analog:** **X**
- **1600 Series:** **✓***
- **20 Series:** **✓**
- **2400 Series:** **✓**
- **3600 Series:** **X**
- **3700 Series:** **X**
- **3810:** **✓**
- **4400 Series:** **✓**
- **5400 Series:** **✓**
- **4600 Series:** **✓***
- **5600 Series:** **✓***
- **6400 Series:** **✓**
- **9040:** **✓**
- **T3/T3 IP Series:** **X**

- **Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

7.3.81 Forward Hunt Group Calls On

Forward the user's hunt group calls (internal and external). This function only works when forward unconditional is also on and uses the same forwarding number as forward unconditional.

This option is only applied for calls to **Sequential** and **Rotary** type hunt groups. Calls from other hunt group types are not presented to the user when they have Forward Unconditional active. Note also that hunt group calls cannot be forwarded to another hunt group.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Forward -> Forward Hunt Group Calls On.
- **Action Data:** None.
- **Default Label:** FwdH+.
- **Toggles:** **✓**.
- **Status Indication:** **✓**.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	<Label> 	<Label>	Green on.
- Off.	<Label>	<Label>	Off.

- **User Admin:** ^[634] **X**.

- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

- **Analog:** **X**
- **1600 Series:** **✓***
- **20 Series:** **✓**
- **2400 Series:** **✓**
- **3600 Series:** **X**
- **3700 Series:** **X**
- **3810:** **✓**
- **4400 Series:** **✓**
- **5400 Series:** **✓**
- **4600 Series:** **✓***
- **5600 Series:** **✓***
- **6400 Series:** **✓**
- **9040:** **✓**
- **T3/T3 IP Series:** **X**

- **Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

7.3.82 Forward Number

Sets the number to which calls are forwarded when the user has forwarding on. Used for all forwarding options unless a separate **Forward On Busy Number** is also set. Forwarding to an external number is blocked if **Inhibit Off-Switch Transfers** is selected within the system configuration.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Forward -> Forward Number.
- **Action Data:** Telephone number.
 - IP Office 4.0+ allows this field to be left blank to prompt the user for entry when the button is pressed. Also if blank, IP Office 4.0+ users with a log in code will be prompted to enter that code.
 - For IP Office 4.0+, on large display phones, if configured without a preset target this type of button will display an [interactive button menu](#) ^[51b] for target selection.
- **Default Label:** FwdNo.
- **Toggles:** ✗.
- **Status Indication:** ✓ for IP Office 4.0+.

For a button with a prefixed number, status indication will indicate when that number matches the users current set number. For a button with a no number, status indication will show when a number has been set.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	FwdNo	FwdNo	Green on.
- Off.	FwdNo	FwdNo	Off.

- **User Admin:** ^[63d] ✗.

- **Phone Support** ^[51b]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.83 Forward On Busy Number

Sets the number to which calls are forwarded when using 'Forward on Busy' and/or 'Forward on No Answer'. Forwarding to an external number is blocked if **Inhibit Off-Switch Transfers** is selected within the system configuration.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Forward -> Forward on Busy Number.
- **Action Data:** Telephone number.
 - IP Office 4.0+ allows this field to be left blank to prompt the user for entry when the button is pressed. Also if blank, IP Office 4.0+ users with a log in code will be prompted to enter that code.
 - For IP Office 4.0+, on large display phones, if configured without a preset target this type of button will display an [interactive button menu](#) ^[51b] for target selection.
- **Default Label:** FwBNo.
- **Toggles:** ✗.
- **Status Indication:** ✓ for IP Office 4.0+.

For a button with a prefixed number, status indication will indicate when that number matches the users current set number. For a button with a no number, status indication will show when a number has been set.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	FwBNo	FwBNo	Green on.
- Off.	FwBNo	FwBNo	Off.

- **User Admin:** ^[63d] ✗.

- **Phone Support** ^[51b]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*

-
- **1600 Series:** ✓*
 - **20 Series:** ✓
 - **2400 Series:** ✓
 - **3700 Series:** ✗
 - **3810:** ✓
 - **5400 Series:** ✓
 - **4600 Series:** ✓*
 - **6400 Series:** ✓
 - **9040:** ✓
 - **T3/T3 IP Series:** ✗

- **Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

7.3.84 Forward On Busy Off

Switches forward on busy off. This button function is largely obsolete, as [Forward On Busy On](#)^[609] can be used to switch forward on busy on/off and provides status indication.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Forward -> Forward on Busy Off.
- **Action Data:** None.
- **Default Label:** FwBOF.
- **Toggles:** **X**.
- **Status Indication:** **X**.
- **User Admin:**^[634] **X**.

- **Phone Support**^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: X	• 3600 Series: X	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: X	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: X
- **Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

7.3.85 Forward On Busy On

Enables forwarding when the user's extension is busy. For users with call appearance buttons, they will only return busy when all call appearance buttons are in use. Uses the **Forward Number** as its destination unless a separate **Forward on Busy Number** is set.

For IP Office 3.2 and higher, **Forward Internal (User | Forwarding)** can also be used to control whether internal calls are forwarded.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Forward -> Forward on Busy On.
- **Action Data:** None.
- **Default Label:** FwBOn.
- **Toggles:** **✓**.
- **Status Indication:** **✓**.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	<Label> ⁶³⁴	<Label>	Green on.
- Off.	<Label>	<Label>	Off.

- **User Admin:**^[634] **X**.

- **Phone Support**^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: X	• 3600 Series: X	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: X	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: X
- **Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

7.3.86 Forward On No Answer Off

Switches forward on no answer off. This button function is largely obsolete, as [Forward On No Answer On](#)^[610] can be used to switch forward on no answer on/off and provides status indication.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Forward -> Forward on No Answer Off.
- **Action Data:** None.
- **Default Label:** FwNOF.
- **Toggles:** **X**.
- **Status Indication:** **X**.
- **User Admin:**^[634] **X**.
- **Phone Support**^[517]
Note that support for particular phone models is also dependant on the IP Office software level.

- **Analog:** **X**
 - **1600 Series:** **✓***
 - **20 Series:** **✓**
 - **2400 Series:** **✓**
 - **3600 Series:** **X**
 - **3700 Series:** **X**
 - **3810:** **✓**
 - **4400 Series:** **✓**
 - **5400 Series:** **✓**
 - **4600 Series:** **✓***
 - **5600 Series:** **✓***
 - **6400 Series:** **✓**
 - **9040:** **✓**
 - **T3/T3 IP Series:** **X**
- **Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

7.3.87 Forward On No Answer On

Switches forward on no answer on/off. The time used to determine the call as unanswered is the user's no answer time. Uses the **Forward Number** as its destination unless a separate **Forward on Busy Number** is set.

For IP Office 3.2 and higher, **Forward Internal (User | Forwarding)** can also be used to control whether internal calls are forwarded.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Forward -> Forward on No Answer On.
- **Action Data:** None.
- **Default Label:** FwNOn.
- **Toggles:** **✓**.
- **Status Indication:** **✓**.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	<Label> ¹	<Label>	Green on.
- Off.	<Label>	<Label>	Off.

- **User Admin:**^[634] **X**.
- **Phone Support**^[517]
Note that support for particular phone models is also dependant on the IP Office software level.

- **Analog:** **X**
 - **1600 Series:** **✓***
 - **20 Series:** **✓**
 - **2400 Series:** **✓**
 - **3600 Series:** **X**
 - **3700 Series:** **X**
 - **3810:** **✓**
 - **4400 Series:** **✓**
 - **5400 Series:** **✓**
 - **4600 Series:** **✓***
 - **5600 Series:** **✓***
 - **6400 Series:** **✓**
 - **9040:** **✓**
 - **T3/T3 IP Series:** **X**
- **Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

7.3.88 Forward Unconditional Off

Switch 'forward all calls' off. This does not affect 'Forward on No Answer' and/or 'Forward on Busy' if also on. This function is largely obsolete as a button set to [Forward Unconditional On](#) ^[61] toggles on/off and indicates when on.

- **IP Office Software Level:** 1.1+.

- **Action:** Advanced -> Forward -> Forward Unconditional Off.

- **Action Data:** None.

- **Default Label:** FwUOf.

- **Toggles:** ✗.

- **Status Indication:** ✗.

- **User Admin:** ^[63] ✗.

- **Phone Support** ^[51]

Note that support for particular phone models is also dependant on the IP Office software level.

- **Analog:** ✗
- **1600 Series:** ✓*
- **20 Series:** ✓
- **2400 Series:** ✓
- **3600 Series:** ✗
- **3700 Series:** ✗
- **3810:** ✓
- **4400 Series:** ✓
- **5400 Series:** ✓
- **4600 Series:** ✓*
- **5600 Series:** ✓*
- **6400 Series:** ✓
- **9040:** ✓
- **T3/T3 IP Series:** ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.89 Forward Unconditional On

This function is also know as 'divert all' and 'forward all'. It forwards all calls, except hunt group and page calls, to the forward number set for the user's extension. To also forward hunt group calls to the same number [Forward Hunt Group Calls On](#) ^[60] must also be used.

For IP Office 3.2 and higher, **Forward Internal (User | Forwarding)** can also be used to control whether internal calls are forwarded.

In addition to the lamp indication shown below, most phones display **D** when forward unconditional is on.

- **IP Office Software Level:** 1.1+.

- **Action:** Advanced -> Forward -> Forward Unconditional On.

- **Action Data:** None.

- **Default Label:** FwUOn.

- **Toggles:** ✓.

- **Status Indication:** ✓.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	<Label> 	<Label>	Green on.
- Off.	<Label>	<Label>	Off.

- **User Admin:** ^[63] ✗.

- **Phone Support** ^[51]

Note that support for particular phone models is also dependant on the IP Office software level.

- **Analog:** ✗
- **1600 Series:** ✓*
- **20 Series:** ✓
- **2400 Series:** ✓
- **3600 Series:** ✗
- **3700 Series:** ✗
- **3810:** ✓
- **4400 Series:** ✓
- **5400 Series:** ✓
- **4600 Series:** ✓*
- **5600 Series:** ✓*
- **6400 Series:** ✓
- **9040:** ✓
- **T3/T3 IP Series:** ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.
- **T3 Phones:**
 - **Classic/Comfort icon:** Displays  followed by the user name.
 - **DSS Link LED:** On when active.

7.3.90 Group

Monitors the status of a hunt group queue. This option is only supported for hunt groups with queuing enabled. The user does not have to be a member of the group.

Depending on the users button type, indication is given for when the group has alerting calls and queued calls (queued in this case is defined as more calls waiting than there are available group members).

In IP Office 4.0 the definition of queued calls has changed to include ringing calls. However for operation of the Group button, ringing calls are still regarded as different from other queued calls.

For pre-4.0 IP Office pressing the button displayed information about the longest waiting call in the queue and options to answer, drop or ignore the call. For IP Office 4.0 and higher the button has been changed to just answer the longest waiting call.

- **IP Office Software Level:** 1.0+.
- **Action:** Group.
- **Action Data:** Group name enclosed in " " double-quotes or group number.
- **Default Label:** <group name>.
- **Toggles:** ✗.
- **Status Indication:** ✔ *Required.*

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- No calls	Main	Main	Not lit.
- Call alerting.	Main ♦	Main ♦	Green flash.
- Calls queued.	<u>Main</u>	Main	Red flash.

- **User Admin:** ^[634] ✗.
- **Phone Support:** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

- **Analog:** ✗
- **1600 Series:** ✔*
- **20 Series:** ✔
- **2400 Series:** ✔
- **3600 Series:** ✗
- **3700 Series:** ✗
- **3810:** ✔
- **4400 Series:** ✔
- **5400 Series:** ✔
- **4600 Series:** ✔*
- **5600 Series:** ✔*
- **6400 Series:** ✔
- **9040:** ✔
- **T3/T3 IP Series:** ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.91 Group Listen On

Using group listen allows callers to be heard through the phone's handsfree speaker but to only hear the phone's handset microphone. When group listen is enabled, it modifies the handsfree functionality of the user's phone in the following manner

- When the user's phone is placed in handsfree / speaker mode, the speech path from the connected party is broadcast on the phone speaker but the phone's base microphone is disabled.
- The connected party can only hear speech delivered via the phone's handset microphone.
- Group listen is not supported for IP phones or when using a phone's **HEADSET** button.
- Currently connected calls are not affected by changes to this setting. If group listen is required it must be selected before the call is connected.

This enables listeners at the user's phone to hear the connected party whilst limiting the connected party to hear only what is communicated via the phone handset.

- **IP Office Software Level:** 4.1+.
- **Action:** Advanced -> Extension -> Group Listen On.
- **Action Data:** None.
- **Default Label:** Group Listen On.
- **Toggles:** ✓.
- **Status Indication:** ✓.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	<Label>↵	<Label>	Green on.
- Off.	<Label>	<Label>	Off.

- **User Admin:** ⁶³⁴✗.

- **Phone Support** ⁵¹⁷↗

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✗	• 5600 Series: ✗
• 1600 Series: ✗	• 3700 Series: ✗	• 4600 Series: ✗	• 6400 Series: ✓*
• 20 Series: ✗	• 3810: ✗	• 5400 Series: ✓*	• 9040: ✗
• 2400 Series: ✓*			• T3/T3 IP Series: ✗

7.3.92 Group Paging

Makes a paging call to an extension or group specified. If no number is specified, this can be dialed after pressing the button. The target extension or group members must be free and must support handsfree auto-answer in order to hear the page.

On Avaya phones with a **CONFERENCE** button, a paged user can convert the page call into a normal call by pressing that button.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Group Paging.
- **Action Data:** User number or name or group number or name. For IP Office 4.0+ this field can be left blank for number entry when pressed.
 - For IP Office 4.0+, on large display phones, if configured without a preset target this type of button will display an [interactive button menu](#) ^[516] for target selection.
- **Default Label:** Page.
- **Toggles:** **X**.
- **Status Indication:** **X**.
- **User Admin:** ^[634] **✓**.
- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

- **Analog:** **X**
 - **1600 Series:** **✓***
 - **20 Series:** **✓**
 - **2400 Series:** **✓**
 - **3600 Series:** **X**
 - **3700 Series:** **X**
 - **3810:** **✓**
 - **4400 Series:** **✓**
 - **5400 Series:** **✓**
 - **4600 Series:** **✓***
 - **5600 Series:** **✓***
 - **6400 Series:** **✓**
 - **9040:** **✓**
 - **T3/T3 IP Series:** **X**
- **Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*
- **T3 Phones:**
 - **Classic/Comfort icon:** Displays  followed by target number if set.
 - **DSS Link LED:** None.

Paging Limits

The table below lists the maximum recommended size for paging groups.

IP Office Control Unit	Software Level	
	4.0+	3.2
IP500	64	–
IP412	48	24
IP406 V2	32	16
Small Office Edition	16	16
IP406 V1	–	16
IP403	–	16

7.3.93 Headset Toggle

This function is intended for use with Avaya phones that have separate handset and headset sockets but do not provide a dedicated Headset button, for example older style 4400 Series and 4600 Series phones. On phones without a headset socket or with a dedicated Headset button this control will have no effect.

- **IP Office Software Level:** 1.4+.
- **Action:** Miscellaneous -> Headset Toggle.
- **Action Data:** None.
- **Default Label:** HdSet.
- **Toggles:** ✓.
- **Status Indication:** ✓.
- **User Admin:**  ✗.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✗
• 1600 Series: ✗	• 3700 Series: ✗	• 4600 Series: ✓*	• 6400 Series: ✗
• 20 Series: ✗	• 3810: ✗	• 5400 Series: ✗	• 9040: ✗
• 2400 Series: ✗			• T3/T3 IP Series: ✓
- *4606, 4612 and 4624 only.

- **T3 Phones:**
 - **Classic/Comfort icon:** Displays **HdSet**.
 - **DSS Link LED:** On when active.

7.3.94 Hold Call

This uses the Q.931 Hold facility, and "holds" the incoming call at the ISDN exchange, freeing up the ISDN B channel. The Hold Call feature "holds" the current call to a slot. The current call is always automatically placed into slot 0 if it has not been placed in a specified slot. Only available if supported by the ISDN exchange.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Hold -> Hold Call.
- **Action Data:** ISDN Exchange hold slot number or blank (slot 0).
- **Default Label:** Hold.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.95 Hold CW

Place the user's current call on hold and answers the waiting call. This function is not supported on phones which have multiple call appearance buttons set.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Hold -> Hold CW.
- **Action Data:** None.
- **Default Label:** HoldCW.
- **Toggles:** **X**.
- **Status Indication:** **X**.
- **User Admin:** ^[634] **X**.
- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: X	• 3600 Series: X	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: X	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: X
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.96 Hold Music

This feature allows the user to listen to the system's music on hold. See [Music On Hold](#) ^[746] for more information.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Hold -> Hold Music.
- **Action Data:** *Optional*.
IP Office 4.2+ (not Small Office Edition) supports up to 4 hold music sources. However only the system source is supported for **Hold Music** buttons.
- **Default Label:** Music.
- **Toggles:** **X**.
- **Status Indication:** **X**.
- **User Admin:** ^[634] **X**.
- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: X	• 3600 Series: X	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: X	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: X
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.97 Hunt Group Enable

An individual users membership of any particular hunt groups is programmed through the IP Office configuration. This control allows the user to enable or disable that membership. While enabled, the user can receive hunt group calls when logged in.

In addition to the lamp indication below, most phones display **G** when any group membership is enabled.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Hunt Group -> Hunt Group Enable.
- **Action Data:** Group number or name or blank for all groups of which the user is a member.
- **Default Label:** HGE na.
- **Toggles:** ✓.
- **Status Indication:** ✓ *Required.*

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	<Label> 	<Label>	Green on.
- Off.	<Label>	<Label>	Off.

- **User Admin:**  **X**.

- **Phone Support:** 

Note that support for particular phone models is also dependant on the IP Office software level.

- **Analog:** **X**
 - **1600 Series:** ✓*
 - **20 Series:** ✓
 - **2400 Series:** ✓
 - **3600 Series:** **X**
 - **3700 Series:** **X**
 - **3810:** ✓
 - **4400 Series:** ✓
 - **5400 Series:** ✓
 - **4600 Series:** ✓*
 - **5600 Series:** ✓*
 - **6400 Series:** ✓
 - **9040:** ✓
 - **T3/T3 IP Series:** **X**
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

- **T3 Phones:**

- **Classic/Comfort icon:** Displays **[A]** followed by the group number or * for all if programmed with no specific group number.
- **DSS Link LED:** On when active.

7.3.98 Hunt Group Disable

This function is obsolete, the [Hunt Group Enable](#)^[617] function being able to toggle membership between enabled and disabled and providing lamp indication of when membership is enabled.

An individual user's membership of any particular hunt groups is programmed through the IP Office configuration. This control allows the user to disable that membership. They will no longer receive calls to that hunt group until their membership is enabled again.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Hunt Group -> Hunt Group Disable.
- **Action Data:** Group number or blank for all groups of which the user is a member.
- **Default Label:** HGDIs.
- **Toggles:** **X**.
- **Status Indication:** **X**.
- **User Admin:**^[634] **X**.
- **Phone Support**^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: X	• 3600 Series: X	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: X	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: X

- **Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

7.3.99 Inspect

Not supported. Provided for CTI emulation only. Allows users on display phones to determine the identification of held calls. Allows users on an active call to display the identification of incoming calls.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Inspect.
- **Action Data:** None.
- **Default Label:** Inspt.
- **Toggles:** ✗.
- **Status Indication:** ✗.

- **User Admin:** ⁶³⁴ ✗.

- **Phone Support:** ⁵¹⁷

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗

- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.100 Internal Auto-Answer

This function is also known as handsfree auto-answer. Sets the user's extension to automatically connect internal calls after a single ring. This function should only be used on phones that support handsfree operation.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Internal Auto-Answer.
- **Action Data:** *Optional*.
 - If left blank this function acts as described above for internal auto-answer.
 - IP Office 4.1+ supports the entry of **FF** as the Action Data. In that case the button will enable/disable headset force feed operation for external calls. In this mode, when headset mode is selected but the phone is idle, an incoming external call will cause a single tone and then be automatically connected. This operation is only supported on Avaya phones with a fixed **HEADSET** button. Ring delay is applied if set on the call or line appearance button receiving the call before the call is auto-connected.
- **Default Label:** HfAns.
- **Toggles:** ✓.
- **Status Indication:** ✓ *Required*.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	<Label>◀	<Label>	Green on.
- Off.	<Label>	<Label>	Off.

- **User Admin:** ^[634] ✓.

- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

- **Analog:** ✗
- **1600 Series:** ✓*
- **20 Series:** ✓
- **2400 Series:** ✓
- **3600 Series:** ✗
- **3700 Series:** ✗
- **3810:** ✓
- **4400 Series:** ✓
- **5400 Series:** ✓
- **4600 Series:** ✓*
- **5600 Series:** ✓*
- **6400 Series:** ✓
- **9040:** ✓
- **T3/T3 IP Series:** ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

- **T3 Phones:**
 - **Classic/Comfort icon:** Displays **HfAns**.
 - **DSS Link LED:** On when active.

7.3.101 Leave Word Calling

Not supported. Provided for CTI emulation only. Leaves a message for the user associated with the last number dialed to call the originator.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Leave Word Calling.
- **Action Data:** None.
- **Default Label:** LWC.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support:**  ✗.

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.102 Line Appearance

Creates an line appearance button linked to the activity of a specified line appearance ID number. The button can then be used to answer and make calls on that line. For full details refer to the IP Office Key & Lamp Manual.

The line appearance button user must also have at least one call appearance button programmed before line appearance buttons can be programmed.

Line appearance functions, assigned to buttons that do not have status lamps or icons, are automatically disabled until the user logs in at a phone with suitable buttons.

Note that on 4620, 4621, 4625 and 5621 phones, buttons set to call appearance can occupy the full screen width, using the button on either side of the display line for operation and adjusting the numbering of all other buttons accordingly. The appearance buttons can be changed to half-width mode from the phone by pressing **Options -> Application Options -> Call Appearance Width**.

For IP Office 3.2+, appearance buttons can be set with a ring delay if required or to not ring. This does not affect the visual alerting displayed next to the button. The delay uses the user's [Ring Delay](#) ^[287] ([User](#) | [Telephony](#) | [Multi-line Options](#) ^[287]) setting.

For IP Office 4.2+, line appearances are supported on T3 and T3 IP phones. These phones do not require (or support) call appearance buttons in order to use line appearances.

- **IP Office Software Level:** 3.0+.
- **Action:** Appearance -> Line Appearance.
- **Action Data:** Line ID number.
- **Default Label:** Line <Line ID number>.
- **Toggles:** **X**.
- **Status Indication:** **✓**. See [Line Appearance Button Indication](#) ^[677].
- **User Admin:** ^[634] **X**.
- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: X	• 3600 Series: ✓	• 4400 Series: ✓	• 5600 Series: ✓
• 1600 Series: ✓	• 3700 Series: X	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: X	• 3810: ✓	• 4600 Series: ✓	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: X

7.3.103 Manual Exclude

Not supported. Provided for CTI emulation only.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Manual Exclude.
- **Action Data:** None.
- **Default Label:** Excl.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** ^[634] ✗.
- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.104 MCID Activate

This action is used with ISDN Malicious Caller ID call tracing. It is used to trigger a call trace at the ISDN exchange. The call trace information is then provided to the appropriate legal authorities.

This option requires the line to the ISDN to have MCID enabled at both the ISDN exchange and on the IP Office. The user must also be configured with **Can Trace Calls** ^[279] ([User | Telephony | Supervisor Settings](#) ^[279]) enabled.

- **IP Office Software Level:** 4.0+.
- **Action:** Advanced -> Miscellaneous -> MCID Activate.
- **Action Data:** None.
- **Default Label:** MCID.
- **Toggles:** ✗.
- **Status Indication:** ✓.
- **User Admin:** ^[634] ✗.
- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓	• 3700 Series: ✗	• 4600 Series: ✓*	• 6400 Series: ✗
• 20 Series: ✗	• 3810: ✓	• 5400 Series: ✓	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602.

7.3.105 Off Hook Station

Enables the user's extension to be controlled by an IP Office application, for example Phone Manager or SoftConsole. Calls can then be answered and cleared through the application without having to manually go off or on hook. Requires the phone to support full handsfree operation.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Miscellaneous -> Off Hook Station.
- **Action Data:** None.
- **Default Label:** OHStn.
- **Toggles:** ✓.
- **Status Indication:** ✓.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	<Label>⏮	<Label>	Green on.
- Off.	<Label>	<Label>	Off.

- **User Admin:** ⁶³⁴✗.
- **Phone Support** ⁵¹⁷

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓	• 3700 Series: ✗	• 5400 Series: ✓*	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓*			• T3/T3 IP Series: ✗
- *✗ Not 2402, 4601, 4602, 5402, 5601 and 5602 models.

7.3.106 Park

Monitors the status of an IP Office system park slot. The user can use the button to park a call into that slot and to also retrieve a call parked in that slot including calls parked by other users.

Park buttons with indication will indicate when the park slot is in use. Similarly the Park buttons within the Phone Manager and SoftConsole applications can be used to park, retrieve and indicate parked calls.

- **IP Office Software Level:** 1.0 to 3.2 only.
For IP Office 4.0 and higher this function has been replaced by [Emulation | Call Park](#)^[572].
- **Action:** Park Call.
- **Action Data:** Park slot number.
- **Default Label:** Park.
- **Toggles:** ✓.
- **Status Indication:** ✓ *Required.*

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- No parked call	PARK1	PARK1	Off
- Parked here.	PARK1 ♦	PARK1 ♦	Green flash.
- Parked elsewhere.	<u>PARK1</u>	<u>PARK1</u>	Red flash.

- **User Admin:**^[634] ✗.
- **Phone Support**^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.107 Park Call

For IP Office 4.0 and higher this function has been replaced by [Emulation | Call Park](#)^[572].

- **IP Office Software Level:** 1.0 to 3.2 only.
- **Action:** Advanced -> Call -> Park Call.
- **Action Data:** Park slot number.
- **Default Label:** Park.
- **Toggles:** ✓.
- **Status Indication:** ✓.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- No parked call	PARK1	PARK1	Off
- Parked here.	PARK1 ♦	PARK1 ♦	Green flash.
- Parked elsewhere.	PARK1	PARK1	Red flash.

- **User Admin:**^[634] ✗.
- **Phone Support**^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

- **Analog:** ✗
 - **1600 Series:** ✓*
 - **20 Series:** ✓
 - **2400 Series:** ✓
 - **3600 Series:** ✗
 - **3700 Series:** ✗
 - **3810:** ✓
 - **4400 Series:** ✓
 - **5400 Series:** ✓
 - **4600 Series:** ✓*
 - **5600 Series:** ✓*
 - **6400 Series:** ✓
 - **9040:** ✓
 - **T3/T3 IP Series:** ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.108 Priority Call

This feature allows the user to call another user even if they are set to 'do not disturb'. A priority call will follow forward and follow me settings but will not go to voicemail.

- **IP Office Software Level:** 1.1+.

- **Action:** Advanced -> Call -> Priority Call.

- **Action Data:** User number or name.

- **Default Label:** PCall.

- **Toggles:** ✗.

- **Status Indication:** ✗.

- **User Admin:** ^[634] ✗.

- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.109 Priority Calling

Not supported. Provided for CTI emulation only.

- **IP Office Software Level:** 1.0+.

- **Action:** Emulation -> Priority Calling.

- **Action Data:** None.

- For IP Office 4.0+, on large display phones, if configured without a preset target this type of button will display an [interactive button menu](#) ^[516] for target selection.

- **Default Label:** Pcall.

- **Toggles:** ✗.

- **Status Indication:** ✗.

- **User Admin:** ^[634] ✗.

- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.110 Private Call

When on, any subsequent calls cannot be intruded on, bridged into or silently monitored until the user's private call status is switched off.

Note that use of private calls is separate from the user's intrusion settings. If a user is set to **Cannot be Intruded**, switching private calls off does not affect that status. To allow private calls to be used to fully control the user status, **Cannot be Intruded** should be disabled for that user.

If enabled during a call, any current recording, intrusion or monitoring is ended.

- **IP Office Software Level:** 4.0+.
- **Action:** Advanced -> Call -> Private Call.
- **Action Data:** None.
- **Default Label:** PrivC.
- **Toggles:** ✓.
- **Status Indication:** ✓.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	<Label>◀	<Label>	Green on.
- Off.	<Label>	<Label>	Off.

- **User Admin:** ⁶³⁴✗.
- **Phone Support** ⁵¹⁷

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓	• 3700 Series: ✗	• 4600 Series: ✓*	• 6400 Series: ✗
• 20 Series: ✗	• 3810: ✓	• 5400 Series: ✓	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602.

7.3.111 Relay Off

Opens the specified switch in the system's external output port (**EXT O/P**).

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Relay -> Relay Off.
- **Action Data:** Switch number (1 or 2).
- **Default Label:** Rely-.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗

- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.112 Relay On

Closes the specified switch in the system's external output port (**EXT O/P**).

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Relay -> Relay On.
- **Action Data:** Switch number (1 or 2).
- **Default Label:** Rely+.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗

- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.113 Relay Pulse

Closes the specified switch in the system's external output port (**EXT O/P**) for 5 seconds and then opens the switch.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Relay -> Relay Pulse.
- **Action Data:** Switch number (1 or 2).
- **Default Label:** Relay.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** ^[634] ✗.
- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.
 - **T3 Phones:**
 - **Classic/Comfort icon:** Displays **S1** or **S2** dependant on switch number.
 - **DSS Link LED:** None.

7.3.114 Resume Call

Resume a call previously suspended to the specified ISDN exchange slot. The suspended call may be resumed from another phone/ISDN Control Unit on the same line.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Resume Call.
- **Action Data:** ISDN Exchange suspend slot number.
- **Default Label:** Resum.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support** 
 - Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.115 Retrieve Call

Retrieves a call previously held to a specific ISDN exchange slot. Only available when supported by the ISDN exchange.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Retrieve Call.
- **Action Data:** Exchange hold slot number.
- **Default Label:** Retrив.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support** 
 - Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.116 Ring Back When Free

Sets a ringback on the extension being called. When the target extension ends its current call, the ringback users is rung (for their set No Answer Time/Allocated Answer Interval) and if they answer, a new call is made to the target extension.

Ringback can be cleared using the [Cancel Ring Back When Free](#)^[580] function.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Miscellaneous -> Ring Back When Free.
- **Action Data:** None.
- **Default Label:** AutCB.
- **Toggles:** ✖.
- **Status Indication:** ✔.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	<Label>◀	<Label>	Green on.
- Off.	<Label>	<Label>	Off.

- **User Admin:**^[634] ✖.
- **Phone Support**^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✖	• 3600 Series: ✖	• 4400 Series: ✔	• 5600 Series: ✔*
• 1600 Series: ✔*	• 3700 Series: ✖	• 5400 Series: ✔	• 6400 Series: ✔
• 20 Series: ✔	• 3810: ✔	• 4600 Series: ✔*	• 9040: ✔
• 2400 Series: ✔			• T3/T3 IP Series: ✖
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.117 Ringer Off

Switches the phone's call alerting ring on/off.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Ringer Off.
- **Action Data:** None.
- **Default Label:** RngOf.
- **Toggles:** ✓.
- **Status Indication:** ✓ *Required.*

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	<Label>▶	<Label>	Green on.
- Off.	<Label>	<Label>	Off.

- **User Admin:** ⁶³⁴ ✓.
- **Phone Support:** ⁵¹⁷

Note that support for particular phone models is also dependant on the IP Office software level.

- **Analog:** ✗
 - **1600 Series:** ✓*
 - **20 Series:** ✓
 - **2400 Series:** ✓
 - **3600 Series:** ✗
 - **3700 Series:** ✗
 - **3810:** ✓
 - **4400 Series:** ✓
 - **5400 Series:** ✓
 - **4600 Series:** ✓*
 - **5600 Series:** ✓*
 - **6400 Series:** ✓
 - **9040:** ✓
 - **T3/T3 IP Series:** ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.118 Self-Administer

Allows a user to program features against other programmable buttons themselves. See [Using an Admin Button](#) [513] for full details. From IP Office 3.0+, [Appearance](#) [563] can no longer be used to create call appearance buttons. Similarly, existing call appearance button cannot be overwritten using any of the other Admin button functions.

- For IP Office 4.0+ user's with a log in code will be prompted to enter that code when they use this button action.
- For IP Office 4.2+, T3 phone users can access a similar set of functions for button programming, see [T3 Phone Self-Administration](#) [514].
- On 4412D+, 4424D+, 4612IP, 4624IP, 6408D, 6416D, 6424D phones:
 - Admin** can be permanently accessed via **Menu** , , , Admin. See [Using a Menu Key](#) [511].
 - Admin1** can be permanently accessed via **Menu** , **Menu** , , **ProgA**, , , **DSS**.

• **IP Office Software Level:** 1.0+.

• **Action:** Emulation -> Self-Administer.

• **Action Data:** See below.

- If no value is set, the button allows user programming of the following emulation actions:

[Abbreviated Dial.](#) [556]

[Abbreviated Dial Program.](#) [557]

[Account Code Entry.](#) [558]

[AD Suppress.](#) [561]

[Automatic Callback.](#) [564]

[Break Out \(4.0+\).](#) [568]

[Call Forwarding All.](#) [569]

[Call Park \(4.0+\).](#) [572]

[Call Park to Other Extension \(4.0+\).](#) [573]

[Call Pickup.](#) [574]

[Directed Call Pickup.](#) [597]

[Directory.](#) [598]

[Drop.](#) [601]

[Group Paging.](#) [614]

[Headset Toggle.](#) [615]

[Hook Flash \(4.0+\).](#) [603]

[Internal Auto-Answer.](#) [628]

[Park Call \(pre-4.0\)](#) [625]

[Ringer Off.](#) [633]

[Self-Administer.](#) [634]

[Send All Calls.](#) [635]

[Set Hunt Group Night Service.](#) [636]

[Time of Day.](#) [645]

[Timer.](#) [645]

- If **1** is entered as the telephone number, allows user programming of the following IP Office functions:

[Dial \(pre-4.0\).](#) [587]

[Abbreviated Dial \(4.0+\).](#) [556]

[Group.](#) [612]

[Park \(pre-4.0\).](#) [625]

[CPark \(4.0+\).](#) [572]

[User.](#) [649]

[Flash Hook.](#) [603]

- If **2** is entered, the button can be used for viewing details of the IP Office control unit type and its software version. This option is available in IP Office 4.1+. If the user has a log in code set they will be prompted to enter that code.

- System phone users ([User | Telephony | Call Settings | System Phone](#) [277]) can also use the button to manually set the IP Office system's [date and time](#) [747].

• **Default Label:** Admin.

• **Toggles:** **X**.

• **Status Indication:** **X**.

• **User Admin:** [634] ✓.

• **Phone Support** [517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: X	• 3600 Series: X	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓	• 3700 Series: X	• 5400 Series: ✓*	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: X
• 2400 Series: ✓*			• T3/T3 IP Series: ✓*2

- *Not 2402, 5402, 4601, 4602, 5601 and 5602.

- *2: IP Office 4.2+: See [T3 Phone Self-Administration](#) [514].

7.3.119 Send All Calls

Sets the user's extension into 'Do Not Disturb' mode. Callers, other than those on the user's do not disturb exception list, receive busy or are diverted to the user's voicemail mailbox. Note that with a call already connected and other calls already alerting, enabling Do Not Disturb will not affect those calls already existing. For full details of see [Do Not Disturb](#) [752].

When on, most Avaya phones display an **N** on the display. This function and the [Do Not Disturb On](#) [600] function work in parallel, ie. setting one sets the other.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Send All Call.
- **Action Data:** None.
- **Default Label:** SAC.
- **Toggles:** ✓.
- **Status Indication:** ✓.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	<Label> 	<Label>	Green on.
- Off.	<Label>	<Label>	Off.

- **User Admin:** [634] ✓.

- **Phone Support** [517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

- **T3 Phones:**
 - **Classic/Comfort icon:** Displays .
 - **DSS Link LED:** On when active.

7.3.120 Set Absent Text

This feature can be used select the user's current absence text. Note: The user still has to select **Set** or **Clear** on their phone to display or hide the text. This text is then displayed to internal callers who have suitable display phones or applications.

The text is displayed to callers even if the user has forwarded their calls or is using follow me. Absence text is supported across a Small Community Network (SCN).

The absence text message is limited to 128 characters. Note however that the amount displayed will depend on the caller's telephone device or application.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Set -> Set Absent Text.
- **Action Data:** The telephone number should take the format "**y,n,text**" where:
 - **y** = 0 or 1 to turn this feature off or on respectively.
 - **n** = the number of the absent statement to use:
 - 0 = None.
 - 1 = On vacation until.
 - 2 = Will be back.
 - 3 = At lunch until.
 - 4 = Meeting until.
 - 5 = Please call.
 - 6 = Don't disturb until.
 - 7 = With visitors until.
 - 8 = With cust. til.
 - 9 = Back soon.
 - 10 = Back tomorrow.
 - 11 = Custom.
 - **text** = any text to follow the absent statement..
- **Default Label:** Absnt.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support** 
 - Note that support for particular phone models is also dependant on the IP Office software level.
 - **Analog:** ✗
 - **1600 Series:** ✓*
 - **20 Series:** ✓
 - **2400 Series:** ✓*
 - **3600 Series:** ✗
 - **3700 Series:** ✗
 - **3810:** ✓
 - **4400 Series:** ✓
 - **5400 Series:** ✓*
 - **4600 Series:** ✓*
 - **5600 Series:** ✓*
 - **6400 Series:** ✓
 - **9040:** ✓
 - **T3/T3 IP Series:** ✗
 - *Not 1603, 2402, 4601, 4602, 5402, 5601 and 5602.

7.3.121 Set Account Code

Dials an account code and then returns dial tone for the user to dial a number. Can also be used to enter an account code after a call has been connected.

- **IP Office Software Level:** 2.1+.
- **Action:** Advanced -> Set -> Set Account Code..
- **Action Data:** Account code or blank.
If blank, the user is prompted to dial an account code after pressing the button. This option is not supported on XX02 phone modules.
- **Default Label:** Acct.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.
 - **T3 Phones:**
 - **Classic/Comfort icon:** Displays **1234**.
 - **DSS Link LED:** None.

7.3.122 Set Hunt Group Night Service

Puts the specified hunt group into 'Night Service' mode. Calls to a group set to night service, receive busy or are diverted to voicemail if available or are diverted to the group's night service fallback group if set.

This function cannot be used to override hunt groups already set to night service mode by an associated time profile.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Set -> Set Hunt Group Night Service.
- **Action Data:** Hunt group extension number.
 - IP Office 4.0+: If left blank, the button will affect all hunt groups of which the user is a member.
- **Default Label:** HGNS+.
- **Toggles:** ✓.
- **Status Indication:** ✓ *Required*.

If the button is blank (no specific hunt group) it will indicate on if any one of the hunt groups of which the user is a member is set to night service. If the button is set for multiple hunt groups it will indicate on if any one of those groups is set to night service.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	<Label> 	<Label>	Green on.
- Off.	<Label>	<Label>	Off.

- **User Admin:**  **X**.
- **Phone Support:**  **X**.

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: X	• 3600 Series: X	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: X	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: X

 - *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.
- **T3 Phones:** Supported on Avaya T3 Classic and Comfort phones and DSS Link units.
 - **Classic/Comfort icon:** Displays  followed by the group number. The background uses the same settings as the LED below.
 - **DSS Link LED:** On when all related groups are in night service. Slow flash if related hunt groups are in mixed states.

7.3.123 Set Hunt Group Out Of Service

Puts the specified hunt group into 'Out of Service' mode. Calls to a group set to out of service receive busy or are diverted to voicemail if available or are diverted to the group's out of service fallback group if set.

For pre-IP Office 4.0 systems this function cannot be used to override hunt groups already set to night service mode by an associated time profile.

For IP Office 4.0 systems this function can be used to override hunt groups already set to night service mode by an associated time profile.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Set -> Set Hunt Group Out of Service.
- **Action Data:** Hunt group extension number.
 - IP Office 4.0+: If left blank, the button will affect all hunt groups of which the user is a member.
- **Default Label:** HGOS+.
- **Toggles:** ✓.
- **Status Indication:** ✓ *Required*.
If the button is blank (no specific hunt group) it will indicate on if any one of the hunt groups of which the user is a member is set out of service. If the button is set for multiple hunt groups it will indicate on if any one of those groups is set out of service.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	<Label>◀	<Label>	Green on.
- Off.	<Label>	<Label>	Off.

- **User Admin:** ⁶³⁴✗.

- **Phone Support:** ⁵¹⁷

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗

- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

- **T3 Phones:**

- **Classic/Comfort icon:** Displays – followed by the group number. The background uses the same settings as the LED below.
- **DSS Link LED:** On when set. On when all related groups are out of service. Slow flash if related hunt groups are in mixed states.

7.3.124 Set Inside Call Seq

Only supported for analog extensions. The [distinctive ringing pattern](#)^[745] used for other phones is set by the phone type. See the [Set Inside Call Seq](#)^[495] short code.

7.3.125 Set Night Service Group

This button allows the user to change the Night Service target of a hunt group. The button user does not have to be a member of the hunt group. For Small Community Networks this function can be used for hunt groups on remote systems.

When pressed, the user is prompted to enter or select a hunt group as the Night Service destination. Changing the destination does not affect calls already ringing at the hunt groups previous night service destination.

- **IP Office Software Level:** 4.2+.
- **Action:** Advanced -> Set -> Set Night Service Group.
- **Action Data:** Hunt group extension number or blank for selection when pressed. This is the group for which the night service destination is being set.
- **Default Label:** SetNSG.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**^[634] ✗.
- **Phone Support**^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.
 - On T3 phones this option is accessible through the phone's menus.

7.3.126 Set Out of Service Group

This button allows the user to change the Out of Service target of a hunt group. The button user does not have to be a member of the hunt group. For Small Community Networks this function can be used for hunt groups on remote systems.

When pressed, the user is prompted to enter or select a hunt group as the Out of Service destination. Changing the destination does not affect calls already ringing at the hunt groups previous Out of Service destination.

- **IP Office Software Level:** 4.2+.
- **Action:** Advanced -> Set -> Set Out of Service Group.
- **Action Data:** Hunt group extension number or blank for selection when pressed. This is the group for which the night service destination is being set.
- **Default Label:** SetOOSG.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** ^[634] ✗.
- **Phone Support:** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.
 - On T3 phones this option is accessible through the phone's menus.

7.3.127 Set No Answer Time

Allows the user to change their no answer time setting. This is the time calls will ring before going to voicemail or following the user's divert on no answer setting if set on.

In situations where call coverage is also being used, the user's no answer time must be greater than their individual coverage time for coverage to occur.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Set -> Set No Answer Time.
- **Action Data:** Time in seconds.
- **Default Label:** NATim.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** ^[634] ✗.
- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.128 Set Outside Call Seq

Only supported for analog extensions. The [distinctive ringing pattern](#) ^[745] used for other phones is set by the phone type. See the [Set Outside Call Seq](#) ^[497] short code.

7.3.129 Set Ringback Seq

Only supported for analog extensions. The [distinctive ringing pattern](#) ^[745] used for other phones is set by the phone type. See the [Set Ringback Seq](#) ^[498] short code.

7.3.130 Set Wrap Up Time

Allows the user to change their Wrap-up Time setting. Specifies the amount of time after ending one call before another call can ring. During this interval the user is treated as still being on a call. It is recommended that this option is not set to less than the default of 2 seconds. 0 is used to allow immediate ringing.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Set -> Set Wrap Up Time.
- **Action Data:** Time in seconds. Range 0 to 99999 seconds.
- **Default Label:** WUTim
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.131 Stored Number View

Not supported. Provided for CTI emulation only. Allows a user to view the contents of any programmed feature button.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Stored Number View.
- **Action Data:** None.
- **Default Label:** BtnVu.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.132 Suspend Call

Uses the Q.931 Suspend facility. Suspends the incoming call at the ISDN exchange, freeing up the ISDN B channel. The call is placed in exchange slot 0 if a slot number is not specified. Only available when supported by the ISDN exchange.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Suspend -> Suspend.
- **Action Data:** Exchange slot number or blank (slot 0).
- **Default Label:** Suspe.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.133 Suspend CW

Uses the Q.931 Suspend facility. Suspends the incoming call at the ISDN exchange and answer the call waiting. The call is placed in exchange slot 0 if a slot number is not specified. Only available when supported by the ISDN exchange.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Suspend -> Suspend CW.
- **Action Data:** Exchange slot number or blank (slot 0).
- **Default Label:** SusCW.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.134 Time of Day

Displays the time and date on the user's telephone. This function is ignored on those Avaya IP Office phones that display the date/time by default.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Time of Day.
- **Action Data:** None.
- **Default Label:** TmDay.
- **Toggles:** ✓.
- **Status Indication:** ✓.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	<Label>◀	<Label>	Green on.
- Off.	<Label>	<Label>	Off.

- **User Admin:** ⁶³⁴ ✓.

- **Phone Support:** ⁵¹⁷

Note that support for particular phone models is also dependant on the IP Office software level.

- **Analog:** ✗
 - **1600 Series:** ✓*
 - **20 Series:** ✓
 - **2400 Series:** ✓*
 - **3600 Series:** ✓
 - **3700 Series:** ✗
 - **3810:** ✓
 - **4400 Series:** ✓
 - **5400 Series:** ✓*
 - **4600 Series:** ✓*
 - **5600 Series:** ✓*
 - **6400 Series:** ✓
 - **9040:** ✓
 - **T3/T3 IP Series:** ✗
- *✗ Not 1603, 2402, 4601, 4602, 5402, 5601 and 5602 models.

7.3.135 Timer

Starts a timer running on the display of the user's extension. The timer disappears when the user end a call. Note: This function is ignored on those Avaya IP Office phones that display a call timer by default.

- **IP Office Software Level:** 1.0+.
- **Action:** Emulation -> Timer.
- **Action Data:** None.
- **Default Label:** Timer.
- **Toggles:** ✓.
- **Status Indication:** ✓.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	<Label>◀	<Label>	Green on.
- Off.	<Label>	<Label>	Off.

- **User Admin:** ⁶³⁴ ✓.

- **Phone Support:** ⁵¹⁷

Note that support for particular phone models is also dependant on the IP Office software level.

- **Analog:** ✗
 - **1600 Series:** ✓*
 - **20 Series:** ✓
 - **2400 Series:** ✓*
 - **3600 Series:** ✓
 - **3700 Series:** ✗
 - **3810:** ✓
 - **4400 Series:** ✓
 - **5400 Series:** ✓*
 - **4600 Series:** ✓*
 - **5600 Series:** ✓*
 - **6400 Series:** ✓
 - **9040:** ✓
 - **T3/T3 IP Series:** ✗
- *✗ Not 1603, 2402, 4601, 4602, 5402, 5601 and 5602 models.

7.3.136 Toggle Calls

Cycle between the user's current call and any held calls.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Toggle Calls..
- **Action Data:** None.
- **Default Label:** Toggl.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗

- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.137 Twinning

This action can be used by user's setup for mobile twinning. Mobile twinning requires entry of a Mobility Features license and a twinning destination number in to the IP Office configuration. This action is not used for internal twinning.

The button allows the user to set and change the destination for their twinned calls. It can also be used to switch mobile twinning on/off and indicates the status of that setting.

- For user's setup for one-X Mobile Client, changes to their Mobile Twinning status made through the IP Office configuration or using a **Twining** button are not reflected in the status of the **Extension to Cellular** icon on their mobile client. However, changes to the **Extension to Cellular** status made from the mobile client are reflected by the **Mobile Twinning** field in the IP Office configuration. Therefore for one-X Mobile Client users it is recommended that they control their Mobile Twinning status through the one-X Mobile Client rather than through a Twinning button.

In addition, when a call has been routed from the IP Office to the twinned destination, the twinning button can be used to retrieve the call at the twinned user's primary extension.

- In configurations where the call arrives over an IP trunk and the outbound call is on an IP trunk SCN may optimise the routing and in this case the button may not be useable to retrieve the call.

- **IP Office Software Level:** 3.2+.
- **Action:** Emulation -> Twinning.
- **Action Data:** None.
- **Default Label:** Twinning.
- **Toggles:** ✓.
- **Status Indication:** ✓.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	Twining ◀	Twining	Green on.
- Off.	Twining	Twining	Off.
- Twinned call at secondary	Twining ◀	Twining ♦	Red on.

- **User Admin:**  ✗.
- **Phone Support** 

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✓	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓*	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓*			• T3/T3 IP Series: ✗

- * Not 1603, 2402, 4601, 4602, 5402, 5601 and 5602 models.

7.3.138 Unpark Call

This function is obsolete, since the [Park](#)^[625] function can be used to both park and retrieve calls and provides visual indication of when calls are parked. Retrieve a parked call from a specified system park slot.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Call -> Unpark Call.
- **Action Data:** System park slot number. This must match a park slot ID used to park the call.
- **Default Label:** Ride.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**^[634] ✗.
- **Phone Support**^[517]
Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.139 User

Monitors whether another user's phone is idle or in use. The Telephone Number field should contain the user's name enclosed in double quotes. The button can be used to make calls to the user or pickup their longest waiting call when ringing. On buttons with a text label, the user name is shown.

The actions performed when the button is pressed will depend on the state of the target user, whether they are local or on a remote SCN system and the phone on which the button is programmed.

Phone	Avaya 1608, 1616, 2410, 2420, 4610, 4620, 4621, 4625, 4510, 5420, 5610, 5620 Phones	Other Phones or Across Small Community Network
Idle	Call the user.	
Ringing	Displays an option to pickup the call.	Picks up the call.
On a Call	For IP Office 4.0+ the following options are displayed (name lengths may vary depending on the phone display): • CALL Initiates a call to the users. • MESSAGE Cause a single burst of ringing on the target phone. On some phones, when they end their current call their phone will then display PLEASE CALL and your extension number. • VOICEMAIL Call the user's voicemail mailbox. • CALLBACK Set an automatic callback. For 1600 Series phones (IP Office 4.2+) the following additional options are displayed: • Drop Disconnect the user's current call. If configured to be able to intrude on the user: • Acquire Take control of the call. • Intrude Intrude into the call, turning it into a 3-way conference. If configured to be able to listen ⁴⁴³ to the user: • Listen Start silent monitoring of the user's call.	No action. For 1600 phones (IP Office 4.2), the Call, Voicemail and Callback options are supported.

- A User button can be used in conjunction with other buttons to indicate the target user when those buttons have been configured with no pre-set user target. In cases where the other button uses the [phone display for target selection](#) ⁵¹⁶ this is only possible using **User** buttons on an associate button module.
- For IP Office 4.2+ the following changes have been made to the indication of user status via BLF (busy lamp field) indicators such as a User button:
 - The status shown for a logged out user without mobile twinning will depend on whether they have **Forward Unconditional** enabled. If they have **Forward Unconditional** enabled the user is shown as idle. If they do not have **Forward Unconditional** enabled they will show as if on DND.
 - The status shown for a logged out user with mobile twinning will be as follows:
 - If there are any calls alerting or in progress through the IP Office to the twinned destination, the user status is shown as alerting or in-use as appropriate. This includes the user showing as busy/in-use if they have such a call on hold and they have **Busy on Held** enabled.
 - If the user enables DND through Mobile Call Control or one-X Mobile client, their status will show as DND.
 - Calls from the IP Office direct to the user's twinned destination number rather than redirected by twinning will not change the user's status.
- **IP Office Software Level:** 1.0+.
- **Action:** User.
- **Action Data:** User name enclosed in "double-quotes".

- **Default Label:** <the user name>.
- **Toggles:** ✗.
- **Status Indication:** ✔.

Status	24XX/54XX	46XX/56XX	44XX/64XX	16XX
- Idle.	Extn221	Extn221	Not lit.	Not lit.
- Alerting.	Extn221 ⬅	Extn221 ⬆	Green flash.	Red flash.
- In Use/Busy.	Extn221	Extn221	Green on.	Red wink (on with brief flashes).
- DND	Extn221	Extn221	Green on.	Red on.

- **User Admin:** ^[634] ✗.

- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

- **Analog:** ✗
 - **1600 Series:** ✔*
 - **20 Series:** ✔
 - **2400 Series:** ✔
 - **3600 Series:** ✗
 - **3700 Series:** ✗
 - **3810:** ✔
 - **4400 Series:** ✔
 - **5400 Series:** ✔
 - **4600 Series:** ✔*
 - **5600 Series:** ✔*
 - **6400 Series:** ✔
 - **9040:** ✔
 - **T3/T3 IP Series:** ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

- **T3 Phones:**

- **Classic/Comfort icon:** Displays the user name.
- **DSS Link LED:** On when busy, flashing when call alerting user.

7.3.140 Visual Voice

This action provides the user with a display menu for access to their mailbox. It can be used with Voicemail Pro (Intuity and IP Office modes) and Embedded Voicemail. The menu provide the user with options to listening to messages, leaving messages and managing the mailbox.

If pressed when a call is connected, the button allows entry of an extension number for direct to voicemail transfer of the connected call.

On phones that have a display but do not support full visual voice operation as indicated below, use of the button for user mailbox access using voice prompts and for direct to voicemail transfer during a call is supported (does not include T3 and T3 IP phones).

- For IP Office 4.2+, access to Visual Voice on supported phones can be triggered by the phone's **MESSAGES** button rather than requiring a separate Visual Voice programmable button. This is done using the [System | Voicemail](#) ^[164] option **Messages button goes to Visual Voice**.

- **IP Office Software Level:** 4.0+.
- **Action:** Emulation -> Visual Voice.
- **Action Data:** None.
- **Default Label:** Voice.
- **Toggles:** **X**.
- **Status Indication:** **X**.
- **User Admin:** ^[634] **X**.
- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: X	• 3600 Series: X	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓	• 3700 Series: X	• 5400 Series: ✓*	• 6400 Series: X
• 20 Series: X	• 3810: X	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓*			• T3/T3 IP Series: ✓*2

- *Not 2402, 5402, 4601, 4602, 5601 and 5602.

- *2: Takes the user direct to the listen part of Visual Voice. For the full Visual Voice menu options the user should use **Menu -> Settings -> Voicemail Settings**.

Visual Voice Controls

The arrangement of options on the screen will vary depending on the phone type and display size. Controls that cannot be fitted on the current display are accessed by using the phones < and > buttons to move between screen pages.

- **Listen**

Used to access the user's own mailbox. When pressed the screen will show the number of **New**, **Old** and **Saved** messages. Select one of those options to start playback of messages in that category. Once message playback is selected the available controls change:

- **Previous:** Play the previous message.
- **Next:** Play the next message.
- **Rewind:** Rewind approximately 5 seconds.
- **FFwd:** Step forwards approximately 5 seconds.
- **Delete:** Delete the current message.
- **Save:** Mark the messaged as a saved message.
- **Copy:** Copy the message to another mailbox. When pressed as number of additional options are displayed.
 - **Pre-Rec:** Record a message that will be attached to the start of the message being copied.
 - **Targets:** Enter the destination for the message copy.
 - **Done:** Copy the message using the targets entered.
- **Pause:** Pause the current message. Press the button again to unpause.
- **Main(0)**

Hunt group names may be displayed if the user is configured for hunt group mailbox access. The number of new messages in the mailbox is shown after the name. Press the button to access the mailbox in the same way as the **Listen** option above.

- **Message**
Record and send a voicemail message to another mailbox or mailboxes.
- **Greeting**
Change the main greeting used for callers to the mailbox. If no greeting has been recorded then the default system mailbox greeting is used.
 - Note: Depending on the voicemail server type and mailbox mode, it may be possible to record and use additional greetings via the mailboxes voice prompt menus.
- **Record:** Record a new greeting.
- **Listen:** Listen to the current greeting or the new greeting just recorded.
- **Submit:** Submit the new greeting just recorded.
- **Delete:** Delete the current greeting. The mailbox will revert to using the default system greeting unless **Record** and **Submit** are used to record a new greeting.
- **Email**
This option is only shown if the user has been configured with an email address for voicemail email usage in the IP Office configuration. This control allows you to see and if required change the current voicemail email mode being used for new messages received in your voicemail mailbox. Use **Change** to change the selected mode. Press **Done** when the required mode is displayed. Possible modes are:
 - **Email Mode Off**
Voicemail email is not used.
 - **Email Mode Copy**
New voicemail messages are copied to the user's email address. The original message is left in the voicemail mailbox.
 - **Email Mode Fwd**
New voicemail messages are forwarded to the user's email address. The original message is deleted from their voicemail mailbox.
 - **Email Mode Alert**
A alert email message is sent to the user's email address. The original message is not attached to the email and is left in the voicemail mailbox.
- **Password**
Change the voicemail mailbox password. To do this requires entry of the existing password.

7.3.141 Voicemail Collect

Connects to the voicemail server. The telephone number must indicate the name of the Voicemail box to be accessed, eg. "?Extn201" or "#Extn201". The ? indicates "collect Voicemail" and the # indicates "deposit Voicemail". This action is not supported by voicemail using IP Office Intuity emulation mode.

When used with Voicemail Pro, names of specific call flow start points can also be used to directly access those start points via a short code. In these cases ? is not used and # is only used if ringing is required before the start points call flow begins.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Voicemail -> Voicemail Collect.
- **Action Data:** See above.
- **Default Label:** VMCol.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:**  ✗.
- **Phone Support:** 
 - Note that support for particular phone models is also dependant on the IP Office software level.

• Analog: ✗	• 3600 Series: ✗	• 4400 Series: ✓	• 5600 Series: ✓*
• 1600 Series: ✓*	• 3700 Series: ✗	• 5400 Series: ✓	• 6400 Series: ✓
• 20 Series: ✓	• 3810: ✓	• 4600 Series: ✓*	• 9040: ✓
• 2400 Series: ✓			• T3/T3 IP Series: ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.142 Voicemail Off

Disables the user's voicemail box from answering calls that ring unanswered at the users extension. This button function is largely obsolete as the [Voicemail On](#) ^[634] function toggles on/off.

This does not disable the user's mailbox and other methods of placing messages into their mailbox.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Voicemail -> Voicemail Off.
- **Action Data:** None.
- **Default Label:** VMOff.
- **Toggles:** ✗.
- **Status Indication:** ✗.
- **User Admin:** ^[634] ✗.
- **Phone Support** ^[517]

Note that support for particular phone models is also dependant on the IP Office software level.

- **Analog:** ✗
 - **1600 Series:** ✓*
 - **20 Series:** ✓
 - **2400 Series:** ✓
 - **3600 Series:** ✗
 - **3700 Series:** ✗
 - **3810:** ✓
 - **4400 Series:** ✓
 - **5400 Series:** ✓
 - **4600 Series:** ✓*
 - **5600 Series:** ✓*
 - **6400 Series:** ✓
 - **9040:** ✓
 - **T3/T3 IP Series:** ✗
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.

7.3.143 Voicemail On

Enables the user's voicemail mailbox to answer calls which ring unanswered or arrive when the user is busy.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Voicemail -> Voicemail On.
- **Action Data:** None.
- **Default Label:** VMOn.
- **Toggles:** ✗.
- **Status Indication:** ✓.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	<Label> 	<Label>	Green on.
- Off.	<Label>	<Label>	Off.

- **User Admin:** ^[634] ✗.
 - **Phone Support** ^[517]
Note that support for particular phone models is also dependant on the IP Office software level.
 - **Analog:** ✗
 - **1600 Series:** ✗
 - **20 Series:** ✓
 - **2400 Series:** ✓
 - **3600 Series:** ✗
 - **3700 Series:** ✗
 - **3810:** ✓
 - **4400 Series:** ✓
 - **5400 Series:** ✓
 - **4600 Series:** ✓*
 - **5600 Series:** ✓*
 - **6400 Series:** ✓
 - **9040:** ✓
 - **T3/T3 IP Series:** ✓
(IP Office 4.2+)
- *Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.
- **T3 Phones:** Supported on Avaya T3 Classic, Comfort and Compact phones for IP Office 4.2+.
 - **Classic/Comfort icon:** Displays  → . The background uses the same settings as the LED below.
 - **DSS Link LED:** On when set.

7.3.144 Voicemail Ringback Off

This button function is largely obsolete as the [Voicemail Ringback On](#)^[654] function toggles on/off. Disables voicemail ringback to the user's extension.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Voicemail -> Voicemail Ringback Off.
- **Action Data:** None.
- **Default Label:** VMRB-
- **Toggles:** **X**.
- **Status Indication:** **X**.
- **User Admin:**^[634] **X**.
- **Phone Support**^[517]
Note that support for particular phone models is also dependant on the IP Office software level.

- **Analog:** **X**
 - **1600 Series:** **✓***
 - **20 Series:** **✓**
 - **2400 Series:** **✓**
 - **3600 Series:** **X**
 - **3700 Series:** **X**
 - **3810:** **✓**
 - **4400 Series:** **✓**
 - **5400 Series:** **✓**
 - **4600 Series:** **✓***
 - **5600 Series:** **✓***
 - **6400 Series:** **✓**
 - **9040:** **✓**
 - **T3/T3 IP Series:** **X**
- **Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

7.3.145 Voicemail Ringback On

Enables voicemail ringback to the user's extension. Voicemail ringback is used to call the user when they have new voicemail messages in their own mailbox or a hunt group mailbox for which they have been configured with message waiting indication.

The ringback takes place when the user's phone returns to idle after any call is ended.

- **IP Office Software Level:** 1.1+.
- **Action:** Advanced -> Voicemail -> Voicemail Ringback On.
- **Action Data:** None.
- **Default Label:** VMRB+.
- **Toggles:** **✓**.
- **Status Indication:** **✓**.

Status	24XX/54XX	46XX/56XX	16XX/44XX/64XX
- On.	<Label> ¹	<Label>	Green on.
- Off.	<Label>	<Label>	Off.

- **User Admin:**^[634] **X**.
- **Phone Support**^[517]
Note that support for particular phone models is also dependant on the IP Office software level.

- **Analog:** **X**
 - **1600 Series:** **✓***
 - **20 Series:** **✓**
 - **2400 Series:** **✓**
 - **3600 Series:** **X**
 - **3700 Series:** **X**
 - **3810:** **✓**
 - **4400 Series:** **✓**
 - **5400 Series:** **✓**
 - **4600 Series:** **✓***
 - **5600 Series:** **✓***
 - **6400 Series:** **✓**
 - **9040:** **✓**
 - **T3/T3 IP Series:** **X**
- **Not 1603, 4601, 4602, 5601 and 5602 except where 4602 is supported on IP Office 2.1 and 3.0DT software.*

Chapter 8.

Key and Lamp Operation

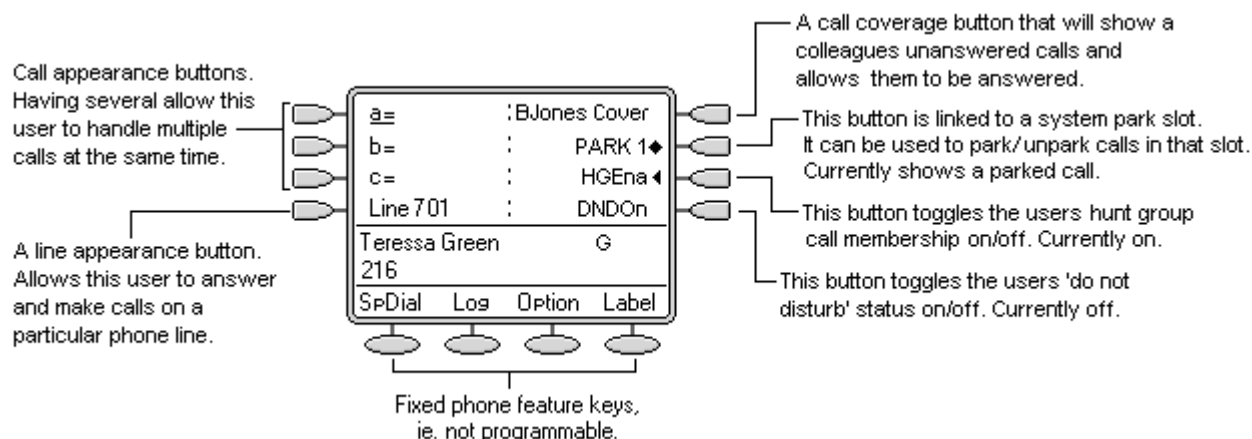
8. Key and Lamp Operation

Many Avaya phones supported on IP Office have a programmable keys or buttons (the terms 'key' and 'button' mean the same thing in this context). Various actions can be assigned to each of these keys, allowing the phone user to access that action.

Many of the phones also have indicator lamps next to the programmable buttons. These lamps are used to indicate the status of the button, for example 'on' or 'off'. On other phones the programmable buttons use an adjacent area of the phones display to show status icons and text labels for the buttons.

- **Example**

The example below shows the display and programmable buttons on an Avaya 5421 phone where a number of programmable features have been assigned to the user.



- This type of phone displays text labels for the programmed features. On other phones a paper label may have to be updated to indicate the programmed feature.

IP Office 3.0* and higher supports four 'appearance' actions - [Call Appearance](#)^[658], [Bridged Appearance](#)^[663], [Line Appearance](#)^[673] and [Call Coverage Appearance](#)^[669]. These actions can be assigned to the programmable buttons on a user's phone. Those 'appearance' buttons can then be used to answer, share, switch between and in some case make calls. This type of call handling is often called 'key and lamp mode'.

This document covers the programming and operation of phones using the appearance functions. Details of the other actions that can be assigned to programmable keys are covered in [Button Programming](#)^[508].

Note

- *IP Office 3.0DT does not support appearance buttons.
- For all the examples within this documentation, it is assumed that **Auto Hold** is on and **Answer Pre-Select** (4.0+) is off unless otherwise stated.
- The text shown on phone displays are typical and may vary between phone types, locales and IP Office software releases.

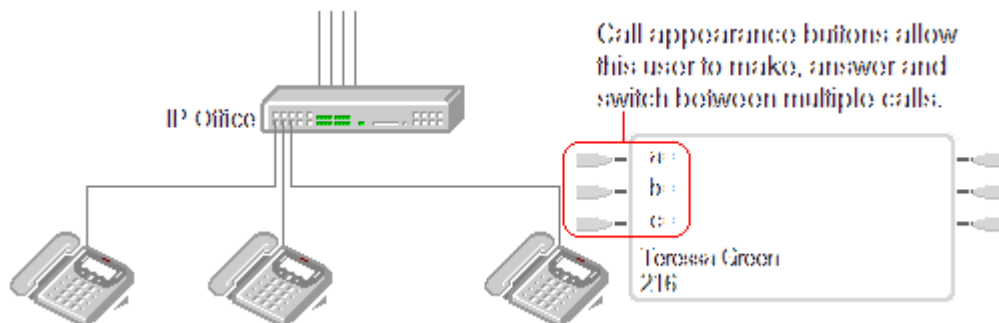
8.1 Appearance Button Features

Appearance functions are only supported on Avaya phones which have programmable buttons and also support multiple calls, see [IP Office Phones](#)^[519]. Appearance functions are also only supported on those buttons that have suitable adjacent indicator lamps or a display area. Appearance buttons are not supported across Small Community Networks (SCN).

8.2 Call Appearance Buttons

Call appearance buttons are used to display alerts for incoming calls directed to a user's extension number or to a hunt group of which they are a member. Call appearance buttons are also used to make outgoing calls.

By having several call appearance buttons, a user is able to be alerted about several calls, select which call to answer, switch between calls and take other actions.



When all the user's call appearance buttons are in use or alerting, any further calls to their extension number receive busy treatment. Instead of busy tone, the user's forward on busy is used if enabled or otherwise voicemail if available.

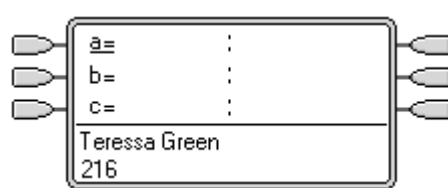
Call appearance buttons are the primary feature of key and lamp operation. None of the other appearance button features can be used until a user has some call appearance button programmed^[1].

There are also additional requirements to programming call appearance buttons:

- Call appearance buttons must be the first button programmed for the user, followed by any further call appearance buttons in a continuous block.
 - For IP Office 5.0+, line appearance buttons can be programmed before call appearance buttons for 1600 Series phone users.
- Programming a single call appearance button for a user is not supported. The normal default is 3 call appearances per user except on phones where only two physical buttons are available.
- [1] For IP Office 4.2+, T3 phones support the use of Line Appearance buttons. These can be programmed against buttons on T3 phones without requiring call appearance buttons. See [T3 Phone Line Appearances](#)^[678].

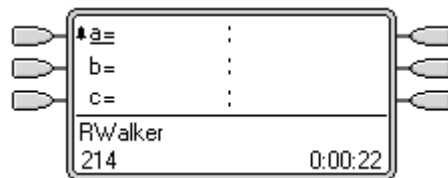
8.2.1 Example 1

In this example, the user has multiple call appearance buttons.



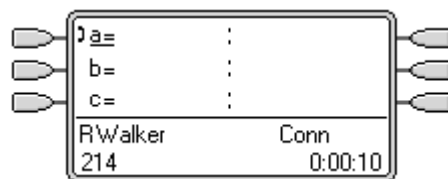
1. Phone Idle

The phone is currently idle.



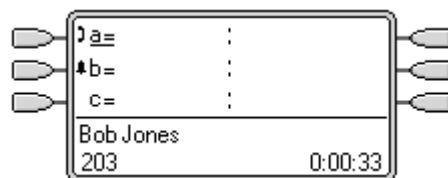
2. First Call Alerts

A call arrives. It alerts against the first available call appearance button. Pressing that button will answer the call.



3. Call Answered

The call is now connected.



4. Second Call Alerts

A second call arrives whilst the first is still connected. It alerts against the next available call appearance button. As the user has a call in progress, the alert gives just a single ring and briefly display details of the caller.

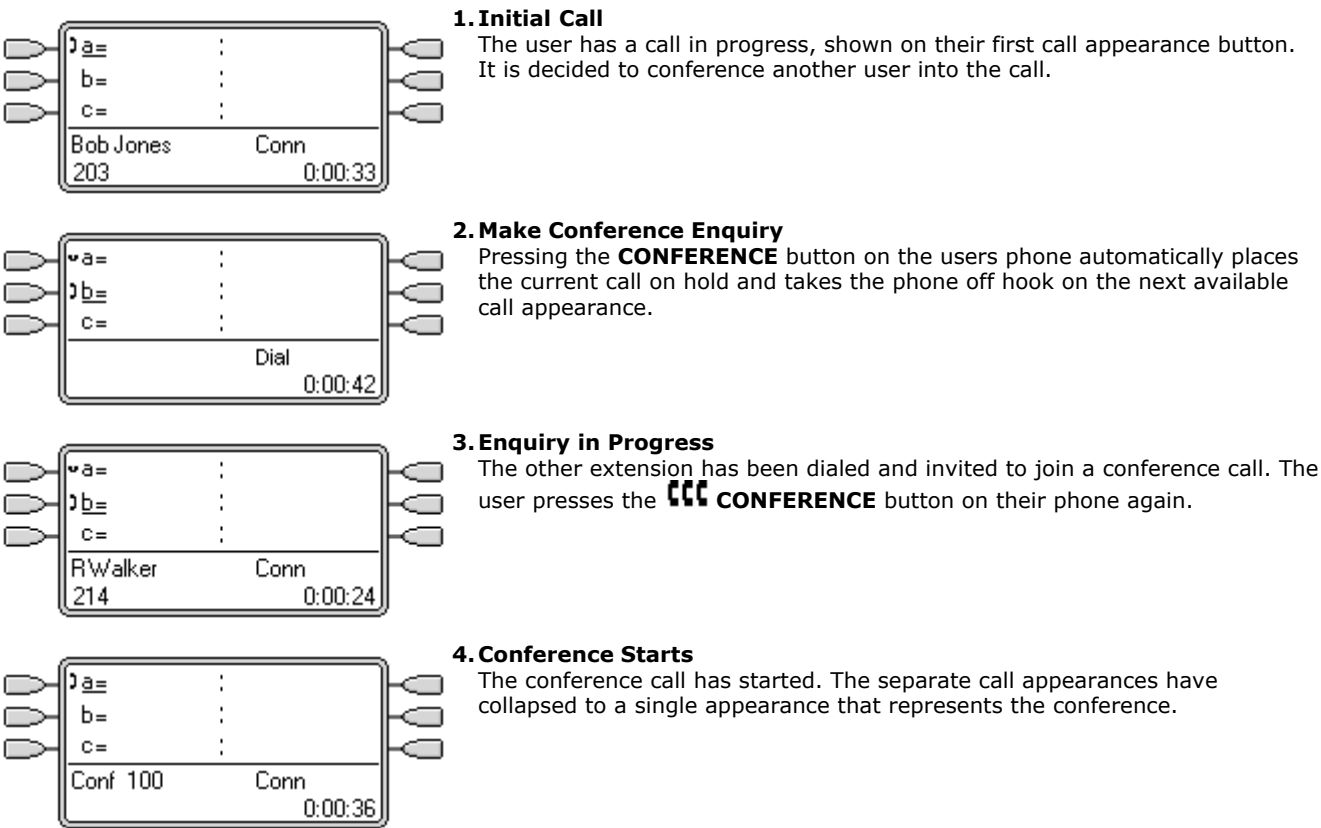


5. Pressing the Second Call Appearance

Pressing the second call appearance button will hold the first call and answer the second.

8.2.2 Example 2

In this example, the user will use their call appearances to make two calls and start a conference between those calls.



8.2.3 How are Call Appearance Buttons Treated?

For incoming calls

- **Call Waiting** settings are ignored except for hunt group call waiting where the call waiting tone is replaced by an alert on a call appearance button if available.
- **Follow Me, Forward Unconditional** and **Forward Hunt Group Calls** are used when set.
- If **Do Not Disturb** is set, only calls from numbers in the user's Do Not Disturb Exception list will alert if a call appearance is available.

Busy status

- **For calls direct to the user's extension number**
The user is busy when all their available call appearances are in use. Instead of busy tone, the user's forward on busy is used if enabled or otherwise voicemail if available.
- **For calls to a hunt group of which the user is a member**
The user is busy to further hunt group calls when they have any appearance button in use on their phone. The only exception is calls to a collective hunt group with call waiting.
- In both cases above, even when busy, the user may still receive alerts on other appearance buttons; for example call coverage, line appearance and bridged appearance buttons.

For outgoing calls

- Outgoing calls are treated exactly the same as calls made by non-appearance button users.
- External Calls made on a call appearance, which route out on a line for which the user also has a line appearance, will remain on the call appearance. The line appearance will indicate 'in use elsewhere'.

For call appearance buttons matched by a bridged appearance button

- If the bridged appearance is used to make or answer calls, the state of the call appearance will match that of the bridged appearance.
- If the call is put on hold by the bridged appearance user, the call appearance will show 'on hold elsewhere'.

Other

- **Held/Parked Call Timeout**
If the user has parked a call, the parked call timer only starts running when the user is idle rather than on another call.
- Incoming calls routed directly to the user as the incoming call routes destination on a line for which the user also has a line appearance, will only alert on the line appearance. These calls do not follow any forwarding set but can be covered.

8.2.4 Button Indication

On phones with a text display area next to the button, by default **a=**, **b=** and so on is displayed. This can be replaced by another label if required.

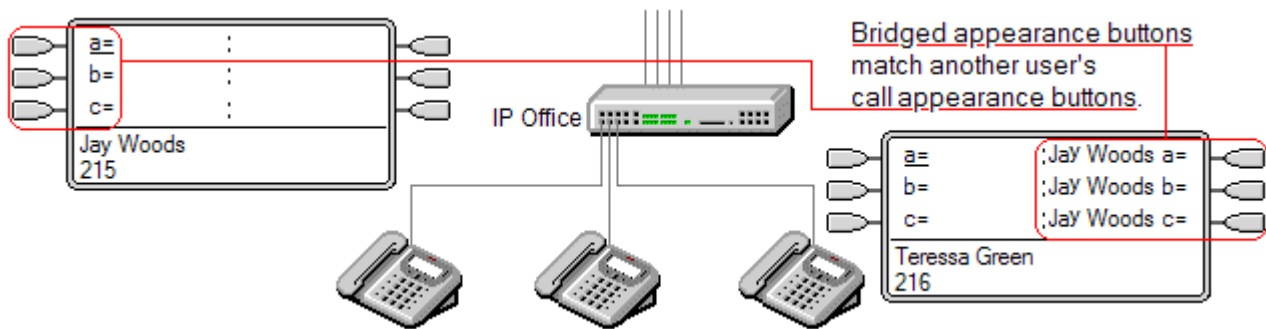
When the user is not connected to a call, the button indicated as selected is the button that will be used if the user goes off hook without pressing an appearance button. When a user is connected to a call, that call is the selected button.

The following table shows how the different states of call appearance buttons (alerting, held, etc) are indicated. This is a general table, not all phone button types are covered. The ring that accompanies the visual indication can be delayed or switched off. See [Ring Delay](#) ^[688].

5410/5420	4400 Series	Call Appearance Button State
CA1	 Red off, Green off.	Idle The call appearance is not in use and is not currently selected.
CA1	 Red on, Green off.	Idle + Selected The call appearance is not in use but is the current selected button that will be used if the user goes off hook.
* CA1 Flashing icon.	 Red off, Green steady flash.	Alerting The matching call appearance is alerting for an incoming call. This is accompanied by ringing. If the user is already on a call, only a single ring is given.
* CA1 Flashing icon.	 Red on, Green steady flash.	Alerting + Selected As above but Ringing Line Preference has made this the user's current selected button.
] CA1	 Red on, Green on.	In Use Here The user has a call connected on the call appearance or is dialing.
] CA1	 Red off, Green on.	In Use Elsewhere The call appearance button is in use on a bridged appearance.
~ CA1	 Red off, Green fast flash.	On Hold Here The call has been put on hold by this user.
≡ CA1	 Red off, Green intermittent flash.	On Hold Elsewhere A call on a bridged appearance button matched to the call appearance has been put on hold. Calls on a call appearance that are put on hold by another user will continue to show connected lamp status, though the phone display will indicate a held call.
] CA1 Icon flashes off.	 Red off, Green broken flash.	Inaccessible The button pressed is not accessible. The call is still dialing, ringing or cannot be bridged into.

8.3 Bridged Appearance Buttons

A bridged appearance button shows the state of one of another user's call appearance buttons. It can be used to answer or join calls on that user's call appearance button. It can also be used to make a call that the call appearance user can then join or retrieve from hold.



- When the user's call appearance button alerts, any associated bridged appearance buttons on other user's phones also alert. The bridged appearance buttons can be used to answer the call on the call appearance button user's behalf.
- When the call appearance button user answers or makes a call, any associated bridged appearance buttons on other users' phones show the status of the call, ie. active, on hold, etc. The bridged appearance button can be used to retrieve the call if on hold or to join the call if active (subject to intrusion permissions).

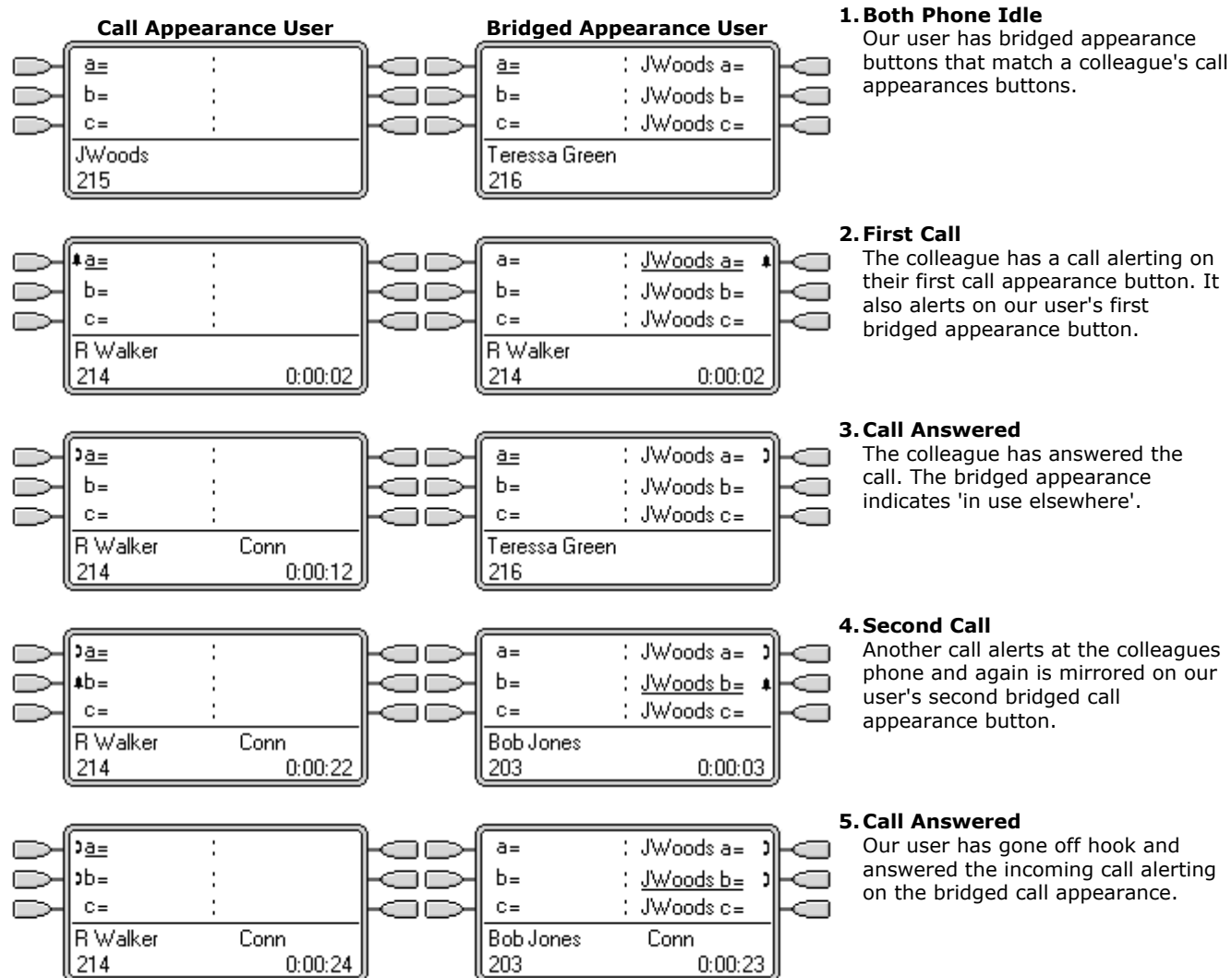
- **Note**

Bridged appearance buttons are different from the action of bridging into a call (joining a call). See [Joining Other Calls \(Bridging\)](#) ⁶⁹³.

Bridged appearance buttons are not supported between users on different systems in a Small Community Network.

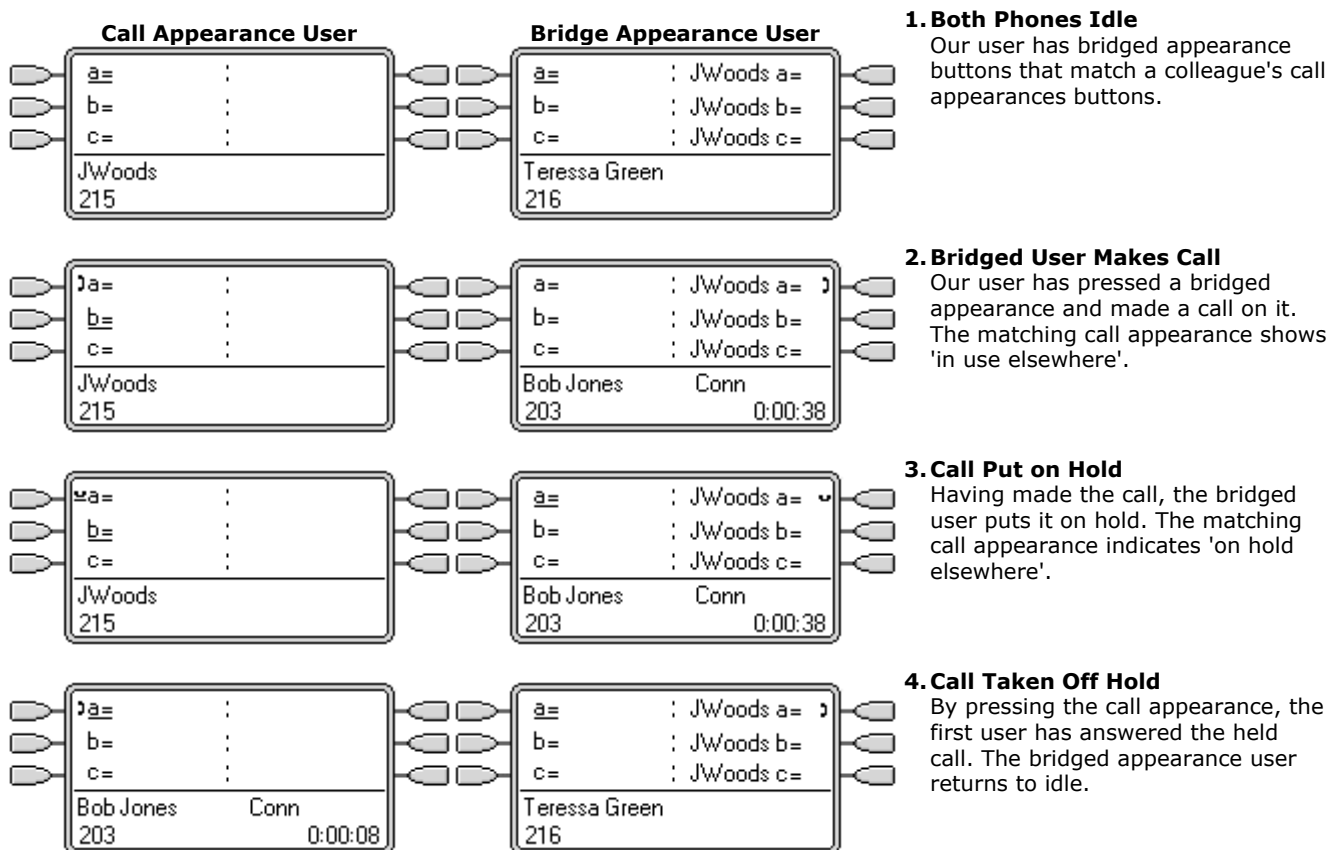
8.3.1 Example 1

In this example, one user is able to see the status of the other user's call appearances, and when necessary answer calls for the other user. Both users have **Ringing Line Preference** and **Auto Hold** on.



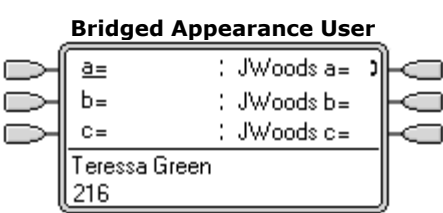
8.3.2 Example 2

In this example, the bridged appearance user makes a call on behalf of the call appearance user. Once the call is connected, they put it on hold. The call appearance user is able to take the call off hold using their call appearance button. Both users have **Ringing Line Preference** and **Auto Hold** on.



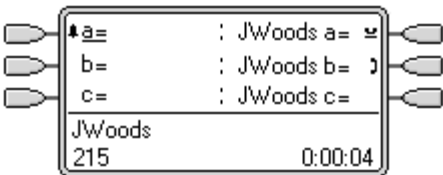
8.3.3 Example 3

In this example, a call is passed from the call appearance user to the bridged appearance user. Both users have **Ringing Line Preference** and **Auto Hold** on.



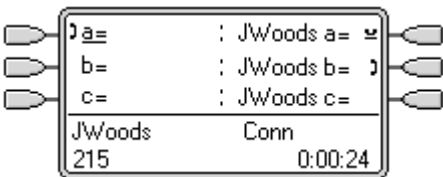
1. Call on Colleague's Phone

The call appearance user has answered a call on one of their call appearances. The bridged appearance user's matching bridged appearance shows 'in use elsewhere'.



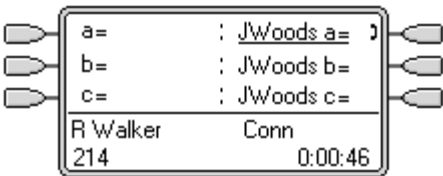
2. Call Held by Colleague

The call appearance user has put the call on hold and called the bridged appearance user. The first bridged call appearance shows a call 'on hold elsewhere' whilst the second matches the call between users.



3. Enquiry Call Between Colleagues

By going off hook, the bridged appearance user has answered the call from the call appearance user. They are asked to pickup the call on the colleagues first call appearance.



4. Call Taken Off Hold

Pressing the first bridged appearance button takes that call off hold and connects it to the bridged appearance user.

- In this example, **Auto Hold** is not set for the system, so pressing the bridged appearance button disconnected the call from the colleague.
- If **Auto Hold** had been set, the colleague's call would have been put on hold until they hung up.

8.3.4 How are Bridged Appearances Treated?

Bridged appearance buttons operate in parallel with their matching call appearance button.

- **Whose user settings control the call?**

Until answered on a bridged appearance button, calls alerting on a bridged appearance button follow the settings of the user or hunt group to which the call was originally directed.

- If the call appearance is in use, any matching bridged appearance will indicate the same.
- If a bridged appearance is in use, the call appearance it matches will indicate the same.
- The bridge appearance will only alert if the call appearance is alerting. For example, direct intercom and paging call to the call appearance will show on the bridged appearance but will not give any audible alert.
- If the bridged appearance user put the call on hold, the call appearance will indicate 'on hold elsewhere'.
- Bridged appearances to a user who has logged out, or has logged into a non-multi line phone, will not operate.
- If the bridged appearance user has 'do not disturb' (DND) enabled, the bridge appearance button icon or lamps will still operate but alerting and ringing line preference selection are not applied unless the caller is in their DND exception list.

Bridged appearance buttons are not supported between users on different systems in a Small Community Network.

8.3.5 Button Indication

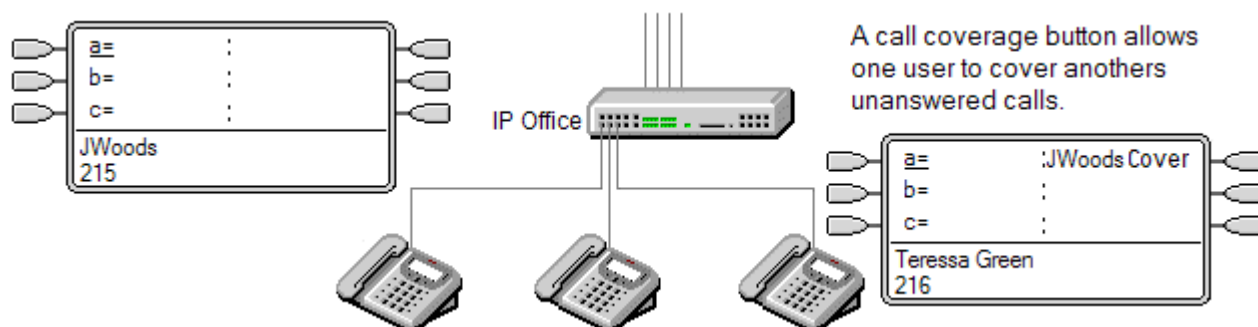
On phones with a text display area next to the button, the name of the bridged user and the label from the bridged user's call appearance key are displayed.

The following table shows how the different states of bridged appearance buttons (alerting, held, etc) are indicated. This is a general table, not all phone button types are covered. The ring that accompanies the visual indication can be delayed or switched off. See [Ring Delay](#) ^[668].

5410/5420	4400 Series	Bridge Appearance Button State
JWoods CA1	 Red off, Green off.	Idle The bridged appearance is not in use.
▲ JWoods CA1 Flashing icon.	 Red off, Green steady flash.	Alerting The matching call appearance is alerting for an incoming call. This is accompanied by ringing. If the user is already on a call, only a single ring is given.
▲ JWoods CA1 Flashing icon.	 Red on, Green steady flash.	Alerting + Selected As above but Ringing Line Preference has made this the user's current selected button.
▶ JWoods CA1	 Red off, Green on.	In Use Elsewhere The matching call appearance button is in use.
▶ JWoods CA1	 Red on, Green on.	In Use Here The user has made a call or answered a call on the bridged appearance, or bridged into it.
◀ JWoods CA1	 Red off, Green fast flash.	On Hold Here The call has been put on hold by this user.
◀ JWoods CA1	 Red off, Green intermittent flash.	On Hold Elsewhere The call on that call appearance has been put on hold by another user.
▶ JWoods CA1 Icon flashes off.	 Red off, Green broken flash.	Inaccessible The button pressed is not useable. The call is still dialing, ringing or cannot be bridged into.

8.4 Call Coverage Buttons

Call coverage allows a user to be alerted when another user has an unanswered call.



The user being covered does not necessarily have to be a key and lamp user or have any programmed appearance buttons. Their Individual Coverage Time setting (default 10 seconds) sets how long calls will alert at their extension before also alerting on call coverage buttons set to that user.

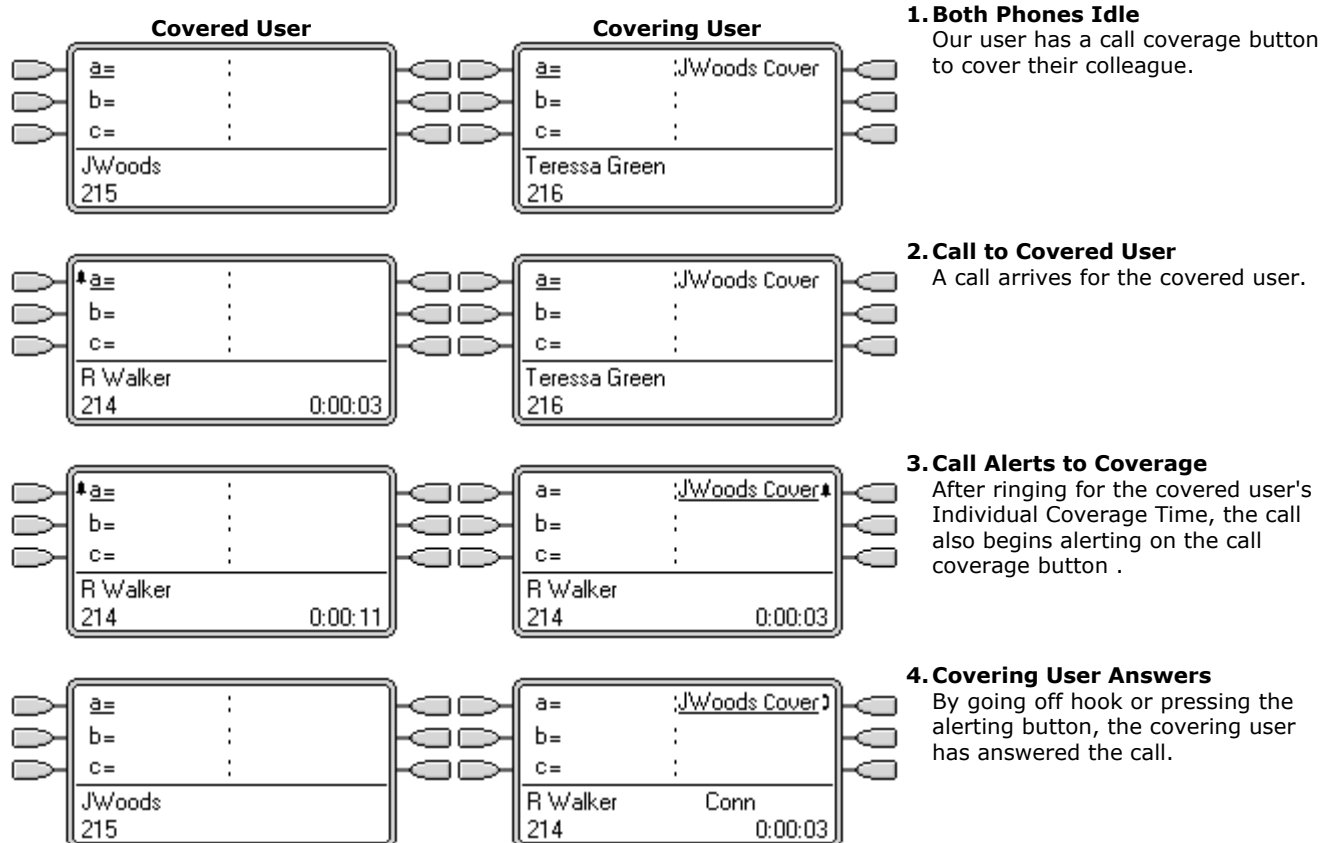
The user doing the covering must have appearance buttons including a call coverage appearance button programmed to the covered user's name.

- Note: Call coverage has been supported from IP Office 1.3. However the method of programming and operation has changed with IP Office 3.0. Users of pre-3.0 IP Office systems that used call coverage should refer to ["Upgrading from Pre 3.0 IP Office"](#) [704].

Call coverage appearance buttons are not supported between users on different systems in a Small Community Network.

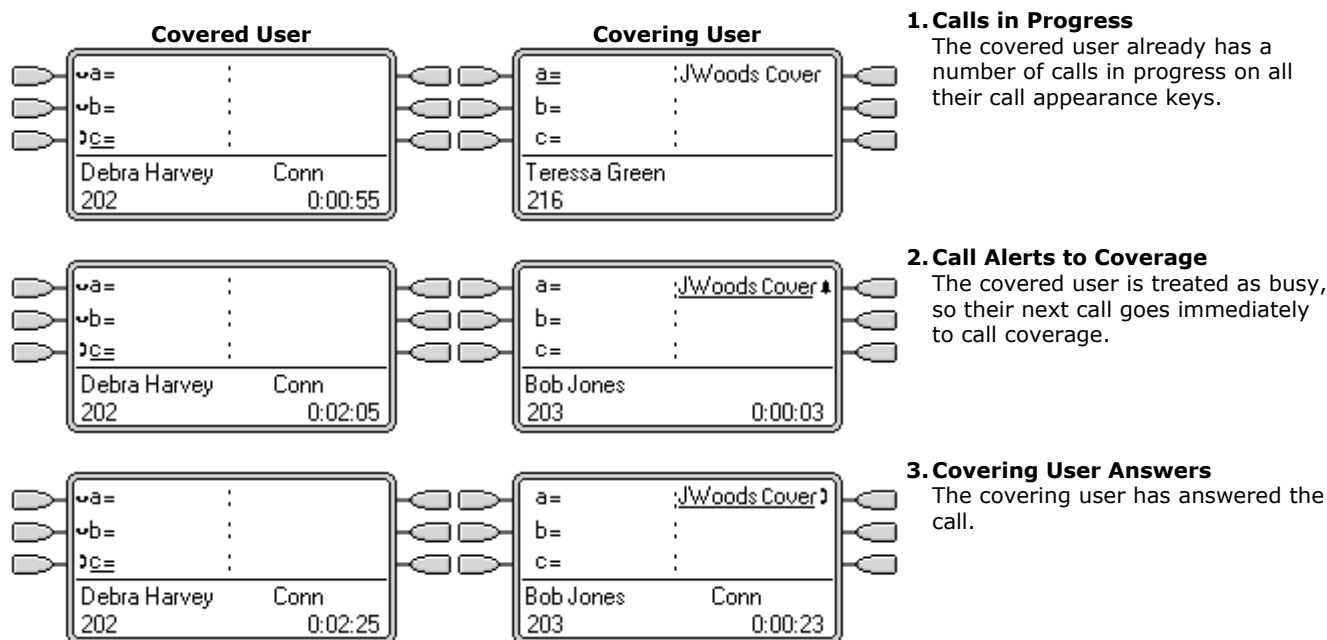
8.4.1 Example 1

In this example, the covering user is able to answer their colleagues call when it rings unanswered. Both users have **Ringing Line Preference** and **Auto Hold** on.



8.4.2 Example 2

In this example, the covered user has calls on all their available call appearances. Both users have **Ringing Line Preference** and **Auto Hold** on.



8.4.3 How is Call Coverage Treated?

Whose user settings control the call?

- Until answered, calls alerting on a call coverage button follow the settings of the user to which the call was originally directed.
- Once answered, the call follows the user settings of the user who answered it.

Coverage is applied to:

- Internal calls dialed to the covered user's extension number.
- External calls routed to the covered user by an IP Office incoming call route.
- Calls forwarded internally by the covered user or on follow me from the covered user.

Coverage is not applied to:

- Hunt group calls to a hunt group of which the covered user is a member.
- Calls forwarded to the covered user using forward or follow me functions.
- Calls alerting on the covered user's bridged appearance and call coverage buttons.
- Coverage is only applied to calls alerting on a line appearance if the call was also routed to that user by an incoming call route.
- Page and intercom calls.
- Parked, transferred and held calls ringing back to the user.
- Automatic callback calls set by the covered user.
- Voicemail ringback calls.
- Call coverage appearance buttons are not supported between users on different systems in a Small Community Network.

Coverage is applied:

- If the covered user's phone is available, call coverage is applied only after the covered user's Individual Coverage Time has expired.
- If the covered user's phone is busy, call coverage is applied immediately.
- If the covered user is using follow me or forward all to an internal number to divert their calls, call coverage is still applied.
- If the covered user has 'do not disturb' on, call coverage is applied immediately except for calls from numbers in the covered user's do not disturb exceptions list.

Other items:

- If the call is not answered after the covered user's **No Answer Time** it will go to the covered user's voicemail if available or follow their forward on no answer settings.
- If the covered user has several alerting calls, the call answered by the call coverage button is the covered user's longest ringing call.
- Calls will not alert at a covering user who has 'do not disturb' enabled, except when the calling number is in the covering user's do not disturb exception list.

8.4.4 Button Indication

On phones with a text display area next to the button, the name of the covered user is displayed followed by the word **Cover**.

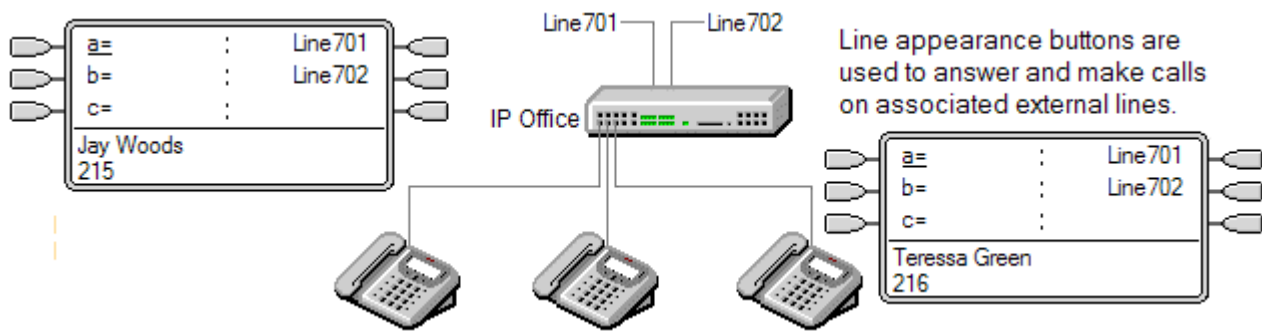
When the user is not connected to a call, the button indicated as selected is the button that will be used if the user goes off hook without pressing an appearance button. When a user is connected to a call, that call is the selected button.

The following table shows how the different states of call coverage appearance buttons (alerting, held, etc) are indicated. This is a general table, not all phone button types are covered. The ring that accompanies the visual indication can be delayed or switched off. See [Ring Delay](#).

5410/5420	4400 Series	Call Coverage Button State
J/Woods Cover	 Red off, Green off.	Idle The button is not in use.
⚡ J/Woods Cover Flashing icon.	 Red off, Green steady flash.	Alerting The call coverage is alerting for an unanswered call at the covered user's phone. This is accompanied by ringing. If the user is already on a call, only a single ring is given.
⚡ J/Woods Cover Flashing icon.	 Red on, Green steady flash.	Alerting + Selected As above but Ringing Line Preference has made this the user's current selected button.
📞 J/Woods Cover	 Red on, Green on.	In Use Here The user has answered the call requiring coverage.
🔇 J/Woods Cover	 Red off, Green fast flash.	On Hold Here The covered call has been put on hold by the call coverage button user.

8.5 Line Appearance Buttons

Line appearance buttons allow specific individual line to be used when making calls or answered when they have an incoming call. It also allows users to bridge into calls on a particular line.



IP Office incoming call routing is still used to determine the destination of all incoming calls. Line appearance buttons allow a call on a specific line to alert the button user as well as the intended call destination. When these are one and the same, the call will only alert on the line appearance but can still receive call coverage.

When alerting on suitable phones, details of the caller and the call destination are shown during the initial alert.

IP Office 3.0+ allows individual line appearance ID numbers to be assigned to selected lines on an IP Office system. Line appearance buttons are only supported for analog, E1 PRI, T1, T1 PRI, and BRI PSTN trunks; they are not supported for other trunks including E1R2, QSIG and IP trunks.

Line appearance buttons are not supported for lines on remote systems in a Small Community Network.

- **Using Line Appearances for Outgoing Calls**

In order to use a line appearance to make outgoing calls, changes to the normal external dialing short codes are required. For full details see [Outgoing Line Programming](#)^[703].

- **Private Lines**

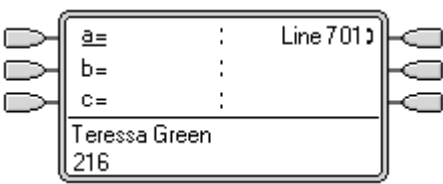
Special behaviour is applied to calls where the user has both a line appearance for the line involved and is also the Incoming Call Route destination of that call. Such calls will alert only on the Line Appearance button and not on any other buttons. These calls will also not follow any forwarding.

- **T3 Phone Line Appearances**

For IP Office 4.2+, line appearances are supported on T3 and T3 IP phones, see [T3 Phone Line Appearances](#)^[678].

8.5.1 Example 1

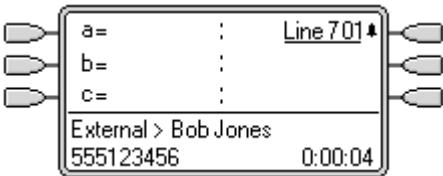
In this example, the user is able to answer a call alerting on a particular line.



1. Line Goes Active

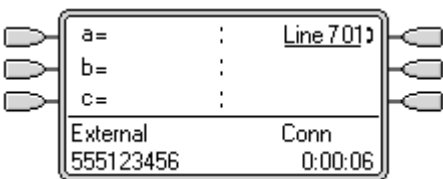
A call is active on the line with line ID number 601. This is indicated as 'in use elsewhere'.

- For an incoming call, the line will show active but will not alert until call routing has been determined. On analog ICLID lines, alerting is delayed until the ICLID that might be used to do the call routing has been received.



2. Line Appearance Alerting

The routing of the call has been complete and it is ringing against its destination. On our user's phone the line appearance also alerts and ringing line preference has made it the current selected button.

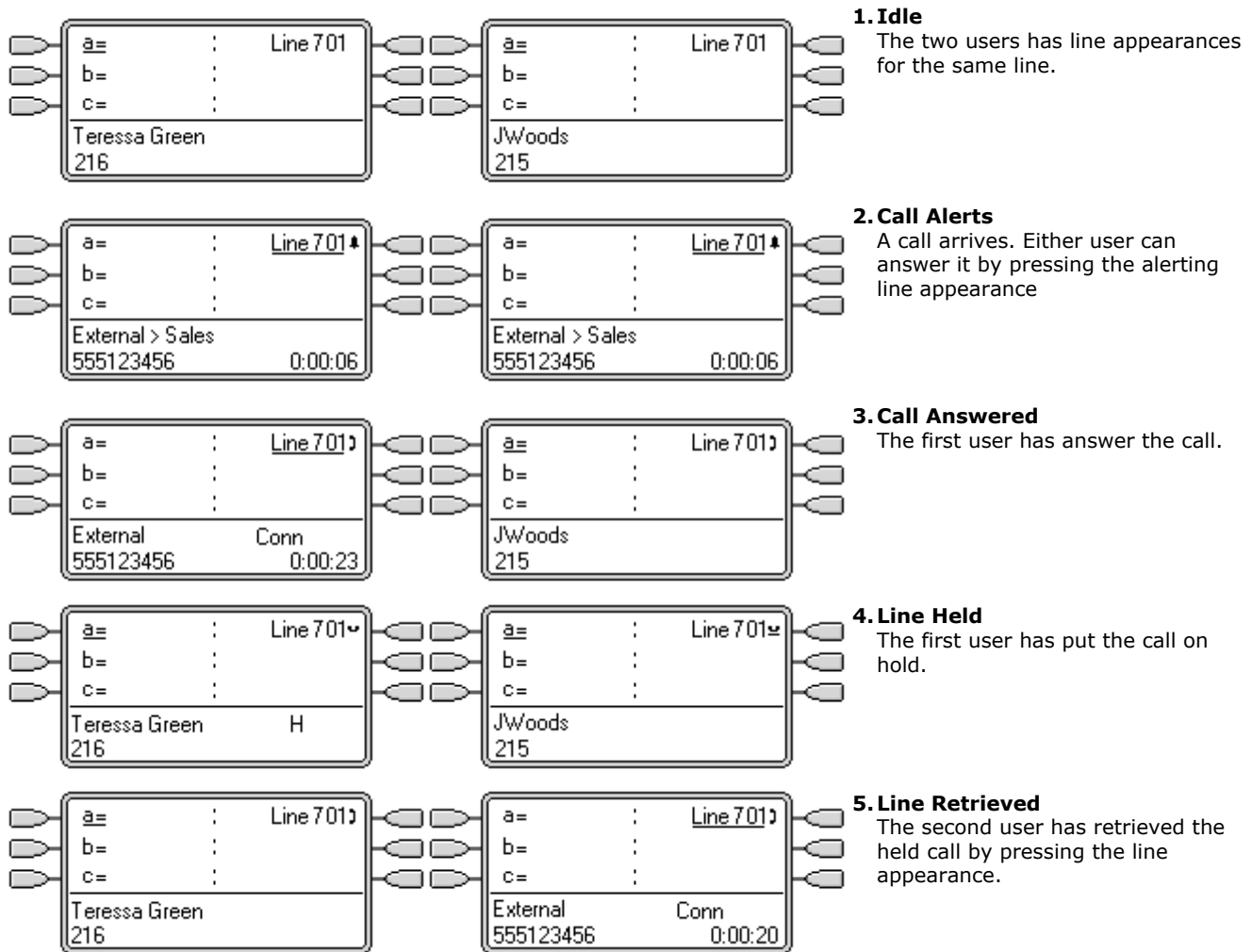


3. Answer Call

By going off hook or pressing the line appearance, our user has answered the call on that line.

8.5.2 Example 2

In this example, two users exchange a call using line appearance buttons set to the same line. Note that this requires that the user who first answers the call to have **Cannot be Intruded** off. Both users have **Ring Line Preference** and **Auto Hold** on.



8.5.3 How are Line Appearances Treated?

Incoming Calls

- **Until answered using a line appearance button, incoming calls alerting on a line appearance, follow the settings of the incoming call route's destination group or user. They do not follow the settings of any line appearance user.**
- If an incoming call's destination is voicemail, or once the incoming call has passed from its destination to voicemail, it cannot be answered or bridged into using a line appearance button.
- If the line appearance user is also the incoming call route's destination, the call will alert on their line appearance only. In this case:
 - It will alert on the line appearance even if all call appearances are in use.
 - The call will not follow any of the user's forwarding settings.
 - The call will receive call coverage from other user's with call coverage buttons set to the line appearance user.
 - The ring delay used is that of the first free call appearance.
- For analog lines set to ICLID, any line appearances show active while the IP Office waits for ICLID information. During this time the line has not been routed and cannot be answered using a line appearance button.
- Calls alerting on a line appearance can also alert on a call coverage appearance on the same phone. If Ringing Line Preference is set, the current selected button will change from the line appearance to the call coverage appearance.
- If the line appearance user has do not disturb (DND) enabled, the line appearance button icon or lamps will still operate but alerting and ringing line preference selection are not applied unless the caller is in their DND exception list.

Outgoing Calls

- In order to be used for making outgoing calls, some additional system programming may be required. See [Outgoing Line Programming](#)^[703].
- Calls made on a call appearance, which are routed out on a line for which the user also has a line appearance, will remain on the call appearance. The line appearance will indicate 'in use elsewhere'.

Additional Notes

- Calls alerting on a line appearance do not receive call coverage or go to a user's voicemail unless the user was the call's original incoming call route destination.
- If a call indicated by a line appearance is parked, it cannot be joined or unparked by using another line appearance.
- Where a line appearance button is used to answer a call for which automatic call recording is invoked, the recording will go to the automatic recording mailbox setting of the original call destination.
- Line appearance buttons are not supported for lines on remote systems in a Small Community Network.

8.5.4 Button Indication

On phones with a text display area next to the button, the label **Line** and the line number are displayed.

When the user is not connected to a call, the button indicated as selected is the button that will be used if the user goes off hook without pressing an appearance button. When a user is connected to a call, that call is the selected button.

The following table shows how the different states of line appearance buttons (alerting, held, etc) are indicated. This is a general table, not all phone button types are covered. The ring that accompanies the visual indication can be delayed or switched off. See [Ring Delay](#) ^[678].

5410/5420	4400 Series	Line Appearance Button State
Line 601	 All off.	Idle The associated line is not in use.
Line 601	 Red on, Green off.	Idle + Selected The associated line is not in use but the button is the user currently selected button.
Line 601 Flashing icon.	 Red off, Green steady flash.	Alerting The line is ringing at its incoming call route destination. This is accompanied by ringing. If the user is already on a call, only a single ring is given.
Line 601 Flashing icon.	 Red on, Green steady flash.	Alerting + Selected As above but Ringing Line Preference has made this the user's current selected button.
Line 601	 Red off, Green on.	In Use Elsewhere The line is in use.
Line 601	 Red on, Green on.	In Use Here The user has answered the line, made a call on it or bridged into the call on the line.
Line 601	 Red off, Green fast flash.	On Hold Here The call on the line has been put on hold by this user.
Line 601	 Red off, Green intermittent flash.	On Hold Elsewhere The call on the line has been put on hold by another appearance button user.
Line 601 Icon flashes off.	 Red off, Green broken flash.	Inaccessible The button pressed is not accessible. The call is still dialing, ringing, routing or cannot be bridged into.

- For IP Office 4.2+ line appearances are supported on T3 and T3 IP phones, see [T3 Phone Line Appearances](#) ^[678].

8.5.5 T3 Phone Line Appearances

For IP Office 4.2+, line appearances are supported on T3 and T3 IP phones. As these phones do not support support call appearance, bridge appearance or call coverage appearance buttons the user can be programmed with just line appearance buttons.

Soft Key	LED Key	Line Appearance Button State
L601	Off	Idle The associated line is not in use.
 601	Off	Idle + Selected The associated line is not in use but the button is the user currently selected button.
L601 alternating with bell symbol.	Fast flashing	Alerting The line is ringing at it incoming call route destination. This is accompanied by ringing. If the user is already on a call, only a single ring is given.
L601 alternating with bell symbol.	Fast flashing	Alerting + Selected As above but Ringing Line Preference has made this the user's current selected button.
L601	On	In Use Elsewhere The line is in use.
 601	On	In Use Here The user has answered the line, made a call on it or bridged into the call on the line.
L601 Slow flash	Slow flash	On Hold Here The call on the line has been put on hold by this user.
L601 Slow flash	Slow flash	On Hold Elsewhere The call on the line has been put on hold by another appearance button user.
-601	Off	Inaccessible The button pressed is not accessible. The call is still dialing, ringing, routing or cannot be bridged into. A single tone is also given.

Notes

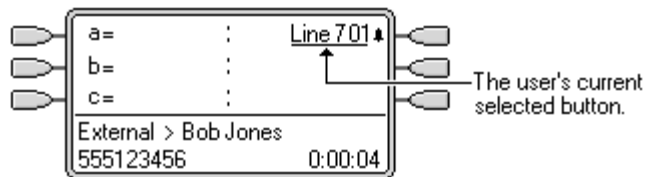
- **Hot Desking**
The following applies to appearance button programmed for a user on a system with T3 phones.
 - **From a T3 Phone**
If a T3 user with programmed line appearances but no programmed call appearances hot desks onto a phone type that requires call appearances, the phone will not operate correctly. This configuration is not supported by Avaya.
 - **To a T3 Phone**
If appearance buttons other than line appearance are programmed for a user, when that user in on a T3 phone those other appearance buttons will be treated as blank. Depending on the button and type of T3 phone the button may assume its default T3 phone function. See [T3 Compact](#)^[547], [T3 Classic](#)^[548] and [T3 Comfort](#)^[549].
- **Call Waiting**
Line appearances will ignore the T3 phones user selected call waiting setting. So with a call connected and call waiting off, calls can still alert on line appearances.
- **Multiple Calls**
T3 phones are limited to a maximum of 6 associated calls at any time, including calls connected, on hold and alerting.
- **Delayed Ringing**
The only Ring Delay options supported are Immediate or No Ring. Any other delayed
- **Preference**
Idle line preference is always used, however T3 phones will never default to using a line appearance for an outbound call.
- **Joining/Bridging**
Joining a call active on a line appearance is supported. This is subject to the intrusion settings of the users involved. The call then becomes a conference call.

8.6 Other Appearance Controls

8.6.1 Selected Button Indication

During appearance button usage, one of the user's appearance buttons may be indicated as the user's current selected button. This is the appearance button already in use, or if idle, the appearance button that will be used if the user goes off hook by lifting the handset.

- On phones with a display area next to each button, the current selected button is indicated by either an _ underscore of the button label, a * star or a shaded background.



- On phones with twin LED lamps, the current selected button is indicated by the red lamp being on .
- On Transtalk 9040 phones, the current selected button is indicated by a ◀ icon.

The IP Office sets which appearance button is the current selected button using the following methods:

- Idle Line Preference** ^[686]
This feature can be set on or off for each individual user, the default is on. When on, it sets the current selected button as the first available idle call appearance or line appearance button. See [Idle Line Preference](#) ^[686].
- Ringing Line Preference** ^[683]
This feature can be set on or off for each individual user, the default is on. When on, it sets the current selected button as the button which has been alerting at the users phone for the longest. Ringing Line Preference overrides Idle Line Preference. See [Ringing Line Preference](#) ^[683].
- Delayed Ring Preference:** ^[690] 4.0+.
This setting is used in conjunction with ringing line preference and appearance buttons set to delayed or no ring. It sets whether ringing line preference should observe or ignore the delayed ring applied to the user's appearance buttons when determining which button should have current selected button status.
- User Selection**
The phone user can override both **Idle Line Preference** and **Ringing Line Preference** by pressing the appearance button they want to use or answer. That button will then remain the current selected button whilst active.
 - If the user currently has a call connected, pressing another appearance button will either hold or disconnect that call. The action is determined by the IP Office system's [Auto Hold](#) ^[687] setting.
- Answer Pre-Select:** ^[686] 4.0+
Normally when a user has multiple alerting calls, only the details of the call on current selected button are shown. Pressing any of the alerting buttons will answer the call on that button, going off-hook will answer the current selected button. Enabling the user telephony setting **Answer Pre-Select** allows the user to press any alerting button to make it the current selected button and displaying its call details without answering that call. To answer a call when the user has **Answer Pre-Select** enabled, the user must press the alerting button to display the call details and then either press the button again or go off-hook.

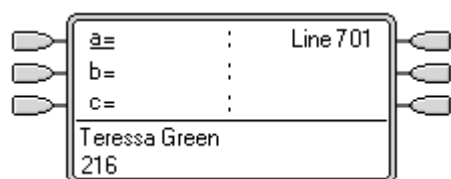
8.6.2 Idle Line Preference

Idle Line Preference determines the user's currently selected button as the first available idle call appearance or line appearance button. [Selected button indication](#)^[679] is applied to that button and if the user goes off-hook, for example by lifting their handset, an outgoing call is started on that button.

- **Idle Line Preference** is overridden by **Ringing Line Preference** if also on for the user.
- By default **Idle Line Preference** is on for all users.
- For appearance button users with **Idle Line Preference** off, going off-hook (lifting the handset or pressing **SPEAKER, HEADSET**, etc) will have no effect until an appearance button is pressed.
- If all the available call appearance and line appearance buttons are in use, no current selected button choice is made by **Idle Line Preference**. In this case, going off hook will have no effect.
- **?Why Would I Use Just Idle Line Preference**
In environments that are focused on making outgoing calls, for example telemarketing, incoming calls are infrequent and user's go off-hook expecting to make a call. Using **Idle Line Preference** without **Ringing Line Preference** ensures that the user doesn't inadvertently answer a call when expecting to make a call.

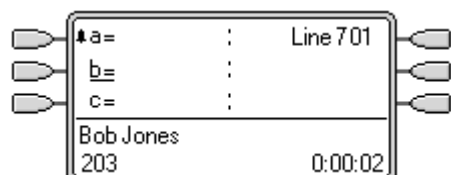
Idle Line Preference Example 1

In this example, only **Idle Line Preference** has been programmed for the user. **Ringing Line Preference** has not been programmed. The user has three call appearance buttons and one line appearance button programmed.



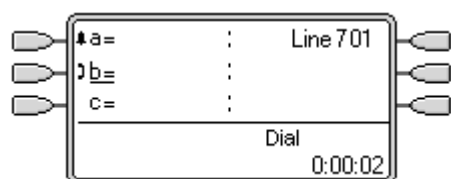
1. Phone Idle

The phone is idle. The current selected button determined by Idle Line Preference is the first available idle call appearance button. This is shown by the _ underscore of the button text.



2. First Call to User

A call for the user arrives. It alerts on the first available call appearance button. Idle Line Preference has changed the current selected button to the next available idle call appearance.



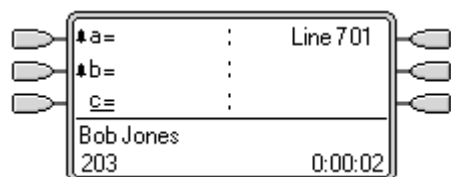
3. User Goes Off Hook

With the call still alerting, if the user goes off hook, it will be interpreted as making a call using the currently selected button, not as answering the alerting button.

4. To answer the alerting call, the user should press the alerting button.

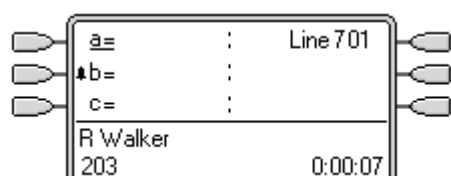
Idle Line Preference Example 2

In this example, only **Idle Line Preference** has been programmed for the user. **Ringing Line Preference** has not been programmed. The user has three call appearance buttons and one line appearance button programmed.



1. Two Calls Alerting

The users has two incoming calls alerting. Idle Line Preference has set the currently selected button to their third call appearance.

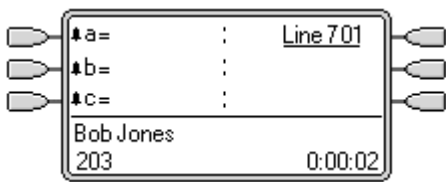


2. First Caller Abandons

If the first incoming caller disconnects, the currently selected button changes to the first call appearance as this is now the first available idle call or line appearance button.

Idle Line Preference Example 3

In this example, only **Idle Line Preference** has been programmed for the user. **Ringing Line Preference** has not been programmed. The user has three call appearance buttons and one line appearance button programmed.

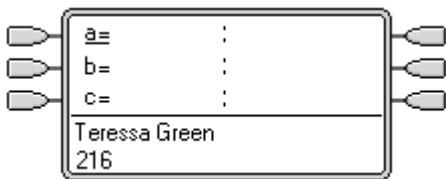


1. All Call Appearances Alerting

In this case, all the users call appearance buttons are alerting incoming calls. Idle Line Preference has changed the currently selected button to the first available line appearance.

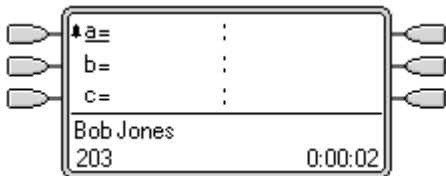
Idle Line Preference Example 4

In this example, both **Idle Line Preference** and **Ringing Line Preference** are set for the user.



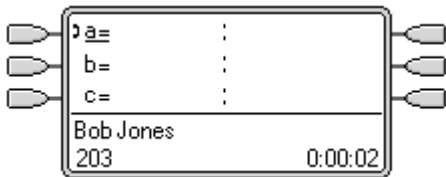
1. Phone Idle

The phone is idle and **Idle Line Preference** has assigned current selected button to the first call appearance.



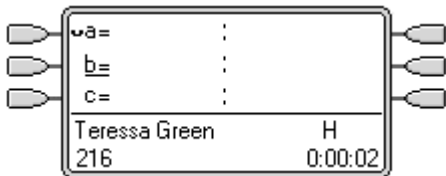
2. Call Alerting

A call has arrived and **Ringing Line Preference** keeps the current selected button at the first call appearance.



3. Call Answered

With the call answered it retains current selected button status.



4. Call Held

When the call is put on hold, **Idle Line Preference** assigns current selected button status to the next available call appearance button.

8.6.3 Ringing Line Preference

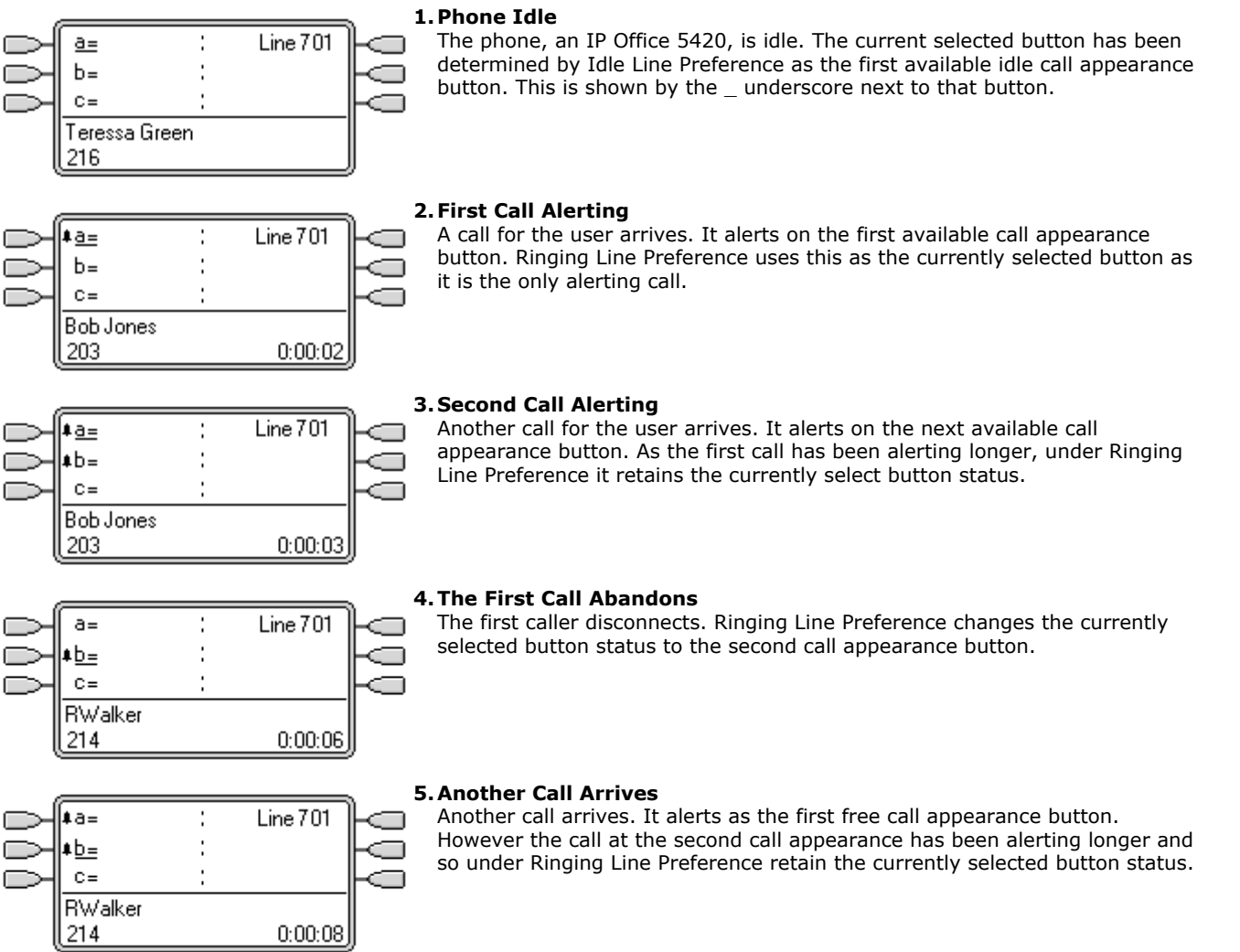
Ringing Line Preference determines the user's currently selected button as the button which has been alerting the longest. [Selected button indication](#)^[679] is applied to that button and if the user goes off-hook, for example by lifting their handset, the alerting call on that button is answered.

Ringing Line Preference includes calls alerting on call appearance, line appearance, bridged appearance and call coverage buttons.

- **Ringing Line Preference** overrides **Idle Line Preference**.
- By default **Ringing Line Preference** is on for all users.
- **Ringing Line Preference Order**
When a user's longest waiting call alerts on several of the user's appearance buttons and Ringing Line Preference is set for the user, the order used for current selected button assignment is;
 - Call appearance.
 - Bridged appearance.
 - Call coverage.
 - Line appearance.
- **Example:**
A user has a call to a covered user alerting initially on a line appearance button. Ringing Line Preference assigns current selected button status to the line appearance. When the same call also begins to alert on the call coverage appearance button, current selected button status switches to the call coverage appearance button.
- **Ring Delay and Ringing Line Preference**
For IP Office 3.2+, appearance buttons can be set to **Delayed Ring** or **No Ring**. These buttons still alert visually but do not give an audible ring or tone. Ringing line preference is still applied to alerting buttons even if set to **Delayed Ring** or **No Ring**.
- **Delayed Ring Preference**
For IP Office 4.0+, for users with **Ringing Line Preference** selected, their **Delayed Ring Preference** setting sets whether ringing line preference is used or ignores buttons that are visually alerting but have **Delayed Ring** or **No Ring** set. The default is off, ie. ignore ring delay.

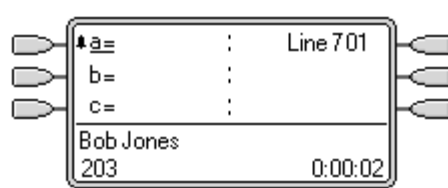
Ringing Line Preference Example 1

In this example, both **Ring Line Preference** and **Idle Line Preference** have been set for the user. The user has three call appearance buttons and one line appearance button programmed. They also have **Ringing Line Preference** on and **Auto Hold** is on. **Answer Pre-Select** is off.



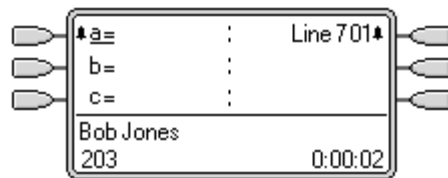
Ring Line Preference Example 2

In this example, the user has both Ring Line Preference and Idle Line Preference programmed. The user has three call appearance buttons and one line appearance button programmed. They also have **Ringing Line Preference** on and **Auto Hold** is on. **Answer Pre-Select** is off.



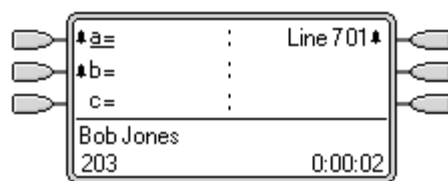
1. First Call to User

A call for the user arrives. It alerts on the first available call appearance button. Ringing Line Preference uses this as the currently selected button as it is the only alerting call.



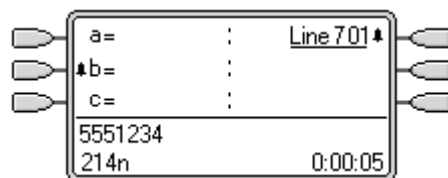
2. Call on Line 601

The user's Line Appearance is alerting due to an incoming call on the associated line. Details of the call and its destination are shown. Ringing Line Preference keeps the currently selected button status on the call appearance button as this has been alerting longest.



3. Second Call to User

A second call to the user arrives and alerts on the second call appearance button. Ringing Line Preference keeps the currently selected button status on the call appearance button as this has been alerting longest.



4. The First Caller Abandons

The first call to the user disconnects. Ringing Line Preference passes the currently selected button status to the Line Appearance button as this has been alerting longest.

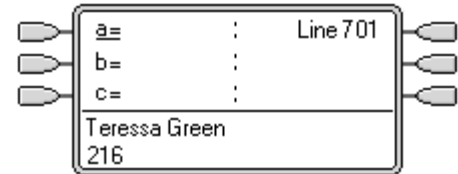
8.6.4 Answer Pre-Select

On some phones, only the details of the call alerting or connected on the current selected button are shown. Instead the details of calls alerting on other buttons are not shown or only shown briefly when they are first presented and are then replaced again by the details of the call on the current selected button.

By default, pressing any of the other alerting buttons will answer the call on that button. IP Office 4.0+ supports **Answer Pre-Select** which can be set individually for each user. Answer pre-select allows a user to press alerting buttons other than the current selected button without actually answering them. Instead the button pressed becomes the current selected button and its call details are displayed.

Note that using answer pre-select with a currently connected call will still either hold or end that call in accordance with the IP Office system's **Auto Hold** ^[687] setting.

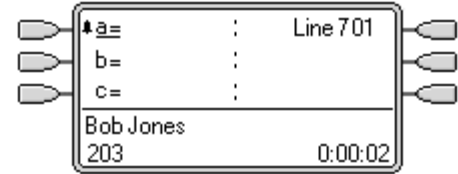
Answer Pre-Select Example 1



The phone display shows three buttons labeled 'a=', 'b=', and 'c=' next to 'Line 701'. Below the buttons, it displays 'Teresa Green' and the number '216'.

1. Phone Idle

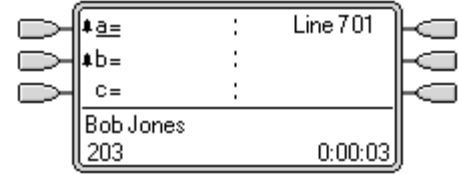
The phone is idle. The current selected button has been determined by Idle Line Preference as the first available idle call appearance button. This is shown by the _ underscore next to that button.



The phone display shows three buttons labeled 'a=', 'b=', and 'c=' next to 'Line 701'. Below the buttons, it displays 'Bob Jones' and the number '203'. A timer shows '0:00:02'.

2. First Call Alerting

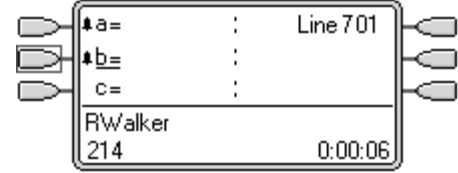
A call for the user arrives. It alerts on the first available call appearance button. Ringing Line Preference uses this as the currently selected button as it is the only alerting call.



The phone display shows three buttons labeled 'a=', 'b=', and 'c=' next to 'Line 701'. Below the buttons, it displays 'Bob Jones' and the number '203'. A timer shows '0:00:03'.

3. Second Call Alerting

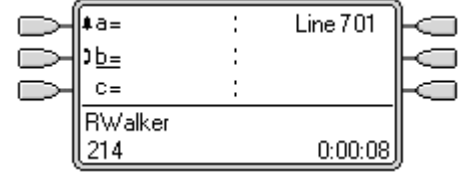
Another call for the user arrives. It alerts on the next available call appearance button. As the first call has been alerting longer, under Ringing Line Preference it retains the currently select button status.



The phone display shows three buttons labeled 'a=', 'b=', and 'c=' next to 'Line 701'. Below the buttons, it displays 'RWalker' and the number '214'. A timer shows '0:00:06'.

4. The User Presses the Second Call Appearance

Pressing the second call appearance overrides ringing line preference and assigns current selected button status to the button without actually answering the call. The details of the caller are displayed.



The phone display shows three buttons labeled 'a=', 'b=', and 'c=' next to 'Line 701'. Below the buttons, it displays 'RWalker' and the number '214'. A timer shows '0:00:08'.

5. The User Answers the Call

The user can press the button again to answer the call or just go off-hook to answer as it is now the currently selected button.

8.6.5 Auto Hold

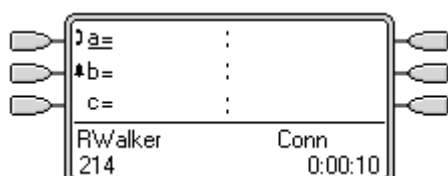
Auto Hold is a system wide feature that affects all appearance button users. This feature determines what happens when a user, who is already on a call, presses another appearance button. The options are:

- If **Auto Hold** is **off**, the current call is disconnected.
- If **Auto Hold** is **on**, the current call is placed on hold.

On IP Office 4.0 and higher systems **Auto Hold** is **on** by default. On previous levels of IP Office software the default for US was **off**.

Auto Hold Example 1

In this example, the user has two calls currently shown on call appearance buttons. **Answer Pre-Select** is off.



1. This user has three call appearance buttons. They have answer one call and are still connected to it, shown by the  icon. A second call is now alerting on their second call appearance button, shown by the  icon.
2. What happens when the user presses the second call appearance key is determined by the IP Office system's **Auto Hold** setting:

- **Auto Hold On**

When the second call appearance key is pressed, that call is answered and the first call is put on hold, shown by the  icon. The user can switch between calls using the call appearance buttons and make/receive other calls if they have additional call appearance buttons

- **Auto Hold Off**

When the second call appearance key is pressed, that call is answered and the first call is disconnected.

8.6.6 Ring Delay

IP Office systems running IP Office 3.2+ software support the option of ring delay on appearance buttons. This option can be used with all types of appearance buttons and can be selected separately for each appearance button a user has. Using ring delay does not affect the buttons visual alerting through the display and display icons or button lamps.

Ring delay is typically used with line appearance buttons for lines which a user wants to monitor but does not normally answer. However ring delay can be applied to any type of appearance button.

The selectable ring delay options for an appearance button are listed below. The option is selected as part of the normal button programming process.

- **Immediate**
Provide audible alerting as per normal IP Office operation.
- **Delayed Ring**
Only provide audible alerting after the system ring delay or, if set, the individual user's ring delay.
- **No Ring**
Do not provide any audible alerting.

There are two possible sources for the delay used when delayed ringing is selected for a button.

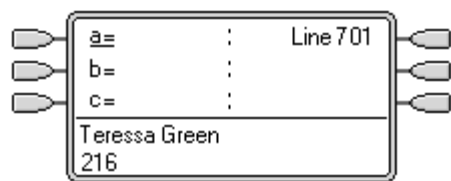
- [System | Telephony | Telephony | Ring Delay:](#) ^[166] Default = 5 seconds, Range 1 to 98 seconds.
This is the setting used for all users unless a specific value is set for an individual user.
- [User | Telephony | Multi-line Options | Ring Delay:](#) ^[281] Default = Blank (Use system setting), Range 1 to 98 seconds.
This setting can be used to override the system setting. It allows a different ring delay to be set for each user.

Notes

- **Calls That Ignore Ring Delay**
Ring delay is not applied to hold recall calls, park recall calls, transfer return calls, voicemail ringback calls and automatic callback calls. For phones using Internal Twinning, ring delay settings are not applied to calls alerting at a secondary twinned extension (except appearance buttons set to **No Ring** which are not twinned).
- **Auto Connect Calls**
For IP Office 3.2 and 4.0, auto-connected calls such as Internal Auto-Answer override Ring delay. For IP Office 4.1+, ring delay is applied to these calls before auto-connection. This does not apply to page calls.
- **Multiple Alerting Buttons**
Where a call is presented on more than one button on a user's phone, see [Multiple Alerting Buttons](#) ^[695], the shortest delay will be applied for all the alerting buttons. For example, if one of the alerting buttons is set to **Immediate**, that will override any alerting button set to **Delayed Ring**. Similarly if one of the alerting buttons is set to **No Ring**, it will be overridden if the other alerting button is set to **Immediate** or **Delayed Ring**.
- **Line Appearance Buttons**
Calls routed to a user that could potentially be presented on both a call appearance button and a line appearance button are only presented on the line appearance button. In this scenario, the ring delay settings used is that of the first free call appearance button.
- **Delay on Analog Lines**
Analog lines set to Loop Start ICLID already delay ringing whilst the IP Office waits for the full ICLID in order to resolve incoming call routing. In this scenario the ring delay operates in parallel to the routing delay.
- **Ring Delay and Ringing Line Preference**
For IP Office 3.2 and higher appearance buttons can be set to **Delayed Ring** or **No Ring**. However ringing line preference is still applied to alerting buttons even if set to **Delayed Ring** or **No Ring**.
 - For IP Office 4.0 and higher, the user's **Delayed Ring Preference** setting is used to determine whether ringing line preference is used with or ignores buttons that are alerting but have **Delayed Ring** or **No Ring** set.

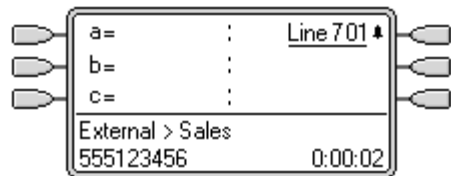
Ring Delay Example 1

In this example, the user has a line appearance button set but configured to no ring.



1. Phone Idle

The phone is idle. The current selected button has been determined by Idle Line Preference as the first available call appearance button. This is shown by the _ underscore next to that button.



2. Incoming Call Alerting on the Line

An incoming call arrives on the line and begin to alert somewhere on the system. The user's line appearance button shows this visually but doesn't ring audibly. Ringing line preference would makes the line appearance the user's currently selected button and therefore they would answer the line if they went off-hook.

8.6.7 Delayed Ring Preference

When a call is alerting at an idle phone, by default [Ringing Line Preference](#)^[683] sets the call as the currently selected button and if the user then goes off-hook they will answer that call.

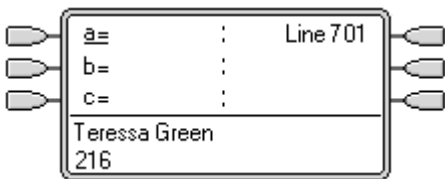
In most situations this is acceptable as the user hears ringing which informs them that there is a call waiting to be answered. If the user wants to make a call instead, they can press another call appearance button to go off-hook on that other button.

When ring delay is being used there can potentially be a problem if the user lifts the handset to make a call without looking at the display. If they do this while the a call is alerting silently on a button with ring delay, the user will actually answer the waiting call rather than get dial tone to make a call.

Once the call alerting on a button has currently selected call status, it retains that status even if a prior call on a button with ring delay applied comes out of its ring delay period.

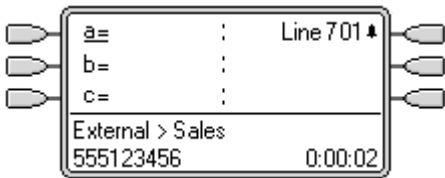
Delayed Ring Preference Example 1

In this example the user has a line appearance button for a line they monitor. This line appearance button has been set to no ring as the user occasionally need to use that line but does not normally answer calls on that line.



1. Phone Idle

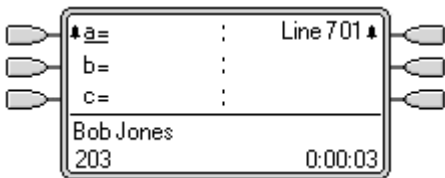
The phone is idle. The current selected button has been determined by Idle Line Preference as the first available call appearance button. This is shown by the _ underscore next to that button.



2. Incoming Call Alerting on the Line

An incoming call arrives on the line and begin to alert somewhere on the system. The user's line appearance button shows this visually but doesn't ring audibly.

- Normally ringing line preference would make the line appearance the user's currently selected button and therefore they would answer the line if they went off-hook expecting to make a call.
- However, because **Delayed Ring Preference** is on for the user, ringing line preference is not applied and idle line preference makes their current selected button the first call appearance. If the user were to go off-hook they would be making a call on that call appearance.

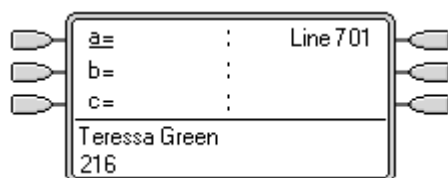


3. Call Alerting for the User

A call for the user arrives. It alerts on the first available call appearance button. Ringing line preference is applied and makes that the users currently selected button. If the user goes off-hook now that will answer the call on the call appearance and not the line appearance.

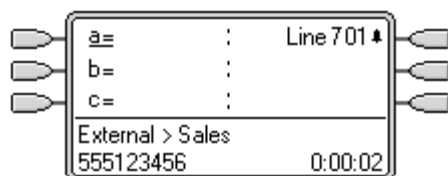
Delayed Ring Preference Example 2

This is similar to the previous example except that the user and the line has been configured for a 15 second ring delay. This informs the users that the line has not been answered for some reason and allows them to answer it by just going off-hook.



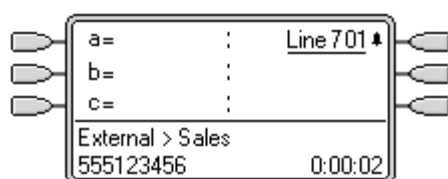
1. Phone Idle

The phone is idle. The current selected button has been determined by Idle Line Preference as the first available call appearance button. This is shown by the _ underscore next to that button.



2. Incoming Call Alerting on the Line

An incoming call arrives on the line and begin to alert somewhere on the system. The user's line appearance button shows this visually but doesn't ring audibly. Because **Delayed Ring Preference** is on for the user, ringing line preference is not applied and idle line preference makes their current selected button the first call appearance. If the user were to go off-hook they would be making a call on that call appearance.



3. Call Continues Alerting

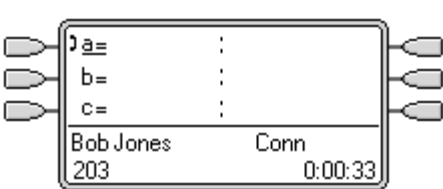
When the ring delay for the line appearance expires, if no other call has taken ringing line preference it becomes the current selected call and will be answered if the user goes off-hook.

8.6.8 Collapsing Appearances

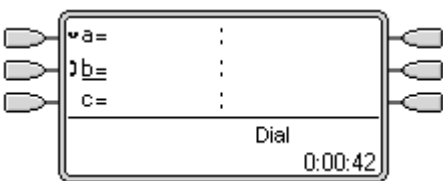
This topic covers what happens when a user with several calls on different appearance buttons, creates a conference between those calls. In this scenario, the call indication will collapse to a single appearance button and other appearance buttons will return to idle except for any line appearance buttons involved which will show 'in use elsewhere'.

Collapsing Appearances Example 1

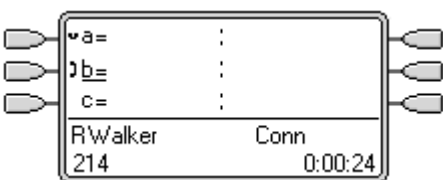
In this example, the user will setup a simple conference. **Ringing Line Preference** and **Idle Line Preference** are set for the user. **Auto Hold** for the system is on. **Answer Pre-Select** is off.



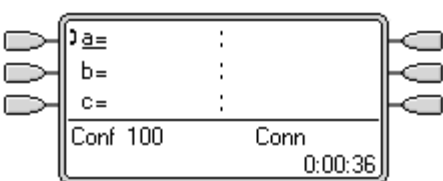
- 1. Initial Call**
The user has a call in progress, shown on their first call appearance button. It is decided to conference another user into the call.



- 2. Make Conference Enquiry**
Pressing the **CONFERENCE** button on the users phone automatically places the current call on hold and takes the phone off hook on the next available call appearance.



- 3. Enquiry in Progress**
The other extension has answered and is invited to join a conference call. The user presses the **CONFERENCE** button on their phone again.



- 4. Conference Starts/Call Appearances Collapse**
The conference call has started. The call appearances have collapsed to a single appearance.

8.6.9 Joining Other Calls (Bridging)

Appearance buttons can be used to "join" existing calls and create a conference call. A user can join calls that are shown on their phone as 'in use elsewhere'. These can be on bridged and/or line appearances.

- This feature is often referred to as 'bridging into a call'. However this causes confusion with Bridged appearance buttons and so the term should be avoided.

The ability to join calls is controlled by the following feature which can be set for each IP Office user:

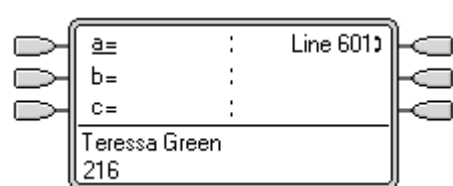
- **Cannot be Intruded:** *Default = On*
If this option is set on for the IP Office user who has been in the call the longest, no other user can join the call. If that user leaves the call, the status is taken from the next internal user who has been in the call the longest. The exceptions are:
 - Voicemail and Conferencing Center calls are treated as **Cannot be Intruded** at all times.
 - When an external call is routed off switch by a user who then leaves the call, the **Cannot be Intruded** status used is that of the user who forwarded the call off switch.
 - Any call that does not involve an internal user at any stage is treated as **Cannot be Intruded** on. For example:
 - When an external call is routed off switch automatically using a short code in the incoming call route.
 - Small Community Network calls from other IP Offices that are routed off-switch.
 - VoIP calls from a device not registered on the IP Office.
 - The **Can Intrude** setting is not used for joining calls using appearance buttons.

The following also apply:

- **Inaccessible**
In addition to the use of the **Cannot be Intruded** setting above, a call is inaccessible if:
 - The call is still being dialed, ringing or routed.
 - It is a ringback call, for example a call timing out from hold or park.
 - If all the internal parties, if two or more, involved in the call have placed it on hold.
- **IP Office Conferencing Resources**
The ability to bridge depends on the available conferencing resource of the IP Office system. Those resources are limited and will vary with the number of existing parties in bridged calls and conferences. The possible amount of conferencing resource depends on the IP Office system type and whether IP Office Conferencing Center is also installed.
- **Conference Tone**
When a call is joined, all parties in the call hear the IP Office conferencing tones. By default this is a single tone when a party joins the call and a double-tone when a party leaves the call. This is a system setting.
- **Holding a Bridged Call**
If a user puts a call they joined on hold, it is their connection to the joined call (conference) that is put on hold. The other parties within the call remain connected and can continue talking. This will be reflected by the button status indicators. The user who pressed hold will show 'on hold here' on the button they used to join the call. All other appearance users will still show 'in use here'.
- **Maximum Two Analog Trunks**
Only a maximum of two analog trunks can be included in a conference call.
- **Parked Calls**
A Line Appearance button may indicate that a call is in progress on that line. IP Office 4.0 and higher allows such calls to be unparked using a line appearance.

Joining Example 1: Joining with a Line Appearance

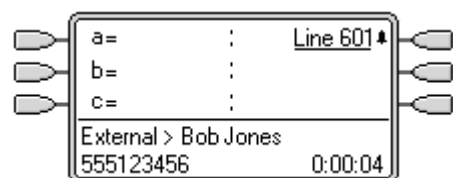
In this example, the user joins a call by pressing a line appearance button. **Answer Pre-Select** is off.



1. Line Goes Active

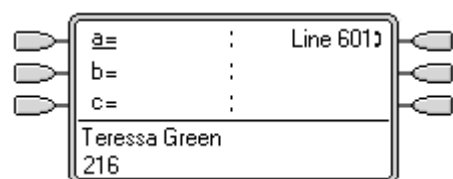
A call is active on the line with line ID number 601.

- If this is an incoming call, it will show active but will not alert until its call routing has been determined. On ICLID analog lines, alerting is delayed until the ICLID that might be used to do that routing has been received.



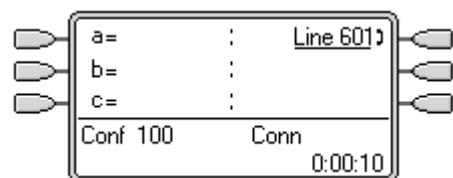
2. Line Appearance Alerting

The call routing is completed and the call is now ringing against its target. The line appearance also begins alerting and Ringing Line Preference has made it the current selected button.



3. Call Answered

Alerting on the line appearance has stopped but the line is still active. This indicates that the call has probably been answered. As our user's phone is idle, Idle Line Preference has returned the current select button to the first available call appearance button.

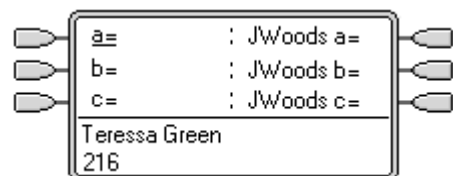


4. User Joins the Call

Our extension user has been asked by their colleague to join the call just answered on line 601. By pressing the line appearance button they have joined the call on that line and created a conference call.

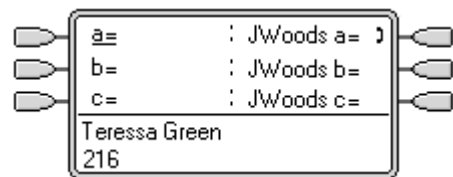
Joining Example 2: Joining with a Bridged Appearance

In this example, the user joins a call using a bridged appearance button. **Answer Pre-Select** is off.



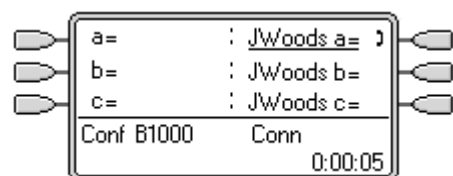
1. User with Bridged Appearance Buttons

The user has bridged appearance buttons that match their colleagues call appearance buttons.



2. Call on Bridged Appearance

The colleague has a call in progress on their first call appearance. This is matched on the first bridged appearance button.



3. User Joins the Call

Pressing the bridged appearance button will take our user off hook and join them into their colleagues call, creating a conference call.

8.6.10 Multiple Alerting Buttons

In some scenarios, it may be potentially possible for the same call to alert on several appearance buttons. In this case the following apply:

- **Line appearance buttons override call and bridged appearance buttons**

In cases where a call on a line goes directly to the user as the incoming call route's destination, the call will only alert on the line appearance. In this scenario the ring delay settings used is that of the first free call appearance button.

- **A call can alert both call appearance, line appearance and bridged appearance buttons**

The most common example of this will be hunt group calls where the hunt group members also have bridged call appearances to each other. In this case the button used to answer the call will remain active whilst the other button will return to idle.

- **Calls on a line or bridged appearance buttons can also alert on call coverage button**

In this case alerting on the call coverage button may be delayed until the covered user's Individual Coverage Time has expired.

- **Ringling Line Preference Order**

When a call alerts on several of the user's appearance buttons and **Ringling Line Preference** is set for the user, the order used for current selected button assignment is:

1. Call appearance.
2. Bridged appearance.
3. Call coverage.
4. Line appearance.

- **Example**

A user has a call to a covered user alerting initially on a line appearance button. **Ringling Line Preference** will assign current selected button status to the line appearance. When the same call also begins to alert on the call coverage appearance button, current selected button status switches to the call coverage appearance button.

Ring Delay

Where ring delays are being used, the shortest delay will be applied for all the alerting buttons. For example, if one of the alerting buttons is set to **Immediate**, that will override any alerting button set to **Delayed Ring**. Similarly if one of the alerting buttons is set to **No Ring**, it will be overridden if the other alerting button is set to **Immediate** or **Delayed Ring**.

8.6.11 Twinning

Twining is a mechanism that allows an IP Office user to have their calls alert at two phones. The user's normal phone is referred to as the primary, the twinned phone as the secondary.

By default only calls alerting on the primary phone's call appearance buttons are twinned. For internal twinning, IP Office 4.1+ supports options to allow calls alerting on other types of appearance buttons to also alert at the secondary phone. These options are set through the **User | Twinning** section of the IP Office configuration and are **Twin Bridge Appearances**, **Twin Coverage Appearances** and **Twin Line Appearances**. In all cases they are subject to the secondary having the ability to indicate additional alerting calls.

Call alerting at the secondary phone ignoring any Ring Delay settings of the appearance button being used at the primary phone. The only exception is buttons set to No Ring, in which case calls are not twinned.

8.6.12 Busy on Held

For a user who has **Busy on Held** selected, when they have a call on hold, the IP Office system treats them as busy to any further calls. This feature is intended primarily for analog phone extension users. Within IP Office Manager, selecting **Busy on Held** for a user who also has line appearance keys will cause a prompt offering to remove the **Busy on Held** selection.

8.6.13 Reserving a Call Appearance Button

Functions such as transferring calls using a **Transfer** key require the user to have at least one available call appearance button in order to complete the outgoing call part of the process. However by default all call appearance button are available to receive incoming calls at all times.

It is possible to reserve the users last call appearance button for the making of outgoing calls only. The method for doing this depends on the IP Office system software level.

- **IP Office 4.0+**
On the **User | Telephony | Multi-line Options** tab, select the option **Reserve Last CA**.
- **Pre-4.0 IP Office**
On the **User | Source Numbers** tab, enter the line **RESERVE_LAST_CA=** .

8.6.14 Logging Off and Hot Desking

IP Office users can be setup to log in and log out at different phones, this is called 'hot desking'. All the users settings, including their extension number, are transferred to the phone at which the user is logged in. This includes their key and lamp settings and appearance buttons.

This type of activity has the following effect on appearance buttons:

- If logged out, or logged in at a phone that doesn't support appearance button functions:
 - Bridged appearances set to the user will be inactive.
 - Call coverage set to the user will still operate.
- If logged in at a phone with fewer buttons than programmed for the user:
 - Those buttons which are inaccessible on the logged in phone will be inactive.
 - Any bridged appearances to those button from other users will be inactive.

Remote Hot Desking

IP Office 4.0 supports, through the addition of license keys, users hot desking between systems within an IP Office Small Community Network (SCN). However the use of appearance buttons (call coverage, bridged appearance and line appearance) within a Small Community Network is not supported. Therefore when a user logs in to a remote system, any such button that they have will no longer operate. Similarly any button that other users have with the remote user as the target will not operate.

8.6.15 IP Office Applications

A number of IP Office applications can be used to make, answer and monitor calls. These applications treat calls handled using key and lamp operation follows:

- **Phone Manager/SoftConsole**

These applications are able to display multiple calls to or from a user and allow those calls to be handled through their graphical interface.

- All calls alerting on call appearance buttons are displayed.
- Calls on line, call coverage and bridged appearance buttons are not displayed until connected using the appropriate appearance button
- Connected and calls held here on all appearance button types are displayed.
- The status of alerting call appearance calls, connected and held calls is shown in the Phone Manager's call status panel. Clicking on a call here can be used to answer or unhold a call. This action will place any current connected call on hold regardless of the system's Auto Hold setting.

8.7 Programming Appearance Buttons

This section covers the programming of appearance buttons for users into existing IP Office configurations.

- **Appearance Functions**

The functions **Call Appearance**, **Bridged Appearance**, **Coverage** and **Line Appearance** are collectively known as "appearance functions". For full details of their operation and usage refer to the [Key and Lamp Operation](#) ⁽⁶⁵⁸⁾ section. The following restrictions must be observed for the correct operation of phones.

IP Office Software	
IP Office 2.1 or 3.0DT	On systems running IP Office 2.1 or 3.0DT software, the <u>first programmable button must be set as a call appearance button</u> . This requirement is necessary for the correct operation of phone functions such as call log.
IP Office 3.0+	For systems running IP Office 3.0 or higher (excluding 3.0DT), the <u>first 3 programmable buttons must be set as call appearance buttons</u>. This requirement is necessary for the correct operation of functions such as transfer, conference and call log. • On phones with only two physical programmable buttons both buttons <u>must</u> be used as call appearance buttons. • On 1600 Series phones, all the appearance buttons must be programmed as a continuous block with no gaps between the appearance buttons.
IP Office 4.2+	T3 phones support Line Appearance buttons only and are exempt from the above rules.
IP Office 5.0+	IP Office 5.0+ allows users have line appearances programmed before call appearances. This option is only supported by users using 1600 Series phones.

- Appearance functions programmed to buttons without suitable status lamps or icons are treated as disabled. These buttons are enabled when the user logs in on a phone with suitable buttons in those positions.
- Line appearance buttons require line ID numbers to have been assigned, see [Programming Line Appearance Numbers](#) ⁽⁷⁰²⁾. The use of line appearances to lines where incoming calls are routed using DID (DDI) is not recommended.
- **How many buttons are allowed?**
The recommended limits are as follows:
 - A maximum of 10 bridged appearances to the same call appearance.
 - A maximum of 10 line appearances to the same line.
 - A maximum of 10 call coverages of the same covered user.

Programming Appearance Buttons Using IP Office Manager

If only button programming changes are required, the configuration changes can be merged back to the IP Office system without requiring a reboot.

1. Start IP Office Manager and load the current configuration from the IP Office system.
2. Locate and select the user for whom appearance buttons are required.
3. Select **Button Programming**.

Button No.	Label	Action	Action Data
1		Appearance	a=
2		Appearance	b=
3		Appearance	c=
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			

- The number of buttons displayed is based on the phone associated with the user when the configuration was loaded from the IP Office system. This can be overridden by selecting **Display all buttons**.

4. For the required button, click the button number and then click **Edit**.
5. Click the ... button.

6. From the list of options that appears, click **Appearance**.
7. Select the type of appearance button required.
8. Use the **Action Data** drop-down fields to select the required settings. Click **OK**.
9. Repeat for any additional call appearance buttons required. Click **OK**.
10. Repeat for any other users requiring appearance buttons.

8.7.1 System Settings

System settings are applied to all users and calls. The system settings that affect appearance operation are found on the [System | Telephony](#) ^[160] tabs and are:

- **Auto Hold:** *Default = On, Software level = 3.0+.*
Used for users with multiple appearance buttons. When on, if a user presses another appearance button during a call, their current call is placed on hold. When off, if a users presses another appearance button during a call, their current call is disconnected.
- **Conferencing Tone:** *Default = Entry & Exit Tones.*
This settings controls how conference tones are used. It can be set to either **Entry & Exit Tones** or **Repeating Tone**. With **Entry & Exit Tones** a single tone is heard when a new party joins a conference and double-tone is heard when a party leaves the conference. With **Repeating Tone** a conference tone is heard every 10 seconds by all conference parties.
- **Ring Delay:** *Default = 5 seconds, Range = 0 to 98 seconds, Software level = 3.2+.*
This setting is used when any of the user's programmed appearance buttons is set to Delayed ringing. Calls received on that button will initially only alert visually. Audible alerting will only occur after the ring delay has expired. This setting can be overridden by a ring delay set for an individual user ([User | Telephony | Multi-line Options | Ring Delay](#) ^[281]).
- **Visually Differentiate External Call:** *Default = Off, Software level = 5.0+.*
This setting is applied to the lamp flashing rate used for bridged appearance and call coverage appearance buttons on 1600 Series phones and on BM32 button modules. When selected, external calls alerting on those buttons will use a slow flash (200ms on/50ms off). If not selected or if the call is internal, normal flashing (500ms on/500ms off) is used.

8.7.2 User Settings

User settings are applied separately to each individual IP Office user. In addition to button programming, the following user settings are applicable to appearance button operation:

- **Cannot be Intruded:** *Default = On.*

This feature controls whether other users can use their appearance buttons to join the user's call. It applies when the user is the longest present internal party already within the call.

- **Individual Coverage Time (secs):** *Default = 10 seconds, Range 1 to 99999 seconds, Software level 3.0+.*

This function sets how long the phone will ring at your extension before also alerting at any call coverage users. This time setting should not be equal to or greater than the **No Answer Time** applicable for the user.

- **Ring Delay:** *Default = Blank (Use system setting), Range = 0 ([use system setting](#)^[166]) to 98 seconds, Software level = 3.2+.*

This setting is used when any of the user's programmed appearance buttons is set to Delayed ringing. Calls received on that button will initially only alert visually. Audible alerting will only occur after the ring delay has expired.

- **Coverage Ring:** *Default = Ring, Software level = 5.0+.*

This field selects the type of ringing that should be used for calls alerting on any of the user's call coverage and bridged appearance buttons. **Ring** selects normal ringing. **Abbreviated Ring** selects a single non-repeated ring. **No Ring** disables audible ringing. Note that each button's own ring settings (**Immediate**, **Delayed Ring** or **No Ring**) are still applied.

- The ring used for a call alerting on a call coverage or bridged appearance button will vary according to whether the user is currently connected to a call or not.
 - If not currently on a call, the **Coverage Ring** setting is used.
 - If currently on a call, the quieter of the **Coverage Ring** and **Attention Ring** settings is used.

Attention Ring Setting	Coverage Ring Setting		
	Ring	Abbreviated	Off
Ring	Ring	Abbreviated	Off
Abbreviated	Abbreviated	Abbreviated	Off

- **Attention Ring:** *Default = Abbreviated Ring, Software level = 4.1+.*

This field selects the type of ringing that should be used for calls alerting on appearance buttons when the user already has a connected call on one of their appearance buttons. **Ring** selects normal ringing. **Abbreviated Ring** selects a single ring. Note that each button's own ring settings (**Immediate**, **Delayed Ring** or **No Ring**) are still applied.

- **Ringing Line Preference:** *Default = On, Software level = 3.0+.*

For users with multiple appearance buttons. When the user is free and has several calls alerting, ringing line preference assigns currently selected button status to the appearance button of the longest waiting call. Ringing line preference overrides idle line preference.

- **Idle Line Preference:** *Default = On, Software level = 3.0+.*

For users with multiple appearance buttons. When the user is free and has no alerting calls, idle line preference assigns the currently selected button status to the first available appearance button.

- **Delayed Ring Preference:** *Default = Off, Software level = 4.0+.*

This setting is used in conjunction with appearance buttons set to delayed or no ring. It sets whether ringing line preference should use or ignore the delayed ring settings applied to the user's appearance buttons.

- When on, ringing line preference is only applied to alerting buttons on which the ring delay has expired.
- When off, ringing line preference can be applied to an alerting button even if it has delayed ring applied. This is the same as pre-4.0 ringing line preference operation.

- **Answer Pre-Select:** *Default = Off, Software level = 4.0+.*

Normally when a user has multiple alerting calls, only the details of the call on current selected button are shown. Pressing any of the alerting buttons will answer the call on that button, going off-hook will answer the current selected button. Enabling Answer Pre-Select allows the user to press any alerting button to make it the current selected button and displaying its call details without answering that call until the user either presses that button again or goes off-hook. Note that when both Answer Pre-Select and Ringing Line Preference are enabled, once current selected status is assigned to a button through ringing line preference it is not automatically moved to any other button.

- **Reserve Last CA:** *Default = Off, Software level = 4.0+.*

Used for users with multiple call appearance buttons. When selected this option stops the user's last call appearance button from being used to receive incoming calls. This ensures that the user always has a call appearance button available to make an outgoing call and to initiate actions such as transfers and conferences. For pre-4.0 IP Office this option is set by adding the **RESERVE_LAST_CA=** option on the [User | Source Numbers](#)^[275] tab.

- **Abbreviated Ring:**

This option has been replaced by the Attention Ring setting above.

8.7.3 Line Appearance ID Numbers

Line appearances are supported for analog, E1 PRI, T1, T1 PRI, and BRI PSTN trunks. They are not supported for E1R2, QSIG and IP trunks.

Note that setting and changing line settings including line appearance ID numbers requires the IP Office system to be rebooted.

Automatic Renumbering

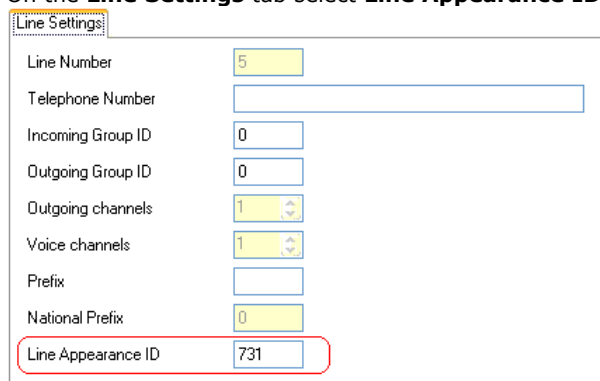
1. Select **Tools | Line Renumber**.
2. Select the starting number required for line numbering and click **OK**.
3. All lines that support **Line Appearance ID** will be numbered in sequence.

Manual Renumbering

1. Start IP Office Manager and load the current configuration from the IP Office.
2. Select  **Line**.
3. Select the line required. The tab through which line appearance ID numbers are set will vary depending on the type of line. A couple of examples are shown below.

- **Analog Line**

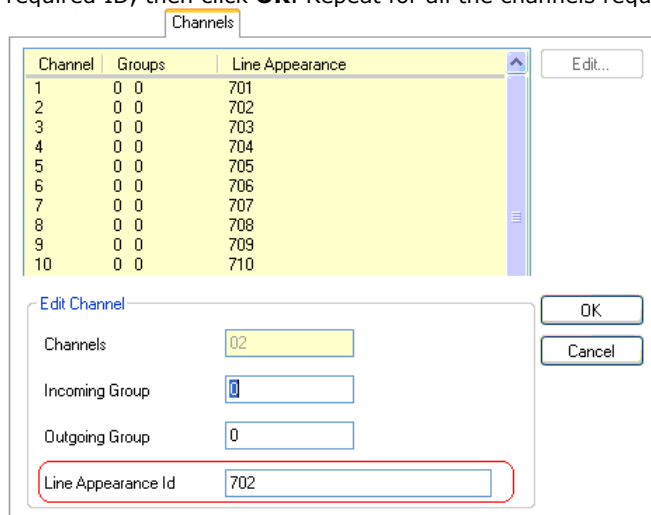
On the **Line Settings** tab select **Line Appearance ID** and enter the ID required.



Line Number	5
Telephone Number	
Incoming Group ID	0
Outgoing Group ID	0
Outgoing channels	1
Voice channels	1
Prefix	
National Prefix	0
Line Appearance ID	731

- **Basic/Primary Rate Trunks**

On the **Channels** tab select the individual channel and click **Edit**. Select **Line Appearance ID** and enter the required ID, then click **OK**. Repeat for all the channels required.



Channel	Groups	Line Appearance
1	0 0	701
2	0 0	702
3	0 0	703
4	0 0	704
5	0 0	705
6	0 0	706
7	0 0	707
8	0 0	708
9	0 0	709
10	0 0	710

Channels	02
Incoming Group	0
Outgoing Group	0
Line Appearance Id	702

4. Click **OK** and repeat for any other lines.

8.7.4 Outgoing Line Programming

Assigning line ID numbers to lines and associating line appearance buttons to those lines is sufficient for answering incoming calls on those lines. However, to use line appearance buttons for outgoing calls may require further programming.

Short Codes and Outgoing Line Appearance Calls

Once a line has been seized using a line appearance button, short code matching is still applied to the number dialed. That can include user, system and ARS or LCR short codes.

- The short codes matching must resolve to an off-switch number suitable to be passed direct to the line.
- The final short code applied must specify a 'dial' feature. This allows call barring of specific matching numbers to be applied using short codes set to features such as 'Busy'.

Line Appearance Hot Lines

A new short code feature has been added for scenarios where the associate line is an analog tie line or similar direct to another phone.

To use this feature:

- Create a new short code such as ***99*** with the feature **DialDirectHotLine**.
- Set ***99*** as the prefix for that line.

8.8 Upgrading from Pre-3.0 Systems

Most of the aspects of appearance functions have no effect on systems being upgraded from versions of IP Office earlier than 3.0. However the following existing IP Office configuration settings are affected:

- **Call Appearance Buttons**

Call appearance buttons should start with button 1 and form a single block. On systems being upgraded where the call appearance buttons have been programmed differently, those buttons will be lost following the upgrade to 3.0.

- **Call Coverage**

Call coverage support was originally added in IP Office 1.3. Call coverage operation in IP Office 3.0 is a total replacement and uses different methods of setup and operation. If upgrading from a version earlier than 3.0, all existing call coverage settings will be lost. Therefore it is necessary to make manual notes of the covered and covering users before upgrading to IP Office 3.0 or higher.

- **Outgoing Call Routing**

If it is a requirement to use line appearance button for outgoing calls, then it will be necessary to add incoming line prefixes and to setup secondary dial tone short codes based on the same prefixes. See [Outgoing Line Programming](#) | 703.

8.8.1 Call Handling Changes

People who have used phones on IP Office systems prior to IP Office software level 3.0 will find a number of changes to the way the phones operate.

- **Selected Button**

By default one appearance button is indicated as the current selected button. This is done either by the adjacent red LED being on or the button display label being underlined.

- The current selected button represents either the appearance button of the current connected call or the appearance button that will be used if the user goes off hook (ie. lifts the handset or presses the Speaker key).

- **Auto Hold**

The default operation of this feature depends on the phone system's locale:

- In the US, the default setting for **Auto Hold** is **off**. With a current call already connected on one appearance button, pressing another appearance key will disconnect the current call.
- Outside the US, the default setting for **Auto Hold** is on. With a current call already connected on one appearance button, pressing another appearance key will hold the current call.
- Note that for IP Office 4.0+, on all systems regardless of locale the default for **Auto Hold** is **off**.

- **Call Waiting**

Call waiting features are not applied to non-hunt group calls. Hunt group call waiting is applied, subject to the normal conditions for hunt group call waiting, but with the call waiting tone replaced by a call appearance button alert.

- **Busy Status**

For a user with call appearance buttons, you are busy when:

- For calls direct to your extension number, you are busy only when you have no further call appearance buttons available on which to present the call.
- For calls to any hunt group of which you are a member, you are busy to further group calls once you have a call connected unless hunt group call waiting is being used. However you may still receive additional calls dialed or forwarded direct to your extension number if you have any free call appearance buttons.
- In either case above, even when busy, you may be alerted on other types of appearance button, for example line appearance and call coverage.
- Busy on held can be used to return busy to further calls when you have an existing call on hold, however this is not recommended in conjunction with appearance buttons.

- **Retrieving Held Calls**

Pressing  **Hold** will put the current connected call on hold. The appearance button will indicate the held call with, depending on the phone type, a flashing green lamp or a  icon. However pressing  **Hold** again will not retrieve the held call.

- To retrieve a held call, press the appearance button against which the call was held.
- An intermittent green flashing lamp or an  icon indicate a call held by another user. These can also be retrieved by pressing that appearance button.

- **Transferring Calls**

To transfer calls, the  **Transfer** function of the phone or IP Office Phone Manager application should be used.

- **Joining Another Call**

Appearance buttons can indicate a call taking place elsewhere. You may be able to join that call by pressing the appearance button.

- Permission to join a call is controlled by the intrusion settings of the party who has been in the call the longest, not by your intrusion settings. See [Joining Other Calls](#)^[693] for full details.
- The joined call is a conference call and is subject to the IP Office's conference controls. If you press **Hold**, it is your connection to the conference that is held, it does not affect the other parties in the call.
- **Unparking Calls**
Parked calls can be indicated by buttons programmed to the Park function and a particular park slot number. These can be calls parked by the phone user or parked by other users. If the phone is idle, the parked call can be unparked by pressing the park button. If another call is connected on an appearance button, that call must be put on hold or ended before the parked call can be unparked.
- **Unprogrammed/Inaccessible Keys**
Buttons to which no function has been set or which the function is currently not useable, will produce a short burst of tone or ringing when pressed. If the button has an associated status lamp, it will also flash briefly.
- **Call Count**
Avaya IP Office phones with twin LED buttons display a call count. This appears as a digit count, for example **01** on the display. It increments for all calls that alert at a user's extension including missed and unanswered calls.
 - Sequential calls from the same number do not increment the count more than once.
 - Calls alerting on bridged, line and call coverage buttons are not included in the call count and history.
 - The count is reset whenever the IP Office system is restarted.
 - On Avaya 4400, 4600 and 6400 Series phones with a **MENU** key, details of the call count can be accessed and entries called or deleted. Press **MENU** | **MENU** and select **Hist**.
- **Call Log**
On 2410, 2420, 4610, 4620, 5410, 5420, 5610 and 5620, the call count is replaced by a **Log** function instead of the call count and history detailed above.
- **Self-Administration of Appearance Keys**
Previously users with a programmable button set to **Self-Administer (Admin)** could program their own call appearance buttons. In IP Office 3.0 this is no longer possible. In addition users cannot overwrite keys already programmed to an appearance function.

8.8.2 Twin LED Button Users

These notes are for users of Avaya phones which have twin LED lamps next to the programmable buttons. That is most 4400 Series, 6400 Series and older style 4600 Series phones.

- **Red LED On**

This is called the currently selected button. It indicates either the button that will be used if you go off-hook (pickup the handset or press the **Spkr** button) or the appearance button of the call to which you are currently connected. When your phone is idle your first call appearance button will show the red LED on.

- **Green LED**

The green LED is used as follows on appearance buttons:

- **On/Off:** The button is in use/idle. This can include being used by another user, for example a line appearance button of a shared line.
- **Flashing:** A call is alerting you.
- **Fast Flash:** The call is on hold.
- **Intermittent Flash:** The call has been put on hold by another user (on hold elsewhere).

- **Call Handling**

Having appearance keys means:

- You can make and answer calls by pressing the appearance buttons.
- **Auto Hold:** When connected to a call on one appearance button, pressing another appearance button will place the first call on hold and make/answer a call on the button pressed. For US systems this changes to disconnecting the first call.
- **Transferring Calls:** To transfer a call, press **Trnsfr**, call the transfer destination and then press **Trnsfr** again.
- **Retrieving Held Calls:** You cannot retrieve a held call by pressing **Hold** again. To retrieve a call from hold, press the appearance key associated with that call. Held calls are indicated by a fast flashing green lamp.

- **Busy Status**

Call appearance buttons allow you to make, receive and switch between multiple calls. This changes when the system returns busy to additional calls

- **Hunt Group Calls:** You are seen as busy to further hunt group calls once you have any appearance button in use.
- **Personal Calls:** You are seen as busy to further calls directed to your extension number once all your call appearance buttons are in use.
- **Forward on busy**, if set, is only used when all your call appearance buttons are in use. Even when busy, additional calls can alert you about other calls on call coverage, bridged appearance and line appearance button if programmed for you..
- **Busy on Held** can be used but we strongly recommend it is avoided for appearance key users.

- **Joining a Call**

When an appearance button indicates a call in progress elsewhere. You may be able to use that button to join the call. Whether you are allowed to join the call depends on the **Cannot Be Intruded** setting of the user who has been in the call the longest.

- **Call waiting** settings are ignored for direct call to appearance button users. Hunt group call waiting can be used if setup.
- **Unprogrammed/Inaccessible Keys**
These keys will return a short tone and flash.
- **Self-Administration:** Users with access to this function can no longer program their own appearance keys or replace the programming of existing appearance buttons.
- **Hot Desking/Logging On:** If you move to a phone that doesn't have suitable programmable keys to support appearance buttons, you are treated as a normal PBX mode user while on that phone.

Twin LED Button Users Lamp States

The table below summarizes the meaning of the twin LED lamp states.

- **Selected** refers to the button indicating either the appearance button of the currently connected call or, if idle, the appearance button that would be used if the user goes off hook.

Feature	IP Office 2.1/3.0DT	IP Office 3.0+
Call Appearance Buttons		
- Idle.	All off.	All off.
- Idle: Selected.	–	Red on.
- Alerting.	Green flash.	Green flash.
- Alerting: Selected.	–	Red on, Green flash.
- In Use: Here.	Green on.	Red on, Green on.
- In Use: Elsewhere.	–	Green on.
- Held: Here.	Red on.	Green fast flash.
- Held: Elsewhere.	–	Green intermittent flash.
Other Buttons		
- Parked: Here	Green flash.	Green flash.
- Parked: Elsewhere	Red flash.	Red flash.
- User: Ringing	Red flash.	Green flash.
- User: In use.	Red on.	Green on.
- Group: Ringing.	Green Flash.	Green flash.
- Group: Queued.	Red flash.	Red flash.
- Other toggling features: On.	Green on.	Green on.
- Other toggling features: Off.	All off.	All off.
- Non-toggling features	All off.	All off.

The flash rate on button lamps is sometimes used to indicate different status. For example a fast flash is used for calls you put on hold and a intermittent flash for calls put on hold by someone else.

- **Steady Flash:** *****----- (0.5s on/0.5 s off/...)
 - Used mainly to indicate alerting calls.
- **Fast Flash:** *-*-*-*-*-*-*- (50ms on/50ms off/...)
 - Used mainly to indicate calls put on hold by you. This flash mode is also called 'Flutter'.
- **Intermittent Flash:** *-----*-----*----- (50ms on/200ms off/...)
 - Used mainly to indicate calls on hold elsewhere, ie. put on hold by another user. This flash mode is also called 'Inverse Wink'.

Chapter 9.

Telephone Features

9. Telephone Features

This section provides descriptions of the following telephony functions provided by the IP Office.

- [Handsfree Announced Transfers](#) ^[711]
- [Mobile Call Control](#) ^[714]
- [one-X Mobile Client](#) ^[717]
- [Advice of Charge](#) ^[723]
- [Malicious Call Tracing](#) ^[738]
- [Call Barring](#) ^[737]
- [Caller Display](#) ^[737]
- [Call Intrusion](#) ^[739]
- [Call Tagging](#) ^[739]
- [Private Calls](#) ^[740]
- [Call Pickup](#) ^[740]
- [Call Waiting](#) ^[741]
- [Parking Calls](#) ^[742]
- [Ring Back When Free](#) ^[743]
- [Message Waiting Indication](#) ^[744]
- [Ring Tones](#) ^[745]
- [Music on Hold](#) ^[746]
- [Date and Time](#) ^[747]
- [System Phone Features](#) ^[749]
- [The 'No User' User](#) ^[750]
- [Forwarding and Transferring Calls](#) ^[751]
- [Conferencing](#) ^[767]
- [Hot Desk Operation](#) ^[769]
- [Coverage Group](#) ^[731] [\(IP Office 5.0+\)](#) ^[731]
- [Dial Tone Transfer](#) ^[734] [\(IP Office 5.0+\)](#) ^[734]
- [Centralized Personal Directory](#) ^[727] [\(IP Office 5.0+\)](#) ^[727]
- [Centralized Call Log](#) ^[728] [\(IP Office 5.0+\)](#) ^[728]
- [T38 Fax Relay](#) ^[732] [\(IP Office 5.0+\)](#) ^[732]

9.1 Handsfree Announced Transfers

The IP Office 4.2 Q4 2008 maintenance release and higher supports several methods that allow the enquiry call part of a supervised transfer to be answered handsfree. In addition the IP Office can be optionally configured to allow both the enquiry call and completed transfer call to be auto-answered.

Example

1. User 201 answers a call that they then want to transfer to user 203.
2. They press **TRANSFER** to put the call on hold pending transfer.
3. They then press a **Dial Direct** button and dial 203.
4. The transfer enquiry call is auto answered by User 203's phone. User 201 is able to announce the pending transfer and hear if User 203 wants to accept the call.
 - The auto-answer only occurs if the target user's extension is idle. If the target is already connected to a call, the transfer enquiry will be presented as normal call.
5. If the transfer is accepted, User 201 can press **TRANSFER** again to complete the transfer process.
 - The transferred call will then ring at the target. However, if required the IP Office can be configured to also auto-answer the completed transfer.

Configuration

Handsfree announced transfers are supported when using one of the following features after having pressed **TRANSFER**.

Button Features	Short Code Features
• Dial Direct ^[58] • Automatic Intercom ^[56] • Dial Intercom ^[59]	• Dial Direct ^[45]

• User Button Usage

Following the use of any of the buttons above, if the button has not been programmed with a specific target, a [User](#) ^[64] button can be used to indicate the target for the enquiry call. This gives the advantage of being able to see the target user's status before attempting the transfer.

- For **Automatic Intercom** and **Dial Intercom** buttons without a pre-specified target, the **User** button must be on a button module.
- For **Dial Direct** buttons without a pre-specified target the **User** button can be on the phone or button module. Due to this and the support for **Dial Direct** across an Small Community Network, we recommend that a Dial Direct button is used for handsfree announced transfers.

Phone Support

Handsfree announced transfer is supported for calls being transferred to the following phones:

Full Support	Partial Support	Not Supported
The following IP Office phones support full announced transfer operation. • 1603, 1608, 1616, 2410, 2420, 5410, 5420, 4610, 4621, 4625, 5610, 5620, 5621. • All IP Office T3 phones. • Analog Off-Hook Stations (See notes below).	The following phone can auto-answer announced transfers but require the user to use the handset to respond. • 2402, 4601, 4602, 5402, 5601, 5602.	Announced transfer is not supported for any phones not list in the other column. On unsupported phones the transfer enquiry consultation call will be presented as a normal call.

Notes

- On supported phones, if the target user's phone is not idle when the enquiry call attempt is made, the enquiry call is turned into a normal transfer attempt, eg. alerting on an available call appearance.
- Enabling the extension specific setting [Disable Speakerphone](#) ^[25] will turn all auto-answer calls, including handsfree announced transfers to the extension, into normal calls.

- **Off-Hook Station Analog Phones**

Analog phone extensions configured as [Off-Hook Station](#)^[278] can auto-answer transfers when off-hook and idle.

- **Headset Users**

The following applies to users on supported phones with a dedicated **HEADSET** button. These users, when in headset mode and idle will auto-answer the announced transfer enquiry call through the headset after hearing 3 beeps. The transfer completion will require them to press the appropriate call appearance unless they are set to [Headset Force Feed](#)^[620].

- **Twinning**

Handsfree announced transfer calls to users with twinning enabled will be turned into normal calls.

- **Small Community Network Support**

Dial Direct is supported to targets across a Small Community Network, therefore allowing handsfree announced transfers to remote SCN users.

Full Handsfree Transfer Operation

If required the IP Office system can be configured to allow the full handsfree announced transfer process, ie. both the enquiry call and the transfer, to be auto-answered on supported phones. This is done by entering **FORCE_HANDSFREE_TRANSFER** into the [Source Numbers](#)^[275] of the [NoUser](#)^[750] [user](#)^[750] and rebooting the IP Office system

9.2 User Directory Access

On Avaya phones with suitable displays, the various IP Office directories can be accessed. The user can then select which directory they want to search and then search that directory by dialing part of the required name and selecting from the displayed matches.

- On phones with a **Contacts** button, that button can be used to access the IP Office directories plus the users own centralized personal directory. The user is able to select from directories of **All**, **Personal**, **External**, **User** or **Groups**.
- On other phones with a programmable button set to the **Directory** ⁽⁵⁹⁸⁾ (**Dir**) function. The user is able to select from directories **INDeX** (internal extensions), **Group** (Hunt Groups) or **Extrn** (numbers in the IP Office Directory). On phones with a **Contacts** button it will access the same directories as the **Contacts** button detailed above.
- On phones with a **Menu** ⁽⁵⁹⁸⁾ button, that button can be used to access the same directories as a **Directory** programmable button. Press **Menu** ⁽⁵⁹⁸⁾ and select **Dir**. Alternatively, press **Menu** ⁽⁵⁹⁸⁾ twice, then press **▶** and then select **Dir**.
- For many programmable button function that require entry of a number when pressed, a **Dir** option may be displayed on the phone display to allow number selection using the directories. In this case the directories available may be limited to those supported by the button function. See [Interactive Button Menus](#) ⁽⁵¹⁶⁾.
- When used to make internal calls, the name matches are based on the **User Names** and **Full Names** programmed into the system. If a user has a **Full Name** programmed then that takes precedence over their **User Name**. When used to make external calls, the name matches are based on entries in the IP Office Directory.

Name dialing functions on IP Office assume that the phone is using the standard ITU keypad as follows:



- Dialing Spaces**
For names that include spaces, the method of indicating a space has changed in IP Office 5.0.
 - Pre-IP Office 5.0**
To enter a name with a space, nothing is dialed for the space. For example "John S..." is dialed as 56467.
 - IP Office 5.0+**
To enter a name with a space, the 0 key is used for the space. For example "John S..." is dialed as 564607.

Selecting Dial By Name Mode

- Double-click  **System**.
- Select the **Telephony** tab.
- The **Dial By Name** checkbox operates as follows.
 - Dial By Name Selected**
Using the letter keys, start dialing the name that you want. For example, for names starting with John, dial 5646. The display will show the first match to the letters entered so far. Either enter further letters or use the ◀ and ▶ keys to scroll through the other matches found.
 - Dial By Name Not Selected** (*This mode is no longer support for IP Office 5.0+*)
Press the dial pad button that matches the first letter of the name you want. For example, to select **L**, press the 5 key three times.

9.3 Mobile Call Control

Mobile call control is only supported on IP500 systems and only on digital trunks. It allows a user receiving a call on their twinned device to access IP Office dial tone and then perform dialing action including making calls and activating short codes.

After answering a twinned call, the Mobile Call Control user can dial ** (within 1 second of each other) to place that call on hold and instead get dial tone from the IP Office. Any dialing is now interpreted as if the user is logged into an analog extension on the IP Office using their user settings. That also include user BLF status indication.

- Mobility Features licenses are required in the IP Office configuration for all the users that will be configured for any of the IP Office mobility features including Mobile Call Control and one-X Mobile Client usage. The same single license also allows the user to use mobile twinning, mobile call control and one-X Mobile if required. Check that the configuration contains valid **Mobility Features** licenses.
 - If a Mobile Call Control user remote hot desks to another IP Office system within an SCN, they take their licensed status with them rather than consuming or requiring a license on the remote system.
- **Trunk Restrictions**

This feature is only supported on the IP500 and only on the following trunk types:

 - IP500 Universal PRI (Not on T1 robbed-bit and E1R2 channels set to Loop Start emulation).
 - IP500 BRI.
 - IP500 SIP (RFC2833).
 - Routing via trunks that do not support clearing supervision (disconnect detection) should not be used.
 - DTMF detection is applied to twinned calls to a user configured for this feature. This will have the following effects:
 - DTMF dialing is muted though short chirps may be heard at the start of any DTMF dialing.
 - DTMF dialed by the user will not be passed through to other connected equipment such as IVR or Voicemail.
- **WARNING**

This feature allows external callers to use features on your phone system and to make calls from the phone system for which you may be charged. The only security available to the system is to check whether the incoming caller ID matches a configured users' **Twinned Mobile Number** setting. The IP Office cannot prevent use of these features by caller's who present a false caller ID that matching that of a user configured for access to this feature.

Using Mobile Call Control

In addition to using ** to access mobile call control, the user has access to the following additional controls:

- **Clearing a Call: *52**

It may be necessary to clear a connected call, for example after attempting a transfer and hearing voicemail or ringing instead. To do this dial ** for dial tone and then ***52** (this is a [default system short code](#)^[435] and can be changed if required).
- **Return to Dial Tone: ##**

Return to dial tone after getting busy, number unobtainable or short code confirmation tones from the IP Office.

Enabling Outgoing Mobile Call Control

1. License Mobile Features

Enter the licenses for Mobile Twinning and confirm that they are valid by merging and retrieving the configuration.

2. Configure the user for Mobile Twinning and Mobile Call Control

On the [User | Mobility](#) ^[297] tab do the following:

- Enable **Mobility Features** for the user.
 - Set the **Twinned Mobile Number** for the user's twinned calls destination.
- Digits are matched from right to left.
 - The match must be at least 6 digits. If either the CLI or the Mobile Twinned Number is less than 6 digits no match will occur.
 - Matching is done for up to 10 digits. Further digits are ignored. If either the CLI or Mobile Twinned Number is less than 10 digits, matching stops at that shorter length.
 - If multiple matches occur the first user in the configuration is used. IP Office Manager will warn against configuration where such a conflict may exist.
 - Select **Can do Mobile Call Control**.
3. On systems with some unsupported trunk types, further changes such as Outgoing Group ID, system shorts codes and ARS may be necessary to ensure that calls to the mobile twinned numbers are only routed via the

Incoming Mobile Call Control

The IP Office can be configured to allow Mobile Call Control users to use this function when making an incoming call to the IP Office. This requires the user to make the incoming call from the same CLI as their Mobile Twinning Number (even if they do not actually use Mobile Twinning).

The call will be rejected:

- If the caller ID is blank or withheld.
- If the caller ID does not match a Twinned Mobile Number of a user with Can do Mobile Call Control enabled.
- If the call is received on a trunk type that does not support Mobile Call Control.

Enabling Incoming Mobile Call Control

1. License Mobile Features

Enter the licenses for Mobile Twinning and confirm that they are valid by merging and retrieving the configuration.

2. Configure the user for incoming Mobile Call Control

On the [User | Mobility](#) ^[297] tab do the following:

- Enable **Mobility Features** for the user.
- Set the **Twinned Mobile Number** to match the CLI of the device from which the user will be making calls.
- Select **Can do Mobile Call Control**.

3. Add a FNE Short Code

In the system short codes section of the configuration add a short code similar to the following. Key points are the use of the **FNE Service** feature and the **Telephone Number** value **31**.

- **Short Code:** *99
- **Feature:** FNE Service
- **Telephone Number:** 31

4. Add an Incoming Call Route for the user

Create an incoming call route that matches the user's CLI and with the FNE short code created above as its destination.

5. On systems with some unsupported trunk types, further changes such as Incoming Group ID changes may be necessary to ensure that only calls received on trunks that support Mobile Call Control are routed to this short code.

Mobile Direct Access (MDA)

A new FNE code (FNE32) is supported for the IP Office 4.2 Q3 2009 maintenance release and higher. For a Mobile Call Control or one-X Mobile client user, FNE32 immediately redials on switch the DDI digits received with the call rather than returning dial tone and waiting for DTMF digits as with FNE31. This is called Mobile Direct Access (MDA).

MDA requires the user's external telephony provider to provide a direct trunk with DDI to the IP Office (ie. an ISDN or SIP trunk). By assigning a specific incoming line group ID to the trunk, an incoming call route can be created for the same line group ID with blanks incoming number and incoming CLI fields. The destination is a short code set to FNE32.

User validation is performed using the CLI in the same way as for normal Mobile Call Control. In addition the call will be rejected no DDI digits are provided. Once connected the user can use the other Mobile Call Control features such as **.

BRI Line | Short Codes | Channels

Line Number: 06 | Line SubType: ETSI

Card: 2

Port: 10

Telephone Number: | TEI: 0

Incoming Group ID: 20 | Outgoing Group ID: 0

Prefix: | Number of Channels: 2

Standard | Voice Recording | Destinations

Bearer Capability: Any Voice

Line Group Id: 20

Incoming Number: | Incoming Sub Address: | Incoming CLI: |

Standard | Voice Recording | Destinations

	TimeProfile	Destination	Fallback Extension
▶	Default	*99	

Short Code

Code: *99

Feature: FNE Service

Telephone Number: 32

Line Group Id: 0

9.4 one-X Mobile Client

IP500 systems running IP Office 4.2+ support the Avaya one-X Mobile Client on Windows and Symbian mobile cell phones. This uses DID numbers (one for each feature required) to activate and use various one-X Mobile features supported by the IP Office system.

The IP Office is configured to route incoming calls on those DID numbers to short codes for each feature. The caller's incoming CLI is then checked for a match against the mobile twinning and forwarding numbers of those users configured for one-X Mobile operation. If a match is found access to the one-X feature is allowed using the identity of that user as if they were now dialing from an extension on the IP Office system.

- **WARNING**

This feature allows external callers to use features on your phone system and to make calls from the phone system for which you may be charged. The only security available to the system is to check whether the incoming caller ID matches a configured users' **Twinned Mobile Number** setting. The IP Office cannot prevent use of these features by caller's who present a false caller ID that matching that of a user configured for this feature.

Example

Stage	Events
Setup the User's Mobile Cell Phone for one-X Mobile	1. The one-X Mobile client application has been loaded onto a user's mobile cell phone. 2. A configuration file for the IP Office one-X functions is also loaded. Within this the DDI numbers allocated for one-X mobile features are split into two parts; a shared DDI prefix for IP Office system and then a DDI suffix for each require one-X feature. Whenever a one-X feature is selected by the user, the prefix and the appropriate suffix for the feature are combined into a number dialled by the users mobile cell phone.
User selects a one-X Mobile feature on their phone	1. Within the one-X Mobile client application on their phone, the user selects the 'dial tone' feature. 2. The DDI prefix and the DDI suffix in the phone's one-X Mobile configuration file are combined to dial the appropriate DDI number. For this example 555 776 9900.
The DDI call is received by the IP Office	1. The call is received by the IP Office along with the number of DDI digits that the line provider passes through. For this example the four digits 9900. 2. On the IP Office an Incoming Call Route has been added with the Incoming Number field set to 99XX. This will match the 9900 digits just received. 3. The Incoming Call Route is set with the Destination of 777#. The # will be replaced by the XX part of the DDI number matched above. For this example 00 will set the destination as 77700.
Check the CLI received with the call for a one-X mobile user match	1. The IP Office system has a system short code 777XX. Its settings are 777XX / N / FNE. 2. The short code uses the FNE feature. This causes the IP Office system to check that it has received an incoming CLI number with the call. The last 6 to 10 digits of that number are checked for a match against the Twinned Mobile Number or Forward Number of those users on the system who have been configured as Can have one-X Mobile Client. 3. Once a match occurs the call proceeds using the identity of the user matched.
The appropriate one-X Mobile feature is provided to the user.	1. The short code takes 777XX and then passes the value N to the FNE feature. Therefore in our example 77700 will pass the value 00. 2. The value 00 matches the FNE feature Dial Tone (also called Idle Appearance Select). This feature causes the IP Office to return system dial tone to the user so that they can now dial the number they require as a call from the IP Office system.

Restrictions

• Supported Phones and Phone Client Software

IP Office 4.2+ supports Avaya one-X Mobile Client on mobile cell phones that run **Windows Mobile V5/V6** and **Symbian Single-Mode (V4.0)**. For the regularly updated list refer to the Avaya one-X Mobile section of the Avaya support website (support.avaya.com). This same site is also the location of the client software files that need to be installed on the phone and how to transfer those files to the phone.

- Each phone requires a settings file. That file is used to configure the features the user can access and the DID number that the phone should dial in order to access the feature.

• Trunk Restrictions

This feature is only supported on the IP500 and only on the following trunk types:

- IP500 Universal PRI (Not on T1 robbed-bit and E1R2 channels set to Loop Start emulation).
- IP500 BRI.
- IP500 SIP (RFC2833).
- Routing via trunks that do not support clearing supervision (disconnect detection) should not be used.

• Users

- One-X Mobile is an IP Office licensed feature using a Mobility Features license for each user.
- It is only useable by users who have **Can use one-X Mobile Client** and **Mobility Features** enabled in the IP Office configuration.
- The CLI provided on calls from their mobile cell phone to the IP Office must match the Twinned Mobile Number or Forwarding number set on the IP Office. At least 6 digits are required.
 - For user's setup for one-X Mobile Client, changes to their Mobile Twinning status made through the IP Office configuration or using a **Twinning** button are not reflected in the status of the **Extension to Cellular** icon on their mobile client. However, changes to the **Extension to Cellular** status made from the mobile client are reflected by the **Mobile Twinning** field in the IP Office configuration. Therefore for one-X Mobile Client users it is recommended that they control their Mobile Twinning status through the one-X Mobile Client rather than through a Twinning button.

Additional Documentation

The following guides include details of how to install and configure the software on the phones. These documents are available from the one-X Mobile client section of the Avaya support website (support.avaya.com).

Document	Doc Code
Avaya one-X Mobile Edition Device Compatibility List	327824
Avaya one-X Mobile Edition for S60 User Documentation	16-601288
Avaya one-X Mobile Edition for Windows Mobile 5 Pocket PC and Treo Edition Install, Admin and User Guide R4.0	16-601613
Avaya one-X Mobile Edition for Windows Mobile 5 Smartphone Edition User Guide	16-602323

Feature Name Extension (FNE) Features

The one-X Mobile client accesses IP Office features using DID numbers routed to IP Office short codes set to the FNE feature. The number set in the short code indicates the particular FNE feature required.

The table below lists the FNE features supported by IP Office. The settings file tag is the string used in the phone software settings file to associate a feature with a DID number.

Value	Function (Setting File Tag)
00	Dial Tone (IDLE_APPEARANCE_SELECT) - Provide IP Office dial tone to the user. Similar to Mobile Call Control ^[714] .
01	Active Appearance Call Select (ACTIVE_APPEARANCE_SELECT) - Attempt a call acquire (steal) on the user's primary extension. If there is no active or ringing call to acquire, give IP Office dial tone.
02	Automatic Callback (AUTO_CALL_BACK_TOGGLE) - Set a ringback when free when calling an IP Office extension number that does not answer or returns busy.
04	Call Forwarding All Calls (CALL_FORWARDING_ALL_ACTIVATION) - Switch forward unconditional on.
05	Call Forwarding Busy (CALL_FORWARDING_BUSY_NO_ANSWER_ACTIVATION) - Switch forward on busy and forward on no answer on.
06	Call Forwarding Deactivation (CALL_FORWARDING_DISABLE) - Switch all forwarding off.
07	Call Park (CALL_PARK) - Park call on the IP Office using the user's extension ID.
08	Call Unpark (CALL_UNPARK) - Unpark a call parked using the user's extension ID.
09	Call Pickup Group (CALL_PICKUP_GROUP) - Call Pickup Any ^[444]
10	Call Pickup Directed (CALL_PICKUP_DIRECTED) - Directed Call Pickup using the entered user or hunt group number.
12	Calling Party Number Block (CALLING_PARTY_NUMBER_BLOCK) - Make a call from IP Office with CLI withheld.
13	Calling Party Number Unblock (CALLING_PARTY_NUMBER_UNBLOCK) - Make a call from the IP Office with CLI allowed.
14	Conference on Answer (CONFERENCE_ON_ANSWER) - Make an additional call and add them to a conference.
15	Drop (DROP_LAST_ADDED_PARTY) - Drop last party added to a conference.
16	Exclusion (EXCLUSION) - Make the existing call private ^[740] . Repeat to remove privacy from existing call.
17	Held Appearance Select (HELD_APPEARANCE_SELECT) - Pickup a held call on the user's primary extension.
18	Dial Tone (IDLE_APPEARANCE_SELECT) - Same as 00 - Dial Tone.
19	Off PBX Call Enable (OFF_PBX_ENABLE) - Switch the user's Mobile Twinning on.
20	Off PBX Call Disable (OFF_PBX_DISABLE) - Switch the user's Mobile Twinning off.
24	Send All Calls Enable (SEND_ALL_CALLS_ENABLE) - Do Not Disturb On.
25	Send All Calls Disable (SEND_ALL_CALLS_DISABLE) - Do Not Disturb Off.
26	Transfer On Hang Up (TRANSFER_ON_HANGUP) - Unsupervised transfer.
27	Transfer to Voicemail (TRANSFER_TO_COVERAGE) - Transfer the held IP Office call to the user's voicemail mailbox.
31	Used for Mobile Call Control ^[714] .
32	Used for Mobile Direct Access ^[710] .

Example Configuration Overview

In this example, two DID numbers are going to be used to allow one-X Mobile users to access the FNE functions 00, 01 and 26. This will allow those users respectively to obtain IP Office dial tone, to acquire a call alerting on their normal extension and to transfer a call.

The DID numbers requested were 555 76769900, 555 76769901 and 555 76769926 with 4 digits being passed by the provided to the IP Office, ie. 9900, 9901 and 9926.

- This example is made much simpler by using both a continuous DID range and one where the last two digits of the DID numbers match the IP Office FNE short code features required. This allows implementation using a single short code and a single incoming call route.

IP Office Configuration

1. IP Office one-X Mobile Client Licensing

Mobility Features licenses are required in the IP Office configuration for all the users that will be configured for any of the IP Office mobility features including one-X Mobile Client usage. The same single license also allows the user to use mobile twinning and mobile call control if required. Check that the configuration contains valid **Mobility Features** licenses.

2. IP Office User Configuration

For each user, the following must be set on the [User | Mobility](#) ^[29] tab.

- Select **Mobility Features**.
- Select **Can have one-X Mobile Client**.
- Set their **Twinned Mobile Number** to match the CLI of calls from the device on which they will be using the one-X Mobile Client software. This match is used to determine the user for the FNE feature.
 - Digits are matched from right to left.
 - The match must be at least 6 digits. If either the CLI or the Mobile Twinned Number is less than 6 digits no match will occur.
 - Matching is done for up to 10 digits. Further digits are ignored. If either the CLI or Mobile Twinned Number is less than 10 digits, matching stops at that shorter length.
 - If multiple matches occur the first user in the configuration is used. IP Office Manager will warn against configuration where such a conflict may exist.

3. FNE System Short Code

This short code is used as the destination for calls received on the DID numbers requested for one-X Mobile usage.

- **Short Code:** 777XX
- **Number:** N
- **Feature:** [FNE](#) ^[47]

4. Incoming Call Route

An incoming call route is required to send the DID calls to the FNE short code. Since a continuous range of DID numbers has been requested, with end digits that match the feature required, this can be done with a single incoming call route entry in the IP Office configuration.

- **Incoming Number:** 99XX
- **Destination:** 777#
The # matches any digits received for the XX part of the incoming number.
- Other fields can be configured as required. For example using line group ID's to restrict one-X Mobile client access to those trunks known to support this feature.

one-X Mobile Client Configuration File

During installation of the one-X Mobile software, a settings file is installed on the phone. For Windows phones, the file is called **settings.ini** file, for Symbian single-mode phones the file is called **setting.1xme** file. For some phones, once the software has been installed, the settings file values can be changed through the phone interface.

	Example Settings Files	
	Windows Mobile 'settings.ini'	Symbian 'settings.1xme'
Dialing Prefixes and Codes	<pre>PRE_IMS=Dial; DID_PREFIX = 1555776; INTERNATIONAL_DIRECT_DIAL_PREFIX = 011; NATIONAL_DIRECT_DIAL_PREFIX = 1; HOME_COUNTRY_DIAL_CODE = +1; ARS_CODE = ; EXTENSION_LENGTH = 3; NATIONAL_NUMBER_LENGTH = 10; USERS_EMERGENCY_NUMBERS = 112,999,911; SETTINGS_PIN = 1234;</pre>	<pre>DID_PREFIX = 1555776; INTERNATIONAL_DIRECT_DIAL_PREFIX = 011; NATIONAL_DIRECT_DIAL_PREFIX = 1; HOME_COUNTRY_DIAL_CODE = +1; ARS_CODE = ; EXTENSION_LENGTH = 3; NATIONAL_NUMBER_LENGTH = 10; USERS_EMERGENCY_NUMBERS = 112,999,911; SETTINGS_PIN = 1234;</pre>
DDI Suffixes for Features These are used with the DDI_Prefix above to complete the DDI number for a particular FNE feature (see the table of possible features above).	<pre>IDLE_APPEARANCE_SELECT = 9900; ACTIVE_APPEARANCE_SELECT = 9901; AUTO_CALL_BACK_TOGGLE = 9902; DISABLE_AUTO_CALL_BACK_TOGGLE = 9903; CALL_FORWARDING_ALL_ACTIVATION = 9904; CALL_FORWARDING_BUSY_NO_ANSWER_ACTIVATION = 9905; CALL_FORWARDING_DISABLE = 9906; CALL_PARK = 9907; CALL_UNPARK = 9908; CALL_PICKUP_GROUP = 9909; CALL_PICKUP_DIRECTED = 9910; CALL_PICKUP_GROUP_EXTENDED = ; CALLING_PARTY_NUMBER_BLOCK = 9912; CALLING_PARTY_NUMBER_UNBLOCK = 9913; CONFERENCE_ON_ANSWER = 9914; DROP_LAST_ADDED_PARTY = 9915; EXCLUSION = 9916; HELD_APPEARANCE_SELECT = 9917; OFF_PBX_ENABLE = 9919; OFF_PBX_DISABLE = 9920; SEND_ALL_CALLS_ENABLE = 9924; SEND_ALL_CALLS_DISABLE = 9925; TRANSFER_ON_HANGUP = 9926; TRANSFER_TO_COVERAGE = 9927;</pre>	<pre>IDLE_APPEARANCE_SELECT = 9900; ACTIVE_APPEARANCE_SELECT = 9901; AUTO_CALL_BACK_TOGGLE = 9902; DISABLE_AUTO_CALL_BACK_TOGGLE = 9903; CALL_FORWARDING_ALL_ACTIVATION = 9904; CALL_FORWARDING_BUSY_NO_ANSWER_ACTIVATION = 9905; CALL_FORWARDING_DISABLE = 9906; CALL_PARK = 9907; CALL_UNPARK = 9908; CALL_PICKUP_GROUP = 9909; CALL_PICKUP_DIRECTED = 9910; CALL_PICKUP_GROUP_EXTENDED = ; CALLING_PARTY_NUMBER_BLOCK = 9912; CALLING_PARTY_NUMBER_UNBLOCK = 9913; CONFERENCE_ON_ANSWER = 9914; DROP_LAST_ADDED_PARTY = 9915; EXCLUSION = 9916; HELD_APPEARANCE_SELECT = 9917; OFF_PBX_ENABLE = 9919; OFF_PBX_DISABLE = 9920; SEND_ALL_CALLS_ENABLE = 9924; SEND_ALL_CALLS_DISABLE = 9925; TRANSFER_ON_HANGUP = 9926; TRANSFER_TO_COVERAGE = 9927;</pre>
Enterprise Settings	<pre>SUB_MENU_NAME = My Company; <Voicemail> = *17;</pre>	<pre>SUB_MENU_NAME = My Company; <Voice Mail> = *17;</pre>

- Do NOT modify the tag names shown before the equals signs.
- Do NOT remove any tag rows. If a feature is not being used or is unavailable leave the value between the '=' and ';' blank.
- Do NOT remove the terminating semi-colon.
- All values MUST go between the '=' and ';'.
- For those tags that match FNE features, the value should be the DID digits that will be passed to the IP Office for routing to the appropriate short code. This value is used in conjunction with the DID prefix to form the full telephone number.
- The following tags MUST have values set (not necessarily those shown as examples below):

```
DDI_PREFIX = +1555776
INTERNATIONAL_DIRECT_DIAL_PREFIX = 011;
NATIONAL_DIRECT_DIAL_PREFIX = 1;
HOME_COUNTRY_DIAL_CODE = 1;
ARS_CODE = ;
EXTENSION_LENGTH = 3;
NATIONAL_NUMBER_LENGTH = 10;
USERS_EMERGENCY_NUMBERS = 112,999,911;
```

Configuration File Fields

- **LOCATION_NAME = ;** *for example LOCATION_NAME = Boston;*
This is a required tag for Windows Mobile .ini settings file only. It is not present or required for a Symbian configuration file. The string defines the location name of the one-X Mobile server and it will be displayed in the Avaya one-X Mobile menu on the mobile phone. If you have multiple locations, each location must have a unique LOCATION_NAME value.
- **PRE_IMS = ;** *This tag is not used by IP Office.*
- **DID_PREFIX = ;** *for example DID_PREFIX = 173255512;*
This required tag defines the DID/DDI prefix that is used to specify the FNE features in the IP Office. For example, if you are using 73255512XX as DID/DDI numbers to activate your FNEs, the DID_PREFIX as shown above would be set intentionally short 2 digits since the FNE tag will be populated with the last 2 digits (e.g. IDLE_APPEARANCE_SELECT = 85;). The DID_PREFIX and the FNE digits when put together must equal the full DID/DDI number like in this example.
- **INTERNATIONAL_DIRECT_DIAL_PREFIX = ;** *for example INTERNATIONAL_DIRECT_DIAL_PREFIX = 011;*
This required tag specifies the international call prefix for your country.
- **NATIONAL_DIRECT_DIAL_PREFIX = ;** *for example NATIONAL_DIRECT_DIAL_PREFIX = 1;*
This optional tag specifies the prefix for dialing national numbers.
- **HOME_COUNTRY_DIAL_CODE = ;** *for example HOME_COUNTRY_DIAL_CODE = 1;*
This required tag is the home country code.
- **ARS_CODE = ;** *for example ARS_CODE = 9;*
This optional tag set the ARS access code.
- **EXTENSION_LENGTH = ;** *for example EXTENSION_LENGTH = 5;*
This required tag sets the dial plan length of the IP Office.
- **NATIONAL_NUMBER_LENGTH = ;** *for example NATIONAL_NUMBER_LENGTH = 9, 10;*
This required tag specifies the number of digits for a national number. This field accepts multiple numbers separated by commas for countries that have different number lengths.
- **USERS_EMERGENCY_NUMBERS = ;** *for example USERS_EMERGENCY_NUMBERS = 911;*
This is a required tag and it specifies the numbers dialed for emergency.
- **SETTINGS_PIN = ;** *for example SETTINGS_PIN = 1234;*
This is an optional tag. When set, the client will prompt for this pin when installing or modifying the configuration.

9.5 Advice of Charge

IP Office 4.0 supports advice of charge (AOC) on outgoing calls to ISDN exchanges that provide AOC information. It supports AOC during a call (AOC-D) and at the end of a call (AOC-E). This information is included in the IP Office Delta Server 5.2.5 and higher output.

AOC is only supported on outgoing ISDN exchange calls. It is not supported on incoming calls, reverse charge calls, QSIG and non-ISDN calls. Provision of AOC signalling will need to be requested from the ISDN service provider and a charge may be made for this service.

For users, display of AOC information is only supported on T3 phones, T3 IP phones and Phone Manager.

- The user who makes an outgoing call is assigned its charges whilst they are connected to the call, have the call on hold or have the call parked.
- If AOC-D is not available, then all indicated by AOC-E are assigned to the user who dialed the call.
- If AOC-D is available:
 - If the call is transferred (using transfer, unpark or any other method) to another user, any call charges from the time of transfer are assigned to the new user.
 - If the call is manually transferred off-switch, the call charges remain assigned to the user who transferred the call.
 - If the call is automatically forwarded off switch, subsequent call charges are assigned to the forwarding user.
 - AOC-D information will only be shown whilst the call is connected. It will not be shown when a call is parked or held.
 - Call charges are updated every 5 seconds.
- For conference calls all call charges for any outgoing calls that are included in the conference are assigned to the user who setup the conference, even if that user has subsequently left the conference.

Enabling AOC Operation

1. Set the System Currency

The **Default Currency**^[166] ([System | Telephony | Telephony](#)^[166]) setting is by default set to match the system locale. Note that changing the currency clears all call costs stored by the IP Office except those already logged through Delta Server.

2. Set the Call Cost per Charge Unit for the Line

AOC can be indicated by the ISDN exchange in charge units rather than actual cost. The cost per unit is determined by the IP Office using the **Call Cost per Charge Unit** setting which needs to be set for each line. The values are 1/10,000th of a currency unit. For example if the call cost per unit is £1.07, a value of 10700 should be set on the line.

3. Enable User AOC Display

By default users do not see call charges. The **Display Charges** (User | T3 Options | T3 Telephony) setting is used to switch this option on or off. Note that the display of AOC information is only supported on T3 phones.

4. Applying a Call Cost Markup

It may be a requirement that the cost applied to a user's calls has a mark-up (multiplier) applied to it. This can be done using the **Call Cost Markup**^[277] ([User | Telephony | Call Settings](#)^[277]) setting. The field is in units of 1/100th, for example an entry of 100 is a markup factor of 1.

AOC Short Codes

A number of short code features exist that can be used with AOC. These features can only be used with T3 phones.

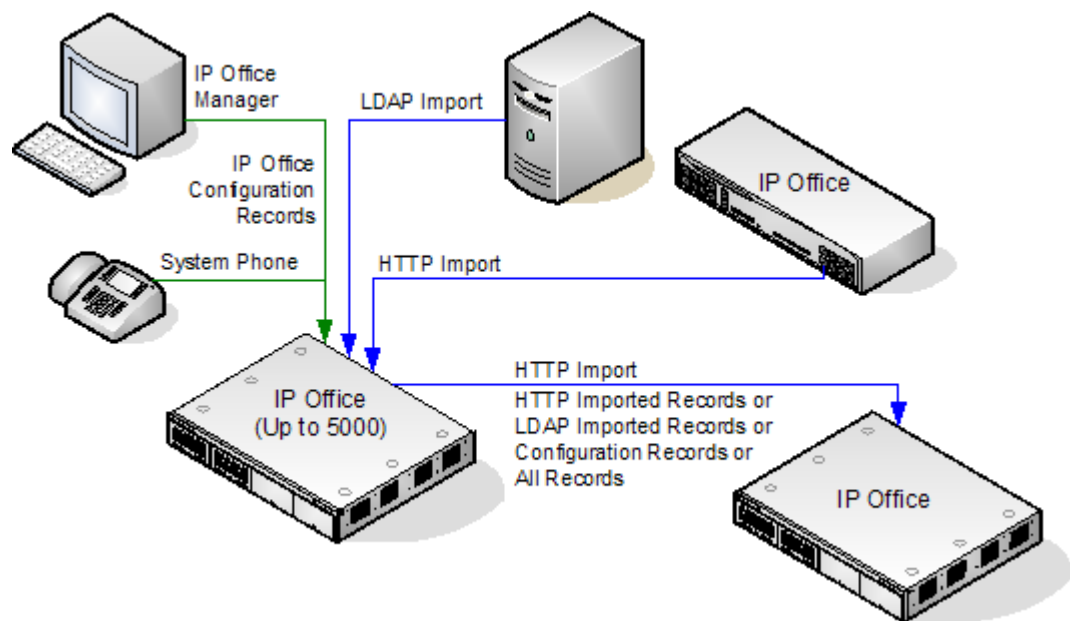
- **AOC Previous Call**
Displays the call costs of the user's previous call if AOC information was provided with that call.
- **AOC Total**
Display the cumulative total cost of the user's calls for which AOC information is available.
- **AOC Reset Total**
Set the cumulative total (units and cost) for the user's calls back to zero.

9.6 Centralized System Directory

Directory services can be used to import directory entries (names and numbers) from external sources. These sets of entries are regularly re-imported.

For IP Office 5.0+, the following changes have been made:

- LDAP Import** ^[175]
For IP500 systems,
 - The number of directory records that can be imported using LDAP has increased from 500 records to up to 5000 records. LDAP import is configured through the [System | Directory Services | LDAP](#) ^[175] form.
 - LDAP records are now included in the directory listed by phones rather than just the within IP Office user applications.
- HTTP Import** ^[179]
IP Office systems are able to import the directory entries from another IP Office using HTTP. This is supported within an SCN or over IP connections. HTTP import is configured through the [System | Directory Services | HTTP](#) ^[179] form. The records imported can be any or all of the following: LDAP imported entries, HTTP imported entries, configuration entries.
- System Directory Records** ^[359]
These records are entered directly into the IP Office system configuration and are permanently stored as part of the configuration. System directory records override LDAP/HTTP imported records.
 - The number of directory records that can be configured with the IP Offices own configuration using Manager has increased from 1000 to 2500. These are entered through the [Directory](#) ^[359] section.
 - 1608/1616 Phone user's with **System Phone** privileges, can add, delete and edit the system directory records of the system at which they are logged in. They cannot edit LDAP and/or HTTP imported entries.
- NoUser Settings**
The options **ExtendDirectLimit** and **ExtendLDAPDirectLimit** are no longer supported.



IP Office	Number of Directory Records			Total Number of Directory Records
	IP Office Configuration	LDAP Import	HTTP Import	
IP500	2500	5000	5000	5000
IP412	2500	2500	2500	2500
IP406 V2	2500	2500	2500	2500

Directory entries are used for two types of function:

- Directory Dialing**
Directory numbers are displayed by IP Office user applications such as Phone Manager and SoftConsole. Directory numbers are also viewable through the [Dir](#) ^[598] function on many IP Office phones. In both cases they allow the user to select the number to dial by name. In this usage, the directory will also contain the names and numbers of users and hunt groups on the IP Office system.

- The **Dir** function groups directory entries shown to the phone user into the following categories. In some scenarios, the categories displayed may be limited to those supported for the function being performed by the user:
 - **External**
Directory entries from the IP Office configuration. For IP Office 5.0 this includes HTTP and LDAP imported entries.
 - **Groups**
Groups on the IP Office system. If the system is in a Small Community Network it will also include groups on other IP Office systems in the network (For pre-IP Office 5.0 systems, this feature requires the IP Offices to have **Advanced Small Community Networking** licenses).
 - **Users or Index**
Users on the IP Office system. If the system is in a Small Community Network it will also include users on other IP Office systems in the network (For pre-IP Office 5.0 systems, this feature requires the IP Offices to have **Advanced Small Community Networking** licenses).
 - **Personal**
Available for T3 phones, T3 IP phones and 1600 Series phones (IP Office 5.0+). These are the user's personal directory entries stored within the IP Office system configuration.
- **Name Matching**
Directory entries are also used to associate a name with the dialed number on outgoing calls or the received CLI on incoming calls. When name matching is being done, a match in the users personal directory overrides any match in the system directory. Note that some IP Office user applications also have their own user directory.
 - The IP Office Phone Manager and SoftConsole applications have their own user directories which are also used by the applications name matching. Matches in the application directory may lead to the application displaying a different name from that shown on the phone.
 - Name matching is not performed when a name is supplied with the incoming call, for example QSIG trunks.

For IP Office 5.0, the following characters are supported in directory entries. They are supported in both system configuration entries and in HTTP/LDAP imported entries.

- **? = Any Digit**
Directory entries containing a **?** are only used for name matching against the dialed or received digits on outgoing or incoming. They are not included in the directory of numbers to dial available to users through IP Office phones or applications. The wildcard can be used in any position but typically would be used at the end of the number.
 - In the following example, any calls where the dialed or received number is 10 digits long and starts 732555 will have the display name Holmdel associated with them.
 - **Name:** Holmdel
 - **Number:** 9732555????
- **(and) brackets = Optional Digits**
These brackets are frequently used to enclose an optional portion of a number, typically the area code. Only one pair of brackets are supported in a number. Entries containing digits inside () brackets are used for both name matching or user dialling. When used for name matching, the dialed or received digits are compared to the directory number with and without the () enclosed digits. When used for dialling from a phone or application directory, the full string is dialed with the () brackets removed.
 - The following example is a local number. When dialed by users they are likely to dial just the local number. However on incoming calls, for the CLI the telephony provider includes the full area code. Using the () to enclose the area code digits, it is possible for the single directory entry to be used for both incoming and outgoing calls.
 - **Name:** Raj Garden
 - **Number:** 9(01707)373386
- **Space and - Characters**
Directory entries can also contain spaces and - characters. These will be ignored during name matching and dialling from the directory.

Imported Records

- Imported directory records are temporary until the next import refresh. They are not added to the IP Office system's configuration.
- They cannot be viewed or edited using IP Office Manager or edited by a System Phone user.
- The temporary records are lost if IP Office is restarted. However the IP Office will request a new set of imported directory records after an IP Office restart.

- The temporary records are lost if an IP Office configuration containing Directory changes is merged. The IP Office will then import a new set of temporary records without waiting for the **Resync Interval**.
- If an configuration record is edited by a System Phone user to match the name or number of a temporary record, the matching temporary record is discarded.

Importation Rules

When a set of directory records is imported by HTTP or LDAP, the following rules are applied to the new records:

- Imported records with a blank name or number are discarded.
- Imported records that match the name or number of any existing record are discarded.
- When the total number of directory records has reached the system limit, any further imported records are discarded.

IP Office	Number of Directory Records			Total Number of Directory Records
	IP Office Configuration	LDAP Import	HTTP Import	
IP500	2500	5000	5000	5000
IP412	2500	2500	2500	2500
IP406 V2	2500	2500	2500	2500

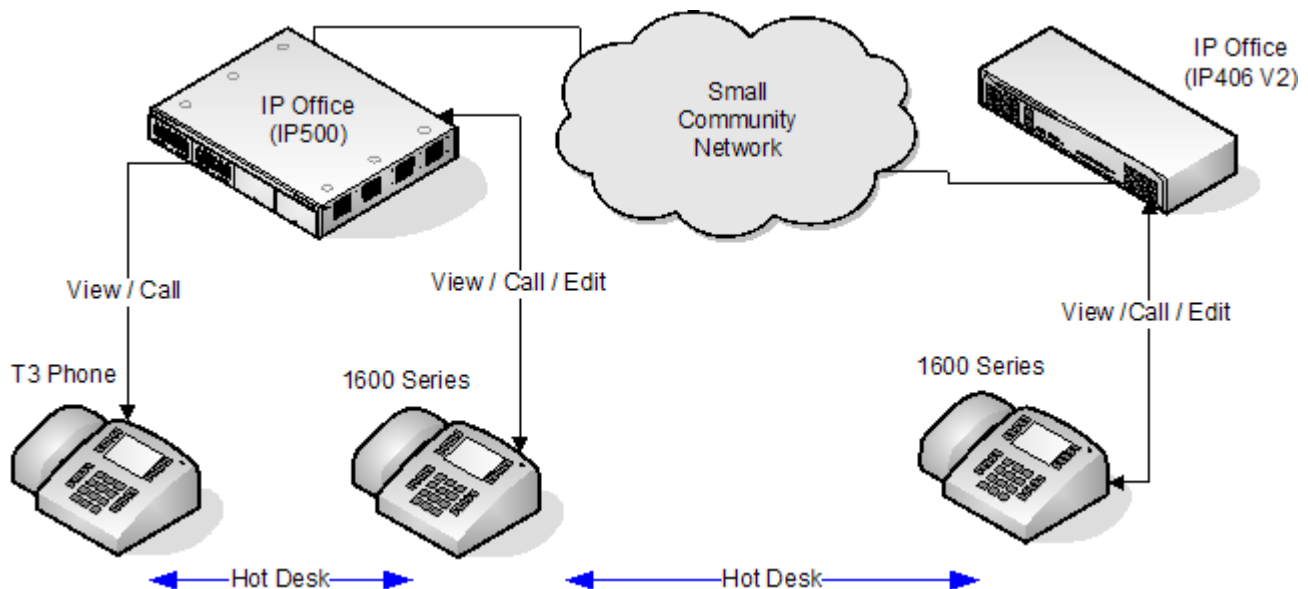
9.7 Centralized Personal Directory

Each IP Office user is able to have up to 100 personal directory records, up to the IP Office system limit.

- IP500: 10800 total records.
- IP412: 3600 total records.
- IP406 V2: 1900 total records.

For pre-IP Office 5.0 system, a user's personal directory was only usable from T3 Series phones. For IP Office 5.0+, a user's personal directory is also useable from 1608 and 1616 phones.

The user can view these records and use them to make calls when they are using a 1608, 1616 or T3 Series phone. In addition, on 1608 or 1616 phone, the user can edit their personal directory records.



When the user hot desks to another T3 or 1600 Series phone, their personal directory entries become accessible through the new phone. IP Office 5.0 also allow the user who hot desks to another IP Office in the Small Community Network to still use their personal directory.

The user personal directory entries can be entered and edited using IP Office Manager. This is done through the [User | Personal Directory](#) ^[304] menu.

9.8 Centralized Call Log

For IP Office 5.0+, the IP Office can store a [centralized call log](#)^[728] for users.

Each users' centralized call log can contain up to 30 call records for user calls (10 on IP412 and IP406 V2 systems). When this limit is reached, new call records replace the oldest record.

That call log is can be displayed on the phone, by pressing **Call Log**, when the user is using a 1608 or 1616 Series phone. The user can use the call log to make calls or to store as a personal speed dial. They can also edit the call log to remove records.

The centralized call log moves with the user if they log on and off from different phones, including if they hot desk within a Small Community Network.

Call Log Information

The following information is included in each centralized call log record:

Information	Description
Name	The name, of the caller or the party called, if available. Up to 31 characters. This text is similar to that shown on the phone display of 1600 Series phones. For example, on forwarded call details of the original target and the caller name are included, eg. Bob > Sue.
Number	The number associated with the call. Up to 31 digits.
Tag	A text tag can be associated with calls by several different methods. See Call Tagging ^[739] . Up to 31 characters. The tag is not shown within the call log display on phones.
Time and Date	The time and date of the call using the IP Office system time.
Duration	The call duration. For outgoing and answered calls this is the call connection time. For missed calls this is the call ringing time.
Record Type	Call log records can be Incoming, Outgoing or Missed. Note that these are calls to or from the user, not the phone, so it can include IP Office calls handled through a twinned device, mobile call control^[714], one-X Mobile Client^[717] or Phone Manager Telecommuter mode. • Incoming Calls to the user that the user then answered. This includes calls that the user answers on a twinned device. This also includes outgoing calls that are transferred to and answered by the user. • Outgoing Calls made by the user. • Missed Calls to the user that they did not answer. This includes calls while the user is logged off or in Do Not Disturb state. • Missed call records include an indication of what happened to the missed call. Options are Answered by Another, Answered by Voicemail or Lost (not answered on the IP Office). • Missed call records are also marked as either acknowledged or unacknowledged. If the user's call log contains any unacknowledged call log records, the Call Log lamp is lit when using a 1608 or 1616 phone. From the phone, viewing an unacknowledged record changes it to acknowledged. • If the user has also be configured to included missed hunt group calls in their call log, those are also marked as acknowledged or unacknowledged.
Count	The number of times a matching call has been logged. A matching call is one with the same name, number and type. Only one record is kept for matching calls, with the count increased by 1 and using the time and date of the most recent matching call.

If missed hunt group calls are also being logged, the IP Office stores up to 10 call records for each hunt group. When this limit is reached, new call records replace the oldest record.

Controlling Centralized Call Logging

The following controls exist for which users have their calls included in the centralized call log and which calls are included.

User Setting

The user centralized call log settings can be set through the user configuration ([User | Telephony | Call Log](#)^[283]) or through their associated user rights ([User Rights | Telephony | Call Log](#)^[394]).

- **Centralized Call Log:** *Default = System Default (On)*

This setting allows the use of centralized call logging to be enabled or disabled on a per user basis. The default is to match the system setting [Default Centralized Call Log On](#)^[174] ([System | Telephony | Call Log](#)^[174]). The other options are **On** or **Off** for the individual user. If off is selected, the call log shown on the users phone is the local call log stored by the phone.

System Settings ([System | Telephony | Call Log](#)^[174])

- **Default Centralized Call Log On:** *Default = On.*

When selected, each IP Office user is defaulted to have the IP Office store a call log of their calls. This call log will be displayed on the phone when the user is using a 1600 Series phone. The use of centralized call logging can be enabled/disabled on a per user basis using the [Centralized Call Log](#)^[283] user setting ([User | Telephony | Call Log](#)^[283]).

- **Logged Missed Calls Answered at Coverage:** *Default = Off.*

This setting controls how calls to a user, that are answered by a covering user should be logged in the centralized call log. This option applies for calls answered elsewhere (covered) by pickup, call coverage ([call coverage](#)^[669]) buttons or [coverage group](#)^[734], bridged appearance button, user BLF, voicemail, etc.

Setting	Targeted User	Covering User
Off (Default)	Nothing	Answered Call
On	Missed Call	Answered Call

- **Log Missed Hunt Group Calls:** *Default = Off.*

By default, hunt group calls are not included in any user's centralized call log unless answered by the user. If this option is selected, a separate call log is kept for each hunt group of calls that are not answered by anyone. It includes hunt group calls that go to voicemail.

- If missed hunt group calls are also being logged, the IP Office stores up to 10 call records for each hunt group. When this limit is reached, new call records replace the oldest record.
- Within the user call log setting ([User | Telephony | Call Log](#)^[283]) the list of hunt groups allows selection of which hunt groups' missed call records should be displayed as part of the centralized call log when a user is using a 1608 or 1616 phone.

Call Scenarios

This is not a comprehensive list. However it summarizes how the user call log is used in some common call scenarios.

Scenarios	User Call Log Notes
Authorization / Account Codes	Account and authorization codes used as part of a call are not included in user call logs.
Automatic Callback	If answered, they will show as an outgoing call to the target.
Application Calls	Calls made and answered using IP Office applications (including CTI interfaces) are logged as if the user made or answered the call using an extension.
Conference Calls	Conference calls are not included in the user call log.
Hold	When a user holds and then un-holds a call, the call duration includes the time the call was on hold.
Follow-Me	Calls to the user still appear in their user call log. The follow me calls do not appear in the user call log of the user who was the follow me destination.
Forward on Busy	If the forwarded call is answered, the forwarding user will have a Missed - Answered by Other call log record.
Forward on No Answer	If the forwarded call times out to voicemail, the user will have a Missed - Answered by Voicemail call log record.
Forward Unconditional	When forwarding to another number, there will be no record of forwarded calls in the forwarding users call log. When using the To Voicemail option, the forwarded call will be logged as a Missed - Answered by Voicemail call record.
Page Calls	Page calls are not included in any user call logs unless the page is answered (by pressing Conference). When answered the page is logged as a normal call between the two users involved.
Park	Retrieving a call from Park (even if the user is the one who parked the call) is logged as a incoming call.
Short Codes	Calls are only logged if they result in a call being made or a call being answered. Calls made using Break Out are not included.
Small Community Network	The user's call log records are stored by the IP Office system that is their home system, ie. the one on which they are configured. When the user is logged in on another system, new call log records are sent to the user's home system, but using the time and date on the system where the user is logged in. Hunt group call log records are stored on the IP Office system on which the hunt group is configured.
Suppressed Digits	Calls made with digit suppression enabled (AD Suppress button ^[56†]) are not included in the users call log.
Transfers	If the user answers and accepts a supervised transfer, they will have a incoming calls records. One for the transfer enquiry call and one for the transferred call. If the user is the target of an unsupervised transfer, they will have an Incoming or Missed call log. Note that even if the call being transferred was originally an outgoing call, for the user answering the transfer it is logged as a incoming call.
Twinning and Mobility	When a user has a twinned device (either internal twinning or mobile twinning), the user's call log operates regardless of which device the user uses to make or answer calls. Calls between the twinned devices, ie. the user transferring a call between devices, are not included in their call log. This includes calls made using mobile call control or a one-X Mobile client.

9.9 Coverage Groups

This feature is supported for IP Office 5.0+. For users with a **Coverage Group** selected, coverage group operation is applied to all external calls that are targeted to the user.

For external calls:

- In scenarios where an external call would normally have gone to voicemail, it instead continues ringing and also starts alerting the members of the coverage group.
- The follow me settings of Coverage Group members are used, the forwarding settings are not.
- If the user is not available, for example if they have logged off or set to do not disturb, coverage group operation is applied immediately.
- If the user is configured for call forward on busy, coverage operation is applied to the user's calls forwarded to the forward on busy destination.

Coverage group operation is not applied to the following types of call:

- Hunt group calls.
- Recall calls such as transfer return, hold recall, park recall, automatic callback.

The Coverage Group is set through the user's [User | Telephony | Supervisor Settings](#)^[279] or through their associated [User Rights | Telephony | Supervisor Settings](#)^[393]. The only group settings used are:

- The list of group members. They are treated as a collective group regardless of the group's configuration.
- If the group has **Night Server Fallback Group** and or **Out of Service Fallback Group** set, the members of those groups are used if the coverage group is set to night service mode or out of service mode respectively.

9.10 T38 Fax Relay

Group 3 Fax is the common standard for fax transmission over analog and digital (TDM) phone lines. However, the sending of fax calls over IP lines is not normally possible or proves unreliable due to the distortion caused during encoding of the audio signal.

Within an IP Office Small Community Network (SCN), an IP Office proprietary protocol (**Fax Transport Support**) allows fax calls at one IP Office to be sent to another IP Office. However, this method is only supported between IP Offices.

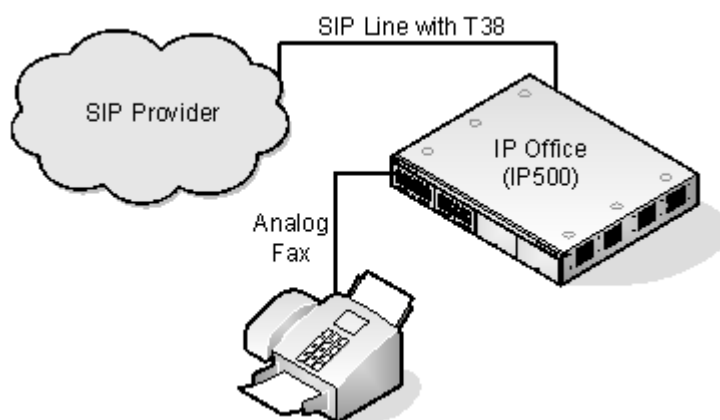
T38 Fax Relay is a public set of protocols that allow fax calls to be reliably transported over IP connections that have a T38 Fax gateway at each end. For IP Office 5.0, IP500 systems with an IP500 VCM card can act as a T38 Fax gateway.

Both IP Office SIP extensions and IP Office SIP lines can be configured for T38. They can then be used as the point at which fax calls are sent and or received. Each fax call uses a VCM channel. The SIP line or extension must support Re-Invite.

In addition, the existing IP Office Fax Transport Support can still be used to transport the faxes over an IP Office SCN. That includes faxes being made or received via a T38 SIP line or extension. The conversion from T38 to Fax Transport Support uses two VCM channels.

Scenario 1:

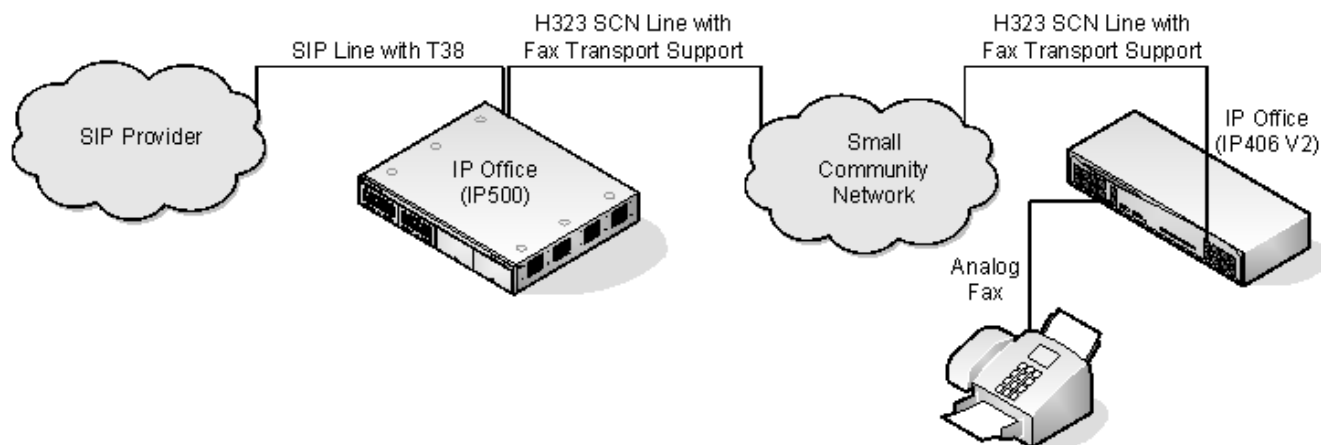
In this scenario, the SIP provider supports T38. By configuring the IP Office's SIP line for T38 operation, the analog fax machine attached to the IP Office can make and receive fax calls via the SIP provider. In this scenario, on the IP500, 1 VCM channel is used for each T38 fax call.



Scenario 2:

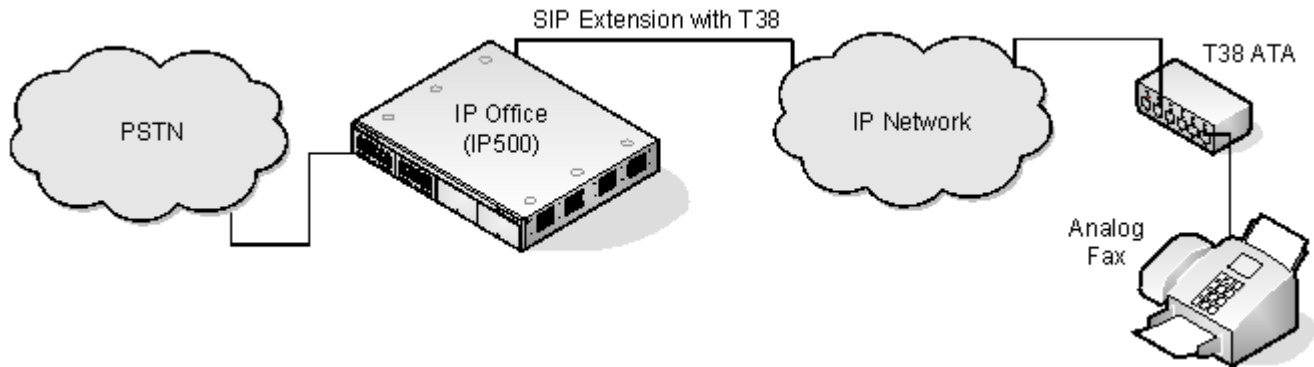
This scenario is similar to the previous. However, fax calls via the SIP line are also transported across the Small Community Network to a fax machine attached to another IP Office in the network. In this scenario, on the IP500, 2 VCM channels are used for the T38 fax call.

This method is also significant in that it allows non-IP500 systems running IP Office 5.0 to make use of SIP lines for fax.



Scenario 3:

In this scenario, an ATA (Analog Telephone Adaptor) that supports T38 is used to connect the fax machine as a SIP extension on the IP Office.

**System Requirements for T38**

- IP Office 500 with an IP500 VCM.
- IP Office 5.0 software.
- The SIP line or extension must support Re-Invite.

Outgoing Fax Calls

When sending a fax via T38, the call must be correctly indicated as being (or potentially being) a fax call. This can be done in 2 ways.

- **Analog Fax Extension Setting**

For an analog fax device, the extension's [Equipment Classification](#) ^[258] setting ([Extension | Analog](#) ^[258]) can be set to **FAX Machine**.

- **Dial Fax Short Code**

Calls can be routed to a [Dial Fax](#) ^[460] short code which has the SIP line as its destination.

9.11 Dial Tone Transfer

A user who is not able to make external calls to any or some external numbers, can be transferred to dial tone by a user who is able to make external calls. This feature is supported for IP Office 5.0+.

1. The restricted user wanting to make the external call, dials the unrestricted user and requests dial tone.
2. The unrestricted user initiates a transfer and dials the prefix for an ARS form configured to provide secondary dial tone.
 - The prefix is a short code set up to access the required ARS form. While this can be a system short code, using a user or user rights short code will allow control over who can provide dial tone transfer for restricted users.
3. When they hear the secondary dial tone, the unrestricted user completes the transfer.
4. The restricted user now hears the secondary dial tone and is now able to make an external call.
 - The restricted user is now able to make calls as permitted by the short codes in the ARS form.
 - The restricted user is not able to transfer the dial tone to another user.

The ARS form being used can still contain short codes that restrict the dialing that can be attempted after the restricted user hears secondary dial tone. Other ARS features can also be used such as alternate routing or time profiles to provide out of hours routing. The ARS form timers are run from when the unrestricted caller dials the ARS form. They are not reset when the restricted user is transferred to the ARS form.

Multiple prefixes and ARS forms can be used if required to create more complex scenarios. For example, one where the unrestricted user can transfer the restricted users to an ARS forms that allows international calls or to an ARS form that only allows national dialing.

Example Configuration

The example below is a simple configuration that allows the unrestricted user to use 8 as a transfer destination that provides secondary dial tone.

1. Create an ARS Form for Secondary Dial Tone

The ARS form needs to be created before short codes can be added to route callers to it.

- Enter a **Route Name** to identify the ARS form, for example **Dial Tone Trans**.
- Select **Secondary Dial Tone**.
- Select either **System Tone** (this matches [locale specific](#)^[800] normal dial tone) or **Network Tone** (this matches [locale specific](#)^[767] secondary dial tone). For some locales both tones are the same.
- Enter short codes that will take any digits dialed by the restricted user and process them for external dialing to an IP Office outgoing line group. For this example we will allow any digits dialed to be presented to the first trunk seized in outgoing line group 0.

Code	N
Telephone Number	N
Feature	Dial
Line Group ID	0

- Other short codes can be used to allow or bar the dialing of specific numbers or types of numbers.
- Configure the rest of the ARS form as required. For full details on ARS form configuration see [ARS](#)^[406].

2. Create a Short Code for Dial Tone Transfer

For this example we will allow the prefix 8 to be used to access an ARS form created above.

- In the user short codes of the unrestricted user, create a short code that invokes the ARS form created above. For example:

Code	8
Telephone Number	
Feature	Dial
Line Group ID	51 Dial Tone Trans

- It is important that the short code does not pass any digits to the ARS form. Once the ARS form receives any digits, it starts short code matching and ends secondary dial tone.
 - The short code could also be setup as a system or user rights short code.
3. The unrestricted user is now able to provide secondary dial tone to other users by on request by pressing **Transfer**, dialing **8** and then pressing **Transfer** again.

Account and Authorization Codes

If the restricted user enters an account or authorization code while calling the unrestricted user to request dial tone, that value is not carried forward with their external call once they have been provided with secondary dial tone.

If the unrestricted user enters an account or authorization code while dialing the ARS form, that value remains associated with the call made by the restricted user.

If the ARS form short code used to route the restricted users call requires an account or authorization code, the value already entered is used, otherwise the restricted user is prompted to enter a value.

Call Logging

The restricted user's outgoing call log will include the call to the unrestricted user and the outgoing external call they subsequently make. The outgoing external call record will include the prefix dialed by the unrestricted user to access the ARS form.

The unrestricted users call log will include just an incoming call from the restricted user.

Within the IP Office SMDR output, the calls by the restricted user are included. The call by the unrestricted user is not included.

9.12 Malicious Call Tracing (MCID)

MCID (Malicious Caller ID) is an ISDN feature. It is supported by IP Office 4.0+ on BRI and PRI trunks to ISDN service provider who provide MCID.

When used it instructs the ISDN exchange to perform a call trace on the user's current call and to keep a record of the call trace for the legal authorities. Trace information is not provided to or displayed by the IP Office or IP Office phones.

The use of MCID is subject to local and national legal requirements that will vary. The feature may also not be enabled until specifically requested from the service provider. You should consult with your ISDN service provider and with appropriate legal authorities before attempting to use MCID.

Successful use of this feature is indicated by a tone on the phone and a "User Registered" message on T3 phones.

Activating MCID

1. Liaise with the ISDN Service Provider

MCID should not be used with first confirming its usage with the ISDN service provider.

2. Enabling MCID Call Tracing on a Line

BRI and PRI lines include a Support Call Tracing Option, which by default is off.

3. Enabling MCID Call Tracing for a User

First the user must be allowed to use call tracing. Each user has a [Can Trace Calls](#) ^[279] ([User](#) | [Telephony](#) | [Supervisor Settings](#) ^[279]) option. This option is off by default.

4. Providing an Active MCID Control

The user needs to be provided with a mechanism to trigger the MCID call trace at the exchange. This can be done using either a short code or a programmable button.

- **MCID Activate Button**

The action [MCID Activate](#) ^[623] ([Advanced](#) | [Miscellaneous](#) | [MCID Activate](#) ^[623]) can be assigned to a programmable buttons. It allows a malicious call trace to be triggered during a call.

- **MCID Activate Short Codes**

The feature MCID Activate can be used to create a short code to triggering a malicious call trace.

9.13 Call Barring

Call barring can be applied in a range of ways.

- **Barring a User From Making Any External Calls**

For each user, [Outgoing Call Bar](#)^[279] ([User | Telephony | Supervisor Settings](#)^[279]) can be selected to stop that user from making any outgoing calls.

- **Barring Particular Numbers/Number Types**

IP Office short codes are used to match user dialing and then perform a specified action. Typically the action would be to dial the number to an external line. However, short codes that match the dialing of particular numbers or types of numbers can be added and set to another function such as Busy. Those short codes can be added to a particular user, to a User Rights associated with several users or to the system short codes used by all users.

- The IP Office allows short codes to be set at user, user rights, system and least cost route. These have a hierarchy of operation which can be used to achieve various results. For example a system short code for a particular number can be set to busy to bar dialing of that number. For a specific user, a user short code match to the same number but set to Dial will allow that user to override the system short code barring.

- **Using Account Codes**

The IP Office configuration can include a list of account codes. These can be used to restrict external dialing only to users who have entered a valid account code.

- **Forcing Account Code Entry for a User**

A user can be required to enter an account code before the system will return dialing tone. The account code that they enter must match a valid account code stored in the IP Office configuration. The setting for this is [Force Account Code](#)^[279] ([User | Telephony | Supervisor Settings](#)^[279]).

- **Forcing Account Code Entry for Particular Numbers**

Each IP Office short code has a Force Account Code option. Again the account code entered must match a valid account code stored in the IP Office configuration. for the call to continue.

- **Barring External Transfers and Forwards**

A user cannot forward or transfer calls to a number which they cannot normally dial. In addition there are controls which restrict the forwarding or transferring of external calls back off-switch. See [Off-Switch Transfer Restrictions](#)^[765].

9.14 Caller Display

Caller display displays details about the caller and the number that they called. On internal calls the IP Office provides this information. On external calls it uses the Incoming Caller Line Identification (ICLID) received with the call. The number is also passed to IP Office applications and can be used for features such as call logging, missed calls and to make return calls.

Analog extension can be configured for caller display via the IP Office configuration (Extension | Extn | Caller Display Type).

- **Adding the Dialing Prefix**

Some IP Office systems are configured to require a dialing prefix in front of external numbers when making outgoing calls. When this is the case, the same prefix must be added to the ICLID received to ensure that it can be used for return calls. The prefix to add is specified through the Prefix field of each line.

- **Directory Name Matching**

The IP Office configuration contains a directory of names and numbers. If the ICLID of an incoming call matches a number in the directory, the directory name is associated with that call and displayed on suitable receiving phones.

- The IP Office SoftConsole and Phone Manager applications also have directories that can be used for name matching. If a match occurs, it overrides the system directory name match for the name shown by that application.

Extended Length Name Display

In some locales, it may be desirable to change the way names are displayed on phones in order to maximize the space available for the called or calling name. There are two hidden controls which can be used to alter the way the IP Office displays calling and called information.

These controls are activated by entering special strings on the Source Numbers tab of the NoUser user. These strings are:

- **LONGER_NAMES**

This setting has the following effects:

- On DS phones, the call status display is moved to allow the called/calling name to occupy the complete upper line and if necessary wrap-over to the second line.
- For all phone types:
 - On incoming calls, only the calling name is displayed. This applies even to calls forwarded from another user.
 - On outgoing calls, only the called name is displayed.

- **HIDE_CALL_STATE**

This settings hides the display of the call state, for example **CONN** when a call is connected. This option is typically used in conjunction with **LONGER_NAMES** above to provide additional space for name display.

9.15 Call Intrusion

Call intrusion allows a user to join another users existing conversation. Once the intrusion has occurred, all parties can hear and talk to each other. Note that intruding uses IP Office conference resources.

The ability to intrude is controlled by two IP Office configuration settings, the **Can Intrude** ^[279] ([User | Telephony | Supervisor Settings](#) ^[279]) and the **Cannot Be Intruded** ^[279] ([User | Telephony | Supervisor Settings](#) ^[279]). By default no users can intrude and all users cannot be intruded.

- **Bridging**

Users with call appearance buttons may be able to bridge into other calls. This is similar to intrusion but subject to different operation.

- **Privacy**

IP Office 4.0+ provides privacy features that allow users to indicate that a call cannot be intruded on. See [Private Calls](#) ^[740].

Below is an example of a short code, which can be used to attempt call intrusion. Using it the intruder would dial *90*N#, replacing the N with the extension number of the user into whose call they need to intrude.

- **Short Code:** *90*N#
- **Telephone No:** N
- **Feature:** CallIntrude

The Dial Inclusion short code feature can be used instead of Call Intrude. It allows the intruder and the intrusion target to talk without the third party hearing them. During this type of intrusion, all parties hear a repeated intrusion tone. When the intruder hangs-up the original call parties are reconnected.

9.16 Call Tagging

Call tagging associates a text string with a call. That string remains with the call during transfers and forwards including across a Small Community Network (SCN).

On Avaya display phones, the text is shown whilst a call is alerting and is then replace by the calling name and number when the call is connected. On analog phones with a caller ID display, the tag text replace the normal caller information.

IP Office applications such as Phone Manager and SoftConsole display any call tag associated with a call. If the call is parked, the tag is shown on the call park slot button used.

A call tag can be added when making a call using Phone Manager or SoftConsole. A tag can also be added to a call by an Voicemail Pro Assisted Transfer action.

9.17 Private Calls

IP Office 4.0 and higher provides features that allow users to make calls are being private.

When on, any subsequent calls cannot be intruded on, bridged into or silently monitored until the user's private call status is switched off.

Note that use of private calls is separate from the user's intrusion settings. If a user is set to **Cannot be Intruded**, switching private calls off does not affect that status. To allow private calls to be used to fully control the user status, **Cannot be Intruded** should be disabled for that user.

Use of private calls can be changed during a call. Enabling privacy during a call will stop any current recording, intrusion or monitoring.

Privacy only applies to the speech part of the call. Call details are still recorded in the IP Office Delta Server SMDR output and other IP Office call status displays.

- **Button Programming**

The button programming action **Advanced | Call | Private Call** can be used to switch privacy on/off. Unlike the short code features it can be used during a call to apply or remove privacy from current calls rather than just subsequent calls. On suitable phones the button indicates the current status of the setting.

- **Short Codes**

A number of short code features are available for privacy.

- **Private Call**

Short codes using this feature toggle private status on/off for the user's subsequent calls.

- **Private Call On**

Short codes using this feature enable privacy for all the user's subsequent calls until privacy is turn off.

- **Private Call Off**

Short codes using this feature switch off the user's privacy if on.

9.18 Call Pickup

Call pickup allows a user to answer a call ringing at another phone.

The following default short codes can be used:

- ***30 - Call Pickup Any**

Answers the longest ringing call on the IP Office system. On large IP Office systems it is recommended that this short code is removed as it becomes difficult for users to predict which call they are answering.

- ***31 - Call Pickup Group**

Pickup the longest ringing call to the hunt groups of which the user is a member.

- ***32*N# - Call Pickup Extn**

Pick up the call ringing at a specific extension. When dial, N is replaced by the extension number.

- ***53*N# - Call Pickup Members**

Pick up any call ringing on another extension that is a member of the Hunt group specified. The call picked up does not have to be a hunt group call. When dial, replace N with the hunt group extension number.

9.19 Call Waiting

Call waiting allows a user who is already on a call to be made aware of a second call waiting to be answered.

User Call Waiting

Call waiting is primarily a feature for analog extension users. The user hears a call waiting tone and depending on the phone type, information about the new caller may be displayed. The call waiting tone varies according to [locale](#)^[802].

For Avaya feature phones with multiple call appearance buttons, call waiting settings are ignored as additional calls are indicated on a call appearance button if available.

To answer a call waiting, either end the current call or put the current call on hold, and then answer the new call. Hold can then be used to move between the calls.

Call waiting for a user can be enabled through the IP Office configuration ([User | Telephony | Call Settings | Call Waiting On](#)^[277]), through the Phone Manager application and through programmable phone buttons.

Call waiting can also be controlled using short codes. The following default short codes are available when using Call Waiting.

- ***15 - Call Waiting On**
Enables call waiting for the user.
- ***16 - Call Waiting Off**
Disables call waiting for the user.
- ***26 - Clear Call and Answer Call Waiting**
Clear the current call and pick up the waiting call.

Hunt Group Call Waiting

Call waiting can also be provided for hunt group calls. The hunt group **Ring Mode** must be **Collective Call Waiting**.

On pre-IP Office 4.0 systems, all the group members must have their own call waiting setting switched on, this no longer applies for IP Office 4.0+.

On phones with call appearance buttons, the call waiting indication takes the form of an alert on the next available call appearance button. On other phones, call waiting indication is given by a tone in the speech path (the tone is locale specific).

- For pre-IP Office 4.0, all the users in the group must also have their own **Call Waiting** setting set to **On**.
- For IP Office 4.0+, the user's own **Call Waiting** setting is overridden when they are using a phone with call appearances. Otherwise the user's own **Call Waiting** setting is used in conjunction with the hunt group setting.

9.20 Parking Calls

Parking a call is an alternative to holding a call. A call parked on the IP Office system can be retrieved by any other user if they know the system park slot number used to park the call. When the call is retrieved, the action is known as Unpark Call or Ride Call. While parked, the caller hears music on hold if available.

Each parked call requires a park slot number. Attempting to park a call into a park slot that is already occupied causes an intercept tone to be played. Most park functions can be used either with or without a specified park slot number. When parking a call without specifying the park slot number, the system automatically assigns a number based on the extension number of the person parking the call plus an extra digit 0 to 9. For example if 220 parks a call, it is assigned the park slot number 2200, if they park another call while the first is still parked, the next parked call is given the park slot number 2201 and so on.

- Park slot numbers can be up to 9 characters in length.

The **Park Timeout** setting in the IP Office configuration ([System | Telephony | Telephony | Park Timeout](#)^[168]) controls how long a call can be left parked before it recalls to the user that parked it. The default time out is 5 minutes. Note that the recall only occurs if the user is idle has no other connected call.

There are several different methods by which calls can be parked and unparked. These are:

Using Short Codes

The short code features, [Park Call](#)^[485] and [Unpark Call](#)^[501], can be used to create short codes to park and unpark calls respectively. The default short codes that use these features are:

- *37*N# - Parks a call in park slot number N.
- *38*N# - Unparks the call in park slot number N.

Using the Phone Manager and SoftConsole Applications

The Phone Manager and SoftConsole applications all support park buttons. Phone Manager provides 4 park slot buttons, numbered 1 to 4. SoftConsole provides 16 park slot buttons numbered 1 to 16 by default. In both cases the park slot number for each button can be changed if required. Clicking on the buttons allows the user to park or unpark calls in the park slot associated with each button.

In addition, when a call is parked in one of those slots by another user, the application user can see details of the call and can unpark it at their extension.

Using Programmable Buttons

The Call Park feature can be used to park and unpark calls. If configured with a specified park slot number, the button can be used to park a call in that slot, unpark a call from that slot and will indicate when another user has parked a call in that slot. If configured without a number, it can be used to park up to 10 calls and to unpark any of those calls.

Phone Defaults

Some telephones support facilities to park and unpark calls through their display menu options (refer to the appropriate telephone user guide). In this case parked calls are automatically put into park slots matching the extension number.

9.21 Ring Back When Free

Also called 'callback' and 'automatic callback'. If the user called is busy, setting a ringback allows you to hang up and wait until they are free. When set, once the busy extension becomes free, the system will ring your telephone when also idle and, when answered, call the original target extension.

Note

- If the extension called has multiple call appearance buttons, you will not receive busy until all its call appearance buttons are in use.
- You must be idle (have no call connected or held) to receive the ringback.

This feature can also be set via the followings methods. These options also allow a ringback to be set when the target just rings, often known as a ringback when next used.

- **Using a button programmed to the Ring Back When Free function**

If the button has status indication, it will show that a ring back has been set. The button can also be pressed again to cancel the ringback.

- **Use a short code set to the Ring Back When Free function**

A short code set to this function can be used to set a ringback on any extension without having to actually make a call.

- **IP Office Phone Manager**

This application provides the user with a button to set a ringback.

- **Analog Phones**

Analog phone users can set a ringback when free by pressing any DTMF key before hanging up when they hear busy tone.

9.22 Message Waiting Indication

Message waiting indication (MWI) or a message lamp is supported for a wide variety of phones. It is used to provide the user with indication of when their voicemail mailbox contains new messages. It can also be configured to provide them with indication when selected hunt group mailboxes contain new messages.

Avaya digital and IP phones all have in-built message waiting lamps. Also for all phone users, the IP Office Phone Manager application provides message waiting indication.

Analog Phone Message Waiting Indication

For analog phones, IP Office 3.1 provides support for a variety of analog message waiting indication (MWI) methods. Those methods are 51V Stepped, 81V, 101V and Line Reversal. The 101V method is only supported when using a Phone V2 expansion module.

81V is typically used in European countries. 51V Stepped is used in most other countries. However the actual method used for a particular model of analog phone should be confirmed with the phone manufacturer's documentation.

The method used for an individual analog extension is set for the [Extn | Extn | Message Waiting Lamp Indication Type](#)^[256] field. This field also provides options for **None** (no MWI operation) and **On**. **On** selects a default message waiting indication method based on the [system locale](#)^[806].

'On' Method	Locale
81V	Belgium, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Italy, Netherlands, Norway, Poland, Portugal, Russia, Saudi Arabia, Sweden, Switzerland, United Kingdom.
51V Stepped	Argentina, Australia, Brazil, Canada, Chile, China, Colombia, Japan, Korea, Mexico, New Zealand, Peru, South Africa, Spain, United States.

- For the United Kingdom system locale (eng), the default Caller Display Type (UK) allows updates of an analog phone's ICLID display whilst the phone is idle. The IP Office uses this facilities to display the number of new messages and total number of messages in the users own mailbox. This feature is not supported with other Caller Display Types.

Hunt Group Message Waiting Indication

By default no message waiting indication is provided for hunt group voicemail mailboxes. Message waiting indication can be configured by adding an H entry followed by the hunt groups name to the Source Numbers tab of the user requiring message waiting indication for that hunt group. For example, for the hunt group Sales, add HSales. Hunt group message waiting indication does not require the user to be a member of the hunt group

9.23 Ring Tones

Ring tones can be defined in the following terms:

- **Distinctive Ringing - Inside, Outside and Ringback**

A distinctive ring tone can be given for each of the different call types: an internal call, an external call and a ringback calls (voicemail calls, ringback when free calls, calls returning from park, hold or transfer).

- The distinctive ringing patterns used for most non-analog phones are as follows:
 - **Internal Call:** Repeated single-ring.
 - **External Call:** Repeated double-ring.
 - **Ringback Call:** Repeated single-ring followed by two short rings.
- For analog extensions, the ringing pattern used for each call type can be set through the IP Office configuration in Manager. This is done using the settings on [System | Telephony | Tones & Music](#)^[169] and or [User | Telephony | Call Settings](#)^[277] tabs.
- For non-analog extension the ringing pattern used for each call type by the IP Office is not configurable.

- **Personalized Ringing**

This term refers to control of the ringing sound through the individual phones. For non-analog phones, while the distinctive ringing patterns cannot be changed, the ringer sound and tone may be personalized depending on the phone's own options. Refer to the appropriate IP Office telephone user guide.

Analog Phone Ringing Patterns

For analog phone users, the distinctive ringing pattern used for each call type can be adjusted. From the [System | Telephony | Tones & Music](#)^[169] tab, the default ring tone for each call type can be configured. The setting for an individual user associated with the analog extension can be altered from the system default through the [User | Telephony | Call Settings](#)^[277] tab.

Note that changing the pattern for users associated with fax and modem device extensions may cause those devices to not recognize and answer calls.

The selectable ringing patterns are:

- **RingNormal**
This pattern varies to match the **Locale** set in the **System | System** tab. This is the default for external calls.
- **RingType1:** 1s ring, 2s off, etc. This is the default for internal calls.
- **RingType2:** 0.25s ring, 0.25s off, 0.25s ring, 0.25s off, 0.25s ring, 1.75s off, etc. This is the default for ringback calls.
- **RingType3:** 0.4s ring, 0.8s off, ...
- **RingType4:** 2s ring, 4s off, ...
- **RingType5:** 2s ring, 2s off, ...
- **RingType6:** 0.945s ring, 4.5s off, ...
- **RingType7:** 0.25s ring, 0.24 off, 0.25 ring, 2.25 off, ...
- **RingType8:** 1s ring, 3s off, ...
- **RingType9:** 1s ring, 4s off, ...
- **RingType0:** Same as **RingNormal** for the United Kingdom locale.
- **Default Ring:** Shown on the [User | Telephony | Call Setting](#)^[277] tab. Indicates follow the settings on the [System | Telephony | Tones & Music](#)^[169] tab.

9.24 Music On Hold (MOH)

The IP Office can provide music on hold (MOH) in from either an internally stored file or from an externally connected audio input.

- **Legal Requirements**

You must ensure that any MOH source you use complies with copyright, performing rights and other local and national legal requirements.

- **Internal Music on Hold Files**

The IP Office can use internal music on hold files that it stores in its non permanent memory. The files are loaded as follows:

- Following a reboot, the IP Office will try using TFTP to download the file. The file properties should be: PCM, 8kHz 16-bit, mono, maximum length 30 seconds (90 seconds on the IP500).
- The system source file name should be holdmusic.wav. For IP Office 4.2+, the names of alternate source files are specified on the [System | Telephony | Tones & Music](#)^[169] tab.
- The initial source for TFTP download is the system's configured TFTP server ([System | System | LAN Settings | TFTP Server IP Address](#)^[153]). The default for this is a broadcast to the local subnet for any PC running a TFTP server.
- By default Manager acts as a TFTP server while it is running. If Manager is used as the TFTP server then the holdmusic.wav file should be placed in the Manager applications [working directory](#)^[118].
- For IP Office 3.1+, if no successful TFTP download occurs, the IP Office will automatically look for the files on the control unit's compact flash memory card if present and will download from there.
- If IP Office has not loaded a hold music file it will retry loading a hold music file approximately every five minutes.
- For IP Office 3.1+, if an internal music on hold file is downloaded, the IP Office will automatically write a copy of that file to its compact flash memory card if present. This will overwrite any existing music on hold file stored on that card.
- If an internal music on hold file is downloaded, that file is used and overrides any external music on hold source if also connected.

- **External MOH**

An external music source can be connected to the IP Office control unit. Connect a line out audio source to the 3.5mm port marked AUDIO on the back of the control unit.

- If the control unit has downloaded the internal system source file **holdmusic.wav** file, the external audio port is ignored.
- The IP Office can be forced to use the external port and not try downloading a holdmusic.wav file by setting the [System Source](#)^[169] ([System | Telephony | Tones & Music](#)^[169]) as **External**.

- **Default Music on Hold Tones**

If no internal music on hold file is available and **External** is not selected as the **System Source**, then the system will provide a default tone for music on hold. The tone used is double beep tone (425Hz repeated (0.2/0.2/0.2/3.4) seconds on/off cadence).

- On IP Office 3.0(50)+ this option is only supported for the Italian locale.
- On IP Office 4.0+ this option is supported in all locales.
- On IP Office 4.2+, **Tone** can be selected as the **System Source**, overriding the use of the external source port and downloading of holdmusic.wav.

Checking Music on Hold

The IP Office short code feature [Hold Music](#)^[486] can be used to listen to the hold music sources. For the System Source the default system short code is ***34#** which allows you to listen to a system's current music on hold. On IP Office 4.2+, for additional sources you can dial ***34N#**, replacing **N** with the source required from 1 to 4.

9.25 Date and Time

The IP Office control unit contains a battery backed clock which is used to maintain system time during normal operation and when mains power is removed. The time is normally obtained using Time protocol (RFC868) requests. Note that this is different from Network Time Protocol (NTP).

Following a reboot the IP Office control unit sends out a time request on its LAN interfaces. It first makes the request to the Voicemail Server IP address in its configuration and, if it receives no reply, it then makes a broadcast request.

The Voicemail Lite server (pre-IP Office 5.0 only), Voicemail Pro server and the Manager program can all act as Time servers, giving the time as set on their host PC. If you are running Manager when the Voicemail Server starts, then Voicemail does not start as a time server. It is therefore recommended that you have no copy of Manager running when you start or restart the Voicemail Server.

A specific address for the time server that should be used can be set in the IP Office configuration using the [Time Server IP Address](#) ⁽¹⁴⁹⁾ [\(System | System\)](#) ⁽¹⁴⁹⁾ setting. Setting this address to 0.0.0.1 also disables the IP Office's time update requests.

When using a time server located in a different time zone from the IP Office, there are two mechanisms for applying an offset to the time. If Manager is acting as the time server, the time offset for each can be specified through the **Time Offset** of the [BOOTP](#) ⁽¹⁴⁶⁾ entry for the system. Alternatively, the offset can be specified in the IP Office configuration using [Time Offset](#) ⁽¹⁴⁹⁾ [\(System | System\)](#) ⁽¹⁴⁹⁾.

Manually Setting the System Time

For IP Office systems without access to a time server, a number of methods to manually set the system time exist. These are available in the IP Office 4.1+. The following method is only supported on these phones: 2410, 2420, 4412, 4424, 4612, 4624, 4610, 4620, 4621, 5410, 5420, 5610, 5620, 5621, 6412, 6424. It is supported on any analog, T3, T3 IP or wireless (IP DECT, 3600, 3700 Series) phones.

- Note: If the IP Office system that is still configured for automatic time updates (on by default), any manually set time and date will be overridden on the next automatic update. The use of automatic updates can be disabled by setting the [System | System | Time Server IP Address](#)^[149] to 0.0.0.1.

Enabling a User Button for Time and Date

1. Select the user who can adjust the system time and date.
 - If necessary create a new user who can be used to log in and set the time and date before logging out.
2. On the **User | Telephony** tab, ensure that the option **System Phone** is selected.
3. On the **User | Button Programming** tab select and double-click on an available button.
4. Select **Emulation > Self-Administer** as the action.
5. In the Action Data field enter **2**.
6. Enter an appropriate label for the button.
7. Adding another button set to the **Emulation > Time of Day** action is recommended as this will allow the user to view and confirm the systems current time.
8. Send the updated configuration to the IP Office.

Using the Programmable Button

1. Press the programmed button. If the user has a **Login Code** set it is requested.
2. The options **Date** and **Time** are displayed.
3. To set the date press **Date**.
 1. The current system date is displayed.
 2. Enter the new date, using two digits for day and month. Use the * or # keys to insert the / separators. The format for date enter matches the locale of the IP Office system.
 3. During entry the key labeled <<< can be used to backspace.
 4. When the full date has been entered as required, press **Next**.
 5. Press **Done**.
 6. The phone will return to idle.
4. To set the time press **Time**.
 1. The current system time is displayed.
 2. Enter the new time using 24-hour clock format. Use the * or # keys to insert the : separator.
 3. When the full time has been entered as required, press **Done**.
 4. The phone will return to idle.

9.26 System Phone Features

The user option **System Phone** ([User | Telephony | Call Settings | System Phone](#)^[277]) can be used to designate a user as being a System Phone user. Depending on the level of IP Office software, System Phone users can access a number of additional functions not available to other phone users.

All IP Office Releases

The following functions have been supported for System Phone users since the release of IP Office:

- **MENU to set date/time**
Restricted to 4412, 4424, 4612, 4624, 6408, 6416 and 6424 phones where supported by the IP Office. Note 4612 and 4624 not supported for 4.1+. On these phones, a System Phone user can manually set the system date and time by pressing **Menu | Menu | Func | Setup**.
- **SoftConsole Send Message**
If the System Phone user is using SoftConsole, they can access the SoftConsole function **Send Message** to send a short text message (up to 16 characters) to a display phone. Refer to the SoftConsole documentation for details. Note that this is no longer required for 4.0+.

IP Office 4.1+

The following function is supported for System Phone users on IP Office 4.1+. Not supported on analog, T3, T3 IP and wireless phones.

- **Date/Time Programmable Button:** *Software level = 4.1+.*
Allows System Phone users to manually set the system date and time through a programmable button (see [Self Administer](#)^[634] and [Date and Time](#)^[747]).

IP Office 4.2+

The following function is supported for System Phone users on IP Office 4.2+ (and 4.1 Q4 maintenance release).

- **Change Login Code of Other Users**
Using a short code with the [Change Login Code](#)^[451] feature, system phone users can change the login code of other users on the system.
- **Outgoing Call Bar Off**
Using a short code with the [Outgoing Call Bar Off](#)^[484] feature, system phone users can switch off the outgoing call bar status of other users on the system.

IP Office 5.0+

The following function is supported for System Phone users on IP Office 5.0.

- **Edit System Directory Records**
Using a 1600 Series phone, a system phone user can edit system directory entries stored in the configuration of the IP Office system on which they are hosted. They cannot edit LDAP and/or HTTP imported entries.

9.27 The 'No User' User

It is possible to have an extension which has no default associated user. This can occur for a number of reasons:

- The extension has no **Base Extension** setting associating it with a user who has the same setting as their **Extension** to indicate that they are the extension's default associated user.
- The extension's default associated user has logged in at another extension. Typically they will be automatically logged back in at their normal extension when they log out the other phone.
- The extension's default associated user cannot be automatically logged in as they are set to **Forced Login**.

Phones with no current user logged in are associated with the setting of the **NoUser** user in the IP Office configuration. This user cannot be deleted and their Name and Extension setting cannot be edited. However their other settings can be edited to configure what functions are available at extensions with no currently associated user.

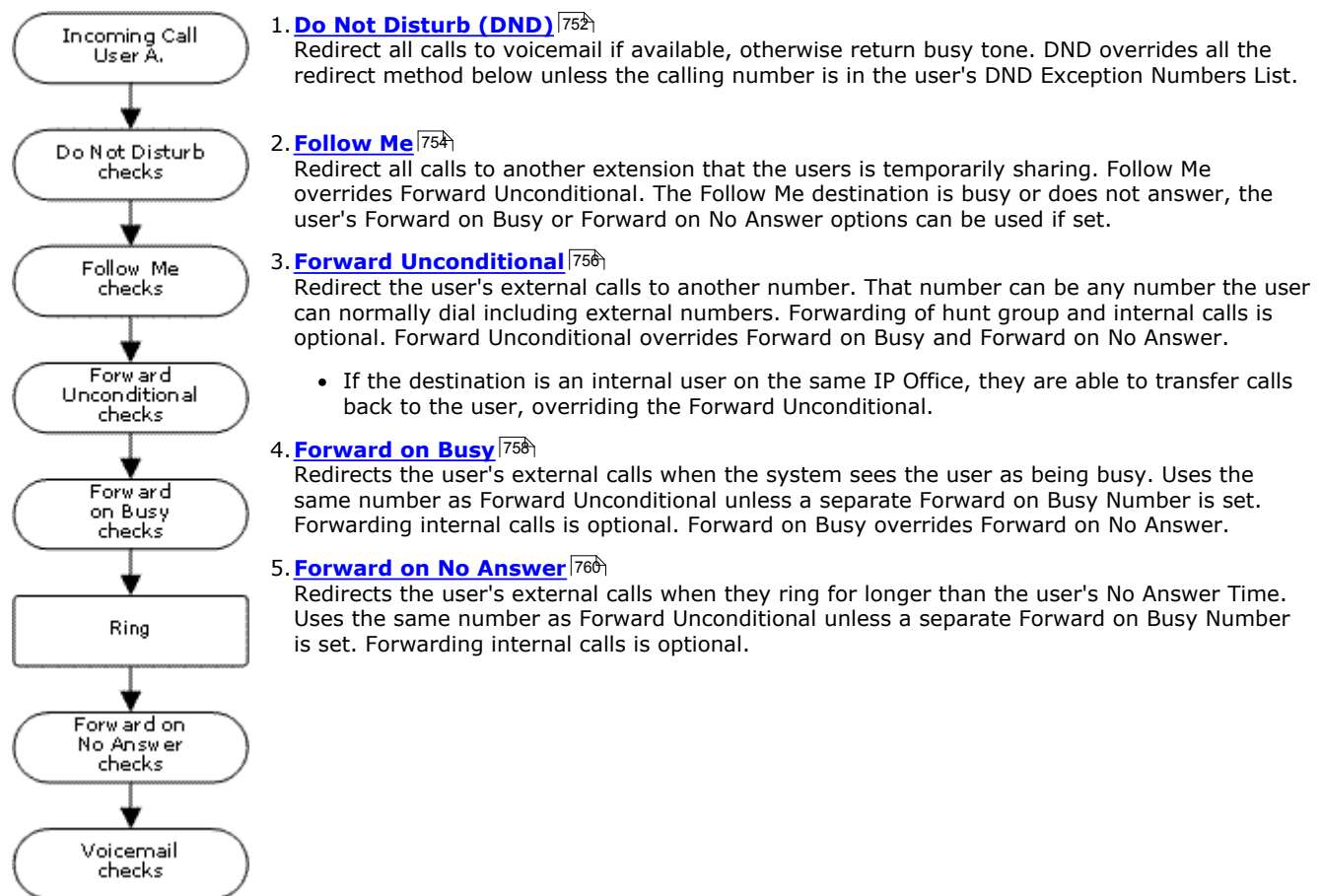
By default the **NoUser** user has **Outgoing Call Bar** enabled so that the extension cannot be used for external calls. For IP Office 4.0+ the users first programmable button is set to the **Login** action.

NoUser Source Numbers

The **SourceNumbers** tab of the **NoUser** user is used to configure a number of special options. These are then applied to all users on the IP Office system. For details refer to the [User | Source Numbers](#) ^[275] section.

9.28 Forwarding and Transferring Calls

This section contains topics looking at how users can have their calls automatically redirected. As illustrated, there is a order of priority in which the redirect methods are used.



Notes

- **Retrieving Externally Forwarded Calls**

Where a call is forwarded to an external destination and receives busy or is not answered within the forwarding user's **No Answer Time**, the system will attempt to retrieve the call. If forwarded on a trunk that does not indicate its state, for example an analog loop start trunks, the call is assumed to have been answered.

- **Off-Switch Forwarding Restrictions**

User forwarding is subject to the same restrictions as transferring calls. To bar a user from forwarding calls to an external number, the **Inhibit Off-Switch Forward/Transfers** ^[279] ([User | Telephony | Supervisor Settings](#) ^[279]) option. To bar all users from forwarding calls to external numbers the **Inhibit Off-Switch Forward/Transfers** ^[166] ([System | Telephony | Telephony](#) ^[166]) option can be used. See [Off-switch Transfer Restrictions](#) ^[765].

- For IP Office 4.0 and higher, when transferring a call to another extension that has forwarding enabled, the type of call being transferred is used. For example, if transferring an external call, if the transfer target has forwarding of external calls enabled then the forward is used.

9.28.1 Do Not Disturb

Summary: Redirect all calls to busy tone or to voicemail if available except those in your DND exceptions list.

Do Not Disturb (DND) is intended for use when the user is present but for some reason does not want to be interrupted. Instead calls are sent to voicemail if available, otherwise they receive busy tone.

- **Exceptions**

Specific numbers can be added to the user's Do Not Disturb Exception List. Calls from those numbers override DND. N and X wildcards can be used at the end of exception numbers to match a range of numbers. For external numbers, this uses the incoming caller line ID (ICLID) received with the call.

- **Priority**

Enabling DND overrides any Follow Me or forwarding set for the user, except for calls in the user's Do Not Disturb Exception List.

- **Phone**

When enabled, the phone can still be used to make calls. An **N** is displayed on many Avaya phones. When a user has do not disturb in use, their normal extension will give [alternate dialtone](#)^[802] when off hook.

- **Applied to**

Call Types Blocked		Call Treatment
Internal	✓	Voicemail if available, otherwise busy tone.
External	✓	Voicemail if available, otherwise busy tone.
Hunt Group	✓	Call not presented (DND exceptions are not used).
Page	✓	Call not presented.
Follow Me	✗	Rings.
Forwarded	✓	Busy.
VM Ringback	✗	Rings
Automatic Callback	✗	Rings
Transfer Return	✗	Rings.
Hold Return	✗	Rings.
Park Return	✗	Rings.
Twinning	✓	Voicemail if available, otherwise busy tone.

Do Not Disturb and Twinning

- **Mobile Twinning**

Selecting DND disables mobile twinning.

- **Internal Twinning**

- Logging out or setting do not disturb at the primary stops twinned calls alerting at the secondary also.
- Logging out or setting do not disturb at the secondary only affects the secondary.

- **Do Not Disturb Exceptions List**

For both types of twinning, while DND is selected calls from numbers entered in the user's [Do Not Disturb Exception List](#)^[273] are only presented to the primary phone.

Do Not Disturb Controls

Do Not Disturb				
Manager	A user's DND settings can be viewed and changed through the User DND ^[273] tab within the IP Office configuration settings.			
Controls	The following short code features/button programming actions can be used:			
	Feature/Action	Short Code	Default	Button
	Do Not Disturb On ^[467]	✓	*08	✓ - Toggles.
	Do Not Disturb Off ^[467]	✓	*09	✓
	Do Not Disturb Exception Add ^[466]	✓	*10*N#	✓
	Do Not Disturb Exception Delete ^[466]	✓	*11*N#	✓
	Cancel All Forwarding ^[450]	✓	*00	✓
Phone Manager	Users can enable DND and set exception numbers by clicking  and select the Do Not Disturb tab. When a user has DND enabled, it is indicated by DND in the title bar. It is indicated by a blue cross  symbol on Speed Dial icons set to the user.			
SoftConsole	A SoftConsole user can view and edit a user's DND settings except exception numbers. Through the directory, select the required user. Their current status including DND is shown. Double-click on the details to adjust DND on or off.			
Voicemail	If voicemail is available, it is used instead of busy tone for callers not in the users exceptions list. For Voicemail Pro, the Play Configuration Menu action can be used to let callers switch DND on or off.			

9.28.2 Follow Me

Summary: Have your calls redirected to another user's extension, but use your coverage, forwarding and voicemail settings if the call receives busy tone or is not answered.

Follow Me is intended for use when a user is present to answer calls but for some reason is working at another extension such as temporarily sitting at a colleague's desk or in another office or meeting room. Typically you would use Follow Me if you don't have a Hot Desking log in code or if you don't want to interrupt your colleague from also receiving their own calls, ie. multiple users at one phone.

- **Priority**

Follow Me is overridden by DND except for callers in the user's DND Exception Numbers List. Follow Me overrides Forward Unconditional but can be followed by the user's Forward on Busy or Forward on No Answer based on the status of the Follow Me destination.

- **Destination**

The destination must be an internal user extension number. It cannot be a hunt group extension number or an external number.

- **Duration**

The Follow Me user's no answer timeout is used. If this expires, the call either follows their Forward on No Answer setting if applicable, or goes to voicemail if available. Otherwise the call continues to ring at the destination.

- **Phone**

When enabled, the phone can still be used to make calls. When a user has follow me in use, their normal extension will give [alternate dialtone](#) [802] when off hook.

- **Exceptions**

- The Follow Me destination extension can make and transfer calls to the follow me source.
- The call coverage settings of the user are applied to their Follow Me calls. The call coverage settings of the destination are not applied to Follow Me calls it receives.

- **Calls Forwarded**

Call Types Redirected		
Internal	✓	Redirected.
External	✓	Redirected.
Hunt Group	✓	Redirected*.
Page	✓	Redirected.
Follow Me	✗	Not redirected.
Forwarded	✓	Redirected.
VM Ringback	✗	Not redirected.
Automatic Callback	✗	Not redirected.
Transfer Return	✗	Not redirected.
Hold Return	✗	Not redirected.
Park Return	✗	Not redirected.

*Except calls for "Longest Waiting" type hunt groups.

Follow Me Controls

Follow Me				
Manager	A user's Follow Me settings can be viewed and changed through the User Forwarding ^[284] tab within the IP Office configuration settings. Note that on this tab, entering a Follow Me Number also enables Follow Me.			
Controls	The following short code features/button programming actions can be used:			
	Feature/Action	Short Code	Default	Button
	Follow Me Here ^[471]	✓	*12*N#	✓
	Follow Me Here Cancel ^[472]	✓	*13*N#	✓
	Follow Me To ^[472]	✓	*14*N#	✓
	Cancel All Forwarding ^[450]	✓	*00	✓
Phone Manager	Users can set a Follow Me To Number and enable Follow Me through the Forwarding tab. Click  and select the Forwarding tab. When a user has Follow Me enabled, it is indicated by FollowTo and the destination in the title bar. It is not indicated on Speed Dial icons set to the user. Other status icons remain linked to the user's normal telephone and not to the status of the destination.			
SoftConsole	A SoftConsole user can view and edit a user's Follow Me settings. Through the directory, select the required user. Their current status including Follow Me is shown. Double-click on the details and select Forwarding to alter their forwarding settings including Follow Me.			
Voicemail	For calls initially targeted to the user but then redirected, when voicemail is invoked the mailbox of the user is used and not the mailbox of the destination. For Voicemail Pro, the Play Configuration Menu action can be used to let callers alter or set their current Follow Me destination.			

9.28.3 Forward Unconditional

Summary: Have your calls redirected immediately to another number including any external number that you can dial.

- **Priority**

This function is overridden by DND and or Follow Me if applied. **Forward Unconditional** overrides **Forward on Busy** and **Forward on No Answer**.

- **Destination**

The destination can be any number that the user can dial. If external and Inhibit Off-Switch Transfers is applied, the caller is directed to voicemail if available, otherwise they receive busy tone.

- If the destination is an internal user on the same IP Office, they are able to transfer calls back to the user, overriding the Forward Unconditional.

- **Duration**

The destination is rung using the forwarding user's No Answer Time. If this expires, the call goes to voicemail if available. Otherwise the call continues to ring at the destination. Calls to an external destination sent on trunks that do not signal their state, for example analog loop start trunks, are assumed to have been answered.

- **Phone**

When enabled, the phone can still be used to make calls. An **D** is displayed on DS phones. When a user has forward unconditional in use, their normal extension will give [alternate dialtone](#)^[802] when off hook.

- **Calls Forwarded**

Once a call has been forwarded to an internal destination, it will ignore any further **Forward No Answer** or **Forward on Busy** settings but may follow additional **Forward Unconditional** settings.

Call Types Forwarded		
Internal	✓	Optional.
External	✓	Forwarded.
Hunt Group	✓	Optional.*
Page	✗	Not presented.
Follow Me	✗	Rings.
Forwarded	✓	Forwarded.
VM Ringback	✗	Rings.
Automatic Callback	✗	Rings.
Transfer Return	✗	Rings.
Hold Return	✗	Ring/hold cycle.
Park Return	✗	Rings.

*Optional only for calls targeting sequential and rotary type groups. Includes internal call to a hunt group regardless of the forward internal setting.

- **To Voicemail:** *Default = Off, Software level = 5.0+.*

If selected and forward unconditional is enabled, calls are forwarded to the user's voicemail mailbox. The Forward Number and Forward Hunt Group Calls settings are not used. This option is not available if the system's **Voicemail Type** is set to **None**. 1600 Series phone users can select this setting through the phone menu. Note that if the user disables forward unconditional, for example using Phone Manager or a short code, the **To Voicemail** setting is cleared.

Forward Unconditional Controls

Forward Unconditional				
Manager	A user's forwarding settings can be viewed and changed through the User Forwarding ^[284] tab within the IP Office configuration settings.			
Controls	The following short code features/button programming actions can be used:			
	Feature/Action	Short Code	Default	Button
	Forward Number ^[474]	✓	*07*N#	✓
	Forward Unconditional On ^[477]	✓	*01	✓ - Toggles.
	Forward Unconditional Off ^[477]	✓	*02	✓
	Forward Hunt Group Calls On ^[473]	✓	✗	✓ - Toggles.
	Forward Hunt Group Calls Off ^[473]	✓	✗	✓
	Disable Internal Forwards ^[464]	✓	✗	✗
	Enable Internal Forwards ^[466]	✓	✗	✗
	Disable Internal Forward Unconditional ^[464]	✓	✗	✗
	Enable Internal Forward Unconditional ^[466]	✓	✗	✗
	Set No Answer Time ^[497]	✓	✗	✓
Cancel All Forwarding ^[456]	✓	*00	✓	
Phone Manager	Users can set a forward destination number and enable Forward Unconditional through the Forwarding tab. Click  and select the Forwarding tab. When a user has Forward Unconditional enabled, it is indicated by Fwd unconditional and the destination in the title bar. It is indicated by a green arrow  symbol on Speed Dial icons set to that user.			
SoftConsole	A SoftConsole user can view and edit a user's forwarding settings. Through the directory, select the required user. Their current forwarding status is shown. Double-click on the details and select Forwarding to alter their forwarding settings.			
Voicemail	For calls initially targeted to the user but then redirected, when voicemail is invoked the mailbox of the user is used and not the mailbox of the destination. For Voicemail Pro, the Play Configuration Menu action can be used to let callers set their current forwarding destination and switch Forwarding Unconditional on/off.			

9.28.4 Forward on Busy

Summary: Have your calls redirected when you are busy to another number including any external number that you can dial.

The method by which the system determines if a user is 'busy' to calls depends on factors such as whether they have multiple calls appearance buttons or Call Waiting and or Busy on Held set. See [Busy](#) ^[762].

- **Priority**

This function is overridden by DND and or Forward Unconditional if applied. It can be applied after a Follow Me attempt. It overrides Forward on No Answer.

- **Destination**

The destination can be any number that the user can dial. The Forward Unconditional destination number is used unless a separate number Forward on Busy Number is set. If Inhibit Off-Switch Transfers is applied, the caller is directed to voicemail if available, otherwise they receive busy tone.

- **Duration**

The destination is rung using the forwarding user's No Answer Time. If this expires, the call goes to voicemail if available. Calls to an external destination sent on trunks that do not signal their state, for example analog loop start trunks, are assumed to have been answered.

- **Phone**

Forward on Busy is not indicated and normal dial tone is used.

- **Calls Forwarded**

Once a call has been forwarded to an internal destination, it will ignore any further **Forward No Answer** or **Forward on Busy** settings but may follow additional **Forward Unconditional** settings.

Call Types Forwarded		
Internal	✓	Optional.
External	✓	Forwarded.
Hunt Group	✗	Not presented.
Page	✗	Not presented.
Follow Me	✗	Rings.
Forwarded	✓	Forwarded.
VM Ringback	✗	Rings.
Automatic Callback	✗	Rings.
Transfer Return	✗	Rings.
Hold Return	✗	Ring/hold cycle.
Park Return	✗	Rings.

Forward on Busy Controls

Forward on Busy																																																
Software Level	A user's forwarding settings can be viewed and changed through the User Forwarding ^[284] tab within the IP Office configuration settings.																																															
Controls	The following short code features/button programming actions can be used: <table><tr><th>Feature/Action</th><th>Short Code</th><th>Default</th><th>Button</th></tr><tr><td>Forward Number ^[474]</td><td>✓</td><td>*07*N#</td><td>✓</td></tr><tr><td>Forward on Busy Number ^[474]</td><td>✓</td><td>*57*N#</td><td>✓</td></tr><tr><td>Forward on Busy On ^[475]</td><td>✓</td><td>*03</td><td>✓ - Toggles.</td></tr><tr><td>Forward on Busy Off ^[475]</td><td>✓</td><td>*04</td><td>✓</td></tr><tr><td>Disable Internal Forwards ^[464]</td><td>✓</td><td>✗</td><td>✗</td></tr><tr><td>Enable Internal Forwards ^[465]</td><td>✓</td><td>✗</td><td>✗</td></tr><tr><td>Disable Internal Forward Busy or No Answer ^[465]</td><td>✓</td><td>✗</td><td>✗</td></tr><tr><td>Enable Internal Forward Busy or No Answer ^[465]</td><td>✓</td><td>✗</td><td>✗</td></tr><tr><td>Set No Answer Time ^[497]</td><td>✓</td><td>✗</td><td>✓</td></tr><tr><td>Cancel All Forwarding ^[450]</td><td>✓</td><td>*00</td><td>✓</td></tr></table>				Feature/Action	Short Code	Default	Button	Forward Number ^[474]	✓	*07*N#	✓	Forward on Busy Number ^[474]	✓	*57*N#	✓	Forward on Busy On ^[475]	✓	*03	✓ - Toggles.	Forward on Busy Off ^[475]	✓	*04	✓	Disable Internal Forwards ^[464]	✓	✗	✗	Enable Internal Forwards ^[465]	✓	✗	✗	Disable Internal Forward Busy or No Answer ^[465]	✓	✗	✗	Enable Internal Forward Busy or No Answer ^[465]	✓	✗	✗	Set No Answer Time ^[497]	✓	✗	✓	Cancel All Forwarding ^[450]	✓	*00	✓
Feature/Action	Short Code	Default	Button																																													
Forward Number ^[474]	✓	*07*N#	✓																																													
Forward on Busy Number ^[474]	✓	*57*N#	✓																																													
Forward on Busy On ^[475]	✓	*03	✓ - Toggles.																																													
Forward on Busy Off ^[475]	✓	*04	✓																																													
Disable Internal Forwards ^[464]	✓	✗	✗																																													
Enable Internal Forwards ^[465]	✓	✗	✗																																													
Disable Internal Forward Busy or No Answer ^[465]	✓	✗	✗																																													
Enable Internal Forward Busy or No Answer ^[465]	✓	✗	✗																																													
Set No Answer Time ^[497]	✓	✗	✓																																													
Cancel All Forwarding ^[450]	✓	*00	✓																																													
Phone Manager	Users can set a forward destination number and enable Forward on Busy through the Forwarding tab. Click  and select the Forwarding tab. When a user has Forward on Busy enabled, it is indicated by Fwd on Busy and the destination in the title bar. It is not indicated by Speed Dial icons set to that user.																																															
SoftConsole	A SoftConsole user can view and edit a user's forwarding settings. Through the directory, select the required user. Their current forwarding status is shown. Double-click on the details and select Forwarding to alter their forwarding settings.																																															
Voicemail	For calls initially targeted to the user but then redirected, when voicemail is invoked the mailbox of the user is used and not the mailbox of the destination. For Voicemail Pro, the Play Configuration Menu action can be used to let callers set the forward destination. It cannot however be used to enable Forward on Busy or set a separate Forward on Busy number.																																															

9.28.5 Forward on No Answer

Summary: Have your calls redirected another number if it rings without being answered.

- **Priority**

This function is overridden by DND and Forward on Busy if applied. It can be applied after a Follow Me attempt. Forward Unconditional overrides Forward on Busy and Forward on No Answer.

- **Destination**

The destination can be any number that the user can dial. The Forward Unconditional destination number is used unless a separate number Forward on Busy Number is set. If Inhibit Off-Switch Transfers is applied, the caller is directed to voicemail if available, otherwise they receive busy tone.

- **Duration**

The destination is rung using the forwarding user's No Answer Time. If this expires, the call goes to voicemail if available. Otherwise the call continues to ring at the destination. Calls to an external destination sent on trunks that do not signal their state, for example analog loop start trunks, are assumed to have been answered.

- **Phone**

Forward on No Answer is not indicated and normal dial tone is used.

- **Calls Forwarded**

Once a call has been forwarded to an internal destination, it will ignore any further **Forward No Answer** or **Forward on Busy** settings but may follow additional **Forward Unconditional** settings.

Call Types Forwarded		
Internal	✓	Optional.
External	✓	Forwarded.
Hunt Group	✗	Not applicable.
Page	✗	Not applicable.
Follow Me	✗	Rings.
Forwarded	✓	Forwarded.
VM Ringback	✗	Rings.
Automatic Callback	✗	Rings.
Transfer Return	✗	Rings.
Hold Return	✗	Ring/hold cycle.
Park Return	✗	Rings.

Forward on No Answer Controls

Forward on No Answer

Manager	A user's forwarding settings can be viewed and changed through the User Forwarding ^[284] tab within the IP Office configuration settings.																																												
Controls	The following short code features/button programming actions can be used: <table><tr><th>Feature/Action</th><th>Short Code</th><th>Default</th><th>Button</th></tr><tr><td>Forward Number^[474]</td><td>✓</td><td>*07*N#</td><td>✓</td></tr><tr><td>Forward on Busy Number^[474]</td><td>✓</td><td>*57*N#</td><td>✓</td></tr><tr><td>Forward on No Answer On^[476]</td><td>✓</td><td>*05</td><td>✓ - Toggles.</td></tr><tr><td>Forward on No Answer Off^[476]</td><td>✓</td><td>*06</td><td>✓</td></tr><tr><td>Enable Internal Forwards^[468]</td><td>✓</td><td>✗</td><td>✗</td></tr><tr><td>Disable Internal Forwards^[464]</td><td>✓</td><td>✗</td><td>✗</td></tr><tr><td>Enable Internal Forward Busy or No Answer^[468]</td><td>✓</td><td>✗</td><td>✗</td></tr><tr><td>Disable Internal Forward Busy or No Answer^[465]</td><td>✓</td><td>✗</td><td>✗</td></tr><tr><td>Set No Answer Time^[497]</td><td>✓</td><td>✗</td><td>✓</td></tr><tr><td>Cancel All Forwarding^[450]</td><td>✓</td><td>*00</td><td>✓</td></tr></table>	Feature/Action	Short Code	Default	Button	Forward Number ^[474]	✓	*07*N#	✓	Forward on Busy Number ^[474]	✓	*57*N#	✓	Forward on No Answer On ^[476]	✓	*05	✓ - Toggles.	Forward on No Answer Off ^[476]	✓	*06	✓	Enable Internal Forwards ^[468]	✓	✗	✗	Disable Internal Forwards ^[464]	✓	✗	✗	Enable Internal Forward Busy or No Answer ^[468]	✓	✗	✗	Disable Internal Forward Busy or No Answer ^[465]	✓	✗	✗	Set No Answer Time ^[497]	✓	✗	✓	Cancel All Forwarding ^[450]	✓	*00	✓
Feature/Action	Short Code	Default	Button																																										
Forward Number ^[474]	✓	*07*N#	✓																																										
Forward on Busy Number ^[474]	✓	*57*N#	✓																																										
Forward on No Answer On ^[476]	✓	*05	✓ - Toggles.																																										
Forward on No Answer Off ^[476]	✓	*06	✓																																										
Enable Internal Forwards ^[468]	✓	✗	✗																																										
Disable Internal Forwards ^[464]	✓	✗	✗																																										
Enable Internal Forward Busy or No Answer ^[468]	✓	✗	✗																																										
Disable Internal Forward Busy or No Answer ^[465]	✓	✗	✗																																										
Set No Answer Time ^[497]	✓	✗	✓																																										
Cancel All Forwarding ^[450]	✓	*00	✓																																										
Phone Manager	Users can set a forward destination number and enable Forward on No Answer through the Forwarding tab. Click  and select the Forwarding tab. When a user has Forward on No Answer enabled, it is indicated by Fwd on No Answer and the destination in the title bar. It is not indicated by Speed Dial icons set to that user.																																												
SoftConsole	A SoftConsole user can view and edit a user's forwarding settings. Through the directory, select the required user. Their current forwarding status is shown. Double-click on the details and select Forwarding to alter their forwarding settings.																																												
Voicemail	For calls initially targeted to the user but then redirected, when voicemail is invoked the mailbox of the user is used and not the mailbox of the destination. For Voicemail Pro, the Play Configuration Menu action can be used to let callers set the forward destination. It cannot however be used to enable Forward on Busy or set a separate Forward on Busy number.																																												

9.28.6 Determining a User's Busy Status

Various IP Office features allow users to handle more than one call at a time. Therefore the term "busy" has different meanings. To other users it means whether the user is indicated as being busy. To the system it means whether the user is not able to receive any further calls. The latter is used to trigger 'busy treatment', either using a user's **Forward on Busy** settings or redirecting calls to voicemail or just returning busy tone.

- **Busy Indication - In Use**

The user busy indication provided to programmable buttons, and to the Phone Manager and SoftConsole applications, is based on the monitored user's hook switch status. Whenever the user is off-hook, they will be indicated as being busy regardless of call waiting or call appearance settings.

- **Busy to Further Calls**

Whether a user can receive further calls is based on a number of factors as described below.

- **Logged In and Present**

Is the user logged into an extension and is that extension physically connected to the IP Office system.

- **Busy on Held**

If a user enables their Busy on Held setting, whenever they have a call on hold, they are no longer available to any further incoming calls.

- **Appearance Buttons**

A user's call appearance button are used to receive incoming calls. Normally, whilst the user has any free call appearance buttons, they are available to receive further calls. Exceptions are:

- **Reserve Last Appearance**

Users with appearance buttons require a free call appearance button to initiate transfers or conferences. Therefore it is possible through the user's configuration settings to reserve their last call appearance button for outgoing calls only.

- **Other Appearance Buttons**

Calls may also be indicated on line, call coverage and bridged appearance buttons.

- **Call Waiting**

Users of phones without appearance buttons can use call waiting. This adds an audio tone, based on the system locale, when an additional call is waiting to be answered. Only one waiting call is supported, any further calls receive busy treatment.

- **Hunt Group Calls**

A user's availability to receive hunt group calls is subject to a range of other factors. See [Member Availability](#)³²⁷.

9.28.7 Chaining and Loops

Chaining is the process where a call forward to an internal user destination is further forwarded by that user's own forwarding settings.

- **Follow Me Calls**

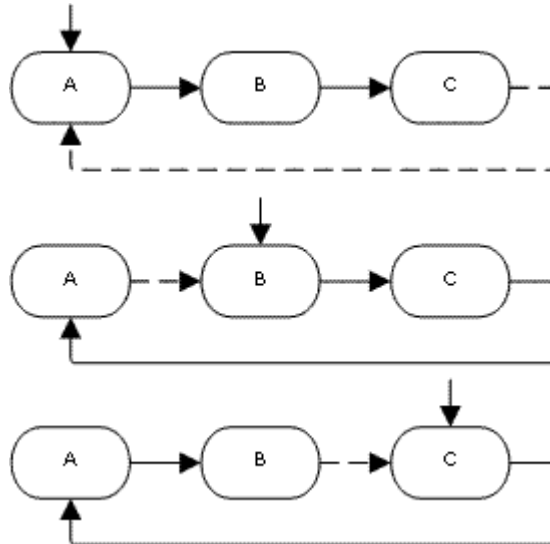
Follow Me calls are not chained. They ignore the forwarding, Follow Me and Do Not Disturb settings of the Follow Me destination.

- **Voicemail**

If the call goes to voicemail, the mailbox of the initial call destination before forwarding is used.

- **Looping**

When a loop would be created by a forwarding chain, the last forward is not applied. For example the following are scenarios where A forwards to B, B forwards to C and C forwards to A. In each case the final forward is not used as the destination is already in the forwarding chain.



- **Maximum Number of Forwards**

A maximum of 10 forwarding hops are supported for any call.

- **Calls Forwarded**

Once a call has been forwarded to an internal destination, it will ignore any further **Forward No Answer** or **Forward on Busy** settings but may follow additional **Forward Unconditional** settings.

9.28.8 Transferring Calls

The following are some of the methods usable to transfer calls.

- **Supervised Transfer**

This is a transfer where the user waits for the transfer destination to answer and talks to that party before completing the transfer, this is referred to as a consultation call. They then either complete the transfer or drop the call and return to the held for transfer call.

- **Pre-IP Office 4.0**

The initial consultation stage is presented as an internal call with internal call details and ringing.

- **IP Office 4.0+**

The call details, display, ringing and forwarding applied are appropriate to the type of call being transferred.

- **Unsupervised Transfer**

This is a transfer completed whilst the destination is still ringing.

- **Automatic Transfer - Forwarding**

The IP Office allows users to automatically transfer calls using forwarding options such as Forward on Busy, Forward on No Answer and Forward Unconditional. For full details see [DND, Follow Me and Forwarding](#) ^[75].

- **Transfers to a Forwarded Extension**

For IP Office 4.0 and higher, when transferring a call to another extension that has forwarding enabled, the type of call being transferred is used. For example, if transferring an external call, if the transfer target has forwarding of external calls enabled then the forward is used.

- **Transfer Return Time (secs):** *Default = Blank (Off), Range 1 to 99999 seconds.*

Sets the delay after which any call transferred by the user, which remains unanswered, should return to the user. A return call will continue ringing and does not follow any forwards or go to voicemail.

- Pre-3.2 IP Office, the transfer return only occurs if the user has no other connected call.
 - For IP Office 3.2+, transfer return will occur if the user has an available call appearance button.
 - Transfer return is not applied if the transfer is to a hunt group that has queuing enabled.

Manual Transfer Methods			
Tool	Unsupervised Transfer	Supervised Transfer	Reclaim
Analog Phone	1. Press R. Note that broken dial tone is heard while a call is on hold. 2. Dial the transfer destination number. 3. Hang-up.	1. Press R. 2. Dial the transfer destination number. 3. If the destination answers and accepts the call, hang-up. 4. If the called party does not answer or does not want to accept the call, press R again. 5. To return to the original caller press R.	*46
Avaya DS Phone	1. Press  Transfer. 2. Dial the transfer destination number. 3. Press  Transfer again to complete the transfer.	1. Press  Transfer. 2. Dial the transfer destination number. 3. If the destination answers and accepts the call, press  Transfer again to complete the transfer. 4. If the called party does not answer or does not want to accept the call, press  Drop. 5. To return to the original caller press it's call appearance button.	*46
Phone Manager	1. Click  . 2. Enter the transfer destination in the Number box. 3. Select Blind Transfer button or click  .	1. Click  . 2. Enter the transfer destination in the Number box. 3. Select Transfer. The original call will be put on Hold. 4. Once the call has been answered you can talk with the transfer target. 5. To transfer the call, click  . 6. To cancel the transfer and reconnect the held call press End.	Function Reclaim

9.28.9 Off-Switch Transfer Restrictions

Users cannot transfer calls to a destination that they cannot normally dial. This applies to manual transfers and also to automatic transfers (forwarding). In addition to call barring applied through short codes, the following IP Office settings may restrict a users ability to transfer calls.

User Specific Controls

- **Outgoing Call Bar:** *Default = Off* ([User | Telephony | Supervisor Settings](#)^[279])
When enabled, this setting stops a user from making any external calls. It therefore stops them making any external transfers or forwards.
- **Inhibit Off-Switch Forward/Transfer:** *Default = Off* ([User | Telephony | Supervisor Settings](#)^[279]), *Software level = 3.2+.*
When enabled, this setting stops the specific user from transferring or forwarding calls externally. This does not stop another user transferring the restricted users calls off-switch on their behalf.
- When either system or user **Inhibit Off-Switch Forward/Transfer** is enabled, it affects the operation of the user's Phone Manager application and phone. In Phone Manager, the destination fields on the **Forwarding** tab are changed to drop-down lists containing only internal destinations. User attempts to set an external forward destination via a short code will receive error tone. User attempt to set an external forward destination via a programmable button on their phone will not have a Next option allowing the number to be saved.

Line Specific Control

- **Analog Trunk to Trunk Connection:** *Default = Off* ([Line | Analog Options](#)^[196])
When not enabled, users cannot transfer or forward calls on one analog trunk back off-switch using another analog trunk.

System Wide Controls

- **Inhibit Off-Switch Forward/Transfer:** *Default = Off* ([System | Telephony | Telephony](#)^[166])
When enabled, this setting stops any user from transferring or forwarding calls externally.
- **Allow Outgoing Transfer:** *Default = Off* ([System | Telephony | Telephony](#)^[166]), *Software level = Pre-4.0.*
When not enabled, users are only able to transfer or forward incoming external calls back off-switch. For IP Office 4.0 and higher this option is not present, instead outgoing transfers are allowed by default.
- **Restrict Network Interconnect:** *Default = Off* ([System | Telephony | Telephony](#)^[166]), *Software level = 4.2+.*
When this option is enabled, each trunk is provided with a **Network Type** option that can be configured as either **Public** or **Private**. The IP Office will not allow calls on a Public trunk to be connected to a Private trunk and vice versa, returning busy indication instead.
 - Due to the nature of this feature, its use is not recommended on systems also using any of the following other IP Office features: [Small Community Networks](#)^[792], VPNremote, Phone Manager telecommuter mode.

Conference Control

Users can use conference controls to effectively transfer calls. This includes transferring an external call to another external number.

For IP Office 5.0, the use of conferencing to effect off-switch transfers can be restricted using the **Inhibit External Only Impromptu Conference**^[166] setting ([System | Telephony | Telephony](#)^[166]). For pre-IP Office 5.0, the off-switch transfer restrictions above are applied.

9.28.10 Centrex Transfer

Centrex Transfer is a feature provided by some line providers on external analog lines. It allows the recipient of a call on such a line to transfer that call to another external number. The transfer is then performed by the line provider and the line is freed. Without Centrex Transfer, transferring an external call to another external number would occupy both an incoming and outgoing line for the duration of the call.

IP Office 4.0 and higher supports Centrex Transfer using the existing Flash Hook features.

The following are the supported controls and usages for Centrex Transfer on IP Office:

- **Centrex Transfer Button Operation**

The action **Flash Hook (Advanced | Miscellaneous | Flash Hook)** can be assigned to programmable buttons on DS and IP phones. This button can be configured with or without a telephone number for an automatic or manual transfer respectively.

- **Manual Transfer**

If the programmable button is setup as a Flash Hook button without a target telephone number, pressing the button returns dial tone to the user. They can then dial the required transfer number and when they hear ringing or an answer, hang up to complete the Centrex Transfer.

- **Automatic Transfer**

If the programmable button is setup as a Flash Hook button with a target telephone number, pressing the button performs the Centrex Transfer to the numbers as a single action.

- **Centrex Transfer Short Code Operation**

The short code feature Flash Hook can be used with IP Office short codes. It can be setup with or without a telephone number in the same way as a Flash Hook programmable button detailed above. The line group must be the group of analog lines from the Centrex service line provider.

- **Centrex Transfer Operation for Analog Extensions**

Most analog phones have a button that performs the action of sending a hook flash signal. The marking of the button will vary and for example may be any of R, H, Recall or Hold. For IP Office analog extensions, pressing this button sends a hook flash to the IP Office to hold any current call and return dial tone.

- To perform a Centrex Transfer, pressing the analog extension's hook flash button should be followed by the dialing of a Flash Hook short code.
- For analog extension users with Call Waiting enabled, pressing the hook flash button during a call will hold the current call and connect any call waiting. Therefore it is recommended that analog extension users wanting to use Centrex Transfer should not also have Call Waiting enabled.

- **Transfer from Voicemail/Auto-Attendant**

This operation is only supported through Voicemail Pro using an Assisted Transfer action with the destination set to a Flash Hook short code.

Additional Notes

- **Addition Prefix Dialing**

In some cases the Centrex service provider may require a prefix for the transfer number. If that is the case, that prefix must be inserted in the button programming or the short code used for the Centrex Transfer.

- **Phone Manager and SoftConsole**

Centrex Transfer is not supported for calls being held and transferred through IP Office applications such as Phone Manager and SoftConsole.

- **Conference Calls**

Centrex Transfer is not supported with conference calls.

9.29 Conferencing

IP Office systems support the following conference capabilities:

Control Unit	DSP		Conference Capability
Small Office Edition	✓	24	Supports up to 24 conference parties with a maximum of 6 parties in any particular conference.
IP403	✗	64	Support multiple conferences totaling up to 64 parties. For example: 20 x 3-way conferences plus 1 x 4-way conference. 1 x 10-way conference (10 parties) plus 11 x 3-way conferences (33 parties) and free capacity for 20 more conference parties to join new or existing conferences.
IP406 V1	✗	64	
IP406 V2	✓	64	
IP500	✓	64	
		128	For IP Office 5.0+, the IP500 capacity has been increased to 128. However the maximum of 64 parties still applies to each individual conference. The system capacity is reduced by the number of embedded voicemail channels in use.
IP412	✗	128	The IP412 supports two 64 party conference banks. When a new conference is started, the bank with the most free capacity is used for that conference. However once a conference is started on one conference bank, that conference cannot use any free capacity from the other conference bank.

Notes:

- **DSP**

The DSP column in the table above indicates systems that automatically apply silence suppression to quiet parties in conferences involving 10 or more parties.

- **Other Use of Conference Resources**

System features such as call intrusion, call recording and silent monitoring all use conference resources for their operation. On the IP500, each embedded voicemail call in progress also reduces the conference capacity.

- **Automatically Ending Conferences**

The behavior for the IP Office automatically ending a conference varies as follows:

- For pre-4.0 IP Office systems, if a conference has just two parties, and one party leaves, the conference call is ended. This may affect conferences that are just beginning but currently only contain the first two parties to join.
- For IP Office 4.0, a conference remains active until the last extension or trunk with reliable disconnect leaves. Connections to voicemail or a trunk without reliable disconnect (for example an analog loop-start trunk) will not hold a conference open.
- For IP Office 5.0, the **Drop External Only Impromptu Conference** setting controls whether a conference is automatically ended when the last internal party exits the conference.

- **Analog Trunk Restriction**

In conferences that include external calls, only a maximum of two analog trunk calls are supported. This limit is not enforced by the IP Office software.

- **Recording Conferences**

If call recording is supported, conference calls can be recorded just like normal calls. Note however that recording is automatically stopped when a new party joins the conference and must be restarted manually. This is to stop parties being added to a conference after any "advice of recording" message has been played.

- **IP Office Conferencing Center**

If IP Office Conferencing Center is installed, 5 resources are reserved for use by the system. The maximum number of callers in any one conference and the total number of people on conference calls is reduced by 5.

- **IP Trunks and Extensions**

Conferencing is performed by services on the IP Office's non-IP interface. Therefore a voice compression channel is required for each IP trunk or extension involved in the conference.

- **Call Routing**

A short code routing calls into a conference can be used as an Incoming Call Route destination.

- **Conference Tones**

The IP Office provides conference tones. These will be either played when a party enters/leaves the conference or as a regularly repeated tone. This is controlled by the [Conferencing Tone](#) ⁽¹⁶⁹⁾ ([System | Telephony | Tones & Music](#) ⁽¹⁶⁹⁾) option.

9.29.1 Default Conference Handling

The methods below use the IP Office's default system short codes.

To start/add to a conference:

1. Place your first call or the existing conference on hold. Existing conference parties will still be able to talk to each other.
2. Call the new party.
 - If not answered, or diverted to voicemail, or answered but the party does not want to join the conference; put them on hold and dial *52 to clear the call.
3. If answered and the other party wants to join the conference, put them on hold and dial *47.
4. All held calls are now in conference.
 - Digital display extensions will see CONF followed by the conference number.

To exit a conference:

1. Parties wanting to leave a conference can simply hang-up.

9.29.2 Using Conference Meet Me

Each conference on the IP Office is assigned a conference number. This number is displayed on suitable display phones.

Conference Meet Me allows users to join or start a specific numbered conference. This method of operation allows you to advertise a conference number and then let the individual parties join the conference themselves.

Through the Button Programming tab within IP Office Manager, the Conference Meet Me function can be assigned to a DSS key (select **Advanced | Call | Conference Meet Me**). This allows simple one key access by internal users to specific conferences.

- For IP Office 4.1+ the following enhancements apply to use buttons programmed to Conference Meet Me:
 - When the conference is active, any buttons associated with the conference ID indicate that active state.
 - Calls can be transferred to the conference by pressing Transfer and then pressing the Conference Meet Me button.

Note:

- Conference Meet Me can create conferences that include only one or two parties. These are still conferences using slots from the IP Office's conference capacity.
- For pre-IP Office 5.0 systems, this function is not supported on IP500 systems without an **IP500 Upgrade Standard to Professional** license.

Example 1: Meet Me to a user specified conference

The following example system short code allows any extension to dial *67* and then the number of the conference which they want to join followed by #. For example dialing *67*600# will put the user into conference 600.

- Short Code: *67*N#
- Telephone Number: N
- Feature: Conference Meet Me

Example 2: Meet Me to a system specified conference number

The following example system short code allows the dialing extension to join a specific conference, in this case 500.

- Short Code: *500
- Telephone Number: 500
- Feature: Conference Meet Me

If you are asked to add a party to a conference, having a conference meet me short code is very useful. With the conference in progress, call the new party. When they answer, hold the call, dial the conference meet me short code and then hang-up.

9.30 Hot Desking

Hot desking allows users to log in at another phone. Their incoming calls are rerouted to that phone and their user settings are applied to that phone. There are a number of setting and features which affect logging in and out of IP Office phones.

- In order to hot desk, a user must be assigned a **Login Code** ^[279] ([User | Telephony | Supervisor Settings](#) ^[279]) in the IP Office configuration.
- By default, each IP Office extension has an **Base Extension** setting. This associates the extension with the user who has the matching **Extension** settings as being that extension's default associated user.
 - By leaving the **Base Extension** setting for an extension blank, it is possible to have an extension with no default associated user. All extensions in this state use the settings of a special user named **NoUser**. On suitable phones the display will show **NoUser**.
 - You can create users whose Extension directory number is not associated with any physical extension. These users must have a log in code in order to log in at a phone when they need to make or receive calls. In this way the IP Office system can support more users than it has physical extensions.
- When another user logs in at an extension, they take control of that phone. Any existing user, including the default associated user, is logged out that phone.
 - Any user settings not applicable to the type of phone on which the user has logged in become inaccessible. For example some programmable button features will become inaccessible if the phone at which a user logs in does not have a sufficient number of programmable buttons.
 - Note that settings that are stored by the phone rather than by the IP Office remain with the phone and do not move when a user hot desks.
- When a user logs off or is logged out by someone else logging in, they are automatically logged back in at the extension for which they are the default associated user if no one else is logged in at that extension. However this does not happen for users set to **Forced Login** ([User | Telephony | Supervisor Settings](#) ^[279]).
- For each user, you can configure how long the extension at which they are logged in can remain idle before they are automatically logged out. This is done using the Login Idle Period option. This option should only be used in conjunction with Force Login.
- Logged in users who are members of a hunt group can be automatically logged out if they do not answer hunt group calls presented to them. This is done by selecting **Logged Off** as the user's **Status on No Answer** ([User | Telephony | Supervisor Settings](#) ^[279]) setting.
- Calls to a logged out user are treated as if the user is busy until the user logs in.
- Logging in and out at a phone can be done either using IP Office short codes or programmable buttons.
 - The default system short code for logging in, is ***35*N#** where the user replaces N with their extension number and then log in code separated by a *. This uses the short code feature **ExtnLogin** ^[469]. If the user dials just a log in code as N, it is checked against the user with the same extension number as the extension's base extension number.
 - The default system short code for logging out is ***36**. This uses the short code feature **ExtLogout** ^[469]. For IP Office 4.0 and higher this feature cannot be used by a user who does not have a log in code or by the default associated user of an extension unless they are set to forced log in.
 - The **ExtnLogin** ^[602] and **ExtnLogout** ^[602] features can be assigned to programmable buttons on suitable Avaya phones. The **ExtnLogin** button will then prompt the user to enter their details.

9.30.1 Remote Hot Desking

IP Office 4.0+ supports hot desking between IP Office systems within a Small Community Network.

The system on which the user is configured is termed their 'home' IP Office, all other systems are 'remote' IP Offices. For pre-IP Office 5.0 systems, this feature requires the IP Offices to have **Advanced Small Community Networking** licenses.

- **User Settings**

When a user logs in to a remote IP Office system;

- The user's incoming calls are rerouted across the SCN.
- The user's outgoing calls uses the settings of the remote IP Office.
- The user's own settings are transferred. However some settings may become unusable or may operate differently.
 - The user's settings are transferred but user rights are not.
 - If user rights with the same name exist on the remote system then they will be used. The same applies for user rights applied by time profiles, if a time profile with the same name also exists on the remote system .
 - Appearance buttons configured for users on the home system will no longer operate.
 - Various other settings may either no longer work or may work differently depending on the configuration of the remote system at which the user has logged in. For example T3 phones the personal directory is not transferred with the user.

- **Break Out Dialing**

In some scenarios a hot desking user logged in at a remote system will want to dial a number using the system short codes of another system. This can be done using either short codes with the **Break Out** feature or a programmable button set to **Break Out**. This feature can be used by any user within the Small Community Network but is of most use to remote hot deskers.

9.30.2 Call Center Agents

On IP Office systems with a call center application such as Compact Contact Center (CCC) or Compact Business Center (CBC), logging in and logging out is a key part of tracking and reporting on call center agents. It also controls call distribution as, until the agent logs in, their hunt group membership is seen as disabled.

For IP Office, CCC, CBC and Delta Server, an agent is defined as being a user with a Login Code and set to Forced Login. Those users consume a CCC agent license.

9.30.3 Hot Desking Examples

The following are example of different ways that the hot desking settings can be used.

Scenario 1: Occasional Hot Desking

In this scenario, a particular user, for this example extension 204, needs to occasionally work at other locations within the building.

1. A Login Code is added to the user's configuration settings, for this example 1234.
2. The user can now log in when needed at any other phone by dialing *35*204*1234#. The phone's default associated user is logged out by this and their calls get busy treatment. User 204 is also logged out their normal phone and their calls now rerouted to the phone at which they have logged in.
3. When finished, the user can dial *36 to log out.
4. This logs the phone's normal default user back on. Its also logs the hot desking user back on at their normal extension.

Scenario 2: Regular Hot Desking

This scenario is very similar to the one above. However the user doesn't want to be automatically logged back in on their normal phone until they return to its location.

1. A Login Code is added to the user's configuration settings, for this example 1234.
2. The Forced Login option is selected.
3. When the user logs out of the phone that they are currently using, they are no longer automatically logged in on their normal extension. When they return to it they must dial *35*204*1234# to log in.
4. Whilst not logged in anywhere, calls to the user receive busy treatment.

Scenario 3: Full Hot Desking

Similar to the scenarios above but this time the user doesn't have a regular phone extension that they use. In order to make and receive calls they must find a phone at which they can log in.

1. The user is given an Extension directory number that is not matched by the extension directory number setting of any existing extension.
2. They are also given a Login Code and a Login Idle Period is set, for this example 3600 seconds (an hour). Forced Login isn't required as the user has no default extension at which they might be automatically logged in by the IP Office system.
3. The user can now log in at any available phone when needed.
4. If at the end of the business day they forget to log out, the Login Idle Period will eventually log them off automatically.

Scenario 4: Call Center Hot Desking

In this scenario, the phone extensions have no default extension number. Several phones set like this might be used in a call center where the agents use whichever desk is available at the start of their shift. Alternatively a set of desks with such phones might be provided for staff that are normally on the road but occasionally return to the office and need a temporary desk area to complete paper work.

1. For the extensions, the Extension setting is left blank. This means that those phones will be associated with the NoUser user's settings and display NOT LOGGED ON.
2. The call center agents or road-warrior users are configured with Extension directory numbers that also don't match any existing physical extensions. They are all given Login Code numbers.
3. The users can log in at any of the extensions when required. When they log out or log in elsewhere, the extensions return to the NoUser setting.

9.30.4 Automatic Log Off

Normally a user can either log themselves out or be logged out by another user logging in. The follow methods can be used by the IP Office system to automatically log out a user.

- A remote hot desking user whose home system can no longer be seen by the remote system at which they are logged in is automatically logged out after 24 hours.

The following methods only apply to users with a **Login Code** and set to **Forced Login**.

Idle Timeout

The user **Login Idle Period**^[279] ([User | Telephony | Supervisor Settings](#)^[279]) can be used to automatically log out the user after a set period of phone inactivity. The period can be set between 1 to 99999 seconds and is based on call inactivity other than ringing calls.

Unanswered Calls

Users who are members of hunt groups are presented with hunt group calls when they are logged in and not already on a call. If the user is logged in but not actually present they will continue to be presented with hunt group calls. In this scenario it can be useful to log the user off.

1. For the hunt group

On the Hunt Group | Hunt Group tab, use the Agent's Status on No Answer Applies to setting to select which types of unanswered hunt group calls should change the user's status. The options are:

- None.
- Any Calls.
- External Inbound Calls Only.

2. For the user

The **Status on No Answer**^[279] ([User | Telephony | Supervisor Settings](#)^[279]) can be used. This sets what the user's status should be changed to if they do not answer a hunt group call. The options are:

- **Logged In**
If this option is selected, the user's status is not changed.
- **Busy Wrap-Up**
If this option is selected the user's membership status of the hunt group triggering the action is changed to disabled. The user can still make and receive calls and will still continue to receive calls from other hunt groups to which they belong.
- **Busy Not Available**
If this option is selected the user's status is changed to do not disturb. This is the equivalent of DND and will affect all calls to the user.
- **Logged Off**
If this option is selected the users status is changed to logged out. In that state the cannot make calls and cannot receive calls. Hunt group calls go to the next available agent and personal calls treat the user as being busy.

9.31 Paging

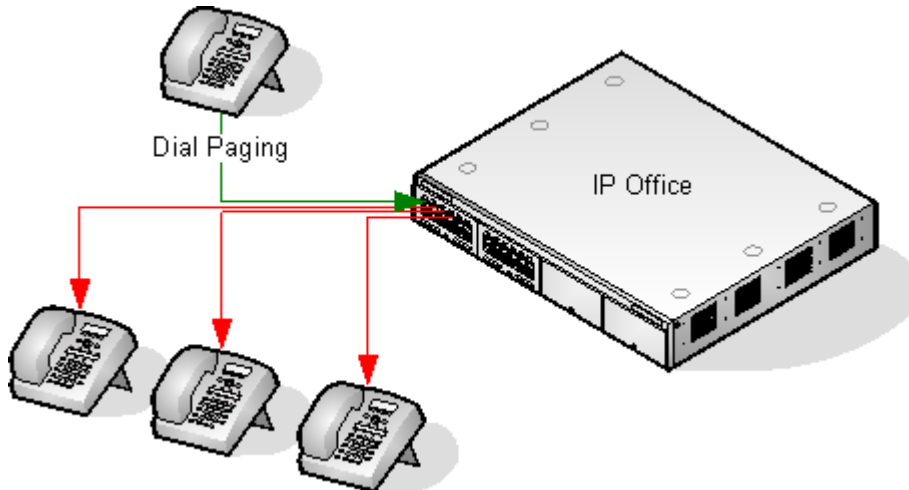
Paging Scenario	Paged Device Connects to...	Short Code/ Button Feature
Phone to Phone ^[773] Simple paging to other IP Office extensions.	Digital Station and Avaya H323 Phones	Dial Paging
Mixed Paging ^[774] This refers to simultaneous paging to phones and a paging speaker.	Analog Extension (Paging Speaker)	Dial Paging
Paging Interface Device ^[774] This refers to paging to a paging interface device such as a UPAM.	Analog Extension (IVR Port)	Dial Extn
	Analog Trunk	Dial

Paging Limits

The table below lists the maximum recommended size for paging groups.

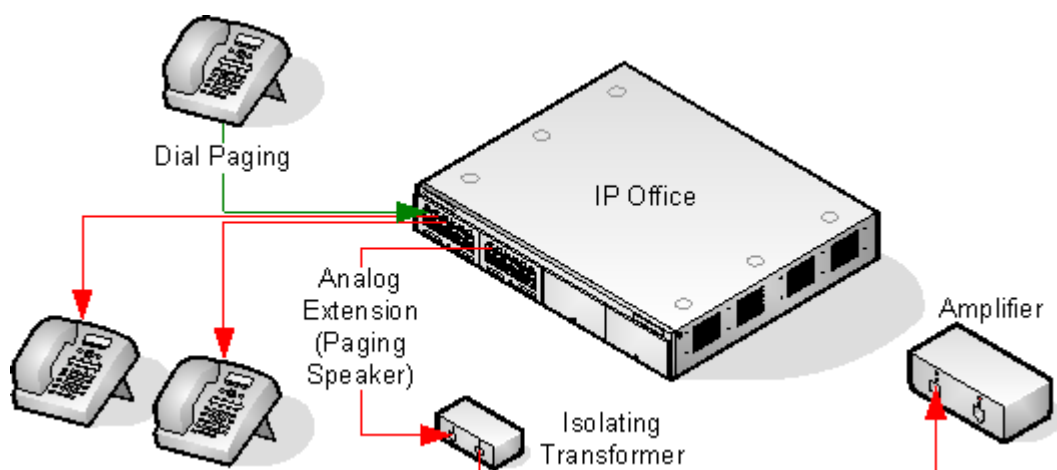
IP Office Control Unit	Software Level	
	4.0+	3.2
IP500	64	–
IP412	48	24
IP406 V2	32	16
Small Office Edition	16	16
IP406 V1	–	16
IP403	–	16

Phone to Phone Paging



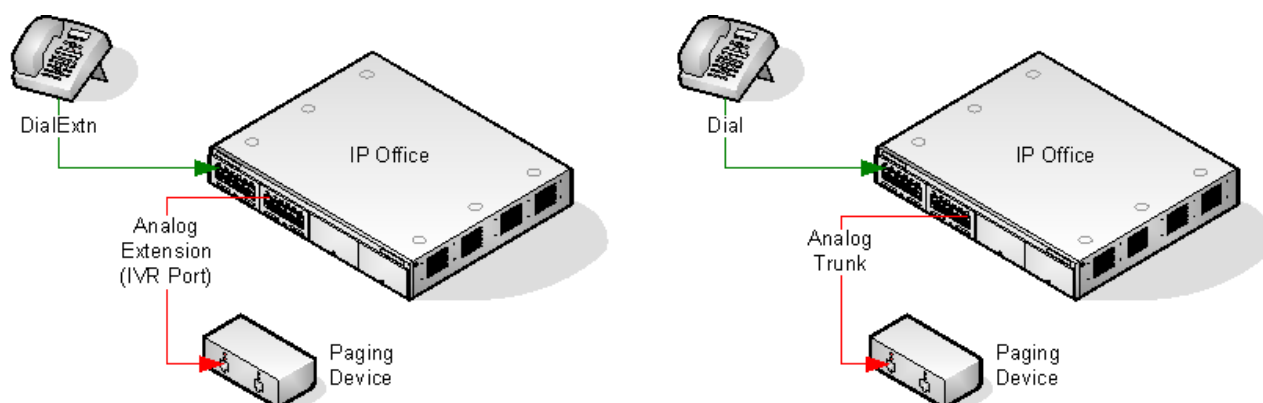
- Paging is supported from all phone types. A page call can be to a single phone or a group of phones.
 - From analog and non-Avaya phones, use a **Dial Paging** ^[461] short code.
 - From Avaya feature phones, a programmable button set to **Dial Paging** ^[592] can be used.
- Paging is only supported to Avaya phones that support auto answer.
- The page is not heard on phones that are active on another call.
- The page is not heard on phones where the user is set to Do Not Disturb or has Forward Unconditional active.
- On Avaya phones with a dedicated **Conference** button, the user can answer a page call by pressing that button. This turns the page into a normal call with the pager.

Mixed Paging



- Uses an amplifier connected to an IP Office analog extension port via a 600ohm isolating transformer. Some amplifiers include an integral transformer.
 - Avaya/Lucent branded amplifiers are designed for connection to special paging output ports not provided on IP Office systems. They are not suitable for supporting mixed paging.
- The transformer and amplifier must be connected when the IP Office is restarted.
- If background music is required between pages, the amplifier must support a separate background music connection and VOX switching.
- The analog extension port is set as a **Paging Speaker** ^[258] in the IP Office configuration ([Extn | Analog | Equipment Classification](#)) ^[258].
- Short code/programmable button: Use **DialPaging** ^[592].

Paging Interface Device



- Uses a paging interface device such as a UPAM or amplifier with analog trunk/extension interface.
- The device can be connected to an analog trunk port or analog extension port.
- If connected to a trunk port:
 - Short code: Use **Dial** ^[455] and the same Line Group ID as the Outgoing Line ID set for the analog trunk.
- If connected to an extension port:
 - Set the analog extension as an **IVR Port** ^[258] in the IP Office configuration ([Extn | Analog | Equipment Classification](#)) ^[258].
 - Short code/programmable button: Use **DialExtn** ^[459].

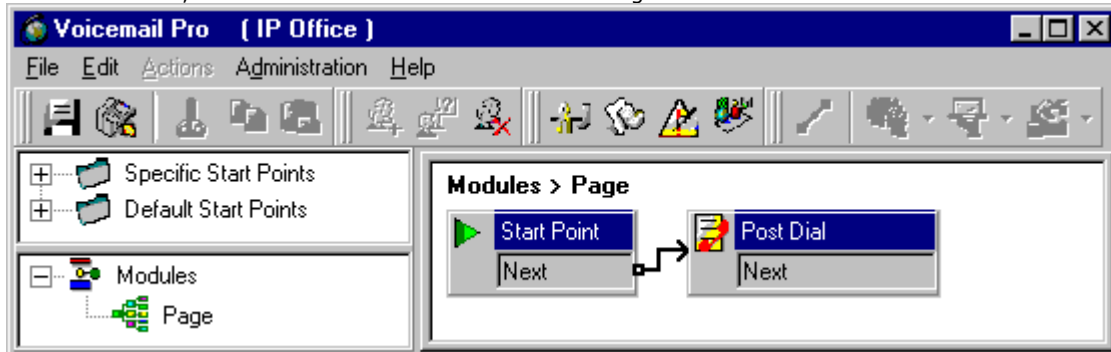
9.31.1 Paging Via Voicemail Pro

Voicemail Pro can be used to deliver pre-recorded announcements. This can be useful when the same announcement is repeated frequently. This method requires the paging port to be an analog extension.

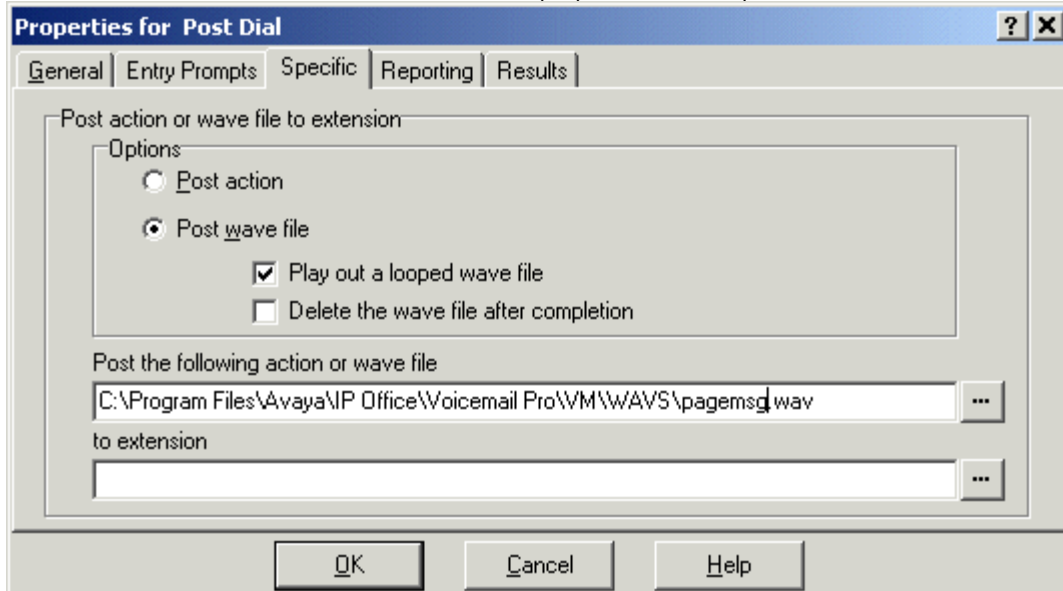
This method also removes the feedback loop that can occur on some sites as the page is first recorded and then played.

Example 1

1. In Voicemail Pro, a new Module was added and named Page.



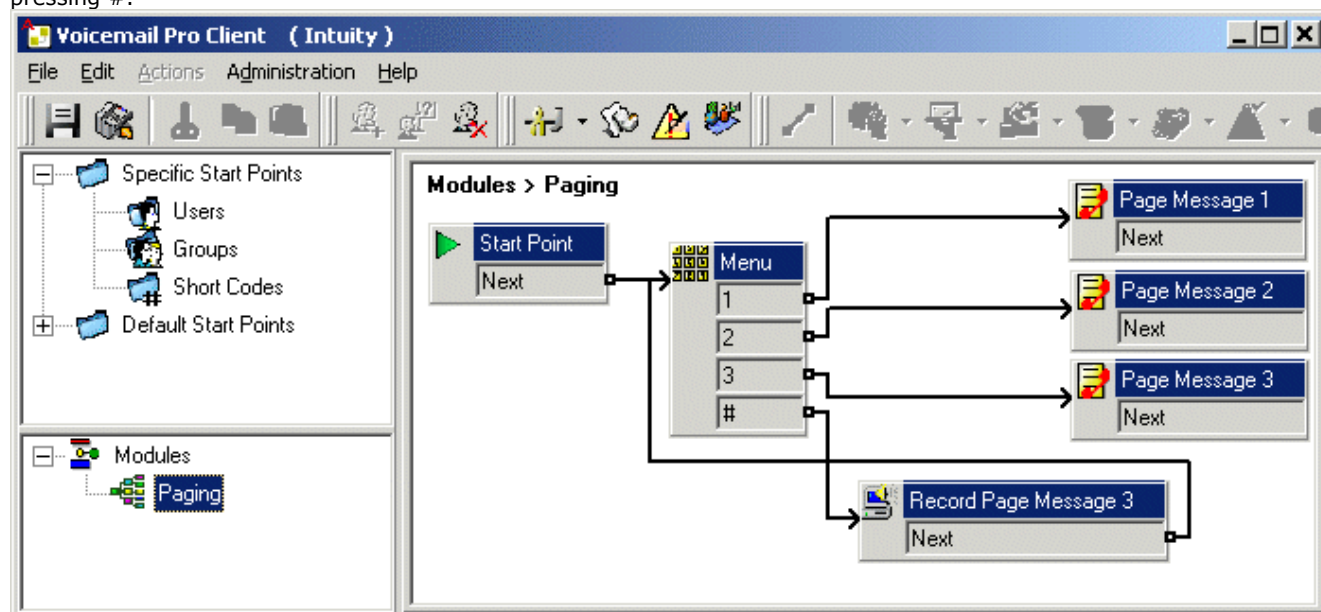
2. A Post Dial action was added to the module. The properties of the Specific tab were set as shown:



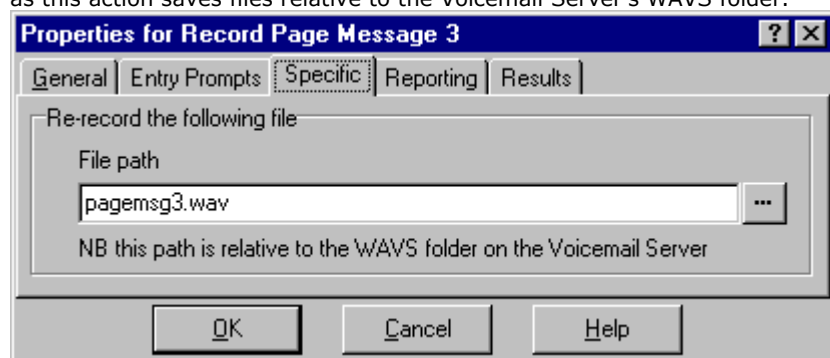
3. We then saved and made live the new Voicemail Pro call flow.
4. In Manager we received the IP Office configuration and created a new short code.
 - Short Code: *80
 - Telephone Number : "Page"
 - Feature: VoicemailCollect.
5. The new IP Office configuration was then merged.

Example 2

This example builds on example 1 by allowing the user to select which message is played from a menu. In this example the user can press 1, 2 or 3 for different messages. They can also re-record the message associated with option 3 by pressing #.



A Play List action was added and in this example set to record pagemsg3.wav. Note that just the file name was specified as this action saves files relative to the Voicemail Server's WAVS folder.



In the Post Dial action that plays back pagemsg3.wav note that the full file path needs to be used.

In IP Office Manager, we then added a short code that triggers the module "Paging" using the VoicemailCollect feature.

Chapter 10.

Data Routing

10. Data Routing

The IP Office system is a network router. In this role it can connect users on its LAN to remote services by using WAN links and telephone trunk connections. It can also allow users to dial-in and then act as if they were using a PC on the LAN.

As well as being a network router, the IP Office is a telephone system. These dual roles allow it to support a range of functions that involve traffic between the network and telephony interfaces. These functions use internal data channels. The number of internal data channels that can be connected from the system's LAN interface to its telephony interface at any time is restricted.

- An internal data channel is a connection between the system's telephony and LAN interfaces. For example a Voicemail connection, an internet connection or a RAS user.
- Calls using a VCM channel (for example VoIP calls and Avaya 4600 and 5600 Series phones) do not use a data channel.
- The number of data channels in use does not necessarily match the number of users:
 - Several LAN network users, browsing the internet using the same service to an ISP would be a single data channel.
 - Several dial-in network users would each have a separate data channel.
- The maximum number of data channels that can be simultaneously in use for voicemail is restricted. These channels also require entry of an appropriate license.

The restriction depends on the type of Control Unit being used.

IP Office Control Unit	Internal Data Channels	Maximum Data Channels for Voicemail
Small Office Edition	18	10
IP403	18	10
IP406 V1	24	20
IP406 V2	40	20
IP412	100	30
IP500	48 ^[1]	40 ^[2]

1. Reduced to 44 when an IP500 4-Port Expansion card is installed.

2. Increased from 30 channels for IP Office 5.0+.

10.1 Network Address Translation (NAT)

NAT allows the addresses used within your LAN to be replaced by a different address when connecting to an external service.

Typically a service provider will allocate you a single IP address to be used when connecting to their service. NAT allows all your user's traffic to appear to be coming from that single address without having to change any of your user's real addresses. This is useful as internally most networks use addresses that have been reserved for public use within networks but are not valid for routing across the internet (since the same addresses may be being used on other networks). Also as stated it allows multiple users to use the same service simultaneously.

The use of NAT is automatically enabled if the IP Office Service being used includes an IP address that is not in the same domain as the its LAN1 IP address.

An exception to the above applies for the Small Office Edition and IP412 control units. These units have two LAN's, LAN1 and LAN2. For these units, on each LAN, Enable NAT can be selected and then applied to traffic between the two LAN's.

10.2 DHCP

The IP Office can act as a simple DHCP server. When switched on with a defaulted configuration, the Control Unit request IP address information from a DHCP server. If it gets no response it assumes the role of DHCP server for the LAN.

In DHCP Server mode, by default the Control Unit issues itself the address 192.168.42.1. It allocates 200 addresses for DHCP clients, 192.168.42.1 to 19.168.42.200. This leaves 192.168.42.201 to 192.168.42.254 available for any computers that need to be allocated a fixed or static IP address. 192.168.42.255 is not used as this is a broadcast address for the LAN.

10.3 Examples

10.3.1 Simple ISDN Internet Connection

In this example, we want all non-local data traffic to be routed to the Internet. The Internet Service Provider (ISP) has provided the account details required. Using the IP Office's [Network Address Translation](#) (NAT), a single account can be used for all users.

1. Select  **Service** and add a normal service. Change the following settings and click **OK**.
 - **Name:** Internet
 - **Account Name:** As provided by the ISP.
 - **Password:** As provided by the ISP.
 - **Telephone Number:** As provided by the ISP.
 - Check **Request DNS**.
2. Select  **IP Route** and add a new route. Change the following settings and click **OK**.
 1. Leave the **IP Address** and **IP Mask** blank. This will then match any data traffic that isn't matched by any other IP Route entry.
 2. Select the service created above as the **Destination**.

Alternate

In the example above, a default IP Route was created which then routed all traffic to the required Service. An alternate method to do this with IP Office is to select Default Route within the Service settings.

10.3.2 ISDN Link Between IP Offices

To create a data link between two sites via ISDN configure the Control Unit as per the following example:

At Site A on IP address 192.168.43.1

1. Create a Normal Service:

The Service name can be any text and is used to identify this particular Service. The Account Name and password are presented to the remote end, therefore must match the User name and password configured at Site B. The Telephone Number is the number of the remote end.

2. Create an IP Route:

In the IP Address field enter the network address of the remote end, not the IP address of the Control Unit. Under Destination select the Service created above.

3. Create a User:

Under the Dial In tab tick Dial In On. This User account is used to authenticate the connection from the Site B. Note that as the Service and User have the same names, these two configuration forms are automatically linked and become an Intranet Service. The User password is displayed at the bottom of the Service tab as the Incoming Password.

4. Setup RAS:

Check the default RAS settings "Dial In" are available, otherwise create a new one. If the RAS settings are given the same name as the Service and User they are automatically linked and become a WAN Service. Ensure that the Encrypted Password option is not checked when using a WAN Service.

5. Setup an Incoming Call Route:

Check the default Incoming Call Route is available, otherwise create a new one. If the Incoming Number is left blank, the Incoming Call Route accepts data calls on any number. Under Destination select the RAS service created above. The Bearer Capability should be AnyData.

At Site B on IP address 192.168.45.1

1. Repeat the above process but altering the details to create an route from Site B to Site A.

10.3.3 Using a Dedicated T1/PRI ISP Link

This section shows an example of a dedicated WAN PPP link to an Internet Service Provider (ISP) over a set of T1 or T1 PRI line channels. The ISP must support this mode of connection and will need to provide details of the required settings. If multiple channels are to be used, then the ISP must support Multilink PPP.

1. Create a New WAN Service

A service is used to define connection settings such as name, password, bandwidth, etc.

1. Select  **Service** to display the existing services.
2. Click on  and select **WAN Service**.
3. Select the **Service** tab.
 1. In the **Name** field enter an appropriate name, such as **"Internet"**. Note that the IP Office will also automatically create User entry and a RAS entry with the same name.
 2. Enter the **Account Name**, **Password** and **Telephone Number** details provided by the ISP.
 3. For the **Firewall Profile** select the firewall created previously.
4. Click the **Bandwidth** tab.
 1. Set the **Maximum No. of Channels** to the maximum number of channels that the service should use. In this example, 12 channels were used.
 2. Leave all the other entries at their default values.
 3. If the ISP has allocated IP address details these are entered through the IP tab. If the IP Address and IP Mask define a different domain from the IP Office LAN, then NAT is automatically applied.
5. Click the **IP** tab.
 1. In the **IP Address** field enter the IP address specified by the ISP.
 2. In the **IP Mask** field enter the IP Mask specified by the ISP.
 3. The settings shown are typical. The actual settings must match those required by the ISP. For example, if Cisco routers are being used then IPHC needs to be ticked.
6. Click the **PPP** tab.
 1. Ensure that the following options are selected. Leave all other options at their default settings.
 - **Multilink**.
 - **Compression Mode**: Disable.
 - **Callback Mode**: Disable.
 - **Access Mode**: Digital64
7. Click **OK**.

2. Create the Virtual WAN Port

In this stage, a WAN port is defined that actually uses T1 or T1 ISDN trunk channels.

1. Select  **WAN Port** to display existing ports.
2. Click on  and select **WAN Port**.
3. In the Name field, enter either **LINEx.y** where:
 - **LINE** must be in uppercase.
 - **x** is the line number. For a trunk card in Slot A, this will be 1. For a trunk card in Slot B, this will be 5.
 - **y** is the lowest numbered channel number to be used by the WAN link minus 1. For example, if the lowest channel to be used is channel 1 then $y = 1 - 1 = 0$.
4. In the **Speed** field, enter the total combined speed of the maximum number of channels sets in the Service. In this example, 12 channels x 64000 bits = 76800.
5. Set the **Mode** to **SyncPPP**.
6. In the **RAS Name** field, select the name used for the Service.
7. Click **OK**.

3. Create an IP Route

By creating an IP route with blank IP address details, it becomes the default route for outgoing IP traffic.

1. Select  **IP Route** to display existing routes.
2. Click on  and select **IP Route**.
3. Leave the **IP Address** and **IP Mask** fields blank.
4. In the **Destination** field, select the WAN service.
5. Leave the **Metric** at default value of **1**.
6. Click **OK**.

4. Configure the Line Channels

This stage of the process differs according to the type of trunk being used.

5. T1 Trunk

Use the following for a T1 trunk.

1. Click  **Line** to display the existing lines.
2. Double-click on the line previously entered in the WAN Port settings.
3. Check that the **Channel Allocation** order matches that required by the ISP. Cisco routers typically use 1->24.
4. Select the channels to be used in the WAN PPP link and change their Channel Type to "Clear Channel 64k".
5. Click **OK**.
6. Click **OK** again.
7. Send the configuration to the IP Office and reboot.

6. T1 PRI Trunk

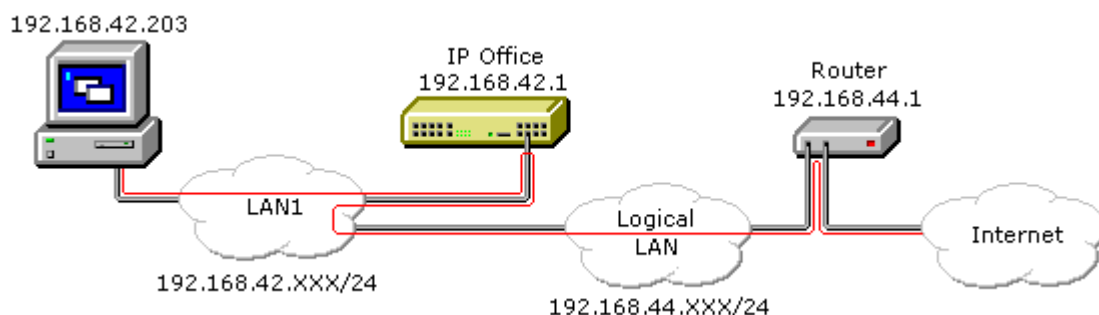
Use the following for a T1 PRI trunk.

1. Click on  **Line** to display the list of existing lines.
2. Double-click on the line previously entered in the WAN Port settings.
3. Check that the **Channel Allocation** order matches that required by the ISP. Cisco routers typically use 1->23.
4. Select the channels to be used in the WAN PPP link and change their Admin to "Out of Service".
5. Click **OK**.
6. Click **OK** again.
7. Send the configuration to the IP Office and reboot.

10.3.4 Logical LAN Connection

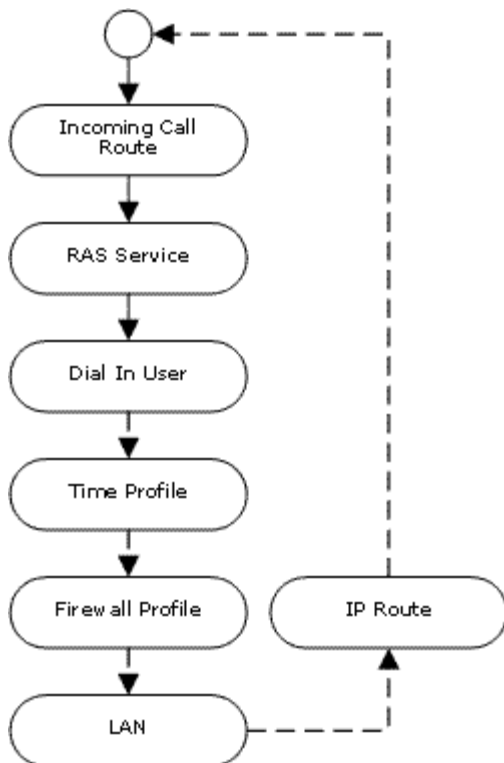
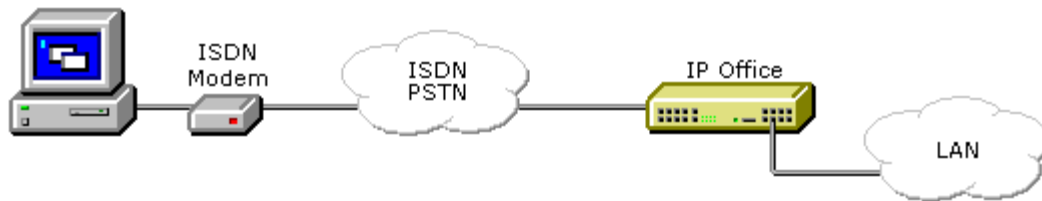
IP Office Small Office Edition and IP412 control units support two separate LAN interfaces (LAN1 and LAN2). These are separately addressed and the IP Office's IP route table and firewalls can be used to control traffic between device attached to the two LAN's.

On other IP Office control units only a single LAN (LAN1) is available. A logical LAN allows these systems to support a second separately addressed LAN on the same interface. Traffic between the IP Office LAN1 and the logical LAN can then be controlled by the IP Office's IP route table and firewalls.



10.3.5 Remote Access

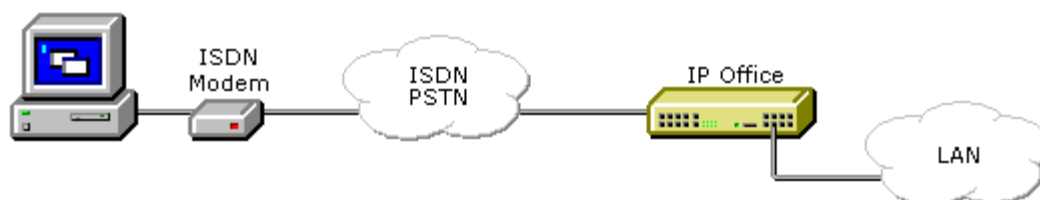
The IP Office support remote access for incoming data calls on trunks.



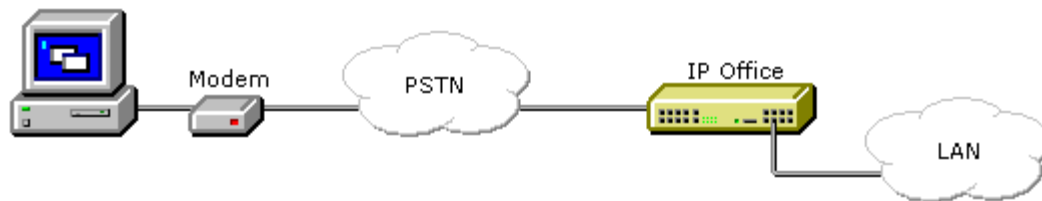
To do remote access, an incoming call is passed through the following elements of the IP Office configuration.

-  **Incoming Call Route**
A Incoming Call Route is used to match incoming remote access calls and pass them to a RAS service as the destination.
-  **RAS Service**
The RAS service defines settings relating to the data traffic methods useable with the call.
-  **User**
The user defines the name and password required for the RAS service. The user must have Dial In On enabled.
 - An **R** setting on the user's [Source Numbers](#) ^[275] tab can be used to define the ICLID from which RAS calls are accepted.
-  **Time Profile**
The user settings can specify a time profile. The time profile then controls when remote access is allowed.
-  **Firewall Profile**
The user settings can specify a firewall profile. The firewall profile then controls what traffic is allowed through the remote access connection.
 - **Static NAT**
IP Office 4.2+ supports the use of [Static NAT](#) ^[367] entries in firewall profiles. These are used to translate external IP addresses to internal IP addresses.
-  **System | LAN**
The IP Office can provide DHCP support for remote access connections when it is set to Server or Dial in modes. Alternatively the remote access client can use a static IP address on the IP Office's subnet.
-  **IP Route**
If the remote access client uses a IP address that is from a different subnet from the IP Office, then a IP route entry is required for returning data. The RAS service is set as the destination.

ISDN Remote Access Example



1.  **Create a User**
The required details are:
 - **In the User tab:**
Enter a Name and Password. IP Office is case sensitive. Remember to take care with passwords as this is a remote access link into your network.
 - **In the Dial In tab:**
Ensure that Dial In On is ticked. The Firewall Profile and Time Profile are optional.
2.  **Create a RAS Entry**
 - **In the RAS tab:**
Enter the same name as the user that you created earlier. Again, remember this is case sensitive.
3.  **Create an Incoming Call Route**
 - Set the **Bearer Capability** to **Any Data**.
 - In the **Destination** drop-down list, select the RAS entry created above.
 - The values that you enter for any of the other fields will depend on whether the remote user will be calling in on a particular line, number or from a set ICLID.
4. **Is a Return IP Route Needed ?**
Go to Step 5.
5.  **Create a IP Route (Optional)**
If the remote user has an IP address that is not in the same domain as the IP Office, then an IP Route is needed for return data. This is not necessary if the remote user's dial-up connection method is set to 'Obtain an IP Address Automatically' and the IP Office's **DHCP mode** is set to **Server** or **Dial In**.
 - Enter the **IP Address** and **IP Mask** of the remote system.
 - In the **Destination** drop-down list select the RAS entry created above.

Analog Remote Access Example

Configuration for a connection from an analog modem call is very similar to the ISDN example. However the IP Office must be able to answer modem calls. This can be done in the following ways;

- **Modem Cards**

For all IP Office control units except the Small Office Edition, a modem card can be installed. This module allows the IP Office system to answer V.90 analog modem calls. The Internal Modem Card allows the IP Office system to support 12 simultaneous modem calls (4 only on the IP403). The Modem 2 card allows the IP Office system to support 2 simultaneous modem calls.

- **Analog Trunk Modem Mode**

On systems with an ATM4 trunk card and on the Small Office edition, the first analog trunk can be set to answer V.32 modem calls. This is done by checking the Modem Enabled option on the analog line settings or using the default short code *9000* to toggle this service on or off.

- When using an analog modem, the Bearer Capability of the incoming call route used should be Any Voice.

10.3.6 WAN PPP

A VoIP link across a leased line requires the Control Unit at both ends to have a Voice Compression Module installed. These provide for a fixed number of channels to use VoIP at any time. They are used to compress voice down to either 6k3 (G723) or 8k (G729) and provide echo cancellation.

Both ends must use the same version of software and be configured to use the same speed and compression.

At Site A on IP address 192.168.42.1.

1. Create a Normal Service:

The Account Name and password is presented to the remote end, therefore must match the User name and password configured at Site B. The Encrypted Password option can only be used if the remote end also supports CHAP.

2. Create a User:

Under the Dial In tab tick Dial In On. This User account is used to authenticate the connection from the Site B. As the Service and User have the same name these two configuration forms are automatically linked and become an Intranet Service. The User password is displayed at the bottom of the Service tab as the Incoming Password.

- **Name:** SiteB
- **Dial In | Dial In On:** Enabled.

3. Create a RAS service:

If CHAP is to be used on this link, then the Encrypted Password option must be checked in the Service and in the RAS service. The name of the RAS service must match the name of the Service at Site B. If the RAS service is given the same name as the Service and User, they are automatically linked and become a WAN Service. Ensure that the Encrypted Password option is not checked when using a WAN Service.

4. Edit the WANPort:

Note - do not create a new WANPort, this is automatically detected. If a WANPort is not displayed, connect the WAN cable, reboot the Control Unit and receive the configuration. The WANPort configuration form should now be added.

- **RAS Name:** SiteA

5. Create an IP Route:

The IP Address is the network address of the remote end. Under Destination select the Service created above.

6. Create a new Line:

The Line Number and Line Group ID must be unique, in other words, not used by any other line. The Gateway IP Address is the IP Address of the Control Unit at the remote end. The Compression Mode used is dependent on the Voice Compression Card the Control Unit is running and the speed of the link.

7. Create a Short Code:

To route all calls where the number dialed starts with 8 via Line Group ID 1, therefore via the VPN Line created above.

- **Short Code:** 8N
- **Telephone Number:** N
- **Line Group ID:** 1
- **Feature:** Dial

At Site B on IP address 192.168.45.1

1. Repeat the above steps for VoIP traffic from Site B to Site A.

- Note: For the IP Office Small Office Edition Control Unit, enabling **Local Tones** under the Line and Extension VoIP tabs is recommended.

10.3.7 WAN Frame Relay

To create a VoIP link via the WAN port using frame relay, the first step is to attach a WAN cable and reboot the Control Unit. After this, receive a copy of the configuration.

Both ends must use the same version of software and be configured to use the same speed and compression.

At Site A

1. Create a WAN Service:

- **On the Service Tab:**
The Name is "FR_link". The Account Name should be "FR_Link" and all password fields (both Password and Incoming Password) should be left blank.
- **On the PPP Tab:**
Check the MultiLink/QoS box. Set the Header Compression Mode to IPHC.
- **On the Dial In Tab:**
If you are using a WAN 3 module, you must add "WAN" as the Dial In Service number.

2. On the Wan Port Form:

- **In the WanPort Tab**
Set the speed to match the link. Set the RAS Name to Dial In. Set the Mode as SyncFrameRelay.
- **In the FrameRelay Tab**
Set the appropriate Frame Relay Management Type. The other default settings are appropriate for a basic Frame Relay Connection.
- **In the DCLI tab**
Set the RAS Name to "FR_link". Frame Link Type = PPP. DLCI set to the network setting

3. Create a RAS service:

Encrypted Password option is not checked when using a WAN Service. Have the Name = "FR_Link"

4. Create an IP Route:

The IP Address is the network address of the remote end. Under Destination select the "FR_link" that was created above.

5. Create a new Line:

The Line Number and Line Group ID must be unique, in other words, not used by any other line. The Gateway IP Address is the IP Address of the Control Unit at the remote end.

6. Create a Short Code:

To route all calls where the number dialed starts with 8 via Line Group ID 1, therefore via the VPN Line created above.

- **Short Code:** 8N
- **Telephone Number:** N
- **Line Group ID:** 1
- **Feature:** Dial

At Site B

1. Repeat the above steps for VoIP traffic from Site B to Site A.

- **Note:** For the IP Office Small Office Edition Control Unit, enabling Local Tones under the Line and Extension VoIP tabs is recommended.

Chapter 11.

Small Community Networking

11. Small Community Networking

IP Office systems linked by IP trunks can enable voice networking to form a Small Community Network (SCN). Within an SCN the separate IP Office systems 'learn' each other's extension numbers and user names. This allows extension calls between systems and support for a range of internal call features, see [Supported SCN Features](#)^[794].

Capacity

The following are the supported capacity limits for a Small Community Network system.

IP Office Software Level	Pre-5.0	5.0+
Maximum Number of IP Office Systems	16	32
Maximum Number of Users	500	500
Maximum H323 SCN Line Hops Between Systems	5	5
Star H323 SCN Line Layout	✓	✓
Serial H323 SCN Line Layout	✓	✓
Mesh H323 SCN Line Layout	✗	✓

- Small Community Networks using IP Office's with differing software levels will operate (see Software Level Interoperation below). However for a Small Community Network with more than 16 systems, only IP Office 5.0 systems are supported. If a pre-IP Office 5.0 system is included in a network of more than 16 IP Office systems, it will not receive any SCN support.

Configuration Summary

To set up a small community network, the following are required:

- A working H323 trunk between the IP Office systems, that has been tested for correct voice and data traffic routing.
 - The arrangement the H323 trunks must meet the requirements detailed in [Supported SCN Network Layouts](#)^[793].
 - On IP Office 500 systems, H323 trunks require the entry of **IP500 Voice Networking** licenses.
- VCM modules are required in all systems.
- The extension, user and group numbering on each system must be unique.
- The user and group names on each system must be unique.
- We also recommend that all names and numbers (line, services, etc) on the separate IP Office systems are kept unique. This will reduce potential maintenance confusion.
- All systems should use the same set of telephony timers, especially the **Default No Answer Time**.

Software Level Interoperation

SCN is supported between IP Office systems with the same major software level or one level of difference in major software level. For example between 4.2 and 4.1 (same major level) and between 5.0 and 4.2 (one major level of difference).

This option is intended mainly to allow the phased upgrading of sites within a Small Community Network. It is still recommended that all systems within a network are upgraded to the same level where possible. Within a SCN using differing levels of software, network features will be based on the lowest level of software within the network.

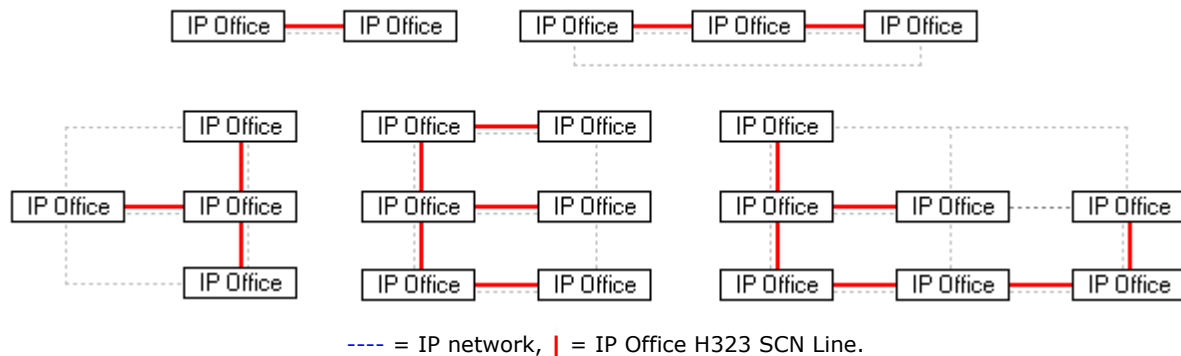
11.1 Supported SCN Network Layouts

The allowed arrangement of H323 SCN lines between the IP Office systems depends on the lowest software level of any IP Office system in the network. Note that we are referring to H323 SCN lines configured in the IP Office configurations. The actual IP network configuration, including IP routes in the IP Office configurations, can differ as per the customer network requirements.

IP Office Software Level	Pre-5.0	5.0+
Maximum Number of IP Office Systems	16	32
Maximum Number of Users	500	500
Maximum H323 SCN Line Hops Between Systems	5	5
Star H323 SCN Line Layout	✓	✓
Serial H323 SCN Line Layout	✓	✓
Mesh H323 SCN Line Layout	✗	✓

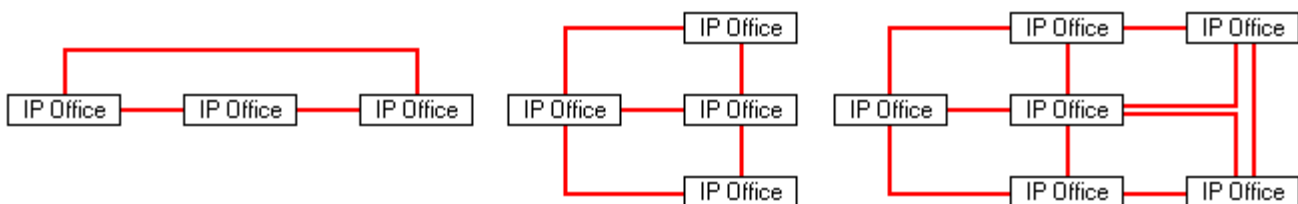
Star/Serial Layouts

The following are examples of star and serial layouts. These are the only types of layouts supported for Small Community Networks containing any pre-IP Office 5.0 systems.



Mesh Layout

The use of 'mesh' layouts connections is only supported for a Small Community Network of IP Office 5.0 systems. A mesh layout is one where there is more than one possible H323 SCN Line route between any two IP Offices. The following are examples of mesh layouts. Mesh, star and serial layouts can be combined.



SCN Signalling

IP Office SCN uses a signalling similar to RIP in order to update each other of their presence. This traffic can be seen in the IP Office System Monitor application as AVRIP packets.

This traffic is sent to port 50795 on which each IP Office system listens.

Each IP Office in the SCN transmits an update every 30 seconds. Additionally BLF updates are transmitted when applicable up to a maximum of every 0.5 seconds. Typically the volume is less than 1Kbps per IP Office system.

11.2 Supported SCN Features

Standard SCN Features

The following features are supported across all Small Community Networks:

- **User to user dialing**
- **Absence Text/Call Tagging**
- **Anti-tromboning**
- **Hold**
- **Transfer**
- **Forwarding**
- **Paging**
- **Call Pick-Up Extension**
- **Callback When Free**
- **Conference**
- **Ring Back**
- **Directory**

Inclusion of SCN users and groups in the DIR directory of each system.

- IP Office system directory are not automatically shared by default. For IP Office 5.0, IP Office systems can be configured to import directory record using [HTTP](#)^[179].

- **User DSS/BLF**

Monitoring of user status only.

- The ability to use additional features such as call pickup via a USER button will differ depending on whether the monitored user is local or remote.
- Indication of new voicemail messages provided by Phone Manager/SoftConsole user speed dial icon is not supported across an SCN.

- **Voicemail Support - Centralized Voicemail using Voicemail Pro**

Within a Small Community Network, a single Voicemail Pro can be used to provide voicemail services for all the IP Office systems. For full details of installation and setup refer to the Voicemail Pro documentation. The Voicemail Pro is licensed and hosted by a chosen central IP Office system and provides full operation for that system. The voicemail features supported for the other remote IP Offices are listed below:

- For pre-IP Office 5.0 IP500 systems, centralized voicemail does not require the remote systems to be running in IP500 Professional mode. Only the IP500 hosting the Voicemail Pro server is required to have an **IP500 Upgrade Standard to Professional** license.
- **User mailboxes.**
- **Call recording.**
Recording of incoming call routes is only supported for destinations on the same IP Office system, not for remote SCN destinations.
- **Dial by Name.**
- **Auto Attendants.**
- **Breakout**
Requires that the numbers used are routable by the system hosting the voicemail server.
- **Announcements**
Using IP Office 4.0 announcements. Pre-4.0 announcements are only supported for queues on the system hosting the voicemail server.
- **ContactStore**
This application is supported but requires each individual IP Office to have a **VMPro Recordings Administrator** license.
- **UMS Web Services**
Users for UMS Web Services (IMAP and or web voicemail) are licensed through the **UMS Web Services** license on their host IP Office system. This applies even if the user remote hot desks to another system in the Small Community Network.

IP Office 4.0: Advanced SCN Networking Features

IP Office 4.0+ allows a number of additional features. For pre-IP Office 5.0 systems, these feature require the IP Offices to have **Advanced Small Community Networking** licenses.

- **Advertised Hunt Groups**

A hunt group can be set to be 'advertised'. Hunt groups that are advertised can be dialed by users on other systems within the Small Community Network (SCN) without the need for short codes.

- **Distributed Hunt Groups**

Hunt groups on a system can include users located on remote IP Office systems within the SCN network. A distributed hunt group can only be edited on the system on which they were created.

- **Remote Hot Desking**

Users can hot desk between IP Office systems within the network. The system on which the user configured is termed their 'home' IP Office, all other systems are 'remote' IP Offices.

- When a user logs in to a remote IP Office system;
 - The users incoming calls are rerouted across the SCN.
 - The users outgoing calls uses the settings of the remote IP Office.
 - The users own settings are transferred. However some settings may become unusable or may operate differently.
 - Users settings are transferred but user rights are not.
 - If user rights with the same name exist on the remote system then they will be used. The same applies for user rights applied by time profiles, if a time profile with the same name also exists on the remote system .
 - Appearance buttons configured for users on the home system will no longer operate.
 - Various other settings may either no longer work or may work differently depending on the configuration of the remote system at which the user has logged in. For example T3 phones the personal directory is not transferred with the user.
 - If a remote user's home system is no longer visible within the SCN, they are automatically logged out after 24 hours.

- **Break Out Dialing**

This feature allows the user to select an IP Office system in the network from a displayed list and then dial a subsequent number as if dialing locally on the select system. This feature is triggered either by a [programmable button](#)^[568] or [short code](#)^[448].

IP Office 4.2

- **Music on Hold Source Selection**

The 4 possible music on hold sources are numbered 1 to 4, with 1 being the IP Office System Source. Where the source number to associate with a call is changed by an Incoming Call Route or Hunt Group, that number is retained when the call is rerouted across the SCN. If the receiving switch has a matching numbered alternate source that source is used.

- **Mobile Call Control**

Licensed mobile call control users who remote hot desk to another IP Office within the SCN take their licensed status with them rather than consuming (if available) a license on the system to which they hot desk.

IP Office 5.0

- **Fallback**^[797]

IP Office 5.0 systems can provide fallback support for Avaya H323 phones, advertised hunt groups and centralized voicemail.

- **Centralized Personal Directory**^[727]

The personal directory numbers stored in the IP Office for each user can now be viewed and called using T3 and 1600 Series phone. If the user hot desks to another IP Office system in the Small Community Network, their personal directory is still available.

- **Centralized Call Log**^[728]

The centralized call log features include support for users hot desking within a Small Community Network.

- The user's call log records are stored by the IP Office system that is their home system, ie. the one on which they are configured. When the user is logged in on another system, new call log records are sent to the user's home system, but using the time and date on the system where the user is logged in.
- Hunt group call log records are stored on the IP Office system on which the hunt group is configured.

- **T38 Fax Relay**

For an IP500 system with an IP500 VCM card, T38 Fax relay can be configured on SIP lines and extensions. Within a Small Community Network, fax calls can transition from T38 to Fax Transport Support to be routed over the SCN.

11.3 Enabling Small Community Networking

The process below adds an H323 SCN Line to the IP Office configuration. It is assumed that data routing between the systems has already been configured and tested.

- A working H323 trunk between the IP Office systems, that has been tested for correct voice and data traffic routing.
 - The arrangement the H323 trunks must meet the requirements detailed in [Supported SCN Network Layouts](#) ⁷⁹³.
 - On IP Office 500 systems, H323 trunks require the entry of **IP500 Voice Networking** licenses.
- VCM modules are required in all systems.
- The extension, user and group numbering on each system must be unique.
- The user and group names on each system must be unique.
- We also recommend that all names and numbers (line, services, etc) on the separate IP Office systems are kept unique. This will reduce potential maintenance confusion.
- All systems should use the same set of telephony timers, especially the **Default No Answer Time**.

A. Setup the VoIP Line from System A to System B

1. On System A, receive the system configuration.
2. Click **Line** to display a list of existing lines.
3. Right-click on the displayed list and select **New** and then **H323 Line**.
4. Select the **Line** tab and set the following:
 - Set a unique **Line Number**.
 - In the **Telephone Number** field, enter a description of the link.
 - Set the **Outgoing Group ID** to a unique value.
5. Select the **VoIP Settings** tab and set the following:
 - For the **Gateway IP Address**, enter the IP address of the remote IP Office System B.
 - In the **Supplementary Services** field select **IP Office SCN**. Use of **IP Office SCN - Fallback** is detailed in [SCN Fallback](#) ⁷⁹⁷.
 - Select the preferred **Compression Mode**. The same mode must be used by all VoIP lines and extensions within the network.
 - The other option can be configured as required but must be matched by the other H323 SCN lines in the network.
6. Load the configuration and reboot System A.

B. Setup the VoIP Line from System B to System A

1. On the remote system, repeat the previous steps to create an H323 SCN line to System A.
2. Load the configuration and reboot the remote IP Office.

C. Test Small Community Networking

1. Test by making calls between extensions on the different systems.

11.4 SCN Fallback

IP Office 5.0 provides a number of features that allows IP Offices to provide fallback functions for each other. This operation requires the IP Offices to be running IP Office 5.0+.

Each IP Office in the SCN can include one H323 line where the **Supplementary Services** is set to **RIP Office SCN - Fallback** rather than **IP Office SCN**. The IP Office to which the H323 line connects can then be used to provide fallback support for selected options for the local IP Office.

Important

- Fallback handover takes approximately 3 minutes. This ensure that fallback is not invoked when it is not required, for example when the local IP Office is simply being power cycled to complete a non-mergeable configuration change.
- Fallback is only intended to provide basic call functionality while the cause of fallback occurring is investigated and resolved. If users make changes to their settings while in fallback, for example changing their DND mode, those changes will not apply after fallback.
- If the fallback IP Office is rebooted while it is providing fallback services, the fallback services are lost.
- Fallback features require that the IP devices local to the local IP Office are still able to route data to the fallback IP Office when the local IP Office is not available. This will typically require each IP Office site to be using a separate data router from the IP Office.

Fallback Options

Once a line is set to IP Office SCN - Fallback, the following options are available:

- **SCN Backup Options:** *Software level = 5.0+.*

These options are only available on when the **Supplementary Services** option is set to **IP Office - Fallback**. The IP Office system to which the trunk connects must be an IP Office 5.0+ system. The intention of this feature is to attempt to maintain a minimal level of operation while problems with the local IP Office are resolved.

- **Backs up my IP Phones:** *Default = On.*

This option is used for Avaya 1600, 4600 and 5600 Series phones registered with the IP Office. When selected, it will share information about the registered phones and users on those phones with the other IP Office.

- If the local IP Office is no longer visible to the phones, the phones will reregister with the other IP Office. The users who were currently on those phones will appear on the other IP Office as if they had hot desked.
- Note that when the local IP Office is restored to the SCN, the phones will not automatically re-register with it. A phone reset via either a phone power cycle or using the IP Office System Status Application is required.
- When phones have registered with the other IP Office, they will show an **R** on their display.

- **Backs up my Hunt Groups:** *Default = On.*

When selected, any hunt groups the local IP Office is advertising to the SCN are advertised from the other IP Office when fallback is required. The trigger for this occurring is Avaya H323 phones registered with the local IP Office registering with the other IP Office, ie. **Backs up my IP Phones** above must also be enabled.

- When used, the only hunt group members that will be available are as follows:
 - If the group was a distributed hunt group, those members who were remote members on other IP Office systems still visible within the SCN.
 - Any local members who have hot desked to another IP Office system still visible within the SCN.
- When the local IP Office becomes visible to the other IP Office again, the groups will return to be advertised from the local IP Office.

- **Backs up my Voicemail:** *Default = On.*

This option can be used if the local IP Office is hosting the Voicemail Pro server being used by the SCN. If selected, when the local IP Office is no longer visible to the voicemail server, the other IP Office will act as host for the voicemail server.

- This option requires the other IP Office to have licenses for the Voicemail Pro features that are required to operated during any fallback period.
- This option requires Voicemail Pro 5.0+.

11.5 SCN Short Code Programming

With Small Community Networking enabled, the IP Offices 'learn' each others extension numbers and route calls appropriately. However the same does not apply to dialing other numbers meant for a remote IP Office. To allow these to be routed correctly across the SCN trunk links, short codes can be used.

Scenario

We want a short code on System A which will correctly route any 3000 range number to System B. This will allow System B group numbers to be dialed from System A. To achieve the above scenario, we will add a new system short code. By using a system short code it becomes available to all users.

1. Receive the configuration from System A.
2. Click **Short code** to display a list of existing system short codes.
3. Right-click on the displayed list and select **New**.
4. Enter the short code settings as follows:
 - **Short Code:** 3XXX
This will match any four-digit number beginning with 3.
 - **Telephone Number:** .
The . indicates that the short code should output the digits as dialed.
 - **Line Group ID:** 3000
This should match the Outgoing Group ID given to the IP Office SCN line connected to System B.
 - **Feature:** Dial
5. Click **OK**.
6. If the only change made to the configuration was this short code, load the new configuration using merge, otherwise load the configuration and reboot.
7. A similar system short code can be added to System B's configuration to route 2XXX dialing to System A.

Chapter 12.

Appendix: Locale Settings

12. Appendix: Locale Settings

The IP Office system Locale sets factors such as the default ringing tones and caller display settings. The locale also controls the default language that the IP Office voicemail server will use for prompts.

Users and incoming call routes can be set to a locale. That locale will then override the system settings for calls to voicemail.

This following table indicates locale settings used within 3.2 and higher for different functions. Note that reference to a locale does not necessarily indicate support, availability or approval for IP Office within that country.

Locale	TLA	Locale	TLA
Argentina ^[804]	ess	Netherlands ^[826]	nld
Australia ^[805]	ena	New Zealand ^[827]	enz
Belgium ^[806]	nlb	Norway ^[828]	nor
Belgium ^[807]	frb	Peru ^[829]	esr
Brazil ^[808]	ptb	Poland ^[830]	plk
Canada ^[809]	frc	Portugal ^[831]	ptg
Chile ^[810]	esl	Russia ^[832]	rus
China ^[811]	chs	Saudi Arabia ^[833]	ara
Colombia ^[812]	eso	South Africa ^[834]	ens
Denmark ^[814]	dan	Spain ^[835]	esp
Finland ^[815]	fin	Sweden ^[836]	sve
France ^[816]	fra	Switzerland ^[837] (French)	frs
Germany ^[818]	deu	Switzerland ^[837] (German)	des
Greece ^[817]	ell	Switzerland ^[837] (Italian)	its
Hong Kong ^[819]	zhb	Taiwan ^[838]	cht
Hungary ^[820]	hun	Turkey ^[839]	trk
Iceland ^[821]	isl	UK ^[840]	eng
India ^[822]	ind	USA ^[841]	enu
Italy ^[823]	ita	Venezuela ^[842]	esv
Korea ^[824]	kor		
Mexico ^[825]	esm		

* Locale defaults to best match. For example New Zealand (enz) falls back to UK English (eng). Embedded voicemail supports simple fallback based on the first two letters of the locale TLA. Voicemail Pro employs multiple fallback always ending in UK or US English.

- **TLA (Three-Letter Abbreviation):**

These are the three character codes used by pre-6.0 Manager to set locales. In IP Office 3.2 they were replaced by selection of the required country or language by name.

- **Locale:**

The country represented by the locale. Teletype (Textphone) is used with Voicemail Pro, refer to the Voicemail Pro documentation.

- **Language:**

The voicemail prompt language used for that locale.

- **Manager:**

Indicates that the IP Office Manager application can run in the specific locale language. Manager uses the best match it has (French, German, Brazilian, Dutch, Italian, Mexican Spanish or US English) for the regional location settings setting of the PC on which it is running, otherwise it defaults to UK English. If required the language used within the Manager screens can be overridden, see [Changing the Manager Language](#) ^[36].

- **Telephony:**

The IP Office provides default telephony settings matching the normal expected defaults for the locale.

- **Phone Display:**

Indicates that display messages from the IP Office to Avaya DS and IP phones can be sent using the appropriate language for that locale. Note that the user locale can be used to override the system locale for these messages. Note also that some phones support their own language selection options for menus displayed by the phone's software.

- **T3 Phones:**

Menus for T3 Series phones available in the specific language.

- **Voicemail:**

These columns indicate for which locales the different Avaya IP Office voicemail servers can provide the appropriate language prompts. In all cases, the system locale can be overridden by setting a different user locale.

- **EVM:**

Indicates that the locale is recognized by Embedded Voicemail and appropriate language prompts are then used. If an unsupported locale is used, Embedded Voicemail will attempt the best match using the first two characters of the locale.

- **VM Lite:** (*Voicemail Lite is not supported on IP Office 5.0 and higher*)

Indicates that the locale is recognized by Voicemail Lite and appropriate language prompts are then used. For an unsupported locale is used, or one for which the necessary prompts are not available, Voicemail Lite will attempt the best match using a sequence of alternate locales.

- **VM Pro:**

Indicates that the locale is recognized by Voicemail Pro and appropriate language prompts are then used. For an unsupported locale is used, or one for which the necessary prompts are not available, Voicemail Pro will attempt the best match using a sequence of alternate locales. For example French Canadian (frc) fallback to French (fra), then US English (enu) and finally UK English (eng). Note that the languages available are selectable during Voicemail Pro installation. For further details refer to the Voicemail Pro manual.

- **All Voicemail**

For calls to voicemail, the locale that is passed to voicemail to determine the prompt to play (if available) is:

- The user locale, if set, is used if the caller is internal.
- The incoming call route locale, if set, is used if caller is external.
- If the possible locales above are not set, the system locale is used.
- The short code locale, if set, is used and overrides the options above if the call is routed to voicemail using the short code.
- If the locale requested is not matched by prompts available on the voicemail server, the method of prompt fallback depends on the voicemail type. Refer to the documentation for Embedded Voicemail, Voicemail Lite or Voicemail Pro.

12.1 Locale Defaults

A Locale being covered in this document does not imply approvals or availability.

- **Tones**

The table below describes the different IP Office tones. The tones used are determined by the system locale setting. Note that in some locales, the same tone sound may be used for several purposes, for example for Busy and Fast Busy may be the same.

Tone	Description
Dial Tone	Normal dial tone.
Alternate Dial Tone	This tone is also known as 'interrupted', 'broken' or 'stutter' dial tone. It is used on extensions when the user has DND, Follow-Me or Forward Unconditional set. It is also used on analog phones when the user has a call on hold, for example during a transfer.
Secondary Dial Tone	Used when accessing an external trunk using a short code or ARS that specifies secondary dial tone. If no specific tone is defined for the locale, normal dial tone is used.
Busy Tone	Used when the number called is busy.
Fast Busy Tone	No channel.
Intercept Busy Tone	Unallocated number.
Ring Tone	Other end is ringing. This tone is also known as 'ringback'.
Call Waiting Tone	Used when a user has a call waiting enable and a is call waiting.
NU Tone	Number Unobtainable.

- **Frequency**

All tone frequencies are in Hertz (Hz). Where a tone uses a combination of frequencies, the frequencies are shown separated by a + symbol. Where a tone uses alternating frequencies, the frequencies are shown separated by a / symbol.

- **Cadence**

The tone cadence is indicated as either a sequence of on/off times or as a sequence of alternating frequency 1/frequency 2 times. Where a portion of the sequence is enclosed in () symbols, it indicates a repeating sequence.

- **POT Port Settings**

These settings are used for analog phone extensions. The settings used are determined by the system locale.

Analog Phone Settings	
Ring Current Frequency	The frequency of ring current.
Minimum Flash Hook Time	The minimum time that loop current has to be broken to detect a timed break recall (TBR). Anything shorter is regarded as a glitch.
Maximum Flash Hook Time	The maximum time the loop current can be broken for it to be detected as a time break recall (TBR). Anything longer is regarded as clearing.
Default Caller Display Type	The type of caller display used when Extn Caller Display Type is set to On .
Default MWI Type	The type of message waiting indication used when Extn Message Waiting Indication Type is set to On .

Locale Specific Behavior	
Companding	The typical companding method employed for telephone systems in that locale. Companding operation can be adjusted through the System Telephony Telephony ¹⁶⁶ tab.
Dialing Timeout	The method used by the IP Office to determine when to disconnect an extension that does not complete dialing a valid routable number.
Disconnect Tone	The tone used when disconnect indication is provided to an extension.

Display Language	The default language used for messages sent to extensions.
Feature Phone Clearing	The locale specific action applied to digital and IP phones when the far end of a call disconnects. This action can be overridden by the Disconnect Tone option on the System Telephony Telephony tab.
Voicemail Truncation Time	On analog trunks, call disconnection can occur though busy tone detection. When such calls go to voicemail to be recorded or leave a message, when the call ends the IP Office indicates to the voicemail system how much to remove from the end of the recording in order to remove the busy tone segment. For some systems it may be necessary to override the default if analog call recordings are being clipped or include busy tone. That can be done by adding a VM_TRUNCATE_TIME= setting with the required value in the range 0 to 7 seconds.
Default Currency	Used for Advice of Charge operation where supported on ISDN lines.

12.2 Argentina

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(2.0/4.0) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	480+620	(0.5/0.5) on/off.
Fast Busy Tone	480+620	(0.25/0.25) on/off.
Intercept Busy Tone	440/620	(0.25/0.25) alternating tones.
Ring Tone	440+480	(1.0/3.0) on/off.
Call Waiting Tone	480+620	(0.06/0.25/0.06/5.0) on/off.
NU (Number Unobtainable) Tone	480+620	Continuous.

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	Mu-Law
Minimum Flash Hook Time	0.070s	Dialling Timeout	30 seconds from start of dialing.
Maximum Flash Hook Time	1.000s	Disconnect Tone	NU
Default Caller Display Type	FSKD	Display Language	Spanish
Default Message Waiting Indication Type	51V Stepped	Feature Phone Clearing	Disconnect Tone.
		Voicemail Truncation Time	0 seconds.
		Default Currency	ARS

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	SoftConsole	Conf' Center	EVM	Lite	Pro
Latin Spanish	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

12.3 Australia

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	350+440	Continuous.
Alternate Dial Tone	350+440	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	400	(0.375/0.375) on/off.
Fast Busy Tone	400	(0.375/0.375) on/off.
Intercept Busy Tone	400	Continuous.
Ring Tone	400+450	(0.4/0.2/0.4/2.0) on/off.
Call Waiting Tone	400	(0.1/30) on/off.
NU (Number Unobtainable) Tone	400	Continuous.

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	A-Law
Minimum Flash Hook Time	0.010s	Dialling Timeout	30 seconds from start of dialing.
Maximum Flash Hook Time	0.350s	Disconnect Tone	NU
Default Caller Display Type	FSKD	Display Language	English (UK)
Default Message Waiting Indication Type	51V Stepped	Feature Phone Clearing	Disconnect Tone.
		Voicemail Truncation Time	5 seconds.
		Default Currency	AUD

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
English (UK)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

12.4 Belgium - Flemish

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	425	(0.5/0.5) on/off.
Fast Busy Tone	425	(0.5/0.5) on/off.
Intercept Busy Tone	425	(0.5/0.5) on/off.
Ring Tone	425	(1.0/3.0) on/off.
Call Waiting Tone	400	(0.08/0.175/0.08/10.0) on/off.
NU (Number Unobtainable) Tone	425	Continuous.

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	A-Law
Minimum Flash Hook Time	0.025s	Dialling Timeout	30 seconds from start of dialing.
Maximum Flash Hook Time	0.350s	Disconnect Tone	NU
Default Caller Display Type	FSKD	Display Language	Dutch.
Default Message Waiting Indication Type	81V	Feature Phone Clearing	Disconnect Tone.
		Voicemail Truncation Time	7 seconds.
		Default Currency	EUR

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Dutch	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓

12.5 Belgium - French

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	425	(0.5/0.5) on/off.
Fast Busy Tone	425	(0.5/0.5) on/off.
Intercept Busy Tone	425	(0.5/0.5) on/off.
Ring Tone	425	(1.0/3.0) on/off.
Call Waiting Tone	400	(0.08/0.175/0.08/10.0) on/off.
NU (Number Unobtainable) Tone	425	Continuous.

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	A-Law
Minimum Flash Hook Time	0.025s	Dialling Timeout	30 seconds from start of dialing.
Maximum Flash Hook Time	0.350s	Disconnect Tone	NU
Default Caller Display Type	FSKD	Display Language	French.
Default Message Waiting Indication Type	851V.	Feature Phone Clearing	Disconnect Tone.
		Voicemail Truncation Time	7 seconds.
		Default Currency	EUR

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
French	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

12.6 Brazil

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(2.0/4.0) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	425	(0.25/0.25) on/off.
Fast Busy Tone	425	(0.25/0.25) on/off.
Intercept Busy Tone	425	(0.1/0.1/0.1/0.1) on/off.
Ring Tone	425	(1.0/4.0) on/off.
Call Waiting Tone	425	(0.06/0.25/0.06/5) on/off.
NU (Number Unobtainable) Tone	425	IP Office 4.2+: (0.25/0.25/0.75/0.25) on/off. Pre-IP Office 4.2: Continuous.

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	A-Law/Mu-Law
Minimum Flash Hook Time	0.100s	Dialling Timeout	30 seconds from start of dialing.
Maximum Flash Hook Time	1.000s	Disconnect Tone	NU
Default Caller Display Type	DTMFD	Display Language	Brazilian Portuguese
Default Message Waiting Indication Type	51V Stepped	Feature Phone Clearing	Go Idle
		Voicemail Truncation Time	2 seconds.
		Default Currency	BRL

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Brazilian Portuguese	✓	✗	✓	✓	✓	✓	✗	✓	✓	✓
Portuguese	✓	✗	✗	✓	✓	✗	✗	✓	✓	✓

12.7 Canada - French

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	350+440	Continuous.
Alternate Dial Tone	350+440	(0.25/0.25) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	480+620	(0.5/0.5) on/off.
Fast Busy Tone	480+620	(0.25/0.25) on/off.
Intercept Busy Tone	440/620	(0.25/0.25) alternating tones.
Ring Tone	440+480	(2.0/4.0) on/off.
Call Waiting Tone	480+620	(0.0/0.1/0.2/1200) on/off.
NU (Number Unobtainable) Tone	480+620	Continuous.

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	Mu-Law
Minimum Flash Hook Time	0.300s	Dialling Timeout	30 seconds from start of dialing.
Maximum Flash Hook Time	1.000s	Disconnect Tone	NU
Default Caller Display Type	FSKD	Display Language	Canadian French
Default Message Waiting Indication Type	51V Stepped	Feature Phone Clearing	Go Idle
		Voicemail Truncation Time	0 seconds.
		Default Currency	CAD

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Canadian French	✓	✗	✗	✗	✗	✗	✗	✓	✓	✓
French	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

12.8 Chile

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(2.0/4.0) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	480+620	(0.5/0.5) on/off.
Fast Busy Tone	480+620	(0.25/0.25) on/off.
Intercept Busy Tone	440/620	(0.25/0.25) alternating tones.
Ring Tone	480+620	(1.0/3.0) on/off.
Call Waiting Tone	480+620	(0.06/0.25/0.06/5.0) on/off.
NU (Number Unobtainable) Tone	480+620	Continuous.

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	Mu-Law
Minimum Flash Hook Time	0.050s	Dialling Timeout	30 seconds from start of dialing.
Maximum Flash Hook Time	1.000s	Disconnect Tone	NU
Default Caller Display Type	FSKD	Display Language	Mexican Spanish.
Default Message Waiting Indication Type	51V Stepped	Feature Phone Clearing	Disconnect Tone.
		Voicemail Truncation Time	2 seconds.
		Default Currency	CLP

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Latin Spanish	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

12.9 China

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(0.4/0.04) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	440	(0.35/0.35) on/off.
Fast Busy Tone	440	(0.7/0.7) on/off.
Intercept Busy Tone	440	(0.1/0.1/0.1/0.1/0.1/0.1/0.4/0.4) on/off.
Ring Tone	440	(1.0/4.0) on/off.
Call Waiting Tone	440	(0.4/4.0) on/off.
NU (Number Unobtainable) Tone	440	Continuous.

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	A-Law
Minimum Flash Hook Time	0.050s	Dialling Timeout	30 seconds from start of dialing.
Maximum Flash Hook Time	0.900s	Disconnect Tone	NU
Default Caller Display Type	FSKD	Display Language	English (UK)
Default Message Waiting Indication Type	51V Stepped	Feature Phone Clearing	Disconnect Tone.
		Voicemail Truncation Time	5 seconds.
		Default Currency	CNY

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Mandarin	✗	✗	✗	✗	✓+	✓+	✗	✓	✓	✓
Putonghua	✗	✗	✗	✗	✓+	✓+	✗	✗	✗	✓

+ Chinese Simplified text.

12.10 Colombia

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(2.0/4.0) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	480+620	(0.5/0.5) on/off.
Fast Busy Tone	480+620	(0.25/0.25) on/off.
Intercept Busy Tone	440/620	(0.25/0.25 alternating tones.
Ring Tone	440+480	(1.0/3.0) on/off.
Call Waiting Tone	480+620	(0.06/0.25/0.06/5.0) on/off.
NU (Number Unobtainable) Tone	480+620	Continuous.

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	Mu-Law
Minimum Flash Hook Time	0.050s	Dialling Timeout	30 seconds from start of dialing.
Maximum Flash Hook Time	1.000s	Disconnect Tone	NU
Default Caller Display Type	FSKD	Display Language	Mexican Spanish
Default Message Waiting Indication Type	51V Stepped	Feature Phone Clearing	Disconnect tone.
		Voicemail Truncation Time	2 seconds.
		Default Currency	COP

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Latin Spanish	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

12.11 Customize

The following options are supported for the IP Office 4.0 Q2 2007 maintenance release and higher.

On the **System | System** tab, the **Locale** can be set to **Customize**. This option is intended for those locales which use a mix of telephony equipment from a range of other locales. Use of this locale option is entirely the responsibility of the IP Office installer.

The Customize locale matches the [Saudi Arabia](#) ⁽⁸³³⁾ locale but with the following additional controls:

- **Tone Plan:** *Default = Tone Plan 1*
The tone plan control dial and ringing tone. The options are:
 - **Tone Plan 1:** United States.
 - **Tone Plan 2:** United Kingdom.
 - **Tone Plan 3:** France.
 - **Tone Plan 4:** Germany.
 - **Tone Plan 5:** Spain.
- **CLI Type:** *Default = FSK V23*
This is the method used for CLI signalling on analog lines.
- **Busy Tone Detection:** *Default = Off.*
Enables or disables the use of busy tone detection for call clearing. This is a system wide setting.

12.12 Denmark

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	425	(0.25/0.25) on/off.
Fast Busy Tone	425	(0.25/0.25) on/off.
Intercept Busy Tone	425	(0.25/0.25) on/off.
Ring Tone	425	(0.75/7.5) on/off.
Call Waiting Tone	425	(0.08/10.0) on/off.
NU (Number Unobtainable) Tone	425	Continuous.

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	A-Law
Minimum Flash Hook Time	0.025s	Dialling Timeout	30 seconds from start of dialing.
Maximum Flash Hook Time	0.350s	Disconnect Tone	NU
Default Caller Display Type	DTMFC	Display Language	Danish
Default Message Waiting Indication Type	81V	Feature Phone Clearing	Disconnect Tone.
		Voicemail Truncation Time	7 seconds.
		Default Currency	DKK

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Danish	✓	✗	✗	✗	✓	✓	✗	✓	✓	✓

12.13 Finland

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	425	(0.25/0.25) on/off.
Fast Busy Tone	425	(0.25/0.25) on/off.
Intercept Busy Tone	425	(0.25/0.25) on/off.
Ring Tone	425	(1.0/5.0) on/off.
Call Waiting Tone	425	(0.08/120.0) on/off.
NU (Number Unobtainable) Tone	425	Continuous.

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	A-Law
Minimum Flash Hook Time	0.025s	Dialling Timeout	30 seconds from start of dialing.
Maximum Flash Hook Time	0.350s	Disconnect Tone	NU
Default Caller Display Type	DTMFA	Display Language	Finnish
Default Message Waiting Indication Type	81V	Feature Phone Clearing	Disconnect Tone.
		Voicemail Truncation Time	7 seconds.
		Default Currency	EUR

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Finnish	✓	✗	✗	✗	✓	✓	✓	✓	✓	✓

12.14 France

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	330	Continuous.
Alternate Dial Tone	330	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	440	(0.5/0.5) on/off.
Fast Busy Tone	440	(0.5/0.5) on/off.
Intercept Busy Tone	440	(0.5/0.5) on/off.
Ring Tone	440	(1.5/3.5) on/off.
Call Waiting Tone	440	(0.1/8.0) on/off.
NU (Number Unobtainable) Tone	440	Continuous.

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	A-Law
Minimum Flash Hook Time	0.025s	Dialling Timeout	30 seconds from start of dialing.
Maximum Flash Hook Time	0.350s	Disconnect Tone	NU
Default Caller Display Type	FSKD	Display Language	French
Default Message Waiting Indication Type	81V	Feature Phone Clearing	Disconnect Tone
		Voicemail Truncation Time	7 seconds.
		Default Currency	EUR

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
French	✓	✓	✓	✗	✓	✓	✓	✓	✓	✓

12.15 Greece

The tones and cadences below are applicable for the IP Office 3.2 4Q7+ and 4.1 1Q8+ maintenance releases and for IP Office 4.2+. Releases prior to those used the [United Kingdom](#) ^[840] set of tones and cadences.

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous
Alternate Dial Tone	425	(0.5/1.0) on/off
Secondary Dial Tone	425	(0.2/0.3/0.7/0.8) on/off
Busy Tone	425	(0.3/0.3) on/off
Fast Busy Tone	425	(0.15/0.15) on/off
Intercept Busy Tone	425	(0.1/0.1/0.2/0.2) on/off
Ring Tone	425	(1.0/4.0) on/off
Call Waiting Tone	425	(0.3/8.0) on/off
NU (Number Unobtainable) Tone	425	(0.1/0.2) on/off

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	A-Law
Minimum Flash Hook Time	0.025s	Dialling Timeout	30 seconds from start of dialing.
Maximum Flash Hook Time	0.350s	Disconnect Tone	NU
Default Caller Display Type	FSKD	Display Language	English (UK)
Default Message Waiting Indication Type	81V	Feature Phone Clearing	Disconnect Tone.
		Voicemail Truncation Time	7 seconds.
		Default Currency	EUR

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Greek	✗	✗	✗	✗	✗	✗	✗	✗	✓	✓
English (UK)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

12.16 Germany

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	(0.16/0.16/0.16/0.16/0.16/0.8) on/off.
Alternate Dial Tone	425	(1.0/0.5) on/off.
Secondary Dial Tone	425	Continuous
Busy Tone	425	(0.48/0.48) on/off.
Fast Busy Tone	425	(0.48/0.48) on/off.
Intercept Busy Tone	425	(0.48/0.48) on/off.
Ring Tone	425	(0.945/4.05) on/off.
Call Waiting Tone	425	(0.08/0.2/0.08/10) on/off.
NU (Number Unobtainable) Tone	425	Continuous.

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	A-Law
Minimum Flash Hook Time	0.025s	Dialling Timeout	30 seconds from start of dialing.
Maximum Flash Hook Time	0.350s	Disconnect Tone	Busy Tone.
Default Caller Display Type	FSKD	Display Language	German.
Default Message Waiting Indication Type	81V	Feature Phone Clearing	Disconnect Tone.
		Voicemail Truncation Time	7 seconds.
		Default Currency	EUR

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
German	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

- Secondary dial tone added in 3.1(5601) in March 2006. Previously used dial tone.

12.17 Hong Kong

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	350+440	Continuous.
Alternate Dial Tone	350+440	(0.25/0.25) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	480+620	(0.5/0.5) on/off.
Fast Busy Tone	480+620	(0.25/0.25) on/off.
Intercept Busy Tone	480/620	(0.25/0.25) on/off.
Ring Tone	440/620	(2.0/4.0) on/off.
Call Waiting Tone	480+620	(0.06/0.25/0.06/5.0) on/off.
NU (Number Unobtainable) Tone	480+620	Continuous.

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	Mu-Law
Minimum Flash Hook Time	0.300s	Dialling Timeout	30 seconds from start of dialing.
Maximum Flash Hook Time	1.000s	Disconnect Tone	NU
Default Caller Display Type	-	Display Language	English (UK)
Default Message Waiting Indication Type	-	Feature Phone Clearing	Go Idle
		Voicemail Truncation Time	7 seconds.
		Default Currency	CNY

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Cantonese	✗	✗	✗	✗	✗	✗	✗	✓*	✗	✓
Putonghua	✗	✗	✗	✗	✓	✓	✗	✗	✗	✓
English (UK)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

*Added in IP Office 4.2.

12.18 Hungary

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	425	(0.5/0.5) on/off.
Fast Busy Tone	425	(0.5/0.5) on/off.
Intercept Busy Tone	425	(0.5/0.5) on/off.
Ring Tone	425	(1.0/4.0) on/off.
Call Waiting Tone	425	(0.15/0.15/0.15/10.0) on/off.
NU (Number Unobtainable) Tone	425	Continuous.

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	A-Law
Minimum Flash Hook Time	0.025s	Dialling Timeout	30 seconds from start of dialing.
Maximum Flash Hook Time	0.350s	Disconnect Tone	NU
Default Caller Display Type	FSKD	Display Language	English (UK)
Default Message Waiting Indication Type	81V	Feature Phone Clearing	Disconnect Tone
		Voicemail Truncation Time	7 seconds.
		Default Currency	HUF

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Hungarian	✗	✗	✗	✗	✗	✗	✗	✗	✓	✓
English (UK)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

12.19 Iceland

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	350+450	Continuous.
Alternate Dial Tone	350+450	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	400	(0.375/0.375) on/off.
Fast Busy Tone	400	(0.375/0.375) on/off.
Intercept Busy Tone	400	Continuous.
Ring Tone	400+450	(0.4/0.2/0.4/2.0) on/off.
Call Waiting Tone	400	(0.1/30.0) on/off.
NU (Number Unobtainable) Tone	400	Continuous.

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	A-Law
Minimum Flash Hook Time	0.025s	Dialling Timeout	30 seconds from start of dialing.
Maximum Flash Hook Time	0.350s	Disconnect Tone	NU
Default Caller Display Type	UK20	Display Language	English (UK)
Default Message Waiting Indication Type	81V	Feature Phone Clearing	Disconnect Tone.
		Voicemail Truncation Time	7 seconds.
		Default Currency	ISK

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
English (UK)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

12.20 India

Support for this locale was added as part of IP Office 4.1.

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	400	Continuous.
Alternate Dial Tone	400	(0.25/0.25/0.25/3.25) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	400	(0.375/0.375) on/off.
Fast Busy Tone	400	(0.25/0.25) on/off.
Intercept Busy Tone	400	(0.75/0.75) on/off.
Ring Tone	400	(0.4/0.2/0.4/2.0) on/off.
Call Waiting Tone	400	(0.2/0.1/0.2/7.5) on/off.
NU (Number Unobtainable) Tone	400	(2.8/0.2) on/off.

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	A-Law
Minimum Flash Hook Time	0.050s	Dialling Timeout	30 seconds from start of dialing.
Maximum Flash Hook Time	0.300s	Disconnect Tone	NU
Default Caller Display Type	DTMFA	Display Language	English (UK)
Default Message Waiting Indication Type	–	Feature Phone Clearing	Go Idle
		Voicemail Truncation Time	7 seconds.
		Default Currency	INR

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
English (UK)	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓

12.21 Italy

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	350+425	Continuous.
Alternate Dial Tone	350+425	(1.0/0.5) on/off.
Secondary Dial Tone	425	(0.2/0.2/0.6/1.0) on/off.
Busy Tone	400	(0.5/0.5) on/off.
Fast Busy Tone	425	(0.5/0.5) on/off.
Intercept Busy Tone	425	(0.5/0.5) on/off.
Ring Tone	425	(1.0/4.0) on/off.
Call Waiting Tone	400	(0.1/4.9) on/off.
NU (Number Unobtainable) Tone	400	(0.1/0.1) on/off.

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	A-Law
Minimum Flash Hook Time	0.025s	Dialling Timeout	10 seconds with no digit dialed.
Maximum Flash Hook Time	0.350s	Disconnect Tone	NU
Default Caller Display Type	FSKD	Display Language	Italian
Default Message Waiting Indication Type	81V	Feature Phone Clearing	Go Idle
		Voicemail Truncation Time	2 seconds.
		Default Currency	EUR

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Italian	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

12.22 Korea

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	350+440	(1.0/0.25) on/off.
Alternate Dial Tone	350+440	(0.25/0.25) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	480+620	(0.5/0.5) on/off.
Fast Busy Tone	480+620	(0.3/0.2) on/off.
Intercept Busy Tone	480+620	(0.125/0.025/0.125/1.5) on/off.
Ring Tone	440+480	(1.0/2.0) on/off.
Call Waiting Tone	480+620	(0.06/0.25/0.06/5.0) on/off.
NU (Number Unobtainable) Tone	480+620	Continuous.

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	A-Law
Minimum Flash Hook Time	0.050s	Dialling Timeout	30 seconds from start of dialing.
Maximum Flash Hook Time	1.000s	Disconnect Tone	NU
Default Caller Display Type	FSKD	Display Language	English (UK)
Default Message Waiting Indication Type	51V Stepped	Feature Phone Clearing	Disconnect Tone
		Vicemail Truncation Time	3 seconds.
		Default Currency	KRW

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Korean	✗	✗	✗	✗	✓	✓	✗	✓	✓	✓
English (UK)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

12.23 Mexico

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(2.0/4.0) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	480+620	(0.5/0.5) on/off.
Fast Busy Tone	480+620	(0.25/0.25) on/off.
Intercept Busy Tone	440/620	(0.25/0.25) alternating tones.
Ring Tone	440+480	(1.0/3.0) on/off.
Call Waiting Tone	480+620	(0.06/0.25/0.06/5.0) on/off.
NU (Number Unobtainable) Tone	480+620	Continuous.

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	Mu-Law
Minimum Flash Hook Time	0.050s	Dialling Timeout	30 seconds from start of dialing.
Maximum Flash Hook Time	1.000s	Disconnect Tone	NU
Default Caller Display Type	FSKD	Display Language	Mexican Spanish
Default Message Waiting Indication Type	51V Stepped	Feature Phone Clearing	Disconnect Tone.
		Voicemail Truncation Time	2 seconds.
		Default Currency	MXN

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Latin Spanish	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

12.24 Netherlands

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	425	(0.48/0.48) on/off.
Fast Busy Tone	425	(0.48/0.48) on/off.
Intercept Busy Tone	425	(0.48/0.48) on/off.
Ring Tone	425	(0.945/4.05) on/off.
Call Waiting Tone	400	(0.08/10.0) on/off.
NU (Number Unobtainable) Tone	425	Continuous.

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	A-Law
Minimum Flash Hook Time	0.025s	Dialling Timeout	30 seconds from start of dialing.
Maximum Flash Hook Time	0.350s	Disconnect Tone	Busy.
Default Caller Display Type	DTMFD	Display Language	Dutch.
Default Message Waiting Indication Type	81V	Feature Phone Clearing	Go Idle.
		Voicemail Truncation Time	7 seconds.
		Default Currency	EUR

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Dutch	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓

12.25 New Zealand

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	350+350	Continuous.
Alternate Dial Tone	350+350	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	400	(0.375/0.375) on/off.
Fast Busy Tone	400	(0.375/0.375) on/off.
Intercept Busy Tone	400	Continuous.
Ring Tone	400+450	(0.4/0.2/0.4/2.0) on/off.
Call Waiting Tone	400	(0.1/30.0) on/off.
NU (Number Unobtainable) Tone	400	(0.075/0.1/0.075/0.1/0.075/0.1/0.075/0.4) on/off.

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	A-Law
Minimum Flash Hook Time	0.025s	Dialling Timeout	30 seconds from start of dialing.
Maximum Flash Hook Time	0.350s	Disconnect Tone	Busy Tone.
Default Caller Display Type	FSKD	Display Language	English (UK)
Default Message Waiting Indication Type	51V Stepped	Feature Phone Clearing	Disconnect Tone.
		Voicemail Truncation Time	5 seconds.
		Default Currency	NZD

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
English (UK)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

12.26 Norway

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	425	(0.5/0.5) on/off.
Fast Busy Tone	425	(0.5/0.5) on/off.
Intercept Busy Tone	425	(0.5/0.5) on/off.
Ring Tone	425	1.0/1.5/(1.0/4.0) on/off.
Call Waiting Tone	425	(0.08/0.6/0.08/10.0) on/off.
NU (Number Unobtainable) Tone	425	Continuous.

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	A-Law
Minimum Flash Hook Time	0.025s	Dialling Timeout	30 seconds from start of dialing.
Maximum Flash Hook Time	0.350s	Disconnect Tone	NU
Default Caller Display Type	UK	Display Language	Norwegian
Default Message Waiting Indication Type	81V	Feature Phone Clearing	Disconnect Tone.
		Voicemail Truncation Time	7 seconds.
		Default Currency	NOK

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Norwegian	✓	✗	✗	✗	✓	✓	✗	✓	✓	✓

12.27 Peru

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(2.0/4.0) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	480+620	(0.5/0.5) on/off.
Fast Busy Tone	480+620	(0.25/0.25) on/off.
Intercept Busy Tone	440/620	(0.25/0.25) alternating tones.
Ring Tone	440+480	(1.0/3.0) on/off.
Call Waiting Tone	480+620	(0.06/0.25/0.06/5.0) on/off.
NU (Number Unobtainable) Tone	480+620	Continuous.

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	Mu-Law
Minimum Flash Hook Time	0.050s	Dialling Timeout	30 seconds from start of dialing.
Maximum Flash Hook Time	1.000s	Disconnect Tone	NU
Default Caller Display Type	FSKD	Display Language	Mexican Spanish
Default Message Waiting Indication Type	51V Stepped	Feature Phone Clearing	Disconnect Tone
		Voicemail Truncation Time	7 seconds.
		Default Currency	PEN

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Latin Spanish	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

12.28 Poland

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	425	(0.5/0.5) on/off.
Fast Busy Tone	425	(0.5/0.5) on/off.
Intercept Busy Tone	425	(0.5/0.5) on/off.
Ring Tone	425	(1.0/4.0) on/off.
Call Waiting Tone	425	(0.15/0.15/0.15/10.0) on/off.
NU (Number Unobtainable) Tone	425	Continuous.

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	A-Law
Minimum Flash Hook Time	0.025s	Dialling Timeout	30 seconds from start of dialing.
Maximum Flash Hook Time	0.350s	Disconnect Tone	NU
Default Caller Display Type	FSKD	Display Language	English (UK)
Default Message Waiting Indication Type	81V	Feature Phone Clearing	Disconnect tone.
		Voicemail Truncation Time	7 seconds.
		Default Currency	PLN

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Polish	✗	✗	✗	✗	✗	✗	✗	✗	✓	✓
English (UK)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

12.29 Portugal

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	350+450	Continuous
Alternate Dial Tone	350+450	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	400	(0.375/0.375) on/off.
Fast Busy Tone	400	(0.375/0.375) on/off.
Intercept Busy Tone	400	Continuous
Ring Tone	400+450	(0.4/0.2/0.4/2.0) on/off.
Call Waiting Tone	400	(0.1/30.0) on/off.
NU (Number Unobtainable) Tone	400	Continuous

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	A-Law
Minimum Flash Hook Time	0.025s	Dialling Timeout	30 seconds from start of dialing.
Maximum Flash Hook Time	0.350s	Disconnect Tone	NU
Default Caller Display Type	UK20	Display Language	Portuguese
Default Message Waiting Indication Type	81V	Feature Phone Clearing	Disconnect Tone
		Voicemail Truncation Time	7 seconds.
		Default Currency	EUR

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Brazilian Portuguese	✓	✗	✓	✓	✓	✓	✗	✓	✓	✓
Portuguese	✓	✗	✗	✗	✓	✗	✗	✓	✓	✓

12.30 Russia

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	Continuous.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	425	(0.35/0.35) on/off.
Fast Busy Tone	425	(0.2/0.2) on/off.
Intercept Busy Tone	425	(0.35/0.35) on/off.
Ring Tone	425	(1.0/4.0) on/off.
Call Waiting Tone	425	(0.2/5.0) on/off.
NU (Number Unobtainable) Tone	425	Continuous.

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	A-Law
Minimum Flash Hook Time	0.025s	Dialling Timeout	30 seconds from start of dialing.
Maximum Flash Hook Time	0.350s	Disconnect Tone	NU
Default Caller Display Type	None	Display Language	Russian
Default Message Waiting Indication Type	51V Stepped	Feature Phone Clearing	Disconnect Tone
		Voicemail Truncation Time	7 seconds.
		Default Currency	RUR

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Russian	✓	✗	✗	✗	✓	✓	✓	✓	✓	✓
English (UK)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Cyrillic display support for the Russian locale is limited on phones as follows:

- 4600 Series/5600 Series: All display strings if using the double-byte build of phone firmware.
- EU24/EU24BL: No Cyrillic language support.

12.31 Saudi Arabia

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	350+440	Continuous.
Alternate Dial Tone	350+440	(.25/.25) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	480+620	(.5/.5) on/off.
Fast Busy Tone	480+620	(.25/.25) on/off.
Intercept Busy Tone	480/620	(.25/.25/.25/.25) on/off.
Ring Tone	440+480	(2.0/4.0) on/off.
Call Waiting Tone	480+620	(.1/.2/1200.0) on/off.
NU (Number Unobtainable) Tone	480+620	Continuous.

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	Mu-Law
Minimum Flash Hook Time	0.300s	Dialling Timeout	30 seconds from start of dialing.
Maximum Flash Hook Time	1.000s	Disconnect Tone	NU
Default Caller Display Type	FSKD	Display Language	English (UK)
Default Message Waiting Indication Type	81V	Feature Phone Clearing	Go Idle
		Voicemail Truncation Time	5 seconds.
		Default Currency	SAR

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
English (UK)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

12.32 South Africa

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	350+450	Continuous.
Alternate Dial Tone	350+450	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	400	(0.375/0.375) on/off.
Fast Busy Tone	400	(0.375/0.375) on/off.
Intercept Busy Tone	400	Continuous.
Ring Tone	400+450	(0.4/0.2/0.4/2.0) on/off.
Call Waiting Tone	400	(0.1/30.0) on/off.
NU (Number Unobtainable) Tone	400	Continuous.

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	Mu-Law
Minimum Flash Hook Time	0.025s	Dialling Timeout	30 seconds from start of dialing.
Maximum Flash Hook Time	0.350s	Disconnect Tone	NU
Default Caller Display Type	UK20	Display Language	English (UK)
Default Message Waiting Indication Type	51V Stepped	Feature Phone Clearing	Disconnect Tone.
		Voicemail Truncation Time	7 seconds.
		Default Currency	ZAR

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
English (UK)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

12.33 Spain

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	425	(0.25/0.25) on/off.
Fast Busy Tone	425	(0.25/0.25) on/off.
Intercept Busy Tone	425	(0.25/0.25) on/off.
Ring Tone	425	(1.5/3.0) on/off.
Call Waiting Tone	425	(0.15/0.15/0.15/30.0) on/off.
NU (Number Unobtainable) Tone	425	Continuous.

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	A-Law.
Minimum Flash Hook Time	0.025s	Dialling Timeout	30 seconds from start of dialing.
Maximum Flash Hook Time	0.350s	Disconnect Tone	NU
Default Caller Display Type	FSKD	Display Language	Spanish.
Default Message Waiting Indication Type	51V Stepped	Feature Phone Clearing	Disconnect tone.
		Voicemail Truncation Time	7 seconds.
		Default Currency	EUR

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Spanish	✓	✓	✗	✗	✓	✓	✗	✓	✓	✓
Latin Spanish	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

12.34 Sweden

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	425	(0.25/0.25) on/off.
Fast Busy Tone	425	(0.25/0.25) on/off.
Intercept Busy Tone	425	(0.25/0.25) on/off.
Ring Tone	425	(1.0/5.0) on/off.
Call Waiting Tone	425	(0.08/120) on/off.
NU (Number Unobtainable) Tone	425	Continuous.

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	A-Law
Minimum Flash Hook Time	0.025s	Dialling Timeout	30 seconds from start of dialing.
Maximum Flash Hook Time	0.350s	Disconnect Tone	NU
Default Caller Display Type	DTMFA	Display Language	Swedish
Default Message Waiting Indication Type	81V	Feature Phone Clearing	Disconnect Tone
		Vicemail Truncation Time	7 seconds.
		Default Currency	SEK

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Swedish	✓	✗	✗	✗	✓	✓	✓	✓	✓	✓

12.35 Switzerland

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	425	Continuous.
Alternate Dial Tone	425	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	425	(0.5/0.5) on/off.
Fast Busy Tone	425	(0.5/0.5) on/off.
Intercept Busy Tone	425	(0.2/0.2) on/off.
Ring Tone	425	(1.0/4.0) on/off.
Call Waiting Tone	425	(0.2/0.2/0.2/4.0) on/off.
NU (Number Unobtainable) Tone	425	(0.2/0.2) on/off.

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	A-Law
Minimum Flash Hook Time	0.025s	Dialling Timeout	30 seconds from start of dialing.
Maximum Flash Hook Time	0.350s	Disconnect Tone	Busy
Default Caller Display Type	UK20	Display Language	French, Italian or German depending on specific selected locale.
Default Message Waiting Indication Type	81V	Feature Phone Clearing	Disconnect Tone.
		Voicemail Truncation Time	7 seconds.
		Default Currency	CHF

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
French	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
German	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Italian	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

12.36 Taiwan

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	350+440	Continuous.
Alternate Dial Tone	350+440	(0.1/0.1) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	480+620	(0.5/0.5) on/off.
Fast Busy Tone	480+620	(0.25/0.25) on/off.
Intercept Busy Tone	480/620	(0.25/0.25/0.25/0.25) on/off.
Ring Tone	440+480	1.2/2.0) on/off.
Call Waiting Tone	350+440	(0.25/0.25/0.25/5.25) on/off.
NU (Number Unobtainable) Tone	480+620	Continuous.

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	Mu-Law
Minimum Flash Hook Time	0.150s	Dialling Timeout	30 seconds from start of dialing.
Maximum Flash Hook Time	1.000s	Disconnect Tone	NU
Default Caller Display Type	DTMFA/FSKD	Display Language	English (UK)
Default Message Waiting Indication Type	81V	Feature Phone Clearing	Disconnect Tone.
		Voicemail Truncation Time	7 seconds.
		Default Currency	TWD

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Mandarin	×	×	×	×	✓+	✓+	×	✓	✓	✓
Putonghua	×	×	×	×	✓+	✓+	×	×	×	✓

+ Chinese Simplified text.

12.37 Turkey

Support for this locale was added as part of IP Office 4.2.

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	350+440	Continuous.
Alternate Dial Tone	350+440	(0.25/0.25) on/off.
Secondary Dial Tone	350+440	Continuous.
Busy Tone	480+620	(0.5/0.5) on/off.
Fast Busy Tone	480+620	(0.25/0.25) on/off.
Intercept Busy Tone	480+620	Continuous.
Ring Tone	440+480	(2.0/4.0) on/off.
Call Waiting Tone	480+620	(0.0/0.1/0.2/1200) on/off.
NU (Number Unobtainable) Tone	480+620	(0.1/0.2) on/off.

Analog Phone Settings

Ring Current Frequency	25Hz.
Minimum Flash Hook Time	0.025s
Maximum Flash Hook Time	0.350s
Default Caller Display Type	FSKD
Default Message Waiting Indication Type	81V

Locale Specific Behavior

Companding	A-Law
Dialling Timeout	30 seconds from start of dialing.
Disconnect Tone	NU
Display Language	English (UK)
Feature Phone Clearing	Go Idle.
Voicemail Truncation Time	0 seconds.
Default Currency	YTL

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
English (UK)	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓*

*Uses English (US) if available.

12.38 United Kingdom

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	350+450	Continuous.
Alternate Dial Tone	350+450	(1.0/0.5) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	400	(0.375/0.375) on/off.
Fast Busy Tone	400	(0.375/0.375) on/off.
Intercept Busy Tone	400	Continuous.
Ring Tone	400+450	(0.4/0.2/0.4/2.0) on/off.
Call Waiting Tone	400	(0.1/30) on/off.
NU (Number Unobtainable) Tone	400	Continuous.

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	A-Law
Ring Current Cadence	(0.4/0.2/0.4/2.0s) on/off.	Dialling Timeout	30 seconds from start of dialing.
Minimum Flash Hook Time	0.025s	Disconnect Tone	NU
Maximum Flash Hook Time	0.350s	Display Language	English (UK)
Default Caller Display Type	UK	Feature Phone Clearing	Go Idle
Default Message Waiting Indication Type	81V	Voicemail Truncation Time	7 seconds.
		Default Currency	GBP

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
English (UK)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

12.39 United States

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone	350+440	Continuous.
Alternate Dial Tone	350+440	(0.25/0.25) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	480+620	(0.5/0.5) on/off.
Fast Busy Tone	480+620	(0.25/0.25) on/off.
Intercept Busy Tone	440/620	(0.25/0.25) alternating tone.
Ring Tone	440+480	(2.0/4.0) on/off.
Call Waiting Tone	480+620	(0.0/0.1/0.2/1200) on/off.
NU (Number Unobtainable) Tone	400	Continuous.

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	20Hz	Companding	Mu-Law.
Minimum Flash Hook Time	0.300s	Dialling Timeout	30 seconds from start of dialing.
Maximum Flash Hook Time	1.000s	Disconnect Tone	Silence.
Default Caller Display Type	FSKD	Display Language	English (US).
Default Message Waiting Indication Type	51V Stepped	Feature Phone Clearing	Go Idle.
		Voicemail Truncation Time	0 seconds.
		Default Currency	USD

Language	Phone Display	T3 Phones	Applications					Voicemail		
			Manager	SSA	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
English (US)	✓	✗	✓	✓	✓	✓	✓	✓	✓	✓

12.40 Venezuela

Tone	Frequency (Hz)	Cadence (seconds)
Dial Tone Tone	425	Continuous.
Alternate Dial Tone	425	(2.0/4.0) on/off.
Secondary Dial Tone	Use Dial Tone.	
Busy Tone	480+620	(0.5/0.5) on/off.
Fast Busy Tone	480+620	(0.25/0.25) on/off.
Intercept Busy Tone	440/620	(0.25/0.25) alternating tone.
Ring Tone	440+480	(1.0/3.0) on/off.
Call Waiting Tone	480+620	(0.06/0.25/0.06/5.0) on/off.
NU (Number Unobtainable) Tone	480+620	Continuous.

Analog Phone Settings		Locale Specific Behavior	
Ring Current Frequency	25Hz	Companding	Mu-Law
Minimum Flash Hook Time	0.050s	Dialling Timeout	30 seconds from start of dialing.
Maximum Flash Hook Time	1.000s	Disconnect Tone	NU
Default Caller Display Type	FSKD	Display Language	Mexican Spanish.
Default Message Waiting Indication Type	81V	Feature Phone Clearing	Disconnect Tone.
		Voicemail Truncation Time	7 seconds.
		Default Currency	VEB

Language	Phone Display	T3 Phones	Applications				Voicemail		
			Manager	Phone Manager	Soft Console	Conf' Center	EVM	Lite	Pro
Latin Spanish	✓	✓	✓	✓	✓	✓	✓	✓	✓

Chapter 13.

Appendix: SMDR

13. Appendix: SMDR

For IP Office 4.2+, the IP Office control unit is able to send SMDR (Station Message Detail Reporting) records to a specified IP address and port.

Typically an SMDR record is output for each call between two parties (internal and or external) that is handled by the IP Office system. In some scenarios, for examples transfers, where a call involves multiple parties then multiple SMDR records may be output for each part of the call. See [SMDR Examples](#)^[849].

Each SMDR record contains call information in a comma-separated format (CSV) format, that is variable-width fields with each field separated by commas. See [SMDR Fields](#)^[846].

Unless otherwise stated, the SMDR referred to in this documentation is the SMDR output direct from the IP Office rather than that output via the IP Office Delta Server application. Delta Server SMDR output is still supported but not if using direct SMDR output from the IP Office. See **Delta Server SMDR Differences** below.

Enabling IP Office SMDR

1. Receive the configuration from the IP Office system.
2. Select **System** and then select the **CDR/SMDR** tab.
3. Use the **Output** drop down box to select **SMDR only**.
4. In the **SMDR** settings, enter the required **IP Address** and **TCP Port**.

SMDR Records

An SMDR record is generated for each call between two devices on the IP Office system. Devices include extensions, trunk lines (or channels on a trunk), voicemail channels, conference channels and IP Office tones.

Calls which are not presented to another device do not generate an SMDR record. For example internal users dialing short code that simply changes a configuration setting.

The SMDR record is generated when the call ends, therefore the order of the SMDR records output does not match the call start times.

Each record contains a call ID which is increased by 1 for each subsequent call.

When a call moves from one device to another, an SMDR record is output for the first part of the call and an additional SMDR record will be generated for the subsequent part of the call.

Each of these records will have the same Call ID.

Each record for a call indicates in the Continuation field if there will be further records for the same call.

Call Times

Each SMDR record can include values for ringing time, connected time, held time and parked time. The total duration of an SMDR record is the sum of those values.

The time when a call is not in any one of the states above, for example when one party to the call has disconnected, is not measured and included in SMDR records.

Where announcements are being used, the connected time for a call begins either when the call is answered or the first announcement begins.

All times are rounded up to the nearest second.

Each SMDR record has a Call Start time taken from the system clock time. For calls being transferred or subject to call splitting, each of the multiple SMDR records will have the same Call Start time as the original call.

Delta Server SMDR Differences

Previously SMDR records were obtained using the IP Office Delta Server application running on a PC connected to the IP Office system via the LAN. This method was used for pre-IP Office 4.2 systems. Delta Server SMDR output is still supported with IP Office 4.2+ systems. However it is not supported if also outputting direct SMDR records from the IP Office.

There are a number of differences between the IP Office SMDR output and that output by the IP Office Delta Server application. The key differences are:

- **Advice of Charge and Authorization Code Fields are Included as Standard**

These fields are optional in the Delta Server SMDR output. They are included as standard in the IP Office SMDR output.

- **Additional Fields are Included for External Outgoing Call Routing**

The IP Office SMDR output can include additional external targeting fields for calls routed out via external lines. These fields indicate what device targeted the call externally, how, and to what number.

- **Call ID Starting Number**

The Call ID is always reset whenever the IP Office system is restarted and then incremented by 1 for each subsequent call that is not a continuation of a previous call.

- The Call ID used by the Delta Server applications starts from 1.
- The Call ID used for IP Office SMDR starts from 1,000,000.

- **Small Community Network**

The following differences apply for calls to and from SCN destinations.

- IP Office SMDR indicates calls across an SCN as internal.
- IP Office SMDR inserts the hunt group or user name of the remote SCN party rather than the local line used.

- **Parked and Held Time**

For parked calls, the Delta Server included the time a call was parked in both the **Park Time** and **Hold Time** fields. The IP Office SMDR uses just the **Park Time** field.

- **Additional Records Through Call Splitting**

The IP Office supports [Call Splitting for Diverts](#)^[187] which produces separate initial call and forwarded call records. This applies for calls forwarded by forward unconditional, forward on no answer, forward on busy, DND or mobile twinning. It also applies to calls forwarded off-switch by an incoming call route. The two sets of records will have the same Call ID. The call time fields of the forward call record are reset from the moment of forwarding on the external trunk.

13.1 SMDR Fields

The SMDR output contains the following fields. Note that time values are rounded up to the nearest second.

1.Call Start

Call start time in the format YYYY/MM/DD HH:MM:SS. For all transferred call segment this is the time the call was initiated, so each segment of the call has the same call start time.

2.Connected Time

Duration of the connected part of the call in HH:MM:SS format. This does not include ringing, held and parked time. A lost or failed call will have a duration of 00:00:00. The total duration of a record is calculated as *Connected Time + Ring Time + Hold Time + Park Time*.

3.Ring Time

Duration of the ring part of the call in seconds.

- For inbound calls this represents the interval between the call arriving at the switch and it being answered, not the time it rang at an individual extension.
- For outbound calls, this indicates the interval between the call being initiated and being answered at the remote end if supported by the trunk type. Analog trunks are not able to detect remote answer and therefore cannot provide a ring duration for outbound calls.

4.Caller

The callers' number. If the call was originated at an extension, this will be that extension number. If the call originated externally, this will be the CLI of the caller if available, otherwise blank.

5.Direction

Direction of the call – **I** for Inbound, **O** for outbound. Internal calls are represented as **O** for outbound. This field can be used in conjunction with **Is_Internal** below to determine if the call is internal, external outbound or external inbound.

6.Called Number

This is the number called by the IP Office. For a call that is transferred this field shows the original called number, not the number of the party who transferred the call.

- **Internal calls:** The extension, group or short code called.
- **Inbound calls:** The DDI dialed by the caller if available.
- **Outbound calls:** The dialed digits.
- **Voice Mail:** Calls to a user's own voicemail mailbox.

7.Dialed Number

For internal calls and outbound calls, this is identical to the **Called Number** above. For inbound calls, this is the DDI of the incoming caller.

8.Account

The last account code attached to the call. Note: IP Office account codes may contain alphanumeric characters.

9.Is Internal

0 or **1**, denoting whether both parties on the call are internal or external (**1** being an internal call). Calls to SCN destinations are indicated as internal.

Direction	Is Internal	Call Type
I	0	Incoming external call.
O	1	Internal call.
O	0	Outgoing external call.

10.Call ID

This is a number starting from 1,000,000 and incremented by 1 for each unique call. If the call has generates several SMDR records, each record will have the same Call ID. Note that the Call ID used is restarted from 1,000,000 is the IP Office is restarted.

11.Continuation

1 if there is a further record for this call id, **0** otherwise.

12.Party1Device

The device 1 number. This is usually the call initiator though in some scenarios such as conferences this may vary. If an extension/hunt group is involved in the call its details will have priority over a trunk, this includes remote SCN destinations.

Type	Party Device	Party Name
Internal Number	E <extension number>	<name>
Voicemail	V <9500 + channel number>	VM Channel <channel number>
Conference	V <1><conference number>+<channel number>	CO Channel <conference number.channel number>
Line	T <9000+line number>	Line <line number>.<channel if applicable>
Other	V <8000+device number>	U <device class> <device number>.<device channel>
Unknown/Tone	V8000	U1 0.0

13.Party1Name

The name of the device – for an extension or agent, this is the user name.

14.Party2Device

The other party for the SMDR record of this call segment. See **Party1Device** above.

15.Party2Name

The other party for the SMDR record of this call segment. See **Party1Name** above.

16.Hold Time

The amount of time in seconds the call has been held during this call segment.

17.Park Time

The amount of time in seconds the call has been parked during this call segment.

18.AuthValid

This field is used for [authorization codes](#)^[403]. This field shows **1** for valid authorization or **0** for invalid authorization.

19.AuthCode

This field shows either the authorization code used or **n/a** if no authorization code was used.

20.User Charged

This and the following fields are used for ISDN [Advice of Charge \(AoC\)](#)^[723]. The user to which the call charge has been assigned. This is not necessarily the user involved in the call.

21.Call Charge

The total call charge calculated using the line cost per unit and user markup.

22.Currency

The currency. This is a system wide setting set in the IP Office configuration.

23.Amount at Last User Change

The current AoC amount at user change.

24.Call Units

The total call units.

25.Units at Last User Change

The current AoC units at user change.

26.Cost per Unit

This value is set in the IP Office configuration against each line on which Advice of Charge signalling is set. The values are 1/10,000th of a currency unit. For example if the call cost per unit is £1.07, a value of 10700 should be set on the line.

27.Mark Up

Indicates the mark up value set in the IP Office configuration for the user to which the call is being charged. The field is in units of 1/100th, for example an entry of 100 is a markup factor of 1.

The following additional fields are provided by IP Office SMDR. They are not provided by Delta Server SMDR.

28.External Targeting Cause

This field indicates who or what caused the external call and a reason code. For example **U FU** indicates that the external call was caused by the Forward Unconditional setting of a User.

Targeted by		Reason Code	
HG	Hunt Group.	fb	Forward on Busy.
U	User.	fu	Forward unconditional.
LINE	Line.	fnr	Forward on No Response.
AA	Auto Attendant.	fdnd	Forward on DND.
ICR	Incoming Call Route.	CfP	Conference proposal (consultation) call.
RAS	Remote Access Service.	Cfd	Conferenced.
?	Other.	MT	Mobile Twinning.
		TW	Teleworker (Phone Manager Telecommuter mode).
		XfP	Transfer proposal (consultation) call.
		Xfd	Transferred call.

29.External Targeter Id

The associated name of the targeter indicated in the External Targeting Cause field. For hunt groups and users this will be their name in the IP Office configuration. For an Incoming Call Route this will be the Tag if set, otherwise **ICR**.

30.External Targeted Number

This field is used for forwarded, Incoming Call Route targeted and mobile twin calls to an external line. It shows the external number called by the IP Office as a result of the off switch targeting where as other called fields give the original number dialled.

13.2 SMDR Examples

The following are examples of IP Office SMDR records for common call scenarios.

Basic Examples

Lost incoming Call

In this record, the **Call duration** is zero and the **Continuation** field is 0, indicating that the call was never connected. The **Ring Time** shows that it rang for 9 seconds before ending.

```
2008/06/28 09:28:41,00:00:00,9,8004206,I,4324,4324,,0,1000014155,0,E4324,Joe Bloggs,T9161,LINE 5.1,0,0
```

Call Answered by Voicemail

In this example, **215** has made a call to **211**. However the **Party2Device** and **Party2Name** show that the call was answered by voicemail.

```
2008/10/20 06:43:58,00:00:10,21,215,O,211,211,,I,28,0,E215,Extn215,V9051,VM Channel 1,0,0
```

Call Transferred to Voicemail

In this example, the **Continuation field** in the first record tells us that it wasn't the end of the call. The matching **Call ID** identifies the second record as part of the same call. The change in **Party 1** details between the two records show that the call was transferred to voicemail.

```
2008/06/28 09:30:57,00:00:13,7,01707392200,I,299999,299999,,0,1000014160,1,E4750,John Smith,T9002,LINE 1.2,11,0
2008/06/28 09:30:57,00:00:21,0,01707392200,I,299999,299999,,0,1000014160,0,V9502,VM Channel 2,T9002,LINE 1.2,0,0
```

External Call

The **Is Internal** field being **0** shows this to be an external call. The **Direction** field as **I** shows that it was an incoming call. The **Ring Time** was 7 seconds and the total **Connected Time** was 5 seconds.

```
2008/08/01 15:14:19,00:00:05,7,01707299900,I,403,390664,,0,1000013,0,E403,Extn403,T9001,Line 1.2,0,0,,,,,,,,,,,,,
```

Internal call

The **Is Internal** field being **1** shows this to be an internal call. The **Ring Time** was 4 seconds and the total **Connected Time** was 44 seconds.

```
2008/06/26 10:27:44,00:00:44,4,4688,O,4207,4207,,1,1000013898,0,E4688,Joe Bloggs,E4207,John Smith,0,0
```

Outgoing Call

The combination of the **Direction** field being outbound and the **Is Internal** field be 0 show that this was an outgoing external call. The line (and in this case channel) used are indicated by the **Party2 Name** and being a digital channel the **Ring Time** before the call was answered is also shown.

```
2008/06/28 08:55:02,00:08:51,9,4797,O,08000123456,08000123456,,0,1000014129,0,E4797,Joe Bloggs,T9001,LINE 1.1,0,0
```

Voicemail Call

The two records below show calls to voicemail. The first shows the **Dialed Number** as *17, the default short code for voicemail access. The second shows the **Dialed Number** as **VoiceMail**, indicating some other method such as the Message key on a phone was used to initiate the call.

```
2008/06/28 09:06:03,00:00:19,0,4966,O,*17,*17[1],,1,1000014131,0,E4966,John Smith,V9501,VM Channel 1,0,0
2008/06/28 09:06:03,00:00:19,0,4966,O,VoiceMail,VoiceMail,,1,1000014134,0,E4966,John Smith,V9501,VM Channel 1,0,0
```

Parked Call

In this example the first record has a **Park Time** showing that the call was parked. The **Continuation** field indicates that the call did not end this way and there are further records. The second record has the same **Call ID** and shows a change in the **Party2Name** [4], indicating that party unparked the call. Note also that both records share the same call start time.

```
2008/10/20 07:18:31,0:00:12,3,215,O,210,210,,1,38,1,E215,Extn215,E210,Extn210,0,7
2008/10/20 07:18:31,0:00:10,0,215,O,210,210,,1,38,0,E215,Extn215,E211,Extn211,0,0
```

Incoming call with Account Code

In this example, at some stage as the call was made or during the call, an **Account Code** has been entered. In this specific case it is a text account code which can be selected and entered by the user using IP Office Phone Manager.

```
2008/06/28 11:29:12,00:00:02,2,5002,I,1924,1924,Support,0,1000014169,0,E1924,Extn1924,T9620,LINE 8.20,0,0
```

Conference Using Conference Add Short Code

In this example 2101 has made a call and put it on hold (record 2), then made another call and put it on hold (record 1) and then dialled the default short code *47 to conference all their held calls (record 3). The records for the first two calls have the **Continuation** field set as 1 indicating that the calls continued in further records.

Record 3 shows 2101 making a new call in which they dial *47, which places them and their held calls into a conference. This is shown by the **Party Device** and **Party Name** details as being a conference (100) and the conference channel used for each.

For both the Continuation fields show that the calls do not end but rather have subsequent records.

```
2008/07/09 17:55,00:00:03,3,2101,O,8262623#,8262623#,,0,1000024,1,E2101,Extn2101,T9002,Line 2.1,8,0
2008/07/09 17:54,00:00:29,7,2101,O,2121,2121,,1,1000023,1,E2101,Extn2101,E2121,Extn2121,23,0
2008/07/09 17:55,00:00:46,0,2101,O,*47,*47,,1,1000026,0,E2101,Extn2101,V11001,CO Channel 100.1,0,0
2008/07/09 17:54,00:00:49,0,,O,71234567890,71234567890,,1,1000023,0,E2121,Extn2121,V11003,CO Channel 100.3,0,0
2008/07/09 17:55,00:00:49,0,,O,8262623#,8262623#,,0,1000024,0,V11002,CO Channel 100.2,T9002,Line 2.1,0,0
```

Conference Using Conference Button

In this example, an extension user answers a call and then brings in another user by using the Conference button on their phone. Again we see records for the initial call, the conference proposal call and then for the 3 parties in the conference that is created.

```
2008/07/09 15:05:41,00:00:04,3,203,O,201,201,,1,1000009,1,E203,Extn203,E201,Extn201,0,0
2008/07/09 15:05:26,00:00:09,3,207,O,203,203,,1,1000008,1,E207,Extn207,E203,Extn203,10,0
2008/07/09 15:05:41,00:00:08,0,,O,,1,1000009,0,E201,Extn201,V11001,CO Channel 100.1,0,0
2008/07/09 15:05:50,00:00:10,0,203,O,201,201,,1,1000010,0,E203,Extn203,V11002,CO Channel 100.2,0,0
2008/07/09 15:05:26,00:00:10,0,207,O,203,203,,1,1000008,0,E207,Extn207,V11003,CO Channel 100.3,0,0
```

Adding a Party to a Conference

This example is a variant on that above. Having started a conference, extension 203 adds another party.

```
2008/07/09 15:08:31,00:00:03,3,203,O,201,201,,1,1000014,1,E203,Extn203,E201,Extn201,0,0
2008/07/09 15:08:02,00:00:22,6,207,O,203,203,,1,1000013,1,E207,Extn207,E203,Extn203,9,0
2008/07/09 15:08:45,00:00:02,4,203,O,403,403,,0,1000016,1,E203,Extn203,E403,Libby Franks,0,0
2008/07/09 15:08:02,00:00:24,0,207,O,203,203,,1,1000013,0,E207,Extn207,V11003,CO Channel 100.3,0,0
2008/07/09 15:08:39,00:00:17,0,203,O,201,201,,1,1000015,0,E203,Extn203,V11002,CO Channel 100.2,8,0
2008/07/09 15:08:31,00:00:26,0,,O,,1,1000014,0,E201,Extn201,V11001,CO Channel 100.1,0,0
2008/07/09 15:08:45,00:00:12,0,,O,403,403,,0,1000016,0,E403,Libby Franks,V11004,CO Channel 100.4,0,0
```

Transfer

In this example 2126 has called 2102. The record (1) for this has the **Continuation** set a 1 indicating that it has further records. In the following record (3) with the same **Call ID** it can be seen that the **Party 2 Device** and **Party 2 Name** fields have changed, indicating that the call is now connected to a different device, in this example 2121. We can infer the blind transfer from the intermediate record (2) which shows a call of zero **Connected Time** between the original call destination 2102 and the final destination 2121.

```
2008/07/09 17:51,00:00:38,18,2126,O,2102,2102,,1,1000019,1,E2126,Extn2126,E2102,Extn2102,19,0
2008/07/09 17:52,00:00:00,7,2102,O,2121,2121,,1,1000020,0,E2102,Extn2102,E2121,Extn2121,0,0
2008/07/09 17:51,00:00:39,16,2126,O,2102,2102,,1,1000019,0,E2126,Extn2126,E2121,Extn2121,0,0
```

In this second example extension 402 answers an external call and then transfers it to extension 403. Again the two legs of the external call have the same time/date stamp and same call ID.

```
2008/08/01 15:23:37,00:00:04,7,01707299900,I,4001,390664,,0,1000019,1,E402,Extn402,T9001,Line 1.1,6,0,,,,,,,,,,,,,
2008/08/01 15:23:46,00:00:00,3,402,O,403,403,,1,1000020,0,E402,Extn402,E403,Extn403,0,0,,,,,,,,,,,,,
2008/08/01 15:23:37,00:00:04,4,01707299900,I,4001,390664,,0,1000019,0,E403,Extn403,T9001,Line 1.1,0,0,,,,,,,,,,,,,
```

Busy/Number Unavailable Tone

In this example 2122 calls 2123 who is set to DND without voicemail. This results in 2122 receiving busy tone.

The records shows a call with a **Connected Time** of 0. The **Call Number** field shows 2123 as the call target but the **Party 2 Device** and **Party 2 Name** fields show that the connection is to a virtual device.

```
2008/07/09 17:59,00:00:00,0,2122,O,2123,2123,,1,1000033,0,E2122,Extn2122,V8000,U1 0.0,0,0
```

Call Pickup

The first record shows a call from 2122 to 2124 with a **Connected Time** of zero but a **Ring Time** of 8. The **Continuation** field indicates that the call has further records.

The second record has the same **Call ID** but the **Party 2 Device** and **Party 2 Name** details show that the call has been answered by 2121.

```
2008/07/09 18:00,00:00:00,8,2122,0,2124,2124,,1,1000038,1,E2122,Extn2122,E2124,Extn2124,0,0
2008/07/09 18:00,00:00:38,1,2122,0,2124,2124,,1,1000038,0,E2122,Extn2122,E2121,Extn2121,0,0
```

Internal Twinning

The records for scenarios such as internal call forwarding or follow me indicate the rerouting in a single record by having Caller and Called Number details that differ from the final Party 1 and Party 2 details. Internal twinning differs is showing a call answered at the twin exactly the same as having been answered at the primary.

203 is internally twinned to 201. Call from 207 to 203 but answer at 201.

```
2008/07/09 16:25:26,00:00:03,7,207,0,203,203,,1,1000037,0,E207,Extn207,E203,Extn203,0,0
```

Park and Unpark

Parking and unparking of a call at the same extension is simply shown by the Park Time field of the eventual SMDR record. Similarly calls held and unheld at the same extension are shown by the Held Time field of the eventual SMDR record for the call. The records below however show a call parked at one extension and then unparked at another.

The records show a call from 207 to 203. 203 then parks the call shown by the **Park Time**. The call is unparked by 201, hence the first record is indicated as continued in its **Continuation** field. The matching **Call ID** indicates the subsequent record for the call.

```
2008/07/09 16:39:11,00:00:00,2,207,0,203,203,,1,1000052,1,E207,Extn207,E203,Extn203,0,4
2008/07/09 16:39:11,00:00:02,0,207,0,203,203,,1,1000052,0,E207,Extn207,E201,Extn201,0,0
```

Distributed Hunt Group Call

An incoming call to site A is targeted to a distributed hunt group member on site B. They transfer the call back to a hunt group member on site A.

```
2008/08/01 15:32:52,00:00:10,19,01707299900,I,4002,390664,,0,1000024,1,E209,Luther-209,T9001,Line 1.2,0,0,,,,,,,,,,,,,
2008/08/01 15:33:19,00:00:00,2,209,I,403,403,,0,1000025,0,E209,Luther-209,E403,Extn403,0,0,,,,,,,,,,,,,
2008/08/01 15:32:52,00:00:03,3,01707299900,I,4002,390664,,0,1000024,0,E403,Extn403,T9001,Line 1.2,0,0,,,,,,,,,,,,,
```

Voicemail Supervised Transfer

A call is routed to a voicemail module that performs a supervised transfer.

```
2008/08/01 16:36:04,00:00:09,0,01707299900,I,xfer,390664,,0,1000061,1,T9001,Line 1.1,V9508,VM Channel 8,0,0,,,,,,,,,,,,,
2008/08/01 16:36:07,00:00:03,4,,I,402,402,,0,1000062,0,E402,Extn402,V8000,U12 0.8,0,0,,,,,,,,,,,,,
2008/08/01 16:36:04,00:00:09,0,01707299900,I,402,390664,,0,1000061,0,E402,Extn402,T9001,Line 1.1,0,0,,,,,,,,,,,,,
```

Outgoing External Call

The **External Targeting Cause** indicates that the external call was caused by a user. The lack of specific reason implies that it was most likely dialed. The **External Targeter ID** is the user name in this example

```
... 16:23:06,00:00:04,5,203,0,9416,9416,,0,1000035,0,E203,Extn203,T9005,Line 5.1,0,0,,,Extn203,,,,,,U,Extn203,,
```

Rerouted External Call

In this example an incoming external call has been rerouted back off switch, shown by the **Party 1** fields and the **Party 2** fields being external line details. The **External Targeter Cause** shows that rerouting of the incoming call was done by an incoming call route (ICR). The **External Targeter ID** in this case is the Tag set on the incoming call route. The **External Targeted Number** is the actual external number call.

```
... 08:14:27,00:00:03,5,392200,I,9416,200,,0,1000073,0,T9005,Line 5.1,T9005,Line 5.2,0,0,,,0000.00,,0000.00,0,0,618,0.01,ICR,Main ICR
```

External Forward Unconditional

In this example, user 203 has a forward unconditional number set for calls. This is indicated by the **External Targeting Cause** showing user and forward unconditional. The **External Targeter ID** shows the source of the call being forwarded, in this example user 207. The **External Targeted Number** shows the actual external number called by the IP Office.

```
... 16:22:41,00:00:02,5,207,0,203,203,,0,1000034,0,E207,Extn207,T9005,Line 5.1,0,0,,,Extn203,0000.00,,0000.00,0,0,618,1.00,U fu,Extn203,,
```

Transferred Manually

In this example the internal user transfers a call to an external number. The **External Targeting Cause** in the first record indicates that this external call is the result of a user (U) transfer proposal (XfP) call. The **Continuation** field indicates that another record with the same **Call ID** will be output.

The additional records are output after the transferred call is completed. The first relates to the initial call prior. The second is the transferred call with the **External Targeting Cause** now indicating user (U) transferred (Xfd).

```
... 16:33:19,00:00:05,3,203,O,9416,9416,,0,1000044,1,E203,Extn203,T9005,Line 5.1,0,0,,,,,,,,,U XfP,Extn207,,
... 16:33:09,00:00:02,2,207,O,203,203,,1,1000043,0,E207,Extn207,E203,Extn203,11,0,,,,,,,,,
... 16:33:19,00:00:04,0,207,O,9416,9416,,0,1000044,0,E207,Extn207,T9005,Line 5.1,0,0,,,Extn207,,,,,,,,,U Xfd,Extn203,,
```

Mobile Twinned Call Answered Internally

For this example user 203 has mobile twinning enabled to the external number 9416 as twin. Their mobile dial delay is set to 2 seconds. The call is answered at the user's internal extension.

In this scenario the record for the external call part of twinning is output immediately the call is answered internally. The **Call Start** for this record differs due to the user's **Mobile Dial Delay** setting. The **External Targeting Cause** indicates the external call was the result of user (U) mobile twinning (MT) settings. If the call had been answered before the mobile dial delay expired, no external call and therefore no record would be produced. When the call is completed the second record is output.

```
... 16:17:59,00:00:00,7,,O,9416,9416,,0,1000028,0,E203,Extn203,T9005,Line 5.1,0,0,,,,,,,,,U MT,Extn203,9416,
... 16:17:58,00:00:07,9,207,O,203,203,,1,1000027,0,E207,Extn207,E203,Extn203,0,0,,,,,,,,,

```


Mobile Twinned Call Answered at the Mobile Twin

This is the same scenario as the example above except that the call is answered at the external mobile twinning destination. Unlike the previous example the external call record has a non-zero **Call Time** showing that the call was also answered externally.

```
... 16:17:04,00:00:06,9,,O,9416,9416,,0,1000026,0,E203,Extn203,T9005,Line 5.1,0,0,,,,,,,,,U MT,Extn203,9416
... 16:17:02,00:00:06,11,207,O,203,203,,1,1000025,0,E207,Extn207,E203,Extn203,0,0,,,,,,,,,
```

Mobile Twinned Call Picked Up Using the Twinning Button

This is the same scenario as the example above, however after answering the call on the external twinned device, the user has picked it up internally by using a twinning button. The first two records are for the answered external call and are output when that call is picked up by the internal extension. The third record is output when the call is ended internally.

```
... 16:19:18,00:00:05,11,207,O,203,203,,1,1000029,1,E207,Extn207,E203,Extn203,0,0,,,,,,,,,
... 16:19:20,00:00:05,9,,O,9416,9416,,0,1000030,0,E203,Extn203,T9005,Line 5.1,0,0,,,,,,,,,U MT,Extn203,9416
... 16:19:18,00:00:05,0,207,O,203,203,,1,1000029,0,E207,Extn207,E203,Extn203,0,0,,,,,,,,,
```

External Conference Party

This is similar to internal conferencing (see examples above) but the conference setup and progress records include **External Targeting Cause** codes for user (U) conference proposal (CfP) and user (U) conferenced (Cfd).

```
... 16:48:58,00:00:02,2,203,O,9416,9416,,0,1000066,1,E203,Extn203,T9005,Line 5.1,0,0,,,,,,,,,U CfP,Extn203,,
... 16:48:37,00:00:04,3,203,O,207,207,,1,1000064,1,E203,Extn203,E207,Extn207,7,0,,,,,,,,,
... 16:49:04,00:00:08,0,203,O,9416,9416,,1,1000067,0,E203,Extn203,V11002,CO Channel 100.2,0,0,,,,,,,,,
... 16:48:37,00:00:13,0,,O,,1,1000064,0,E207,Extn207,V11003,CO Channel 100.3,0,0,,,,,,,,,
... 16:48:58,00:00:13,0,,O,9416,9416,,0,1000066,0,V11001,CO Channel 100.1,T9005,Line 5.1,0,0,,Extn203,,,,,,U Cfd,Extn203,
```

Call Routed by Incoming Call Route

Call from external number 403 rerouted by incoming call route (ICR) for incoming line group 701 back out to 404.

```
2008/08/01 11:45:36,00:00:01,2,403,I,9404,,,0,1000007,0,T9001,Line 1.0,T9010,Line 10.0,0,0,n/a,0,,,,,,,,,ICR,ICR701,404
```

Two Outgoing External Calls Transferred Together

This scenario shows an outgoing call which is then transferred to another outgoing call.

```
2009/02/19 11:13:26,00:00:06,0,203,O,9403,9403,,0,1000012,1,E203,Extn203,T9001,Line 1.0,8,0,n/a,0,,,,,,,,,U,Extn203,,
2009/02/19 11:13:36,00:00:02,0,203,O,8404,8404,,0,1000013,0,E203,Extn203,T9002,Line 2.0,0,0,n/a,0,,,,,,,,,U XfP,Extn203,,
2009/02/19 11:13:26,00:00:11,0,8404,I,404,,,0,1000012,0,T9002,Line 2.0,T9001,Line 1.0,0,0,n/a,0,,,,,,,,,LINE Xfd,0.1038.0 13 Alog T
```

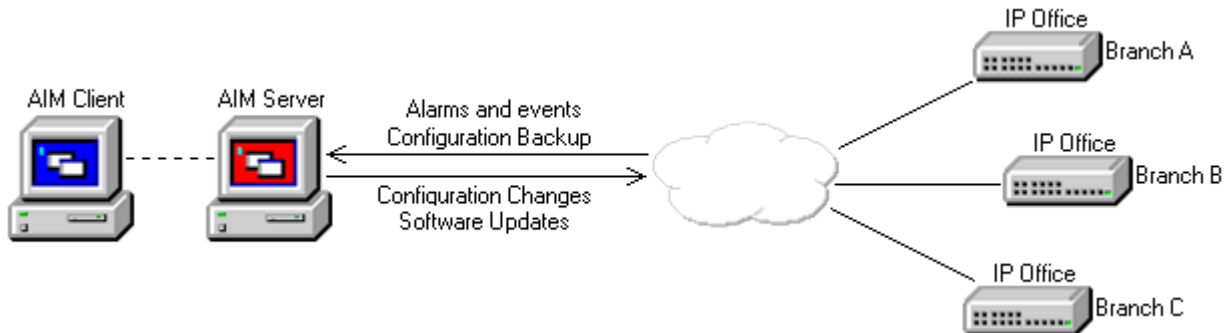
Chapter 14.

Appendix: AIM and IP Office

14. Appendix: AIM and IP Office

Avaya Integrated Management (AIM) is a suite of applications used to monitor and manage multiple phone systems. Running either from a server or through a client-server setup, AIM can be used to remotely monitor and access those phone systems. Refer to the AIM product documentation for full details.

AIM and IP Office Manager support is aimed at customers requiring a "chain store management" solution, i.e. customers managing multiple branch office IP Office systems. Typically the dial plan and other settings of these phone systems are the same from branch to branch. Through the use of configuration templates, AIM is able to deploy the required settings following system installation and to deploy template changes to multiple systems simultaneously.



Key features provided by AIM for IP Office systems are:

- System monitoring and configuration backup.
- Rapid installation by remote software upgrading of new systems.
- Consistent programming through IP Office templates.
- Simultaneous distribution of template changes and updated auto-attendant prompts.

Use of AIM with IP Office is only supported by IP Office 4.0 and higher. Systems with IP Office 2.1 to IP Office 3.2 can be discovered by AIM NMC if they have SNMP enabled or are manually added to AIM Network Management Console (NMC). Those systems can then be upgraded to IP Office 4.1 using AIM Software Update Manager (SUM).

- **⚠ WARNING**
IP Office systems being managed through AIM should only be accessed using the version of IP Office Manager included as part of the AIM suite installation. Similarly only the .bin files included in that installation should be used with those IP Office systems. Attempting to configure these systems using a standalone copy of Manager may cause configuration errors.

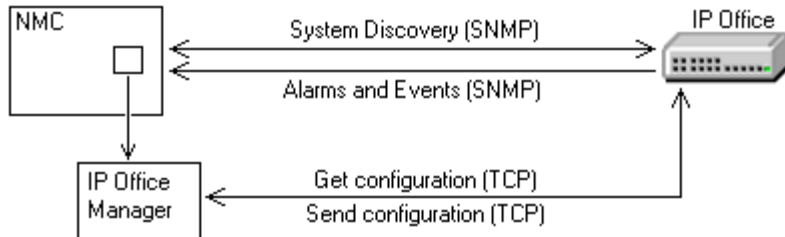
14.1 AIM Applications

IP Office 4.1 is supported by AIM. In addition to its own applications, AIM can also use IP Office Manager as a tool to configure IP Office systems. The IP Office Manager is installed as a component of AIM, either on the AIM server or the AIM client.

AIM consists of the following applications which interact with IP Office:

- **AIM Network Management Console (NMC)**

NMC is used to monitor the phone systems being managed through AIM. It shows the equipment inventory of those systems, their status and system alarms. Refer to the AIM product documentation for full details.



- NMC uses SNMP to discover IP Office systems.
- IP Office SNMP is used to provide system information, alarms and events to NMC.
- For any IP Office system it knows, NMC can open that systems configuration directly into IP Office Manager using the Tool -> Device Manager menu command.

- **AIM Software Update Manager (SUM)**

SUM is used to provide software updates to systems being managed through AIM. Refer to the AIM product documentation for full details.



14.2 Password Administration

The AIM Secure Admin Access (SAA) application is used to control access to the systems being managed through AIM including IP Office systems.

Configuring Access to IP Office Systems

1. Within SAA a number of IP Office Users can be created. Multiple IP Offices can then assigned to each IP Office User.
2. Each IP Office User has a name, password and TFTP password configured within SAA.
3. SAA also has a general AIMAdmin password used by all IP Office Users.
4. Within each IP Office's security settings, the name and password of the Unique Security Administrator must match the name and password of the IP Office User with which the IP Office is associated in SAA.
5. When an IP Office system is associated with the SAA IP Office User, SAA can access the IP Office system's security settings.
 - 5.1. It creates an IP Office Service User called AIMAdmin and belonging to the Administrator Rights Group.
 - 5.2. It sets the IP Office system password to match the IP Office User TFTP Password.
 - If SAA fails to access the IP Office system's security settings using the IP Office User name and password, it will attempt to access the settings using the IP Office Unique System Administrator defaults. If this succeeds it will reset the Unique System Administrator settings to match the IP Office User name and password.
6. That Service User can then be used by the other AIM applications for configuration access to the IP Office.
7. SAA can also control the IP Office's System Password used for software updates.

Updating Passwords

If a password within SAA is changed, SAA will update the relevant IP Office systems to update the matching passwords.

1. If the IP Office User password or TFTP password is changed, SAA will update the IP Office security settings of the IP Office system associated with that IP Office User.
2. If the SAA AIMAdmin password is changed, SAA will update the IP Office security settings of all IP Office systems.

SAA Setting	IP Office Setting
IP Office User name	Unique Security Administrator name
IP Office User password	Unique Security Administrator password
IP Office User TFTP password	System Password
SAA AIMAdmin password	AIMAdmin service user password

14.3 Configuring an IP Office for AIM

The processes below outline the basic steps for adding an IP Office system into AIM.

IP Office Systems with Pre-3.2 IP Office Software

This process covers existing IP Office systems with pre-3.2 IP Office software. It also covers new IP Office control units, except the IP500, as these may be supplied with an initial software level of IP Office 2.1.

1. Initial on-site configuration should ensure the following:
 - 1.1. IP connectivity between the IP Office and the AIM server.
 - 1.2. The System Password should be set to match that used by the IP Office User.
 - 1.3. Enable SNMP.
2. Following the above, it should be possible for NMC to discover the IP Office system.
 - 2.1. If SNMP was not enabled during initial configuration, the IP Office system can be added manually to NMC.
3. SUM should be used to upgrade the IP Office system to IP Office 4.1 00software. Depending on the control unit type this may be a multi-stage upgrade process.
4. Having upgraded the IP Office system to IP Office 4.1, it will have default security settings. SAA can now be used to apply the IP Office User required security settings to the IP Office system.
5. PIM can now be used to apply templates to the IP Office system. The hardware template should include enabling SNMP with the appropriate community string and alarms.
6. Additional site-specific configuration, for example the addition of software licenses, can be done through NMC.

IP Office Systems with IP Office 3.2 or Higher Software

This process covers existing IP Office systems with 3.2 or higher software. It also covers new IP500 control units which are supplied with a base software level of IP Office 4.0.

1. Initial on-site configuration should ensure the following:
 - 1.1. IP connectivity between the IP Office and the AIM server.
 - 1.2. The System password should be set to match that used by the IP Office User.
 - 1.3. The Unique Security Administrator name and password should be set to match the IP Office User or left at default.
 - 1.4. Enable SNMP.
2. Following the above, it should be possible for NMC to discover the IP Office system.
 - 2.1. If SNMP was not enabled during initial configuration, the IP Office system can be added manually to NMC.
3. SUM should be used to upgrade the IP Office system to IP Office 4.1 software to ensure that the same software build is being used for all the systems being managed through AIM.
4. SAA can now be used to apply the IP Office User required security settings to the IP Office system.
5. PIM can now be used to apply templates to the IP Office system. The hardware template should include enabling SNMP with the appropriate community string and alarms.
6. Additional site-specific configuration, for example the addition of software licenses, can be done through NMC.

14.4 PIM Templates

The IP Office configuration record types within each template type are listed below. When a template of that type is created or edited, only the forms for those record types are visible.

- **Hardware Template**^[861]
Contains Control Unit, System, Line, Extension and Short Code records. For some systems depending on IP Office control unit type and or location it may also contain Wireless and or E911 records.
- **User Template**^[862]
Contains User, User Rights, Hunt Group, Incoming Call Route, Firewall and Time Profile records.
- **Auto Attendant Template**^[863]
Contains Auto Attendant, Short Code, Incoming Call Routes and Time Profile records.
- **General Template**^[864]
Contains ARS, Account Code, Directory, Time Profile and Firewall records.

Settings and record types not included in any template are referred to as 'site specific settings'. Those settings can only be edited using AIM NMC (Tools -> Device Manager) to launch IP Office Manager with the whole system configuration opened.

How are templates created?

PIM will first ask what type of template is being created. It then opens IP Office Manager showing only the record types that are needed for that sort of template. In the case of a Hardware template, when IP Office Manager is started the Create Offline Configuration Wizard appears and is used to define the IP Office system type and equipment.

How does IP Office Manager differ when creating or editing a template?

Compared to editing a full IP Office configuration the following differences are visible:

- The Manager application title bar displays the name given to the template.
- Tool and menu bar options not applicable to the template type are greyed out.
- Some fields may be shown as greyed out and empty. Those fields are not part of the template and when the template is merged with an IP Office configuration the existing site specific setting is retained.
- When using Manager to edit a full IP Office configuration, some fields act as drop-down lists from which a selection can be made. In a template, those same fields may not act as drop-downs as the relevant other configuration to list as possible selections are not available. Values must be manually typed into the template fields.
- In a full configuration some user fields can be configured if the user is not using user rights. Within a template those fields can only be set in user rights.
- For auto attendant greetings and menus, the name of wav files stored within PIM can be selected. Those files are converted and transferred to the IP Office system when the auto-attendant template is applied to that system.

How are templates associated with IP Office systems?

Once templates have been created, within PIM a Device Profile for each IP Office system can also be created. That Device Profile defines which templates, up to one of each type, the IP Office system uses.

How are templates merged with the existing configuration?

PIM is used to create Jobs. Each job specifies a date, time, which IP Office systems to update and which template or templates from each IP Office system's Device Profile to merge.

- Merging templates requires the IP Office system to reboot and so should be scheduled outside the normal business hours of the IP Office sites wherever possible.

What happens to existing records in the configuration when a template is merged?

In general all existing records of the type supported by a template are deleted unless the record appears in the template being merged. The exceptions are existing Short Code, Incoming Call Route, Firewall and Time Profile records which may not be deleted every time as these can come from more than one type of template.

What happens if there are configuration errors?

Once all the template records have been merged and all redundant records deleted, post merge validation is applied.

14.4.1 Hardware Template

The purpose of a hardware template is to contain those settings that are common to customer branches using the same type of IP Office control unit and associated hardware such as trunks and extensions.

When a new hardware template is created, IP Office Manager is launched and the Create Offline Configuration Wizard started. This then allows the physical hardware such as the IP Office control unit type, trunk interface cards and external expansion modules to be defined.

This type of template is useful for multiple branch offices that follow the same format, that is have the same hardware and dial plan.

- **WARNING**

Care must be taken to ensure that a hardware template is only ever deployed to a matching physical IP Office. Sending a hardware template to a system with differing physical hardware such as trunks and extensions will cause unpredictable results.

Template Records

This type of template includes forms for the following types of IP Office configuration records.

-  **Control Unit**
All fields shown are greyed out and shown for information only.
-  **System**
-  **Line**
Physical lines can only be added during the initial Create Offline Configuration Wizard stage of template creation. Only IP, IP DECT and SIP lines can be added after the template has been created.
-  **Extension**
Physical lines can only be added during the initial Create Offline Configuration Wizard stage of template creation. Only IP and IP DECT extensions can be added after the template has been created.
-  **Short Code**
All short code changes should be done in hardware template. Note that auto attendant related short code records are included in the [Auto Attendant](#) ⁽⁸⁶³⁾ template deployed to a branch.
-  **Wireless**
This form is only available if an IP Office Small Office Edition control unit is selected during the initial Create Offline Configuration Wizard stage of template creation.
-  **E911**
This form is only available if the locale United States is selected during the Create Offline Configuration Wizard stage of template creation.

14.4.2 User Template

The purpose of this type of template is to contain the records relevant to customer branch users.

Note that during normal operation, IP Office users can change some settings using IP Office short codes, programmable buttons on phones or IP Office Phone Manager applications unless locked through a user rights template. Those changes will be overwritten whenever a user template is reapplied.

Template Records

This type of template includes forms for the following types of IP Office configuration records.

- **User**

The user template deployed to an IP Office should contain user records that match the extension dial plan in the hardware template also deployed to that IP Office. Those fields that can also be defined in a User Rights record are greyed out and can only be set by associating each user with a user rights record in the same template. If required, time profiles can be added to allow different user rights to be associated with the user at different times.

- **User Rights**

For AIM it is required that customer create user rights records to define user settings and then assign them to users. User rights allow various user settings to be defined once and then applied to multiple users by associating those user with the user rights. Changes to the user rights are then applied to all associated users.

- **Hunt Group**

Hunt group records are used to create groups of users. Those groups can then be called from extensions within the system or specified as the destination for incoming calls in Incoming Call Route records.

- **Incoming Call Route**

Incoming calls route records can be used to route incoming calls to selected users or hunt groups. Note that Incoming call route records can also be added through Auto Attendant templates to route calls to an Embedded Voicemail auto attendant.

- **Firewall**

In the user template, firewall records can be added for users who receive RAS data calls. Note that other general purpose Firewall records should be the [General](#)^[864] template to be deployed.

- **Time Profile**

In a user template, time profiles are used with users to control when features such as RAS, automatic voice recording, mobile twinning and user rights are enabled or disabled. They are also used with hunt groups to control night service fallback and automatic voice recording. Note that other time profile records can be added in the [Auto Attendant](#)^[863] and [General](#)^[864] templates deployed to a branch.

14.4.3 Auto Attendant Template

This type of template is only used with IP Office systems that are running Embedded Voicemail. Embedded Voicemail is supported on systems using the IP Office Small Office Edition, IP406 V2 and IP500 control units.

Embedded Voicemail requires an Embedded Voicemail memory card to be fitted to the control unit. Embedded Voicemail can be enabled through the IP Office System |Voicemail form settings contained in the Hardware Template.

Template Records

This type of template includes forms for the following types of IP Office configuration records.

- 
Auto Attendant
 Each auto attendant record defines the DTMF key press actions supported by the auto attendant, the greetings the attendant uses and the time profiles that should control when each greeting is used.
 - The Recording Name fields, one each for the Morning, Afternoon, Evening and Menu Options prompts allow a WAV file name to be specified. The file names can be up to 31 characters long but should not include spaces or the .
- 
Short Code
 Each auto attendant record created automatically adds short codes for the on-site recording of greetings. All non-auto attendant short code records should be managed via the [Hardware](#) ^[861] template deployed to a branch.
- 
Incoming Call Routes
 Once auto attendant records have been added to a template, they can be used as the destination for incoming call routes. Incoming call route records for users and hunt groups should be added by the [User](#) ^[862] template deployed to a branch.
- 
Time Profile
 Time profiles are used by auto attendant records to control when each of the auto attendant greetings are used. Other time profile records should be added in the [General](#) ^[864] and [User](#) ^[862] templates deployed to a branch.

How are the WAV files transferred to the IP Office?

Whenever the Auto Attendant template is deployed to an IP Office, PIM also transfers the required files named in the Auto Attendant template. The files are converted to the required format before transfer and then sent to the Embedded Voicemail Memory card within the system.

14.4.4 General Template

The purpose of this type of template is to include records that may be common to multiple branches but are not part of the other templates deployed to those branches.

Template Records

This type of template includes forms for the following types of IP Office configuration records.



ARS

ARS is one of the methods used to select which line should be used for outgoing calls from an IP Office system.



Account Code

Account codes can be used to control calls made by specific users or to specific numbers.



Directory

Directory records are used to make outgoing calls and to match the ICLID of incoming calls to names for display on suitable phones.



Time Profile

These time profile records are for general purposes such use by ARS records to switch the routing of calls from one ARS record to another. Time profile records required for auto attendants should be defined in the Auto Attendant template deployed to a branch. Similarly time profile records required for users should be defined in the [User](#) ^[862] template deployed to a branch.



Firewall

Note that firewall records can also be added by the [Auto Attendant](#) ^[863] and [User](#) ^[862] templates deployed to a branch.

Chapter 15.

Appendix: CDR Records

15. Appendix: CDR Records

Note that CDR output is not supported by IP Office 5.0+.

There are a number of formats available for CDR output. Each format consist of two types of records; date records and call detail records.

- **Date Records**

A date record is sent each time a CDR connection is started and then once a day (at midnight). The date can be in month/day or day/month format, as selected on the [System | CDR](#) tab.

- **Call Detail Records**

Call detail records are sent at the termination of a call. For some formats, additional fields can be selected using the Normal, Enhanced, or ISDN options on the [System | CDR](#) tab.

CDR Record Formats			
Record Format	Record Options		
	Normal	Enhanced	ISDN
Printer	✓	✓	✓
59-Character	✓	✗	✗
Expanded	✓	✓	✗
LSU	✓	✓	✓
LSU Expanded	✓	✗	✗
INT Direct	✓	✗	✗
INT ISDN	✓	✗	✗
INT Process	✓	✗	✗
Teleseer	✓	✓	✓
Unformatted	✓	✓	✗

15.1 CDR Record Fields

The following list describes the fields which, depending on the selected report format and options, may be included in the CDR records.

Those fields shown in *italics* are not supported by IP Office CDR. Where the report format includes such a field, the data is replaced by a space or spaces. Similarly fields not appropriate to the call type are replaced by a space or spaces as appropriate.

- **Access Code Dialed**

The access code the user dialed to place an outgoing call. On IP Office this will be the digit used to trigger secondary dial tone if used.

- **Access Code Used**

The number of the line used for an outgoing call.

- **Account Code**

This field may contain a number to associate call information with projects or account numbers. For some formats, a long account code overwrites spaces on the record that are assigned to other fields.

- **Attendant Console** - *Not supported by IP Office CDR.*

- **Authorization Code** - *Not supported by IP Office CDR.*

- **Bandwidth** - *Not supported by IP Office CDR.*

- **BCC (Bearer Capability Class)**

This field identifies the type of ISDN call. Any one of the following may appear in this field.

- 0 = Voice Grade Data and Voice.
- 1 = Mode 1 (56 Kbps synchronous data).
- 2 = Mode 2 (less than 19.2 Kbps synchronous or asynchronous data).
- 3 = Mode 3 (64 Kbps data for LDAP protocol).
- 4 = Mode 0 (64 Kbps data clear).

- **Calling Number**

For outgoing or intra-switch calls, this field contains the extension number of the originating telephone user. For incoming and tandem calls, this field contains the trunk access code in standard formats. The fifth digit is the first digit of a 5-digit dialing plan. In formats where the field is less than 7 digits, this also shows the trunk access code of the incoming call.

This field shows the calling party number in Unformatted or Expanded records. If the calling party number is not available, this field is blank for both formats.

- **Calling Number/Incoming Trunk Access Code**

For incoming calls this field contains the incoming trunk access code. For outgoing calls, this field contains the calling extension.

- **Carriage Return**

The ASCII carriage return character followed by a line feed indicates the end of a call record.

- **Condition Code**

The condition code indicates what type of call the record describes. For example, condition code C indicates a conference call, 7 indicates an ARS call, etc. The table below shows condition codes for most record formats. The 59-character format uses different condition codes from those used for other record types.

Code	59	Description
0	-	Identifies an outgoing intra-switch call (a call that originates and terminates on the switch).
9	I	Identifies an incoming external call.
A	-	Identifies an outgoing external call.
C	L	Identifies a conference call.
E	N	An incomplete external call, due to all trunks being busy or out of service. Incoming trunk calls to a busy phone do not generate a CDR record.
G	-	Indicates a call terminating to a ringing station.
H	-	Indicates that a ringing call that was then abandoned.
I	-	Indicates a call attempt to a busy station.

CDR can also record the ring time to answer or abandon for incoming calls originated by the trunk group. In addition, CDR indicates if the incoming destination is busy. This record is separate from the normal call duration record printed for an answered call. This information is indicated by the condition code.

When an incoming call is terminated to an internal destination, the call is tracked from the time ringing feedback is given to the originator. If the call is answered, a CDR record is printed with the condition code G and the duration reflects the time between the start of ringing and the answer of the call. If the call is abandoned before being answered, the system prints a record with the condition code H and the duration reflects the time between the start of ringing and the time the call was abandoned. If the destination is busy, a CDR record is printed with the condition code I and a duration of 0.

- **Dialed Number**

This field contains the number dialed. If it is an outgoing call, the field contains the number dialed by a system user. If it is an incoming call, the field contains the extension that was dialed. If more than 18 digits are dialed, the least significant digits (starting from the right) are truncated.

- **Duration**

This is the duration of the call or call segment. It is recorded in hours, minutes and tenths of minutes. Calls are rounded down in 6-second increments. Therefore, a call of 5-second duration will be indicated as 0 duration. If 9999 appears in this field, this call was in progress when a time change was made in the switch.

- **Feature Flag**

1 for a data call, 0 for voice calls.

- **Format Code** - *Not supported by IP Office CDR.*

- **FRL** - *Not supported by IP Office CDR.*

- **Incoming Circuit Id.**

This field identifies the trunk used for an incoming call. For outgoing calls this field is blank.

- **Incoming Trunk Access Code**

This field contains the access code of the incoming trunk group.

- **ISDN Network Service** - *Not supported by IP Office CDR.*

- **ISDN CC** - *Not supported by IP Office CDR.*

- **IXC (Interexchange Carrier Code)** - *Not supported by IP Office CDR.*

- **Line Feed**

The ASCII line feed character follows a carriage return to terminate CDR records.

- **MA-UUI (Message Associated User-to-User Signaling)** - *Not supported by IP Office CDR.*

- **Node Number** - *Not supported by IP Office CDR.*

- **Null**

Used to terminate and divide CDR Records (usually in triplets) when needed.

- **Outgoing Circuit Id.**

For outgoing calls, this field identifies the trunk used.

- **Packet Count** - *Not supported by IP Office CDR.*

- **PPM (Periodic Pulse Metering)** - *Not supported by IP Office CDR.*

- **Resource Flag** - *Not supported by IP Office CDR.*

- **Space**

The ASCII space character separates other CDR fields or fills unused record locations.

- **TSC Flag** - *Not supported by IP Office CDR.*

- **Time**

This fields contains the time that the call ended, or the time that a user dropped from a multi-party call.

15.2 Call Splitting

Call splitting keeps track of calls where more than two parties are involved. These can be calls that are transferred or conferenced. When any of these situations arise, CDR produces a separate record for each new party involved in the call.

Conference

Caller A makes an incoming trunk call to switch party B (201). They talk for 2 minutes, then B conferences in C (202), and D (203). The entire group talks for another 8 minutes, at which point B drops off the call. This produces a record for segment A-B.

A, C and D continue to talk for another 5 minutes. All remaining parties drop, producing two more records; A-C and A-D. Note that each record shows the incoming trunk ID as the calling number.

Segment	Duration	Condition Code	Calling Number	Dialed Number
A-B	0:10:0	C	123	201
A-C	0:13:0	C	123	202
A-D	0:13:0	C	123	203

Transfer

A calls B (201). They talk for 1 minute, then B transfers the call to C (202). CDR generates a record for segment A-B. A and C talk for 5 minutes. CDR then generates a record for segment A-C.

Segment	Duration	Condition Code	Calling Number	Dialed Number
A-B	0:01:0	9	123	201
A-C	0:05:0	9	123	202

Trunk to Trunk Transfer

A calls switch party B (201), they talk for one minute. B transfers the call to public-network party E (5665555), they talk for 4 minutes. Note that the duration of the original incoming trunk call includes the time after the call was transferred to an outgoing trunk, until all trunk parties drop.

Segment	Duration	Condition Code	Access Code Used	Calling Number	Dialed Number
A-B	0:05:0	9		123	201
A-E	0:04:0	9	345	123	5665555

15.3 Record Formats

15.3.1 59 Character (Normal)

Those fields shown in italics are not supported by IP Office CDR and are replaced by a space or spaces.

Date Record		Call Details Record	
Position	Field Description	Position	Field Description
1-2	Month *	1-2	Time of day-hours
3-4	Day *	3-4	Time of day-minutes
5	Carriage return	5	Duration-hours
6	Line feed	6-7	Duration-minutes
7-9	Null	8	Duration-tenths of minutes
*Leading 0 added if needed.		9	Condition code ⁸⁶⁷
		10-12	Access code dialed
		13-15	Access code used
		16-30	Dialed number
		31-35	Calling number
		36-50	Account code
		51	<i>FRL</i>
		52	<i>IXC</i>
		53-55	Incoming circuit ID
		56-58	Outgoing circuit ID
		59	Carriage return
		60	Line feed
		61-63	Null

15.3.2 Expanded (Normal)

Those fields shown in italics are not supported by IP Office CDR and are replaced by a space or spaces. Those positions not listed are spaces.

Date Record		Call Details Record	
Position	Field Description	Position	Field Description
1-2	Month *	1-2	Time of day-hours
4-5	Day *	3-4	Time of day-minutes
6	Carriage return	6	Duration-hours
7	Line feed	7-8	Duration-minutes
8-10	Null	9	Duration-tenths of minute
*Leading 0 added if needed.		11	Condition code ⁸⁶⁷
		13-16	Access code dialed
		18-21	Access code used
		23-37	Dialed number
		39-48	Calling number
		50-64	Account code
		66-72	<i>Authorization code</i>
		77	<i>FRL</i>
		79-81	Incoming circuit ID
		83-85	Outgoing circuit ID
		87	Feature flag
		89-90	<i>Attendant console</i>
		92-95	Incoming trunk access code
		97-98	<i>Node number</i>
		100-102	ISDN NSV
		104-106	<i>IXC</i>
		108	Bearer Capability Class
		110	<i>MA-UUI</i>
		112	<i>Resource flag</i>
		114-117	<i>Packet count</i>
		119	TSC flag
		121-129	Reserved
		131	Carriage return
		132	Line feed
		133-135	Null

15.3.3 Expanded (Enhanced)

Those fields shown in *italics* are not supported by IP Office CDR and are replaced by a space or spaces. Those positions not listed are spaces.

Date Record		Call Details Record	
Position	Field Description	Position	Field Description
1-2	Month *	1-2	Time of day-hours
4-5	Day *	3-4	Time of day-minutes
6	Carriage return	6	Duration-hours
7	Line feed	7-8	Duration-minutes
8-10	Null	9	Duration-tenths of minutes
*Leading 0 added if needed.		11	Condition code ^[867]
		13-16	Access code dialed
		18-21	Access code used
		23-37	Dialed number
		39-48	Calling number
		50-64	Account code
		66-72	<i>Authorization code</i>
		74-75	Time in queue
		77	<i>FRL</i>
		79-81	Incoming circuit ID
		83-85	Outgoing circuit ID
		87	Feature flag
		89-90	<i>Attendant console</i>
		92-95	Incoming TAC
		97-98	<i>Node number</i>
		100-102	ISDN NSV
		104-107	<i>IXC</i>
		109	Bearer Capability Class
		111	<i>MA-UUI</i>
		113	<i>Resource flag</i>
		115-118	<i>Packet count</i>
		120	TSC flag
		122-123	<i>Bandwidth</i>
		125-130	<i>ISDN CC (digits 1-6)</i>
		131-135	<i>ISDN CC (digits 7-11) /PPM count (1-5)</i>
		136-146	Reserved for future use
		147	Carriage return
		148	Line feed
		149-151	Null

15.3.4 INT-Direct (Normal)

Those fields shown in italics are not supported by IP Office CDR and are replaced by a space or spaces. Those positions not listed are spaces.

Date Record		Call Details Record	
Position	Field Description	Position	Field Description
1-2	Month *	1-2	Day of month
3-4	Day *	3-4	Month
5	Carriage return	5-6	Year
6	Line feed	8-9	Time of day-hours
7-9	Null	10-11	Time of day-minutes
*Leading 0 added if needed.		13	Duration-hours
		14-15	Duration-minutes
		16	Duration-tenths of minutes
		18	Condition code ^[867]
		20-22	Access code dialed
		23-25	Access code used
		27-44	Dialed number used
		46-50	Calling number
		52-66	Account code
		68-72	<i>PPM count</i>
		74-75	Incoming circuit ID
		77-78	Outgoing circuit ID
		79	Carriage return
		80	Line feed

15.3.5 INT-ISDN (Normal)

Those fields shown in italics are not supported by IP Office CDR and are replaced by a space or spaces. Those positions not listed are spaces.

Date Record		Call Details Record	
Position	Field Description	Position	Field Description
1-2	Month *	1-2	Time of day-hours
3-4	Day *	3-4	Time of day-minutes
5	Carriage return	5	Space
6	Line feed	6	Duration-hours
7-9	Null	7-8	Duration-minutes
*Leading 0 added if needed.		9	Duration-tenths of minutes
		11	Condition code ⁸⁶⁷
		13-16	Access code dialed
		18-21	Access code used
		23-37	Dialed number
		39-48	Calling number
		50-64	Account code
		66-72	<i>Authorization code</i>
		74	Line feed
		76	<i>FRL</i>
		78	Incoming circuit ID (hundreds)
		79	Incoming circuit ID (tens)
		80	Incoming circuit ID (units)
		82-84	Outgoing circuit ID
		86	Feature flag
		88-89	<i>Attendant console (1st digit)</i>
		91-94	Incoming trunk access code
		96-97	<i>Node number</i>
		99-101	ISDN NSV
		103-106	<i>IXC</i>
		108	Bearer Capability Class
		110	<i>MA-UUI</i>
		112	<i>Resource flag</i>
		114-119	Reserved
		120-124	<i>PPM</i>
		132	Carriage return
		133	Line feed
		134-136	Null

15.3.6 INT-Process (Normal)

Those fields shown in *italics* are not supported by IP Office CDR and are replaced by a space or spaces. Those positions not listed are spaces.

Date Record		Call Details Record	
Position	Field Description	Position	Field Description
1-2	Month *	1-2	<i>Format code</i>
3-4	Day *	3-4	Time of day-hours
5	Carriage return	5-6	Time of day-minutes
6	Line feed	7	Duration-hours
7-9	Null	8-9	Duration-minutes
*Leading 0 added if needed.		10	Duration-tenths of minutes
		12	Condition code ⁸⁶⁷
		14-16	Access code dialed
		17-19	Access code used
		21-38	Dialed number (digits 1-18)
		39-43	Calling number (digits 1-5)
		45-59	Account code (digits 1-15)
		61	<i>IXC</i>
		62	<i>FRL</i>
		66-67	Incoming circuit ID (digits 1-2)
		71-72	Outgoing circuit ID (digits 1-2)
		74-78	<i>PPM (digits 1-5)</i>
		79	Carriage return
		80	Line feed
		81-83	Null

15.3.7 LSU (Normal)

Those fields shown in *italics* are not supported by IP Office CDR and are replaced by a space or spaces. Those positions not listed are spaces.

Date Record		Call Details Record	
Position	Field Description	Position	Field Description
1-2	Hour *	1	Duration-hours
3	Colon (:)	2-3	Duration-minutes
4-5	Minute *	4	Duration-tenths of minutes
6	Blank	5	Condition code ⁽⁸⁶⁷⁾
7-8	Month *	6-8	Access code dialed
9	Slash (/)	9-11	Access code used
10-11	Day *	12-26	Dialed number
12	Carriage return	27-30	Calling number (digits 2-5)
13	Line feed	31-35	Account code (first 5 digits)
14-16	Null	36-42	<i>Authorization code</i> or digits 6-12 of account code
*Leading 0 added if needed.		43-44	Space or digits 13-14 of account code
		45	<i>FRL</i> or digit 15 of account code
		46	Calling number (1st digit)
		47-48	Incoming circuit ID (tens, units)
		49	Feature flag
		50-52	Outgoing circuit ID (tens, units, hundreds)
		53	Incoming circuit ID (hundreds)
		54	<i>IXC</i>
		55	Carriage return
		56	Line feed
		57-59	Null

15.3.8 LSU (Enhanced)

Those fields shown in *italics* are not supported by IP Office CDR and are replaced by a space or spaces. Those positions not listed are spaces.

Date Record		Call Details Record	
Position	Field Description	Position	Field Description
1-2	Hour *	1	Duration-hours
3	Colon (:))	2-3	Duration-minutes
4-5	Minute *	4	Duration-tenths of minutes
6	Blank	5	Condition code ⁽⁸⁶⁷⁾
7-8	Month *	6-9	<i>IXC</i>
9	Slash (/)	10-12	Access code used
10-11	Day *	13-27	Dialed number
12	Carriage return	28-31	Calling number
13	Line feed	32-35	Account code (digits 1-4)
14-16	Null	36-42	<i>Authorization code</i> or digits 6-12 of account code
*Leading 0 added if needed.		43-45	ISDN NSV
		46	1st digit of a 5-digit calling number
		47-48	Incoming circuit ID (tens, units)
		49	Feature flag
		50-52	Outgoing circuit ID (tens, units, hundreds)
		53	Incoming circuit ID (hundreds)
		54	<i>FRL</i>
		55	Carriage return
		56	Line feed
		57-59	Null

15.3.9 LSU (ISDN)

Those fields shown in *italics* are not supported by IP Office CDR and are replaced by a space or spaces. Those positions not listed are spaces.

Date Record		Call Details Record	
Position	Field Description	Position	Field Description
1-2	Hour *	1	Duration-hours
3	Colon (:)	2-3	Duration-minutes
4-5	Minute *	4	Duration-tenths of minutes
6	Blank	5	Condition code ⁽⁸⁶⁷⁾
7-8	Month *	6-8	<i>IXC</i>
9	Slash (/)	9-11	Access code used
10-11	Day *	12-26	Dialed number
12	Carriage return	27-30	Calling number (digits 2-5)
13	Line feed	31-35	Account code (digits 1-5)
14-16	Null	36-42	<i>Authorization code</i> or digits 6-12 of account code
*Leading 0 added if needed.		43-44	ISDN NSV or digits 13-14 of account code
		45	ISDN NSV (3rd digit) or <i>FRL</i> , or digit 15 of account code
		46	Calling number (1st digit)
		47-48	Incoming circuit ID (tens, units)
		49	Feature flag
		50-52	Outgoing circuit ID (tens, units, hundreds)
		53	Incoming circuit ID (hundreds)
		54	<i>FRL</i>
		55	Carriage return
		56	Line feed
		57-59	Null

15.3.10 LSU-Expanded

Those fields shown in italics are not supported by IP Office CDR and are replaced by a space or spaces. Those positions not listed are spaces.

Date Record		Call Details Record	
Position	Field Description	Position	Field Description
1-2	Hour *	1-2	Time of day-hours
3	Colon (:)	3-4	Time of day-minutes
4-5	Minute *	6	Duration-hours
6	Blank	7-8	Duration-minutes
7-8	Month *	9	Duration-tenths of minutes
9	Slash (/)	11	Condition code ⁸⁶⁷
10-11	Day *	13-15	Access code dialed
12	Carriage return	16-18	Access code used
13	Line feed	20-34	Dialed number
14-16	Null	36-39	Calling number
*Leading 0 added if needed.		41-45	Account code
		47-53	<i>Authorization code</i>
		58	<i>FRL</i>
		60	Calling number (1st digit)
		62-63	Incoming circuit ID (tens, units)
		65	Feature flag
		67-68	Outgoing circuit ID (tens, units)
		70	Outgoing circuit ID (hundreds)
		72	Incoming circuit ID (hundreds)
		73	<i>IXC</i>
		74	Carriage return
		75	Line feed
		76-78	Null

15.3.11 Printer (Normal)

Those fields shown in italics are not supported by IP Office CDR and are replaced by a space or spaces. Those positions not listed are spaces.

Date Record		Call Details Record	
Position	Field Description	Position	Field Description
1-2	Month *	1-2	Time of day-hours
4-5	Day *	3-4	Time of day-minutes
6	Carriage return	6	Duration-hours
7	Line feed	7-8	Duration-minutes
8-10	Null	9	Duration-tenths of minutes
*Leading 0 added if needed.		11	Condition code ^[867]
		13-15	Access code dialed
		17-19	Access code used
		21-35	Dialed number
		37-41	Calling number
		43-57	Account code
		59-65	<i>Authorization code</i>
		70	<i>FRL</i>
		72	<i>IXC</i>
		74-76	Incoming circuit ID
		78-80	Outgoing circuit ID
		82	Feature flag
		83	Carriage return
		84	Line feed

15.3.12 Printer (Enhanced)

Those fields shown in italics are not supported by IP Office CDR and are replaced by a space or spaces. Those positions not listed are spaces.

Date Record		Call Details Record	
Position	Field Description	Position	Field Description
1-2	Month *	1-2	Time of day-hours
4-5	Day *	3-4	Time of day-minutes
6	Carriage return	6	Duration-hours
7	Line feed	7-8	Duration-minutes
8-10	Null	9	Duration-tenths of minutes
*Leading 0 added if needed.		11	Condition code ⁸⁶⁷
		13-16	<i>IXC</i>
		18-21	Access code used
		23-37	Dialed number
		39-43	Calling number
		45-59	Account code
		61-67	<i>Authorization code</i>
		69-71	ISDN NSV
		73	<i>FRL</i>
		75-77	Incoming circuit ID
		79-81	Outgoing circuit ID
		83	Feature flag
		84	Carriage return
		85	Line feed

15.3.13 Printer (ISDN)

Those fields shown in italics are not supported by IP Office CDR and are replaced by a space or spaces. Those positions not listed are spaces.

Date Record		Call Details Record	
Position	Field Description	Position	Field Description
1-2	Month *	1-2	Time of day-hours
4-5	Day *	3-4	Time of day-minutes
6	Carriage return	6	Duration-hours
7	Line feed	7-8	Duration-minutes
8-10	Null	9	Duration-tenths of minutes
*Leading 0 added if needed.		11	Condition code ^[867]
		13-15	<i>IXC</i>
		17-19	Access code used
		21-35	Dialed number
		37-41	Calling number
		43-57	Account code
		59-65	<i>Authorization code</i>
		67-68	ISDN NSV (hundreds, tens)
		70	ISDN NSV (units)
		72	<i>FRL</i>
		74-76	Incoming circuit ID
		78-80	Outgoing circuit ID
		82	Feature flag
		83	Carriage return
		84	Line feed

15.3.14 Teleseer (Normal)

Those fields shown in italics are not supported by IP Office CDR and are replaced by a space or spaces. Those positions not listed are spaces.

Date Record		Call Details Record	
Position	Field Description	Position	Field Description
1-2	Month *	1-3	Space
3-4	Day *	4-5	Time of day-hours
5	Carriage return	6-7	Time of day-minutes
6	Line feed	8	Duration-hours
7-9	Null	9-10	Duration-minutes
*Leading 0 added if needed.		11	Duration-tenths of minutes
		12	Condition code ^[867]
		13-15	Access code dialed
		16-18	Access code used
		19-33	Dialed number
		34-38	Calling number
		39-53	Account code
		54	<i>FRL</i>
		55	<i>IXC</i>
		56-58	Incoming circuit ID
		59-61	Outgoing circuit ID
		62	Feature flag
		63-69	<i>Authorization code</i>
		70-76	Space
		77	Carriage return
		78	Line feed
		79-81	Null

15.3.15 Teleseer (Enhanced)

Those fields shown in italics are not supported by IP Office CDR and are replaced by a space or spaces. Those positions not listed are spaces.

Date Record		Call Details Record	
Position	Field Description	Position	Field Description
1-2	Month *	1-3	Space
3-4	Day *	4-5	Time of day-hours
5	Carriage return	6-7	Time of day-minutes
6	Line feed	8	Duration-hours
7-9	Null	9-10	Duration-minutes
*Leading 0 added if needed.		11	Duration-tenths of minutes
		12	Condition code ^[867]
		13-16	<i>IXC</i>
		17-19	Access code used
		20-34	Dialed number
		35-39	Calling number
		40-54	Account code
		55	ISDN NSV (units)
		56	<i>FRL</i>
		57-59	Incoming circuit ID
		60-62	Outgoing circuit ID
		63	Feature flag
		64-70	<i>Authorization code</i>
		71-72	ISDN NSV (hundreds, tens)
		77	Carriage return
		78	Line feed
		79-81	Null

15.3.16 Teleseer (ISDN)

Those fields shown in *italics* are not supported by IP Office CDR and are replaced by a space or spaces. Those positions not listed are spaces.

Date Record		Call Details Record	
Position	Field Description	Position	Field Description
1-2	Month *	1-3	Space
3-4	Day *	4-5	Time of day-hours
5	Carriage return	6-7	Time of day-minutes
6	Line feed	8	Duration-hours
7-9	Null	9-10	Duration-minutes
*Leading 0 added if needed.		11	Duration-tenths of minutes
		12	Condition code ⁸⁶⁷
		13-15	<i>IXC</i>
		16-18	Access code used
		19-33	Dialed number
		34-38	Calling number
		39-53	Account code
		54	ISDN NSV (units)
		55	<i>FRL</i>
		56-58	Incoming circuit ID
		59-61	Outgoing circuit ID
		62	Feature flag
		63-69	<i>Authorization code</i>
		70-71	ISDN NSV (hundreds, tens)
		77	Line feed
		78-80	Null

15.3.17 Unformatted (Normal)

Those fields shown in italics are not supported by IP Office CDR and are replaced by a space or spaces. Those positions not listed are spaces.

Date Record		Call Details Record	
Position	Field Description	Position	Field Description
1-2	Hour *	1-2	Time of day-hours
3	Colon (:)	3-4	Time of day-minutes
4-5	Minute *	5	Duration-hours
6	Blank	6-7	Duration-minutes
7-8	Month *	8	Duration-tenths of minutes
9	Slash (/)	9	Condition code ^[867]
10-11	Day *	10-13	Access code dialed
12	Carriage return	14-17	Access code used
13	Line feed	18-32	Dialed number
14-16	Null	33-42	Calling number
*Leading 0 added if needed.		43-57	Account code
		58-64	<i>Authorization code</i>
		67	<i>FRL</i>
		68-70	Incoming circuit ID
		71-73	Outgoing circuit ID
		74	Feature flag
		75-76	<i>Attendant console</i>
		77-80	Incoming TAC
		81-82	<i>Node number</i>
		83-85	ISDN NSV
		86-88	<i>IXC</i>
		89	Bearer Capability Class
		90	<i>MA-UUI</i>
		91	<i>Resource flag</i>
		92-95	<i>Packet count</i>
		96	TSC flag
		97-100	Reserved
		101	Carriage return
		102	Line feed
		103-105	Null

15.3.18 Unformatted (Enhanced)

Those fields shown in italics are not supported by IP Office CDR and are replaced by a space or spaces. Those positions not listed are spaces.

Date Record		Call Details Record	
Position	Field Description	Position	Field Description
1-2	Hour *	1-2	Time of day-hours
3	Colon (:)	3-4	Time of day-minutes
4-5	Minute *	5	Duration-hours
6	Blank	6-7	Duration-minutes
7-8	Month *	8	Duration-tenths of minutes
9	Slash (/)	9	Condition code ^[867]
10-11	Day *	10-13	Access code dialed
12	Carriage return	14-17	Access code used
13	Line feed	18-32	Dialed number
14-16	Null	33-42	Calling number
*Leading 0 added if needed.		43-57	Account code
		58-64	<i>Authorization code</i>
		65-66	Time in queue
		67	<i>FRL</i>
		68-70	Incoming circuit ID
		71-73	Outgoing circuit ID
		74	Feature flag
		75-76	<i>Attendant console number</i>
		77-80	Incoming TAC
		81-82	<i>Node number</i>
		83-87	ISDN NSV
		88-89	<i>IXC</i>
		90	Bearer Capability Class
		91	<i>MA-UUI</i>
		92	<i>Resource flag</i>
		93-96	<i>Packet count</i>
		97	TSC flag
		98-99	<i>Bandwidth</i>
		100-105	<i>ISDN CC (digits 1-6)</i>
		106-110	<i>ISDN CC (digits 7-11)/PPM</i>
		111-114	Reserved for future use
		115	Carriage return
		116	Line feed
		117-119	Null

Chapter 16.

Appendix: History

16. Appendix: History

16.1 What was New in 4.2

This section summarizes the main changes in IP Office 4.2.

- [IP Office Manager Changes.](#)^[890]
- [Music on Hold.](#)^[892]
- [Hunt Group Operation.](#)^[895]
- [Button Programming.](#)^[890]
- [Phone Manager.](#)^[893]
- [Call Presentation/User Display.](#)^[896]
- [Voicemail.](#)^[890]
- [System Status Application.](#)^[893]
- [SMDR.](#)^[896]
- [Voicemail Pro.](#)^[891]
- [1600 Series IP Phones.](#)^[894]
- [T3 Phone Enhancements.](#)^[898]
- [Embedded Voicemail.](#)^[891]
- [VoIP Phone Support.](#)^[894]
- [Other Features.](#)^[897]
- [Mobility Features.](#)^[891]
- [Trunk Support Changes.](#)^[894]
- [Platform Restrictions.](#)^[898]

4.2 Q4 2008 Maintenance Release

- [Handsfree Announced Transfer](#)^[71]

The IP Office now supports a number of methods by which the enquiry call part of a supervised transfer can be made as a call which is auto-answered call.

- [HTTP-TFTP Relay Using IP Office Manager](#)^[150]

For IP phones making HTTP files requests for phone firmware files, HTTP-TFTP Relay is support using IP Office Manager as the TFTP server. This is done by setting the **TFTP Server IP Address** to the address of the Manager PC and the **HTTP Server IP Address** to the control unit IP address. This method is supported for up to 5 phones. This is in addition to using the Embedded Voicemail memory card to support up to 50 IP phones.

IP Office Manager Changes

- [Embedded File Management](#)^[132]

For systems with a compact flash memory card installed, the contents of the card can be viewed through Manager. This mode is accessed through the [File | Advanced | Embedded File Management](#)^[132] option. This view can also be used to add and remove files from the card. This may be useful when the memory card is being used to store music on hold files and or phone firmware files.

- Embedded Voicemail message and mailbox greeting files in **.clp** format are protected and cannot be deleted or downloaded. Embedded Voicemail prompts files in **.c11** or **.c23** formats can be managed through this interface.

- [Improved Backup File Control](#)^[12]

Previously if set to keep up backup copies of configuration, the number of backup kept was not controllable. The IP Office 4.2 Manager now allows the number of backups kept by Manager for each system to be limited. This is controlled by the **Number of Backup files to keep** control within [File | Preferences | Security](#)^[12].

- [Discovery of Unsupported Systems](#)^[67]

Previously the IP Office Manager discovery menu did not display IP Office systems with core software that it did not support. The discovery menu will now show those units but indicate that they are not supported.

- [SMTP Server Settings](#)^[185]

The SMTP server settings have been moved from the [System | System Events](#)^[18] tab to a separate [System | SMTP](#)^[185] tab. This reflects the usage of SMTP sending for functions other than just system event notification. For IP Office 4.2 that includes Voicemail Email support for Embedded Voicemail.

- [IP Office Discovery using DNS](#)^[118]

For customers who have configured their IP Office systems as entries on a DNS server, IP Office Manager can no be set to use DNS to locate the required IP Office system. The use of DNS is configured through [Files | Preferences | Discovery](#)^[118]. When selected the **Unit/Discovery Address** field on the [Select IP Office](#)^[67] dialogue is replaced by a **Enter Unit DNS Name or IP Address** field.

Button Programming

- [Set Night Service Group](#)^[640]/[Set Out of Service Group](#)^[641]

Programmable buttons can be configured to change the Night Service Group and Out of Service Group targets of the hunt group associated with the button.

Voicemail

- **Visual Voice through MESSAGES Button**

The [System | Voicemail](#)^[164] option **Messages button goes to Visual Voice** allows the default spoken prompts to be replaced by the Visual Voice menus on phones able to support Visual Voice.

Voicemail Pro

• IP Office Unified Messaging Service (UMS)

Two new methods for users to access their mailbox are now supported. The methods are mailbox access using email applications that support IMAP (Internet Message Access Protocol) and mailbox access via web browsers. The use of these requires the IP Office configuration to contain **UMS Web Services** licenses for the number of required users.

• IMAP Service

The Voicemail Pro now includes an IMAP server. Users can then access their voicemail messages using email clients such as Outlook and Lotus notes that support an IMAP Client. When connected, the IMAP client and Voicemail Pro will synchronize messages in the mailbox with message files in the IMAP client. Playback is through the sound facilities of the user PC.

• Web Voicemail Service

The Voicemail Pro web service allows users to access their mailbox using a web browser. This has been tested with the Internet Explorer 7, Firefox 2 and Opera 9.10 PC browsers. This method of access requires Voicemail Pro to be installed on a PC already running Microsoft's IIS web server. Users can select to have message playback via an IP Office extension or through their PC's sound facilities.

• Test Variable Action

The existing **Check Digits** action has been replaced by a **Test Variable** action. This, in addition to offering the capabilities of the **Check Digits** action, provides significant enhancements. In addition to being able to match the user's DTMF input against a specified string offered by the **Check Digits** action, the **Test Variable** action allows the testing of the contents of any system variable against known user extensions, hunt-groups, mailboxes and the contents of another variable. This will allow callers to enter numbers via a menu action, that can be verified as matching an existing extension or hunt groups prior to attempting to carry out transfers to otherwise potentially non-existent numbers.

• Menu Action Invalid Input Handling

The **Menu** action has been enhanced. It now includes a control for the number of retries for the caller to make a valid entry and an **Invalid Input** result for connection to following call flow actions. Also prompts can be selected for playback whenever an invalid entry or entry timeout occurs.

• License and Service Status Display

When the Voicemail Pro client is connected to a Voicemail Pro server, the **Help | About** screen displays a list of the licenses being used by the Voicemail Pro server. This license details include the validation status and capacity of those licenses. The status of related services, for example the UMS IMAP server, are also listed.

• System Variable Length Increase

Previously the length of values stored by system variables has been limited to 64 characters. That maximum length has been increased to 512 characters.

• Outcalling Configuration

In conjunction with Phone Manager 4.2, Voicemail Pro 4.2 allows users to adjust their outcalling settings through using a visual menu within Phone Manager.

- Using the Phone Manager interface, users can now apply a delay between each notification call in an escalation list.

Embedded Voicemail

• Cantonese Prompt Support

Cantonese Chinese prompts are now supported. They will be used for the system or user **Locale** set to **Hong Kong (Cantonese)**.

• Voicemail Email Support

The Voicemail Email options are now useable with Embedded Voicemail. This requires an accessible SMTP server to be configured in the [System | SMTP](#) ^[718] tab. Not supported on the Small Office Edition.

Mobility Features

The user **Twinning** options have been relabeled **Mobility** to reflect the addition of a number of features for mobile users. In addition the **Mobile Twinning** license has been relabeled **Mobility Features**. The additional features are:

• Mobile Call Control ^[714]

IP500 systems with digital trunks (PRI, BRI or SIP) can support users configured for Mobile Call Control. When those users receive a twinned call from the IP Office, they can dial ** to place that call on hold and access IP Office dial tone. They can then dial as if an extension on the IP Office. The IP Office can also be configured to allow incoming calls from the user's mobile twin device to receive IP Office dial tone (also known as DISA (Direct Inward System Access)).

• one-X Mobile Client Support ^[717]

IP Office 4.2 supports devices using the Avaya one-X Mobile Client software (Windows Mobile V5 and V6 and Symbian Single-Mode only) as the destinations for mobile twinning. An IP Office specific set of one-X Mobile functions are supported using DID's routed to special IP Office short codes. This allows one-X Mobile Client users to invoke various IP Office functions. For example picking up a call ringing at their primary extension or on calls received from the IP Office, transferring the call to their voicemail mailbox.

- **Logged Off Mobile Twinning** ^[29]

Previously mobile twinning was not used when the user logged out the IP Office. IP Office 4.2 allows selection of whether calls should still alert the user's twinned device when the user is logged out. This selection is per individual user. When used, the user's **Mobile Dial Delay** setting is ignored when logged out.

- **Longest Idle Status for Twinned Users**

The longest idle information is now updated for calls to the internal or mobile twin of a hunt group member. The member is seen as busy to hunt group calls if either the master or the twin is on a call. In addition, for mobile twinning:

- If mobile twinning of hunt group calls is selected and the master is idle, the longest waiting state will reflect that of the mobile twin.
- The above also applies if the master is logged out and logged out twinning is selected.

- **User BLF Indication Changes**

Changes have been made to the BLF status applied to users. For most user, logged in or associated with a specific extension, there will be no visible change.

- Users set to DND are now indicated as busy on BLF indicators. This applies to BLF indication only and not to how calls are routing which still follow the previous operation for DND on.
- For users who are logged out there are a number of changes:
 - The status shown for a logged out user without **Logged Off Mobile Twinning** depends on whether they have **Forward Unconditional** enabled. If they have **Forward Unconditional** enabled, the user is shown as idle. If they do not have **Forward Unconditional** enabled they will show as if on DND.
 - The status shown for a logged out user with **Logged Off Mobile Twinning** will be as follows:
 - If there are any calls alerting or in progress through the IP Office to the twin the user status is shown as alerting or in-use as appropriate. This includes the user showing as busy/in-use if they have such a call on hold and they have Busy on Held enabled.
 - If the user enables DND through Mobile Call Control or one-X Mobile client their status will show as DND.
 - Calls from the IP Office direct to the users twinned destination rather than directed by twinning from their primary extension will not change the user's status.

- **License Change**

The **Mobile Twinning** license is now called the **Mobility Features** license, reflecting the fact that it can be used for Mobile Call Control and one-X Mobile Client support in addition to mobile twinning. The mode of license operation has also changed. Prior to IP Office 4.2, the license was only consumed by users who had Mobile Twinning enabled. For IP Office 4.2 it is consumed by a user when they are configured for any of the mobility features, including mobile twinning even if they have turned mobile twinning off.

Music on Hold

The following changes have been made to music on hold (MoH) support.

- **3 Additional Internal Sources**

Previously the IP Office has supported a single music on hold source which could be either an internal source (holdmusic.wav file), an external source connection or a default tone (IP Office 4.0+). Except for Small Office Edition, IP Office 4.2 systems can be configured with up to 3 additional internal hold music sources. These are loaded and stored in the same way as the standard **holdmusic.wav** file plus the IP Office will attempt to load new sources specified in a configuration merge.

- **IP500 Increased Internal Hold Music Length**

The standard length of the holdmusic.wav file is 30 seconds. For the IP500 control unit, the length for all internal wav files for music on hold can be up to 90 seconds.

- **Incoming Call Route Hold Music Selection**

On systems with multiple music on hold sources, the source to associate with external calls can be specified by the [Incoming Call Route](#) ^[34] applied to the call.

- **Hunt Group Hold Music Selection**

On systems with multiple music on hold sources, the source to associate with calls received by a hunt group can be specified within the [hunt group](#) ^[30] configuration.

- Calls overflowing from a hunt group will use the hold music source setting of the original hunt group and ignore the setting of the overflow group.
- Calls going to night service or out of service fallback group use the hold music source setting of the original hunt group and then, if different, the setting of the fallback group. The setting of further fallback groups from the first are ignored.

- **Small Community Network Support**

The 4 possible music on hold sources are numbered 1 to 4, with 1 being the IP Office System Source. Where the source number to associate with a call is changed by an Incoming Call Route or Hunt Group, that number is retained when the call is rerouted across the SCN. If the receiving switch has a matching numbered alternate source that source is used, otherwise it default to the default system source.

- **Merging Music on Hold Changes**

Where possible, when an internal source is specified or details of an existing internal source are changed, the configuration changes can be merged and IP Office will attempt to download any newly specified file at that time. Once downloaded, any existing file is replaced even if callers are listening to that source.

- **System Status Reporting**

The status of the up to 4 internal sources is reported in SSA (*Waiting to Load, Loading, Loaded and Failed to Load*). An alarm is also generated if the IP Office is unable to load a specified source.

Phone Manager

The following new features are supported for Phone Manager 4.2 users in conjunction the IP Office 4.2.

- **Change Password**

Users can now change their **Password** ⁽²⁶⁸⁾ (**User | User | Password**) ⁽²⁶⁸⁾ using Phone Manager. This is the password used as part of the log in to IP Office for the Phone Manager, SoftConsole and IP Office TAPI applications.

- **Outcalling Configuration**

Outcalling was added as part of Voicemail Pro 4.1. It allows users of Intuity emulation mode mailboxes to configure a escalating series of telephone numbers at which the Voicemail Pro would attempt to alert them about new messages. For IP Office 4.2, configuration of Outcalling can be done through Phone Manager Pro. This allows the user to view their current outcalling settings and to make changes when necessary.

- Using the Phone Manager interface, users can now apply a delay between each notification call in an escalation list.

- **Forward Messages**

When accessing a voicemail mailbox using Phone Manager Pro, the user can now right-click on a message and select to forward it to another mailbox.

- **Version Display**

The **About Phone Manager** menu (**Help | About Phone Manager**) now includes version information for the IP Office phone system and the Voicemail Pro server. This is information that may aid in the resolution of support issues.

- **Phone Manager Pro PC Softphone**

The software element used for the PC softphone updated with the following changes:

- Phone Manager Pro PC Softphone 4.2+ is supported on Vista operating systems (excluding the Home editions).
- The VoIP Settings tab has been removed from the Phone Manager preferences. All codec and similar options are controlled through the IP Office configuration.

System Status Application (SSA)

The following new features have been added to the System Status Application as part of IP Office 4.2+:

- **Feature Key and License Information**

All licenses and their current status is listed on the SSA's **Resources | Licenses** screen. It includes details of how often the license limit has been reached and the last time that occurred. The type and serial number of the Feature key dongle is also shown.

- **Control Unit Audit Trail**

The Audit Trail information held by the IP Office and previously visible through Manager is now also shown in SSA.

- **IP Routes**

Details about IP routes are now listed.

- **Voicemail Summary and Details Screens**

A voicemail status screen is now available. It details the voicemail server type and other information such as the number of ports and port in use. In addition a mailbox status screen is available detailing the basic voicemail settings of each mailbox and the number of new, read and saved messages.

- **Directory**

The SSA can now display a directory of all the extensions, users and hunt groups known to the IP Office. This includes users and hunt groups known through Small Community Network connections. In addition any conflicting Small Community Network numbers are indicated.

- **IP Phone Control**

SSA can be used to reboot specific IP phones. This allows control over which phones are upgrading.

1600 Series IP Phones

The IP Office now supports the Avaya 1603, 1608 and 1616 phones.

- **1603**
This is the basic model. It provides only 3 programmable feature keys. Supports power from a power supply unit or PoE, however to use a 1603 with PoE requires an additional PoE power adaptor.
- **1608**
Provides 8 programmable feature keys with twin LED's on each button. Supports power from a power supply unit or PoE.
- **1616**
Provides 16 programmable feature keys with twin LED's on each button. Supports power from a power supply unit or PoE.
- **BM32**
Usable with the 1616 only, the BM32 provides an additional 32 programmable feature keys with twin LED's. Up to 1 BM32 can be daisy-chained to the same 1616 phone. Each BM32 draws power from its associated 1616 phone and requires the phone to be using a dedicated power supply rather than PoE. A maximum of 16 BM32's are supported on the whole IP Office system. Note that appearance buttons are not supported on BM32's.

VoIP Phone Support Enhancements

In parallel with the addition of 1600 Series IP phones, a number of improvements have been made to the IP Office's support for IP phones.

- **Avaya IP Phone HTTP Server Support**
For Avaya IP phones using IP Office DHCP, the address of the HTTP server from which those phones should download their software and settings files can now be specified in the IP Office configuration. 4600 Series and 5600 Series phones attempt to load files via HTTPS and then HTTP before falling back to TFTP. 1600 Series IP phones only support HTTPS or HTTP.
 - For IP Office 4.2, using the Embedded Voicemail memory card is also supported for HTTP file requests for up to 50 IP phones. This is done by setting the **TFTP Server IP Address** and **HTTP Server IP Address** to match the control units IP address. This is supported for up to 50 IP phones. This feature is called HTTP-TFTP Relay. HTTP-TFTP Relay is not supported using IP Office Manager or other TFTP servers.
- **Secondary Site Specific Options Number**
A Site Specific Option Number (SSON) is used by Avaya IP phones when requesting phone specific settings from a DHCP server. When the IP Office is acting as the DHCP server, the matching number must be set in the IP Office configuration. IP Office 4.2 now provides two fields for settings SSON numbers in order to support Avaya 4600 and 5600 Series IP Phones (which use a default SSON of 176) and Avaya 1600 Series phones (which use a default SSON of 242).
- **IP Phone Restart using System Status Application**
Individual Avaya IP phones or groups of phones can be selected and then restarted remotely using the System Status Application. This allows individual phones or groups of phones (up to 20 at a time) to be restarted in order to upgrade their firmware.
- **IP500 DHCP Enhancements**
The scope of DHCP support on IP500 has been enhanced in a number of areas.
 - **Full Avaya IP Phone Support**
Previous only a maximum of 5 IP phones have been supported if using the IP Office for DHCP and TFTP functions. An external DHCP server is required to support more than 5 Avaya IP Phones. For IP Office 4.2+, the IP500 supports up to 272 Avaya IP phones, the maximum extension capacity of the IP500 control unit.
 - **Multiple DHCP IP Address Pools**
On each IP Office LAN interface, up to 8 DHCP address ranges (called 'pools') can be specified. These pools do not have to be on the same subnet as the IP Office itself. This allows devices being supported by IP Office DHCP to be given addresses on a different subnet than the IP Office.
 - **DHCP for Avaya IP Phones Only**
The DHCP pools provided by the IP Office can be restricted for use by Avaya IP phones only. The IP Office will then not respond to DHCP request from other devices.
- **IP500 VCM Controls**
For IP Office 4.2+, the VCM controls for echo and comfort noise supported in the IP Office configuration ([System | VCM](#)^[189]) are now also applied to IP500 VCM cards.

Trunk Support Changes

- **[IP500 BRI Trunks So/To Control](#)**^[199] (*IP500 BRI Daughter cards only*)
IP500 BRI daughter cards can be configured for So (S-Bus) operation for connection to ISDN terminal devices. Note that this requires the addition of terminating resistors at both the IP Office and remote end, and the use of a suitable ISDN cross-over cable. For full details refer to the IP Office Installation manual.

- **IP500 Analog Trunk Impedance Matching**^[196] (*IP500 Analog Trunk Daughter cards only*)
For systems set to the **United States** or **French Canadian** locale, the number of trunk impedance settings supported has been increased. In addition, IP Office Manager can now be used to perform line testing that will attempt to detect and display the recommended impedance setting. A In addition, options for improved signalling of long lines (**Quiet Line**) and mains hum filtering (**Mains Hum Filter**) have been added.
- **Increased ETSI CHI Trunk Support**
Lines that support ETSI CHI (Channel Allocation ID) allow the IP Office to indicate to the central office exchange which trunk B-channel should be used for a call. IP Office 4.2 extends ETSI CHI support to all trunks that support ETSI and extends the number of features that can be used on ETSI CHI trunks.
 - E1 PRI and US PRI trunks can now select ETSI CHI operation.
 - The default Channel Allocation order to use for outgoing calls can be specified.
 - Previously only Line Appearance was configurable for each channel. For IP Office 4.2, the Incoming Group, Outgoing Group, Admin, Direction and Bearer can be set for each individual channel.
- **Network Interconnection Control (Trunk Cross-Connect Barring)**^[765]
For the IP Office system, **Restrict Network Interconnect**^[166] ([System | Telephony | Telephony](#)^[166]) can be enabled. When enabled, each trunk is provided with a **Network Type** option that can be configured as either **Public** or **Private**. The IP Office will not allow calls on a Public trunk to be connected to a Private trunk and vice versa, returning number unobtainable indication instead. This features is designed for markets that restrict certain trunk to trunk connections between private and public networks.
 - Due to the nature of this feature, its use is not recommended on systems also using any of the following other IP Office features: [Small Community Networks](#)^[792], VPNremote, Phone Manager telecommuter mode.
- **SIP Trunk Enhancements**^[243]
The following changes have been made for SIP trunks offered by the IP Office:
 - **SIP Trunk ARS Routing Enhancement**^[243]
Previously, when used within an ARS form, alternate call routes were only used when no further channels were available on the SIP trunk. The IP Office now supports a **Call Initiation Timeout** on SIP lines which determines how long the IP Office should wait for a response to a SIP packet sent to initiate a new call before failing to an alternate route. The default timeout is 4 seconds and can be configured between 1 and 99 seconds.
 - **Use Offerer's Codec**^[243]
When negotiating the codec to be used for a call, the call answerers preferences are normally used. For some SIP providers this needs to be changed and priority given to the offerers preferences. The **Use Offerer's Codec** option on the SIP line can be used to enable this option.
 - **IP Trunk Enhancement**^[232]
The timeout used to determine when an IP line waiting for a response should use an alternate ARS route was previously set by the **H323SetupTimerNoLCR** option in the **NoUser** user **Source Numbers**. This option is now set for each IP line through a **Call Initiation Timeout** option on the IP lines VoIP Settings tab. The default timeout is 4 seconds and can be configured between 1 and 99 seconds.

Hunt Group Operation

- **Call Priority Enhancements**
Call priority is used by hunt group queues, with calls in the queue being sorted by priority and then longest waiting time. Previously the priority setting applied to a call was set by the **Incoming Call Route** that routed the call onto the IP Office or for all other calls was **1-Low**. IP Office 4.2 allows call priority to be changed in a number of ways.
 - **Call Priority Promotion Time**^[166]
A system wide call promotion time can be defined ([System | Telephony | Telephony | Call Priority Promotion Time](#)^[166]). By default this feature is disabled. When enabled, calls queued for a hunt group have their priority increased by 1 each time they have been queued longer than the promotion time value until they have reached the maximum priority of 3.
 - **Call Priority Short Code Character**^[425]
The character **p** can be used in the **Telephone Number** field of **Dial Extn** short codes to change the priority of a call. It is added as a suffix to the Telephone Number using the format **p(x)** where **x** is **1**, **2** or **3** for low, medium or high priority.
- **Hunt Group Music on Hold Selection**
With IP Office 4.2 now supporting up to 4 music on hold sources, the source to use for calls presented to a hunt group can now be specified to override the system or incoming call route setting. See [Music on Hold](#)^[892] above.
- **Longest Idle Status for Twinned Users**
The longest idle information is now updated for calls to the internal or mobile twin of a hunt group member. The member is seen as busy to hunt group calls if either the master or the twin is on a call. In addition, for mobile twinning:
 - If mobile twinning of hunt group calls is selected and the master is idle, the longest waiting state will reflect that of the mobile twin.
 - The above also applies if the master is logged out and logged out twinning is selected.

- [Hunt Group Queued Call Presentation](#) ^[319]

For hunt groups where multiple calls are waiting to be answered, two methods of setting which calls the hunt group member answers when they go off-hook. This is controlled by the **Queue Type** option on the **Hunt Group | Queuing** tab.

- **Assign Call On Agent Answer**

In this mode the call answered by the hunt group member will always be the longest waiting call of the highest priority. At the moment of answering that may not necessarily be the same call as was shown by the call details at the start of ringing. This is the default mode for IP Office 4.0+.

- **Assign Call on Agent Alert**

In this mode, once a call has been presented to a hunt group member, that is the call they will answer if they go off hook. This is similar to the method used for IP Office 3.2 and earlier. This mode should be used when calls are being presented to applications which use the call details such as a fax server, CTI or TAPI.

- **Overflow Mode Selection**

Pre and post IP Office 4.0 system used different overflow methods. For pre-IP Office 4.0 system, whether a call should overflow was determined on a call by call basis. For IP Office 4.0+ system, once one call had met the criteria to overflow, all currently queued calls overflowed. For IP Office 4.2 systems the mode of overflow operation can be selected through the hunt group **Overflow Mode** setting.

Call Presentation/User Information Display

- **Called Number Display overrides Dialed Number Display**

For IP Office 4.0+, the digits displayed to users after making an outgoing call was changed to show the digits dialed to line by the IP Office rather than the digits dialed by the user. IP Office 4.2 returns to displaying the digits dialed by the user. When making a call via a directory feature the digits dialed from the directory are shown. The user dialed digits are retained with the call when parked, held, transferred and retrieved. Directory matching is still performed on the number dialed.

- **User BLF Change**

Changes have been made to the BLF status applied to users. For most user, logged in or associated with a specific extension, there will be no visible change. However for users who have logged out there are a number of changes.

- The status shown for a logged out user without mobile twinning will depend on whether they have **Forward Unconditional** enabled. If they have **Forward Unconditional** enabled the user is shown as idle. If they do not have **Forward Unconditional** enabled they will show as if on DND.
- The status shown for a logged out user with mobile twinning will be as follows:
 - If there are any calls alerting or in progress through the IP Office to the twinned destination, the user status is shown as alerting or in-use as appropriate. This includes the user showing as busy/in-use if they have such a call on hold and they have **Busy on Held** enabled.
 - If the user enables DND through Mobile Call Control or one-X Mobile client, their status will show as DND.
 - Calls from the IP Office direct to the user's twinned destination number rather than redirected by twinning will not change the user's status.

- **Longest Idle Status for Twinned Users**

The longest idle information is now updated for calls to the internal or mobile twin of a hunt group member. The member is seen as busy to hunt group calls if either the master or the twin is on a call. In addition, for mobile twinning:

- If mobile twinning of hunt group calls is selected and the master is idle, the longest waiting state will reflect that of the mobile twin.
- The above also applies if the master is logged out and logged out twinning is selected.

SMDR

- [SMDR via IP Direct from the IP Office](#) ^[844]

The IP Office control unit can be configured to send its SMDR call log records via IP to a designated address and port. The controls for this are on the [System | CDR/SMDR](#) ^[187] form.

- **Increased SMDR/CDR Buffering**

For systems other than the Small Office Edition, the maximum of records that the system can buffer if the remote connect is lost has been increased from 1500 to 3000.

T3 Phone Enhancements

The following changes have been made to the range of features supported by T3 phones (all types) supported on IP Office.

- **Line Appearances** ^[674]

The use of line appearance buttons is now supported with T3 phones. Other appearance button types are not supported. Unlike other phones that support line appearances, the T3 phones do not need to have call appearance buttons programmed.

- **Self-Administered Button Programming** ^[514]

T3 phone users can be given access to a menu to program their own phone buttons (**Menu -> Settings -> Button programming**). This feature is not available by default, the user must be configured for this feature.

- **Voicemail Settings Menu**

On IP Office systems with a voicemail server installed, T3 phone users can now access a menu of voicemail settings via **Menu -> Settings -> Voicemail Settings**. The options available depend on whether the voicemail server supports Visual Voice (Voicemail Pro and Embedded Voicemail).

- On systems that do not support Visual Voice, the menu provides options for turning the user's voicemail on/off and for listening to their messages via traditional audio prompts.
- On system that support Visual Voice, then menu provides options for turning the user's voicemail on/off, listening to messages through menu of visual options (**Listen**) and the other Visual Voice menu options (**Message, Greeting, PIN, Email** and hunt group mailboxes).

- **Visual Voice Support**

In addition to access to Visual Voice through the menu above, buttons set to access Visual Voice go direct to the Visual Voice **Listen** function.

- **Display of "Follow Me Here"**

When another user sets a follow me to the T3 user's phone, Follow me here and the user using the follow me are displayed on the T3 phone's status display. The item can be selected and used to cancel the follow me.

- **Hunt Group Membership Display**

For selected hunt groups of which the user is a member, the user can be configured to display and change the status of their membership. The hunt groups are selected through the IP Office Manager ([User | Hunt Group Memberships | Change Hunt Group Membership Status](#) ^[296]). Previously that list of hunt groups was accessed on the T3 phone using **Menu -> Settings -> Display/Audio -> Group Membership**. For IP Office 4.2 that menu option has been removed, instead the selected hunt groups are displayed on the phone's status display and the status can be changed through that display.

- **Change Hunt Group Status**

For selected hunt groups on the system the user can be configured to be able to display and change the in service, out of service and night service status of the group. The hunt groups are selected through the IP Office Manager ([User | Hunt Group Memberships | Change Hunt Group Membership Status](#) ^[296]). The user can then change the status from their phone using the **Menu -> Group state** option. For IP Office 4.2 that option now includes options to set all the displayed groups in service, out of service or into night service. Previous this had to be done group by group for each displayed group.

- **System Name and Version Display**

Following a restart of the IP Office system or the T3 phone, the phone will briefly display the IP Office system software level and system name. This information can also be accessed using **Menu -> Settings -> System Info**.

Other Features

- **Logged Off Users**

The following changes have been made in regard to logging out:

- For IP Office 4.0 and 4.1, users without a configured **Login Code** are not allowed to log out. For 4.2+, these users are allowed to log out if they are currently associated with (logged in at) an extension that has a different **Base Extension Number** from their own Extension Number, so long as they are not set to Forced Login. This allows system maintainers to change and merge changed **Base Extension Numbers**. Affected users can then log out and will automatically be logged back in at the appropriate extension if available.

- **Mobile Twinning Users** ^[297]

Mobile twinning users can be configured to still receive calls for their primary extension on their twinned device even when logged out from their primary extension. This is done using the [Twin When Logged Off](#) ^[297] ([User | Mobility](#)) ^[297] option.

- **Static NAT Options in IP Office Firewalls** ^[367]

Static NAT entries can be added to IP Office Firewall Profiles in order to translate between external and internal IP addresses. When static NAT entries are added to a Firewall Profile, only traffic that matches one of the static NAT entries (plus all the other firewall settings) is allowed. Each Firewall Profile can contain up to 64 static NAT pairs.

- **Enhanced Outgoing Call Barring**

A number of new features have been added around the existing user setting [Outgoing Call Bar](#) ^[279] ([User | Telephony | Supervisor Settings](#)) ^[279]. When enabled, this setting stops the user from making any outgoing external calls other than those using **Dial Emergency** features. Note that the features below have also been added to the IP Office 4.1 2008 Q2 maintenance release.

- **Outgoing Call Bar Short Code Controls**

The short code features [Outgoing Call Bar On](#) ^[484] and [Outgoing Call Bar Off](#) ^[484] can be used by a user to change their outgoing call bar status. In addition the short code [Change Login Code](#) ^[457] has been added.

- **User Password Controls**

Each IP Office user has a number of passwords.

- **Login Code Controls**

The user log in code is used to log in at an extension and to switch off outgoing call bar. A [Change Login Code](#) [451] short code feature has been added.

- **Voicemail Code**

The voicemail code is used for access to the user's voicemail mailbox when accessed from destinations not configured as trusted sources. This code can be changed through the mailbox prompts interface or through Visual Voice. For IP Office 4.2 it can also be changed through the UMS Web Voicemail (IMAP) interface.

- **User Password**

The user password is used by IP Office application such as Phone Manager, SoftConsole and TAPI. Phone Manager 4.2 now provides a Change Password option that allows the user to change their password. In addition to changing their password, it will update the Phone Manager profile if **Remember Password** is enabled and will attempt where possible to update the TAPI settings if the IP Office TAPI driver is installed on the same PC (Phone Manager will display a warning if the TAPI configuration needs to be manually updated to the new password).

- **Phone Time and Date Display**

For 4.2, the following phones now display the current time and date at the bottom right of their display when idle: 2410, 2420, 5410 and 5420.

Platform Restrictions

Where some of the features listed about are not supported on all IP Office systems that can run IP Office 4.2, the table and notes below detail the restrictions.

Restricted Feature	Small Office Edition	IP406 V2	IP412	IP500
Mobile Call Control	✗	✗	✗	✓
one-X Mobile Support	✗	✗	✗	✓
Switchable To/So BRI	✗	✗	✗	✓
VoIP Enhancements	✗	✗	✗	✓
Embedded Voicemail Email	✗	✓	✗	✓
Embedded File Management	✗	✓	✗	✓
T3 Phone Enhancements	✗	✓	✓	✓
Multiple Music on Hold Sources	✗	✓	✓	✓

16.2 What was New in 4.1

This section summarizes the main changes in IP Office 4.1.

General Manager Changes

- **Optional Legal/Informational Message Display** ^[27]
When starting IP Office Manager, a message dialogue can be displayed which features Continue and Cancel (closing Manager) options. This can be used to display legal warning text or information text before Manager is used.
- **AIM Configured System Warning** ^[85]
If an IP Office 4.1+ configuration from an IP Office that has been configured through AIM, is opened in a standalone version of IP Office Manager, a warning message is displayed. This is to prevent misconfiguration of systems that should only be configured through the version of Manager embedded in the AIM suite of software.
- **Application Idle Timeout** ^[12]
A timeout can be enabled. After 5 minutes of no mouse or keyboard activity, Manager will request reentry of the service user password used to load the current configuration or security settings.
- **Card and Port Indication** ^[19]
For line types provided by the installation of physical trunk cards or modules, within the line settings the card slot or module location is now indicated and the port number on that device.
- **System Events** ^[18]
The System Alarms tab has been renamed Systems Events.
- **Merging Extension Changes** ^[25]
For extension settings, the **Base Extension** and **Disable Speakerphone** fields are now mergeable.

Security Enhancements

- **Service User Password Controls** ^[98]
Various controls have been added within the IP Office security settings for service user passwords. These control can be used to enforce the required level of password complexity. Service user accounts can be disabled after too many incorrect password entries, after a specified period of not being used or after a specific expiry date. Service users can also be prompted to change their password when they next log in after a specified period.
- **Security Reset** ^[128]
Service users with sufficient rights can reset the IP Office security settings to their defaults using IP Office Manager. The command [File | Advanced | Erase Security Settings \(Default\)](#) ^[128] is available in configuration mode and [File | Reset Security Settings](#) ^[14] in security mode.
- **Transport Layer Security (TLS) Secure Connection Support** ^[80]
Secured communication is supported between the IP Office system and IP Office Manager using TLS for both authentication and encryption. Each of the IP Office services (configuration access, security access and system status access) can be configured for secure and/or unsecure connect. Secure connect can include the exchange of security certificates between the IP Office system and the IP Office Manager PC.

Avaya SIP for Branch Support

The Avaya SIP for Branch is a service delivered by interlinking Avaya switches through an Avaya SES (SIP Enablement Service) server. IP Office 4.1+ supports connect to the SES server through the following new features:

- **SES Lines** ^[25]
This type of line is used for connection from the IP Office system to the SES server. It is a variant of the SIP trunk type and requires the IP Office to have SIP Trunk Channel licenses available.
- **Branch Prefix** ^[149]
Each system within a SIP for Branch network requires a unique branch prefix. The Branch Prefix field on the [System | System](#) ^[149] tab is used to set that prefix. Calls to extensions on other systems within the network require the dialing of the branch prefix followed by the extension number.
- **Local Number Length** ^[149]
Extension numbers on systems within a SIP for Branch network should all be the same length. The Local Number Length field on the [System | System](#) ^[149] tab can be used to set the length of user, extension and hunt group extension numbers. Attempting to enter an extension number of a different length will cause a warning with IP Office Manager. Though intended for IP Office systems within a SIP for Branch network this field can be used in any IP Office system configuration.

General IP Office Features

- **[Time Profile Calendar Dates](#)** ^[361]

IP Office Time Profiles have been enhanced. In addition to the existing weekly time patterns, specific times on particular calendar dates can now also be added. Dates in the current and next year can be specified, including multiple dates.

- **[Incoming Call Route Multiple Time Profile Support](#)** ^[356]

Incoming call routes have now been amended to allow the use of multiple time profiles, with separate destinations and fallback destinations for use when a particular time profile is in effect.

- **[IP406 V2 LAN2 Support](#)** ^[152]

RJ45 Ethernet LAN port 8 on the front of the IP406 V2 control unit can now be specified as being the LAN2 port for the IP Office system. This enables the [System | LAN2](#) ^[162] tab and associated settings within the IP Office configuration. This mode is controlled by a **Use Port 8 as LAN2** option on the [System | LAN1 | LAN Settings](#) ^[153] tab.

- **[System Events Syslog Support](#)** ^[181]

In addition to using SNMP and SMTP email, the IP Office can now send system events to up to two Syslog server destinations. The Syslog output can include IP Office Audit Trail events (not supported for SNMP and SMTP email).

- **[Phone Manager Pro Telecommuter Mode](#)** ^[295]

This additional mode has been added to the available Phone Manager Type options. This mode is supported by Phone Manager Pro 4.1+. Users of this mode can start Phone Manager as either a remote or local application. In remote mode the user uses a data connection for Phone Manager and specifies a telephone number available to them to make/receive calls. The IP Office then makes calls to that number when the user makes or answer calls using their Phone Manager application. In local mode the application function as a normal Phone Manager Pro with the user's associated extension. For full details refer to the Phone Manager User Guide and Phone Manager Installation Manual.

Hunt Group Operation

- **[Queuing Alert Extension](#)** ^[319]

For each hunt group, when a number of queued calls threshold is reached, an analog extension can be alerted with ringing. This is intended for an extension connected to a loud ringer device or similar (that is calls are not answered at that extension). This feature is controlled through the [Hunt Group | Queuing](#) ^[319] tab settings Calls in Queue Threshold and Pots Extension to Notify.

- **[Automatic Recording Mailbox for Account Codes](#)** ^[377]

By default automatic recordings for account codes are routed to the mailbox of the user making the call. Previously this could not be changed except through customized call flows on the Voicemail Pro. An alternate mailbox destination can now be specified through the [Account | Voice Recording](#) ^[377] tab.

Telephony

- **[Group Listen](#)** ^[613]

Using group listen allows callers to be heard through the phone's handsfree speaker but to only hear the phone's handset microphone. This feature can be enabled/disabled using either short codes and or a programmable button. Note: Group listen is not supported on IP phones.

- **[Disable Speakerphone](#)** ^[256]

The handsfree speaker enabled by the SPEAKER key on Avaya DS and IP phones can be disabled through the IP Office extension configuration settings. This allows handsfree operation to be disabled where such operation is not desirable.

Button Programming

- **[IP Office Date, Time and Version](#)**

The [Self Administer](#) ^[634] button function can be used to set the IP Office system date and time. It can also be used to view the IP Office control unit type and software version. The user must be configured as a **[System Phone](#)** ^[277] ([User | Telephony | Call Settings](#) ^[277]) and a value of **2** entered as the button's action data.

- **[Headset Force Feed](#)** ^[626]

On Avaya phones with fixed **HEADSET** buttons, a programmable button can be assigned to put the phone into headset force feed mode. In this mode, when headset mode is selected but the phone is idle, an incoming external call will cause a single tone and then be automatically connected.

- **[Group Listen](#)** ^[613]

The group listen feature (see Telephony above) can be assigned to a programmable button. That button can be used to switch group listen on/off and indicates when group listen is on.

- **[Enhanced Conference Meet Me](#)**

For IP Office 4.1+ this button has been enhanced. Buttons associated with a particular conference ID will indicate when the conference is active. Callers connected on other appearance buttons can be transferred into the conference by pressing **TRANSFER** and then the **Conference Meet Me** button. This allows the user to place callers into the conference specified by the button without being part of the conference call themselves. This option is only support on Avaya phones with a fixed TRANSFER button (excluding T3 and T3 IP phones).

Short Codes

- [Group Listen On/Off](#)^[478]

The group listen feature (see Telephony above) can be switched on/off through the use of the Group Listen On and Group Listen Off short code features.

- **Default Embedded Voicemail Auto Attendant Short Codes**

Previously 4 system short codes were automatically added for each auto attendant added to the configuration. With the increase in the number of supported auto attendants to 40, the method of short code usage has changed to allow just 4 system short codes for all auto attendants by using the auto attendant number rather than name.

IP Office 500

- **IP Office 500 PRI Trunk Card (PRI-U)**

This card can be added as a trunk daughter card to any IP500 base card except the Legacy Card Carrier base card. The card is available in single and dual port PRI variants. The IP500 PRI-U card supports E1, T1 and E1-R2 PRI modes. To select the mode required, right-click on the line in the group or navigation pane and select Change Universal PRI Card Line Type. The IP Office systems supports 8 B-channels for each IP500 PRI-U port fitted, using in-service channels from port 9 of slot 1 upwards. Additional B-channels up to the capacity of ports installed and PRI mode selected require IP500 Universal PRI (Additional Channels) licenses added to the configuration. D-channels are not affected by licensing.

- With the introduction of the IP500 PRI-U trunk daughter card, the design of stand off pillars supplied with IP500 trunk daughter cards has been changed. New cards will be supplied with 2 pre-fitted metal stand off pillar and 3 loose plastic pillars. Screws and washers are provided for the metal pillars for the final installation onto the IP500 base card. This changes is required for IP500 PRI-U cards but has been applied to all trunk daughter card types. This does not affect existing trunk daughter cards supplied with 5 plastic stand off pillars.

- **H.323 Trunk Support in Standard Edition Mode**

H.323 trunks (IP trunks and QSIG trunks) on IP Office 500 systems require the addition of IP500 Voice Networking licenses. At launch those trunk and license were only supported on IP Office 500 system running in Professional Edition mode. IP Office 4.1 allows licensed H.323 trunks to be used in Standard Edition mode also.

- **Small Community Networking in Standard Edition Mode**

The above change allows Small Community Networking to be used with IP Office 500 systems running in Standard Edition mode. That includes Centralized Voicemail and, subject to the appropriate additional licenses, advanced Small Community Network features.

Embedded Voicemail

- [40 Auto Attendants](#)^[406]

Previously on 4 auto attendants were supported with the IP Office configuration. IP Office 4.1 allows up to 40 Auto Attendants to be created and to be chained together to support a flexible multi-tiered operation. Each auto-attendant is numbered and that number can be used in short codes for accessing the auto-attendant.

- [Named Greeting Files - LVMGreeting](#)^[407]

The field Recording Name was added in the IP Office 4.0 Q2 20007 maintenance release for use with IP Office systems being managed by the AIM suite. However the field was not useable with systems being managed by stand-alone IP Office Manager. For IP Office 4.1+ the utility required to create named greeting files (**LVMGreeting.exe**) is now provided with IP Office Manager. Those files can then be place on the embedded voicemail memory card and selected in the Recording Name field. The same recording can be shared between multiple auto-attendants. The tools is accessed from Manager via the menu command [Advanced | LVM Greeting Utility](#)^[129]. For full details refer to the IP Office Embedded Voicemail Installation manual.

Voicemail Pro

In conjunction with IP Office 4.1, Voicemail Pro 4.1 supports the following new features:

- **[Automatic Recording Mailbox for Hunt Groups](#)**^[322]
By default automatic recordings for hunt groups are routed to the hunt group mailbox. Previously this could not be changed except through customized call flows on the Voicemail Pro. An alternate mailbox destination can now be specified through the [Hunt Group | Voice Recording](#)^[322] tab.
- **[Automatic Recording Mailbox for Account Codes](#)**^[377]
By default automatic recordings for account codes are routed to the mailbox of the user making the call. Previously this could not be changed except through customized call flows on the Voicemail Pro. An alternate mailbox destination can now be specified through the [Account | Voice Recording](#)^[377] tab.
- **Call Data Tagging on Transfer Actions**
The Transfer action now supports fields for setting the transfer source and description to display on phones receiving the transfer. The ability to associate call data for MS-CRM via Assisted Transfer actions is now also supported on Transfer actions.
- **Call Transfer Announcements**
The Transfer and Assisted Transfer actions can be configured to announce the transfer to the caller. The announcement uses the recorded name of the mailbox associated with the transfer if available or the number if otherwise.
- **LIFO/FIFO Mailbox Operation**
The default message playback order of First In-First Out (FIFO) can now be changed to Last In-First Out (LIFO). This is separately adjustable for new, old and saved messages. These are set through the System Preferences | Housekeeping tab (Administration | Preferences | General).
- **Time in Queue and Time on System Variables**
Two new variables can be used in Queued and Still Queued call flows. They are \$TimeQueued for the time in the queue and \$TimeSystem for the time the call has been on the IP Office system.
- **Castelle Fax Server Support**
The Voicemail Pro can be configured to recognize faxes of this type left in user's email mailboxes and include announcement of their presence in the user's mailbox prompts.
- **Hunt Group/Account Code Call Recording Destination**
Previously the destinations for automatic call recording triggered by hunt groups or account codes could not be changed except through a custom Voicemail Pro call flow. The IP Office 4.1 configuration now allows the required destination for the call recording to be specified.
- **\$DDI System variable for DDI Numbers**
This variable is available on DDI calls passed from the IP Office to the Voicemail Pro.
- **Variable Routing (replaces the CLI Routing Action)**
The existing CLI Routing action has been replaced by the **Variable Routing** action. This action allows the call routing to be based on matching specified values to system variables such as \$CLI and \$DDI. The numbers to which matching is performed can include wildcards such as ? for a single digit and * for any digits.

Key and Lamp Operation

- **Abbreviated Ring Control** ^[277]
For users with multiple call appearance buttons, it can be selected whether additional calls once a call is connected, are presented with a short single abbreviated ring or with normal ringing.
- **Twinned Bridge/Coverage/Line Appearances** ^[297]
For users with a twinned secondary phone, only calls on call appearances at their primary phone also alert at the secondary phone. For IP Office 4.1 it is possible to configure that calls alerting on bridged, coverage and line appearance buttons on the primary should also alert on the secondary.

Licenses

- **IP500 Voice Networking**
This type of license is now supported on IP Office 500 systems running in Standard Edition mode. This allows those systems to use IP and QSIG trunks and to be included in a Small Community Network.
- **IP500 PRI Universal (Additional Channels)**
The IP Office systems supports 8 B-channels for each IP500 PRI-U port fitted. Additional B-channels up to the capacity of ports installed and PRI mode selected require IP500 Universal PRI (Additional Channels) licenses added to the configuration. D-channels are not affected by licensing.
- **VPN IP Extensions Licenses**
IP Office 4.1+ supports 4610, 4621, 5610 and 5621 phones running the VPNremote firmware. These work in conjunction with the Extension | VoIP | VPN Phone Allow setting. The phones are licensed against VPN IP Extensions licenses added to the IP Office configuration.

Windows Operating System Support

- **Windows Vista**
With IP Office 4.1, Vista support is expanded to all IP Office 4.1 applications also supported on Windows XP Pro. Note that the Vista support refers to Vista Business Ultimate and Vista Enterprise editions; the Vista Home Basic and Vista Home Premium editions are not supported.

System Status Application

The following changes have been made to the System Status Application (SSA) including in the IP Office 4.1 suite.

- **Device Version Numbers**
IP500 trunk, extension and VCM cards have electronic version numbers. SSA is now able to display those version numbers.
- **Digital Trunk Clock Source Change Alarm**
SSA can report when the clock source being used by the IP Office system changes from one digital trunk to another.

16.3 What was New in 4.0 May 2007

This section summarizes the changes made for the May 2007 maintenance release of the IP Office 4.0 suite of applications. This is not an exhaustive list. For full details refer to the appropriate IP Office Technical Bulletin.

- **[Call Pickup Line Short Code](#)** ^[445]
This short code feature allows the answering of calls ringing, parked or held on a line by use of the line's Line Appearance ID. This is intended for use with phones where Line Appearance buttons cannot be programmed. Not supported on T3 phones.
- **[Call Pickup User Short Code](#)** ^[446]
This short code feature allows the answering of calls ringing, parked or held against a user by use of the user's Extension Number setting. If the targeted user has multiple calls, preference is given to ringing, parked and held calls in that order. Not supported on T3 phones.
- **[Embedded Voicemail](#)** ^[406]
The following new features appears for Embedded Voicemail:
 - **[Auto Attendant Greeting 'Record Name'](#)** ^[407]
This field appears next to the short code used for recording auto-attendant prompts. The field is only useable for IP Offices being managed through the [Avaya Integrated Management \(AIM\)](#) ^[856] application.
 - **[Enable Local Recording Control](#)** ^[407]
The use of short code to record auto attendant greetings can be disabled if required. The short codes are still active and can be used to hear the current prompts, however the option to record a new prompt will not operate.
 - **[Embedded Voicemail Shutdown Short Code](#)** ^[499]
The Embedded Voicemail memory card is not a hot-swappable device, and so the IP Office system must be switched off in order to remove/replace the memory card. Use of this short code feature allows safe removal of the memory card whilst the IP Office system is running.
- **[Known IP Office System Discovery](#)** ^[70]
IP Office Manager can be configured to record details of IP Office systems it discovers and to then allow later rediscovery of those known systems. This feature is only available when Manager has been configured with a .csv file location to which to record known IP Office system details. When this has been done, a Known Units button is available within the IP Office Manager discovery screen.
- **[Support for Avaya Integrated Management \(AIM\)](#)** ^[856]
Avaya Integrated Management (AIM) is a suite of applications that can be used to monitor and maintain a large number of Avaya systems as multiple locations. Support for IP Office systems has been added to this application suite.
- **[Custom Locale](#)** ^[149]
For some systems, the locales fully supported by IP Office may not match the local requirements. In these cases, the option Customize can be selected in the Locale field of the System | System tab. Additional options are then made visible to select the tone usage, CLI type and busy tone detection settings.
- **[System Time Setting Through Phones](#)** ^[747]
For systems without access to an appropriate time server or where an immediate time and date change is required, a manual method for setting the system date and time has been added.
- **[Internal Twinning for North America](#)** ^[297]
The Internal Twinning function was added in the IP Office 3.1 release but not supported for systems with a North American locale. This feature is now supported in North American locales.
- **[IP DECT](#)** ^[236]
The Avaya IP DECT solution is now supported in North American locales. For IP Office Manager this means that an IP DECT line and IP DECT extensions can now be created on systems with a North American locale.
- **3641 and 3645 Wireless IP Phones**
These phones are now supported. They can be used with 802.11a, 802.11b and 802.11g wireless networks.
- **T3 Direct Media Support**
T3 IP phones have previously not supported Direct Media mode connection. For T3 IP phones with T246 or higher firmware that restriction no longer applies and the specific restrictions on the number of T3 IP phones can be removed.

16.4 What was New in 4.0

This section summarizes the main changes in the IP Office 4.0 General Availability release.

Manager Changes

- **Validation Control**
Control of when Manager applies automatic validation to configuration files is now available through the **File | Preferences** menu.
- **Busy on Held Validation**
The Tools menu now contains a Busy on Held Validation option that checks all users. Previously this check was only performed when a user's settings were edited.
- **Line Renumber**
The Tools menu now contains a Line Renumber option for renumbering all Line Appearance ID's upwards from a selected base number.
- **BOOTP Entries**
The maximum number of BOOTP entries has been increased from 20 to 50.

Hardware Support Changes

- **IP Office 500 System Unit (IP500)**
This control unit has no integral extension or trunk ports. On its front the unit has 4 card slots into which IP500 base cards can be inserted. These cards provide various combinations of digital station port, analog extension ports, voice compression channels and trunk ports. On its rear the unit has slots for embedded voicemail, a feature key dongle slot, audio port, door relay switch port and ethernet LAN/WAN ports plus 8 external expansion module ports.
 - 4406, 4412 and 4424 are only supported on external expansion modules. They are not supported directly on the IP500 system unit.
- **IP Office Standard Edition**
By default the IP500 control unit runs a subset of full IP Office functionality called IP Office Standard Edition. In this mode the IP Office is restricted as follows. These restrictions can be removed by adding an IP500 Upgrade Standard to Professional license to the configuration.
 - The IP500 is restricted to a maximum of 32 users using ports on base cards in the control unit.
 - In Standard Edition mode the IP500 does not support any external expansion modules.
 - The applications Embedded Voicemail, Phone Manager Lite/Pro, SoftConsole, TAPI, Delta Server and CBC, Manager, SSA and Monitor are supported.
 - Advanced applications such as Voicemail Lite/Pro, CCC, Conferencing Center, MS-CRM, etc are not supported.
 - IP trunks (H323, QSIG, SCN) not supported. IP DECT and SIP trunks are supported. Enabling IP trunks requires an IP500 Upgrade Standard to Professional license and IP500 Voice Networking licenses. Note: This restriction was removed in later IP Office 4.0 maintenance releases.
 - Meet-me conferencing is not supported.
- **Hardware Support**
The following hardware is not supported with IP Office 4.0.
 - The WAN3 external expansion module is not supported (the WAN3 10/100 is still supported).
 - All Network Alchemy external expansion modules are no longer supported.
 - The IP403 and IP406 V1 control units are not supported.
- **Phone Support**
The following phones are not supported by IP Office 4.0. They may function but have not been tested with 4.0 and any faults reported with 4.0 will not be fixed.
 - The 20DT Analog DECT phone used with IP Office Analog DECT and Compact DECT is not supported. It may be used with Avaya IP DECT but only as a generic GAP compatible DECT device.
 - The 4606, 4612 and 4624 phones are no longer supported.
 - The Transtalk 9040 is no longer supported.

System Status Monitoring

- **System Status Application (SSA)**

This application provides information about the equipment and resources in IP Office 4.0 and higher systems. This information includes indication of alarms and details of current calls in progress. Use of SSA requires a service user name and password configured for System Status in the IP Office's security settings.

- **Call Status Application**

This application is not supported by IP Office 4.0. It has been replaced by the IP Office System Status Application above. Call Status is still included in the IP Office Admin suite for use with pre-4.0 IP Office systems.

- **Monitor**

The SysMonitor application has been enhanced but is no longer fully backwards compatible with pre-IP Office 4.0 systems. Therefore two versions of Monitor are included in the IP Office Admin suite; version 6.0 for use with IP Office 4.0 systems and version 5.2 for use with pre-IP Office 4.0 systems.

SIP Trunks

- IP Office 4.0+ supports SIP calls through the implementation of SIP trunks. Through normal short code routing of outgoing group ID's any user can make outgoing calls using SIP services, ie. users do not require SIP phones to make and receive SIP calls. Incoming call routing can be used to route incoming calls on SIP trunks. SIP trunks are a licensed feature.

Hot Desking (Logging In/Out)

- **Agent Status on No Answer**

The IP Office can change the status of call center agents who do not answer a hunt group call presented to them. This can include logging the agent off the system. The change of status can be set per user and the use of this option can be set per hunt group.

- **Remote Hot Desking**

Users can now hot desk between systems in a Small Community Network. This requires a Advanced Small Community Networking license in the system where a user logs in remotely.

- **Logging Out**

User who do not have a log in code set cannot log out.

- **NoUser User**

By default the NoUser user's first programmable button is set to the **Login** function.

Voicemail

• Voicemail Channel Reservation

IP Office 4.0 allows the licensed voicemail channels between Voicemail Pro and the IP Office to be reserved for particular functions or to be left unreserved for any function.

• Visual Voice

Users with Avaya multi-line display phones can use a display menu driven interface for accessing and controlling the playback of messages in voicemail mailboxes. This is supported with Voicemail Pro, in Intuity emulation and IP Office modes, and Embedded Voicemail.

• Voice Recording

A number of improvements have been made to call recording operation in conjunction with Voicemail Pro. In the descriptions below 'party' can mean user, hunt group or incoming call route involved in a call.

- Calls including IP end points, including those using Direct Media, can now be recorded.
- Voicemail Pro automatic call recording can be triggered by Incoming Call Routes.
- Where recording is triggered by several parties within the same call, separate recordings are produced for each party.
 - For example if both automatic hunt group recording and automatic user recording are applicable to the same call, separate recordings are produced for both the hunt group and the user.
 - If a call is to be recorded multiple times to the same mailbox only a single recording is made; resolved in the order of: incoming call route, account Code, hunt group and user settings.
- Recording only continues while the party triggering the recording is part of the call, for example:
 - Recording triggered by a user stops when that call is transferred to another user.
 - Recording triggered by a hunt group continues if the call is transferred to another member of the same group. Recording stops if the call is transferred to a user outside the hunt group.
 - Recording triggered by an incoming call route continues for the duration of the call on the IP Office system.
- Parking and holding a call pauses recording. Recording is restarted in the same file when the calls is unparked or taken of hold.

• User Announcements

With Voicemail Pro 4.0 and higher, announcements are supported for calls waiting to be answered by an individual user. User start points in Voicemail Pro now include Queued and Still Queued options.

• Embedded Voicemail

- Embedded voicemail is supported on the IP500 control unit using the same options as the IP406 V2 control unit.
- Hunt group announcements are supported using embedded voicemail.
- The auto-attendant menu includes a Fax option for rerouting fax calls.
- Support for **Visual Voice**.
- Support for Fast Forward (#), Rewind (*), Skip message (9) and Call Sender (**) when listening to messages.
- Support for 3 voicemail reception destinations using *0, *2 and *3.

Hunt Groups

- **Agent Status on No Answer**

The IP Office can change the status of call center agents when a hunt group call is presented but not answered. The agent can be put into busy wrap-up, busy not available or logged out. The change of status can be set per user and the use of this option can be set per hunt group. This feature is not applied if the call is answered elsewhere before the No Answer Time expires.

- **Fallback**

Night service fallback using a time profile is no longer applied to a hunt group already set to out of service. Short codes and buttons can be used to set a hunt group out of service, overriding the night service time profile.

- **Voicemail Answer Time**

A separate value has been added to hunt group settings to control when hunt group calls go to voicemail if unanswered. The default value is 45 seconds.

- **Queuing**

- Previously the definition of queued calls did not include calls ringing against hunt group members. The definition now includes ringing calls and calls waiting to be present for ringing.
- Control and usage of announcements has been separated from queuing (see below).
- The queue limit can be set to include queued and ringing calls or just queued calls.

- **Announcements**

- Hunt group announcements have been separated from hunt group queuing and can be used even when queuing is off.
- Hunt group announcements are now supported by Embedded Voicemail in addition to Voicemail Pro and Voicemail Lite.
- The times for the first announcement, second announcement and between repeated announcements are configurable.

- **Advertised Hunt Groups**

A hunt group can be set to be 'advertised'. This requires an Advanced Small Community Networking license. Hunt groups that are advertised can be dialed by users on other systems within the Small Community Network (SCN) without the need for short codes. This feature requires entry of a Advanced Small Community Networking license on each system.

- **SCN Distributed Hunt Groups**

Hunt groups in a Small Community Network can include members located on other systems within the network. This feature requires entry of a Advanced Small Community Networking license on each system. Distributed hunt groups are automatically advertised to other systems within the SCN.

- **Idle Status**

For longest waiting hunt groups, the type of calls that change a hunt group member's idle status can be selected.

- **Call Presentation**

When additional calls are waiting to be presented, additional hunt group members are alerted using the hunt group type. However when any member answers a call it will be the first waiting call that is answered.

- **Set Hunt Group Night Service and Set Hunt Group Out of Service Short Codes**

Previously the [Set Hunt Group Night Service](#)^[494] and [Set Hunt Group Out of Service](#)^[494] short code features toggled. That behaviour is not supported in 4.0 and higher.

- **Voicemail Mailbox Operation**

For IP Office 3.2 and earlier, when voicemail was invoked, the mailbox of whichever hunt group was currently handling the call was used, for example the mailbox of the overflow or night service hunt group might be used if the call had gone from the original hunt group to an overflow or night server hunt group. For IP Office 4.0 and higher, the mailbox of the originally targetted hunt group is used even if the call has overflowed or gone to a night server hunt group.

Alternate Route Selection (ARS)

- **Least Cost Routes (LCR)**

LCR has been replaced by ARS. On systems being upgraded to IP Office 4.0, any LCR entries will be automatically converted as far as possible to ARS forms. However due to the difference in method of operation the ARS forms will need to be checked.

- **Secondary Dial Tone**

Where secondary dial tone is required it is provided through a check box option in ARS. This simplifies the configuration of secondary dial tone.

- **Outgoing Call Routing**

LCR forms were never explicitly applied to particular calls. Instead any number to be dialed externally, was compared to the LCR short codes for a possible match. In IP Office 4.0, dialing short codes are explicitly routed either to a outgoing line group or to an ARS form.

ISDN Features

The following ISDN features are now supported by IP Office 4.0+. Note that availability of these feature is dependant on their also being supported and available from the ISDN service provider for which there may be charges.

- **Malicious Call Identification - MCID**

Short codes and button programming features have been added so that users can be configured to trigger this activity at the ISDN exchange when required.

- **Advice of Charge - AOC**

Advice of charge during a call (AOC-D) and at the end of a call (AOC-E) is supported for outgoing ISDN calls other than QSIG. The call cost is displayable on T3 phones and included in the IP Office Delta Server output. The IP Office allows configuration of call cost currency and a call cost mark-up for each user.

- **Call Completion to Busy Subscriber - CCBS**

CCBS can be used where provided by the ISDN service provider. It allows a callback to be set on external ISDN calls that return busy. It can also be used by incoming ISDN calls to a busy user.

- **Partial Rerouting - PR**

When forwarding a call on an ISDN channel to an external number using another ISDN channel, partial rerouting informs the ISDN exchange to perform the forward, thus freeing the channels to the IP Office. Not supported on QSIG.

Advanced Small Community Networking (Advanced SCN)

The following new features are supported for IP Office 4.0+ Small Community Networks. Note that these feature require entry of an Advanced Networking License into systems in the network.

- **Network Hot Desking**

Hot desking is supported between IP Office systems within the Small Community Network.

- **Distributed Hunt Groups**

Hunt groups can now include members who are located on different IP Office systems within the Small Community Network. This feature requires entry of a Advanced Small Community Networking license on each system.

- **Break Out**

This feature is provided primarily to support network hot desking but can be used for other purposes. It allows the dialing on one system in the network to be done as if dialed locally on an other system.

Key and Lamp Operation

The following key and lamp operation features were added in IP Office 4.0:

- **Delayed Ring Preference**

This user telephony setting works in conjunction with the user's Ringing Line Preference setting. It sets whether ringing line preference should use or ignore the ring delay applied to the user's appearance buttons.

- **Answer Pre-Select**

Normally when a user has multiple alerting calls, only the details of the call on current selected button are shown. Pressing any of the alerting buttons will answer the call on that button, going off-hook will answer the current selected button. Enabling the user telephony setting Answer Pre-Select allows the user to press any alerting button to make it the current selected button and displaying its call details without answering that call. To answer a call when the user has Answer Pre-Select enabled, the user must press the alerting button to display the call details and then either press the button again or go off-hook.

- **Reserve Last CA**

Phones with appearance buttons require a free call appearance button to perform actions such as call transfers. However it is possible in some scenarios for all available call appearances to be occupied or alerting. The user telephony setting Reserve Last CA can be used to restrict the user's last call appearance button for outgoing calls only.

Licences

The following new licenses are used by IP Office 4.0:

- **IP500 Upgrade Standard to Professional**

This license is required for an IP500 system to run in IP Office Professional Edition mode rather than IP Office Standard Edition mode. It is a pre-requisite for the IP500 Voice Networking licenses and any licensed features not supported in Standard Edition mode.

- **IP500 Voice Networking (Base 4 channels)**

For IP500 systems running in Professional Edition mode, this licence enables support for H323 IP trunks between IP Office systems and QSIG or Small Community Networking over those trunks.

- **IP500 Voice Networking (Additional channels)**

Allows an additional 4 H323 voice networking trunks.

- **IP500 VCM Channels**

Used with the IP500 VCM 32 and IP500 VCM 64 base cards. Each card supports 4 channels by default, with additional channels enabled by the addition of licenses.

- **SIP Trunk Channels**

This license is used to configure the maximum number of simultaneous SIP trunk calls supported. Multiple licenses can be added for the cumulative number of SIP trunks required.

- **Advanced Small Community Networking**

This license is used to enable support for hosting hot deskers from remote systems, creation of distributed hunt groups and the viewing of advertised hunt groups.

Other Features

- **Private Call**

Users can set a status of private call using short codes or a programmed button. Private calls cannot be recorded, intruded on, bridged into or monitored.

- **RTP Relay**

RTP relay allows much more efficient use of the voice compression channels available in an IP Office system:

- Calls between IP endpoints using the same audio codecs that are routed via the IP Office (for example when not using direct media path) no longer use voice compression channels.
- Call setup and progress tones no longer require a voice compression channel. The exceptions are short code confirmation tones, ARS camp on tone, account code entry tone and G723 calls (except Call Waiting).
- Page calls to IP devices use G729a only and therefore only 1 channel regardless of the number of IP devices.
- For T3 IP devices to benefit from RTP relay they must be configured to 20ms packet size.

- **Password Lockout**

Any phone features that require a validated entry (for example password or account code entry) will automatically fail if they have been preceded by 4 failed attempts in the previous 90 seconds.

- **Firewall IP Office Service Controls**

The IP Office firewall standard settings now include controls to drop or allow connects to IP Office 3.2 configuration settings, security settings and system status.

- **User Announcements**

User announcements can be configured for use with Voicemail Pro. These announcements are used for external calls waiting to be answered.

- **Feature Key Dongle Serial Number**

The IP Office configuration settings now displays the serial number of the last Feature Key dongle with which the system validated its licenses and whether the dongle is local (ie. serial or Smart Card) or remote (ie. USB or parallel).

- **Line ID Numbers**

For defaulted systems, all lines supported line ID numbers are numbers from 701 upwards by default. The Line Renumber tool is now available again within Manager to renumber all lines starting from a user selected starting number.

- **Ending Conferences**

- For pre-4.0 IP Office systems, if a conference has two parties, and one party leaves, the conference call is ended. This may affect conferences that are just beginning but currently only contain the first two parties to join.
- For IP Office 4.0, a conference remains active until the last extension or trunk with reliable disconnect leaves. Connects to voicemail or a trunk without reliable disconnect (for example an analog loop-start trunk) will not hold a conference open.

- **Disconnect Tone**

For digital and IP phones, when the IP Office detects that the far end of a call has disconnected it can either make the near end go idle or play disconnect tone. By default this behaviour depends on the system locale. The [Disconnect Tone](#) ⁽¹⁶⁹⁾ ([System | Telephony | Tones & Music](#) ⁽¹⁶⁹⁾) field can be used to override the locale default and force either disconnect tone use or go idle.

Index

A

- AA 401
- AA Number 401
- Abandon 867
- Abbreviated Dial 556, 557, 560, 561
- Abbreviated Dial Pause 556
- Abbreviated Dial Program 557
- Abbreviated Dial Stop 557
- Abbreviated Ring 277
- Absence Text/Call Tagging 794
- Absnt 492, 636
- Accept Any 386
- Accept Collect Calls 277
- access 117
 - Configuring 858
 - Hunt Group Messages 314
 - IP Office 86
 - IP Office 3.2 31
 - IP Office 3.2 Configuration 31
 - IP Office 4.1 31
 - Queue 319
 - SAA fails 858
 - Service 108
 - Service User's 107
 - Specific Voicemail Pro Module 502
 - Time 127
- Access Code Dialed 867
- Access Code Used 875
- Access Control 86
- access greeting 314
- Access Mode 782
- Access Type 127
- according
 - Client 100
 - Client Certificate Checks 100
 - Country 212
- account 781
 - 10 98
 - required unlock 67
 - Service User 67
 - timers relating 110
- Account Admin 107
- Account Code 331
- Account Code Entry 403, 558
 - Forcing 737
- account code recording 377
- Account Expiry
 - passing 110
 - resetting 110
- account expiry during 98
- Account Idle Time
 - set 110
- Account Locked 67
- Account Name 268
 - match 341
- Account Status 110
- Acct 493, 558, 637
- Accunet 224
- ACD Agent Statistics 559
- ACD Stroke Count 559
- ACD_QUEUE_DELAY 275
- Acquire Call 560
- Action Data 899
- Actions 326
 - Actions | Intrude 442
 - Actions | Reclaim 448
 - Actions | Reclaim Call 448
 - actions involving communications 86
- Activating
 - MCID 736
- Active CCBS Support 204
- Active Directory 175
- Active Directory Users 175
- Active Idle Period 334
- Active MCID Control
 - Providing 736
- AD 556, 560, 561
- AD Special Function Mark 560
- AD Special Function Wait 561
- AD Special Functions 560, 561
- AD Suppress 561
- Adaptive 189
- Add Authorization Fields
 - SMDR 403
- Add Calendar Time Entry 361
- Add Date 361
- Add Recurring 361
- Add Recurring Time Entry 361
- Adding 138, 274, 314, 395, 422
 - Blank Buttons 395
 - Dialing Prefix 738
 - IP Office 859
 - IP500 Upgrade Standard 905
 - Manager Start Dialogue 27
 - New Entry 56
 - RESERVE_LAST_CA 277
 - VM_TRUNCATE_TIME 275
 - Voicemail Support 329
- Addition Prefix Dialing 766
- Additional B-channels 220
- additional Call Appearance buttons 288
- Additional Calls 334
- Additional Channels 220
- Additional Notes 250
- Additionally BLF 793
- Add-On's 511, 519, 525, 536
- Address Length 356
- Address Translation 780
- Addressing
 - 0.0.0.1 747
 - DHCP 780
 - DNS 163
 - LAN 780
 - PC 378
- Adjusting
 - Tc Setting 354
- Admin 164, 704
- Admin Button 513, 634
- Admin CD 164
- Admin Function 511, 513
- Admin Suite 27
- Admin1 395, 513
- Admin1 button 513
- Administration | Preferences 899
- Administration Manual 314
- Administrator 163
 - belonging 858
- Administrator Applications CD 27
- Administrator rights 121
- Administrator Rights Group

- Administrator Rights Group
 - belonging 858
- ADMM 237
- ADMM MAC Address 237
- Advanced 440
 - Default All button 212
- Advanced | Call 740
- Advanced | Dial 440
- Advanced | Erase Security Settings 114
- Advanced | Miscellaneous 482
- Advanced Features 175
- Advanced Networking License 905
- Advanced Phone Manager 295
- Advanced SCN Networking Features 794
- Advanced' button 121
- Advertise Group 309
- Advice 439
 - Charge 723
- AES-128 86
- AES-256 86
- affect 453
 - From 243
 - IP Office 128
- affect existing 899
- affect existing trunk 899
- Afternoon 401
- Agent Mode
 - selecting 327
- Agent Status on No Answer 905
- Agent's 770
- Agent's Status on No-Answer Applies To 309
- AH 384
- AIM 856, 862
- AIM Applications 856
- AIM CSM 899
- AIM Network Management Console 856
- AIM NMC 856
- AIM Provisioning 857
- AIM Secure Access Administration 857
- AIM Secure Admin Access 858
- AIM Software Update Manager 856
- AIMAdmin 858
- Alarm
 - Ignore 319
 - SMTP email 181
 - Syslog 181
- Alarm Destinations
 - Editing 181
- Alarm Station 422
- Alarms Sub-Tab Settings 181
- A-Law 490
- A-Law IP Office Systems 406
- A-LAW systems 406
- A-Law/Mu-Law 808
- Alerting
 - Line 688, 690
- All 453
 - cancels forwarding 477
 - Certificate Stores 86
- All Call Appearances Alerting 680
- All Calls 723
- All Calls button 288
- all dialing 331
- All Forwarding 450, 579
- All Group Settings 212
- All Internet Traffic
 - Routing 365
- all IPO Users 858
- All Network Alchemy 905
- All Programs 30
- All remaining 869
- allocating
 - IP 78
 - TEI's 199
- Allow 201
 - IP Office 148
 - ringback 743
 - WAV file 863
- Allow Analog Trunk
 - Trunk Connect 196
- Allow Bump 373
- allow connects 905
- Allow Direct Media Path 237
- Allow Outgoing Transfer 765
- allow recording 401
 - announcements 302
- allow/disallow 333
- AllowAuthorization 403
- allowed during 286
- allows sorting
 - list 118
- Alpha/Hex 386
- Altering
 - Configuration Interface 59
 - Toolbars 50
- Alternate Route Selection 406
- Alternate Route Wait Time 408
- AMD Athlon XP 27
- AMD Athlon64 27
- AMD Opteron 27
- AMI 220
- AMI ZCS 220
- An Add Authorization Fields 403
- an alert 166
- an alerting button 277
- An attempt 61
- an auto-adapting 357
- an existing 337
- an existing entry 361
- an existing queued 319
- an existing route 370
- an existing system 73
- an existing zone 422
- an outgoing 331
- an outgoing intra-switch 867
- an outgoing trunk 869
- Analog Extensions
 - Centrex Transfer Operation 766
 - Notify 319
- analog gain 196
- Analog Line 688, 702
- Analog Lines 470
- Analog Modem Control 488
- Analog Options 196
- Analog Phone 828
- Analog Phone Message Waiting Indication 744
- Analog Phone Ringing Patterns 745
- Analog Phone Settings 828
- Analog Remote Access Example 785
- Analog Trunk 767
 - Trunk Connection 765
- Analog Trunk 16 196

- Analog Trunk Modem Mode 785
- Analog Trunk Restriction 767
- analogue 326
- and/or 519, 536, 607, 611, 899
- and/or unsecure 899
- ANDed 365
- announcement played 302
- Announcements 164
 - allow recording 302
- Announcements On 487
- Anonymous 175
- ANONYMOUS LOGON 175
- Another Call 661, 664, 683, 686, 690
 - Joining 704
- Another Call Arrives 683
- Ansi AnnexD 353
- Answer Call 674
- Answer Call Waiting 277
- Answer Call Waiting on Hold 277
- Answer Pre-Select 656, 657, 679, 680, 683, 686, 687, 692, 693, 701
 - Enabling 277
- Answer Pre-Select 4.0 679
- Answer pre-select allows
 - user 686
- Answer Supervision 216
- Answer Time 323
- Answering 295
- Anti-tromboning 794
- Any Call 459
- any call barring 459
- any call forwarding 273
- any call ringing on 740
- any call waiting 766
- Any Data 86
- Any Voice 785
 - set 345
- AnyData 781
- AOC 439
 - display 723
- AOC during 723
- AOC Operation
 - Enabling 723
- AOC Previous Call 439
- AOC Reset Total 723
- AOC Short Codes 723
- AOC signalling 723
- AOC Total 723
- AOC-D 723
- AOC-E 723
- appearance button during 166
- Appearance Button Features 657
- appearance button indicates
 - call 706
- Appearance Buttons 277, 657, 660, 661, 662, 664, 672, 677, 679, 680, 687, 688, 690, 692, 696, 697, 700, 701, 704, 706
 - Programming 698
- Appearance Buttons Using IP Office Manager
 - Programming 698
- Appearance Function System Settings 700
- Appearance Function User Settings 701
- Appearance Functions 697, 700, 701, 704
- Appearance ID 201
- appearance key 704, 706
- Appearance Keys
 - Self-Administration 704
- appearance shows 676
 - call 666
- Appearances 211
- Appearances Alerting 680
- Appearances Example
 - Collapsing 692
- Appearances Treated 667, 676
- appears 136
 - Embedded Voicemail 904
- Appendix 86
- appendix covers 86
- Application Controls 103
- Application Options 542
- Application Support list 103
- Applications 27
- Applications Controls 103
- applied during 268
- applies even 738
- Apply 138
 - Call Cost Markup 723
- appropriate 392
 - System Locale 256
- appropriate greeting 401
- Aquire 560
- ara 833
- Argentina 204
- arp
 - receiving 369
- ARP request 369
- ARS 703
 - Create 406
 - return 464
 - take 408
- ARS Features 406
- ARS finds 406
- ARS form providing 430
- ARS Operation 406
- ARS Overview 406
- ARS records 864
- ARS Route ID
 - entering 408
- ASCII 867
- Ask 123
- Assisted Transfer 739
- Associating
 - SIP 243
- Async PPP 587, 594, 595
 - set 357
- Asynchronous PPP 357
- attaching
 - Voicemail file 270
 - WAN 789
- Attendant 129
 - Transfer 402
- Attendant Admin 107
- Attendant Console 872
- AUDIO 746
- Audio 3K1 345
- Audit Details 127
- Audit Trail 128
 - include 75
 - Log 98
- Audit Trail creates 98
- Audit Trail records 128
- Audix UDP 164

Audix Voicemail 164
 Australia 805
 AutCB 564
 Authentication Header 384
 Authentication Method 333
 Authentication Name
 SIP Line 245
 Authorization 331
 Enabling 403
 Forcing 403
 Authorization Code 331
 Enabling 403
 Entering 403
 Forcing 403
 Auto 337
 Auto Attendant 129
 auto attendant record 863
 auto attendant records
 control 863
 Auto Attendant Short Codes 899
 Auto Attendant Template 401
 auto connect 361
 Auto Connect Calls 688
 Auto Connect Interval 337
 Auto Connect Time Profile 337
 Auto Hold 166, 656, 657, 664, 665, 666, 670, 675, 680,
 683, 687, 692, 697, 700, 704, 706
 Auto Hold Example 687
 Auto Hold Off 687
 Auto Hold On 664, 665, 666, 670, 675, 687
 auto-adapting
 Modem 357
 Auto-Answer 688
 Auto-assigned
 Range 201
 Autoconnect 337
 auto-connection 688
 Auto-create Extension 237
 AutoLearn
 Selecting 353
 Automatic
 Immediate 216
 set 216
 Automatic Call Recording 314
 Automatic Callback 204, 564
 Automatic Delay 216
 Automatic Intercom 288, 565
 Automatic Intercom button
 Program 288
 automatic learning
 DLCIs 353
 Automatic Log Off 772
 automatic recording
 external 322
 Automatic Renumbering 702
 Automatic Route Selection 144
 Automatic Selection 250
 Automatic Transfer 764
 Automatically Restore SoftConsole 319
 Automatically Saving Sent Configurations 75
 auto-MDI/MDIX 152
 Available column 125
 Available Columns list 54
 Available Member Answers 326
 available/Covering Extension 288
 Avaya 291
 interlinking 899
 Avaya 3600 149
 Avaya 3600 Series SpectraLink 149
 Avaya 4412 520
 Avaya 4600 780
 Avaya Communication Manager
 Universal Dial Plan 164
 Avaya DS 764
 IP Office 800
 Avaya DS Phone 764
 Avaya H.323 152
 Avaya H.323 IP 152
 Avaya INDeX 277
 Avaya Integrated Management 856
 Avaya Intuity Audix 164
 Avaya IP 265
 shows 136
 Avaya IP DECT 237
 IP Office 265
 Avaya IP DECT Mobility Manager 237
 Avaya IP Office 260, 645
 Avaya IP Office VPNremote Phone 260
 Avaya phones 508, 515, 519, 520, 585, 600, 615, 620,
 635, 656, 657, 706
 Avaya SES 899
 Avaya SIP Enablement Service 250
 Avaya T3 Classic 638
 Avaya Technical Support 166
 Avaya use 581
 Avaya Voice Priority Processor 149
 Avaya XX01 403
 avpots16.bin 146
 AVPP 149
 AVPP IP Address 149
 AVRIP 31
 Await Dial Tone 196
B
 B8 152
 B8ZS 220
 back
 IP Office 141
 IP Office Small Office Edition 378
 SES 250
 UK English 800
 Back Sequence 277
 Back When Free 743
 Backup 130
 Backup Binaries 130
 Backup DNS Server IP Address 163
 Backup File Extension 121
 Backup Files on Send 117
 Backup WINS Server IP Address 163
 Backup/Restore 130
 Backward Compatibility 37
 BACP 334
 BACP/BCP 342
 BAK 121
 Band
 Out 260
 Bandwidth 237
 Bandwidth - Not 867
 BAP 334
 Bar Commands 114
 Barring
 External Transfers 737
 Particular Numbers/Number 737

-
- Barring
 - Particular Numbers/Number Types 737
 - User From Making Any External Calls 737
 - Base 462
 - Base Configuration 100
 - Base Extension 462, 593
 - leaving 769
 - US 256
 - Base specifies
 - point 175
 - Base Station Address List 237
 - Base TCP Port 105
 - Basic Audit 181
 - Basic Hunt Group 329
 - Basic Phone Manager 295
 - Basic/Primary Rate Trunks 702
 - Bc
 - exceeding 354
 - BCC 196
 - BCC Flash Pulse Width 196
 - B-channels 220
 - Bearer 463
 - including 224
 - Bearer Capability 463
 - Set 785
 - Bearer Capability Class 872
 - become 250
 - Intranet Service 781
 - WAN Service 781
 - Beep on Listen 149
 - behaviour 481, 516
 - IP Office 767
 - behaviour applies
 - functions 516
 - Belcore
 - Conforms 256
 - Belgium 807
 - belonging
 - Administrator 858
 - Administrator Rights Group 858
 - Bi-Directional Chap 357
 - Binary Directory 146
 - Binary Files 131
 - Binding
 - Refresh Time 152
 - Bit 86
 - BkOut 566
 - Blank 201
 - Adding 395
 - Blank Buttons
 - Adding 395
 - Blank Call Routes 345
 - BLF 31
 - Blind Transfer 764
 - set 402
 - Blind Transfer button 764
 - Blocking
 - Caller ID 455
 - Blocking Firewall 152
 - Book
 - Conference 295
 - Conferencing Center 268
 - Boot File 237
 - BOOTP
 - creates 146
 - Disabling 146
 - matching 117
 - performing 146
 - providing 146
 - respond 146
 - BOOTP Entries 117
 - BOOTP Server 61
 - Border Between
 - Moving 59
 - Both Directions 211
 - Bothway 216
 - BP 256
 - bps 357, 594
 - Branch 250
 - Branch network 250
 - Branch Prefix 250
 - Branch Support 899
 - Brazil 196
 - Brazil Only 277
 - Brazilian 831
 - Brazilian Double-Seizure 204
 - Brazilian Portuguese 831
 - Break Out 440, 566
 - set 770
 - Break Out Dialing 770
 - Breakout Dialing 794
 - BRI 201, 657, 702, 703
 - BRI PSTN 657, 702
 - Bridge Appearance Button State 668
 - Bridged 656, 657, 661, 662, 664, 665, 666, 667, 668, 671, 676, 677, 683, 693, 695, 696, 697, 698, 700, 704, 706
 - Bridged Appearance 508, 567, 600, 656, 657, 661, 662, 664, 665, 666, 667, 668, 671, 683, 693, 695, 697, 698, 706, 762
 - bridged appearance button follow 667
 - Bridged Appearance Button Indication 668
 - bridged appearance button shows
 - user 657
 - Bridged Appearance Buttons 657, 661, 662, 664, 666, 667, 668, 693
 - Bridged Appearance Example 664, 665, 666
 - Bridged Appearance User 661, 664, 665, 666, 667
 - bridged appearance user makes
 - call 665
 - bridged appearance user returns 665
 - Bridged Appearances Treated 667
 - Bridged Call 664, 666, 695, 700
 - Holding 693
 - Bridged User Makes Call 665
 - Broadcast 478
 - broadcast address
 - LAN 780
 - Broadcast IP Address 118
 - Browser/FTP 334
 - browsing
 - internet 780
 - Non-Standard 365
 - Non-Standard Port Numbers 365
 - BT Relate 1100 256
 - BT SIN 227
 - conforming 256
 - BT X25 166
 - BtnVu 643
 - Bundled/Multilinked 342
 - Busy 466, 568, 576, 600, 609, 635, 638, 639, 649, 653, 661, 670, 671, 696, 703, 704, 706
 - contains 905
 - exchange gives 166

Busy 466, 568, 576, 600, 609, 635, 638, 639, 649, 653,
661, 670, 671, 696, 703, 704, 706
 set 268
 Turning 441
Busy Controls 758
Busy Not Available 772
Busy on Held 568, 696, 704, 706
busy signal 166
 user 441, 568
Busy Status 704, 706
Busy Subscriber 204
 Call Completion 905
Busy Tone 326
Busy Tone Detection 149
Busy Wrap Up 327
BusyH 327, 568
BusyOnHeld 441
Button 201
 3A 747
 Editing 290
 Inspect 395
 Setting 511
 Use 2A 747
button during 766
button follow 671
button includes 519, 524
Button Indication 657, 679
button label 679
button labelling options 515
Button No 290
BUTTON PROGRAMMED 511, 513
Button Programming 201, 509, 688, 701
 Select 698
Button Programming Actions 297
Button Programming Manual 290, 656
button receives
 call 657
button requires
 user 634
Button via
 Programming 511, 513
buttons allow 706
 user 657
buttons display 704
buttons show
 user 657
Buttons Treated 661
Buttons Using 698
Buttons Using IP Office Manager
 Programming 509
By Name 800
By Number 462

C

C/F LED
 Extinguish 499
c711
 Small Office Edition 129
c723 129
CA 86, 563
calculate 334
 Committed Burst 354
Calendar Date 110
Call Alerting Scenarios 288
Call Answered 659, 664, 675, 680, 693

Call Appearance 195, 508, 526, 532, 538, 539, 542, 546,
557, 563, 565, 567, 578, 582, 586, 589, 591, 600, 609,
616, 622, 634, 656, 657, 659, 660, 661, 662, 664, 665,
666, 667, 668, 670, 676, 679, 680, 683, 686, 687, 688,
690, 692, 693, 695, 696, 697, 698, 701, 704, 706
Call Appearance button 457
Call Appearance Button Indication 662
Call Appearance Button State 662
Call Appearance Buttons 657, 659, 661, 662, 665, 667,
668, 680, 683, 686, 688, 690, 693, 695, 701, 704, 706
 Reserving 696
Call Appearance Buttons Treated 661
Call Appearance Example 659, 660
Call Appearance User 664, 665, 666
Call Appearance Width 542, 563, 567, 586, 622
call arrives 670
 line 661
Call Bar
 Outgoing 765
Call Barring 703, 737
Call Barring options 76
Call Between Colleagues 666
Call By Call 223
Call By Call chooses 224
Call By Call reduces 224
Call Center 770
Call Center Agents 770
Call Center Hot Desking 771
Call Center Mode 528
Call Completion 204
 Busy Subscriber 905
Call Continues Alerting 690
Call Cost 204
 Set 723
Call Cost Markup
 Applying 723
Call Cost Mark-Up 905
Call Count 704
Call Coverage 656, 657, 661, 670, 671, 672, 676, 683,
695, 697, 701, 704, 706
Call Coverage Appearance 656, 671, 672, 676, 683, 695
Call Coverage Appearance Buttons 683, 695
Call Coverage Button Indication 672
Call Coverage Button State 672
Call Coverage Example 670
Call Coverage Treated 671
Call Data Tagging on Transfer Actions 899
Call Detail Recorder Communications 187
Call Details Record 875
 send 187
call follows
 user 671
Call Forwarding All 569
Call Handling 706
Call Handling Changes 704
Call Held 666, 680, 697, 704
Call Intrude 570, 739
Call Intrude attempt
 user 442
Call Intrusion 767
Call List 547, 548, 549, 570
Call Listen 443, 571
Call Log 704
Call Park 572, 625, 626, 739
 Other Extension 573
Call Park To 573
Call Pickup 444, 574, 575

- Call Pickup Any 444, 574
- Call Pickup Extn 444
- Call Pickup Group 445, 575
- Call Pickup Line 445
- Call Pickup Members 446, 575
- Call Pickup User 446
- Call Presentation 302
- Call Proceeding 425
- Call Progress 430
- call progress signalling 284
- Call Put on Hold 665, 706
- Call Queue 576
- Call Queued 447
- Call Record 440, 576
- call recording 676
- Call Redirection During Fallback 317
- Call Route 349
- Call Sender 905
- Call Sequence
 - corresponding 495
- Call Splitting 869
- Call Status 103, 697
- Call Status Application 905
- Call Steal 448
- Call Steal user 560
- Call Tagging 739
- Call Taken Off Hold 665, 666
- call timing 693
- Call Tracing
 - User 736
- Call Transfer Announcements 899
- Call Types Blocked 752
- Call Types Forwarded 760
- Call Types Redirected 754
- Call Waiting 326, 661, 690, 704, 706
- Call Waiting Off 449, 578
- Call Waiting On 449, 578
- Call Waiting setting 309
- Call waiting settings 661, 706
- Call Waiting Suspend 449, 579
- Call Waiting Tone 828
- Callback 334
- Callback CP 342
- Callback Mode 782
- Callback Telephone Number 334
- Callback When Free 794
- Call-by-call 223
- Call-by-call table
 - number 223
- called Record Greeting 440
- called/calling 738
- Caller Display 828
- Caller Display Type 828
- Caller ID 275
 - Blocking 455
- Caller ID Information 256
 - Delay Waiting 196
- Calling 309
 - 5-second 867
 - Directory System Agent 175
 - Hunt Group 446
 - ID 425
 - Number 867
 - Number/Incoming Trunk Access Code 867
 - Parking 742
 - Party Information 185
 - Reclaiming 448
 - Routing 406
 - Sales 329
 - set 223
 - Transferring 764
- Calling Party Information
 - Mobile Twinning 185
- Calling Party Number 214
- CallIntrude 739
- CallListen 443
- CallPickupAny 444
- CallPickupGroup 445
- CallPickupLine 445
- CallPickupMembers 446
- CallPickupUser 446
- CallQueue 447
- CallRecord 447
- Calls 560, 570, 571, 574, 575, 578, 579, 584
 - Sequential 606
 - Transferring 704
- Calls Alerting 657, 664, 667, 671, 675, 676, 680, 683, 686, 688, 696, 697, 704
 - button 690
 - Coverage 670
 - User 690
- calls direct 704
 - user's 661
- Calls Directly
 - Routing 406
- Calls forwarded 671
- calls ringing 671
- calls routed 671, 674, 693
 - user 688, 695
- Calls That Ignore 688
- CallWaitingOn 449
- CallWaitingSuspend 449
- Can Intrude 277, 571, 693
 - subject 448, 560, 570, 590
- Can Trace Calls 623, 736
- Canada 809
- Canadian French 800
- Cancel 123
 - Follow Me 472
 - ringback 743
- Cancel All Forwarding 450, 579
- Cancel button
 - Selecting 70
- Cancel Leave Word Calling 580
- Cancel Ring Back When Free 450, 580
- CancelCallForwarding 450
- CancelRingBackWhenFree 450
- cancels forwarding 475
 - all 477
- Cannot 201, 511, 519, 526, 536, 548, 549, 557, 560, 570, 571, 583, 590, 602, 606, 634, 638, 639, 662, 668, 675, 676, 677, 701, 704, 706
 - set 628, 740
 - use 693
- Cannot Be 201, 511, 519, 526, 548, 549, 557, 560, 570, 571, 590, 602, 606, 628, 634, 638, 639, 662, 668, 675, 676, 677, 693, 701, 706
- cannot be answered 676
- cannot be called 258
- cannot be forwarded 473
- Cannot Be Intruded 571, 706, 739
- cannot forward 737
- cannot retrieve 706

Cantonese 800
 Card 164
 Card/Module 195
 Carriage Return 875
 carrying
 VoIP 354
 Case 515, 516, 612, 620, 652
 Castelle Fax Server Support 899
 cause 338
 IP Office 72
 login 121
 Manager 121
 CBC 770
 CBC/CCC Agents 330
 CCBS 204
 CCC
 consume 770
 CCP 342
 CD 260
 Insert 27
 open 27
 CDR 875
 generate 867
 receiving 187
 type 187
 CDR produces 869
 CDR Record Fields 867
 CDR Record Formats 879
 CDR Records 875
 internal 187
 CE 773
 Center Mode 528
 Central System 309
 Centralized Voicemail 196
 Centrex 196
 Centrex service 603
 Centrex Transfer 603
 complete 766
 performs 766
 Centrex Transfer Button Operation 766
 Centrex Transfer on IP Office 766
 Centrex Transfer Operation
 Analog Extensions 766
 Centrex Transfer Short Code Operation 766
 Centrex VMWI 196
 cer 100
 Certificate Authorities 86
 Certificate Checks 86
 Certificate Import Wizard 86
 Certificate MMC 86
 Certificate Offered
 IP Office 121
 certificate store 121
 all 86
 Certificate Store Export 86
 Certificates 899
 Certificates – Current User Folder 86
 CF TII 149
 CFG 130
 cfg file
 Manager PC 75
 cfg files 75
 CFrwd 569
 Chain Store Mangement 856
 Challenge Response Authentication 181
 Change Directory

 selecting 118
 Change Passwords 67
 Change Universal PRI Card Line Type 220
 Change Working Directory 118
 Changes 509, 511, 513, 515, 516, 542, 563, 567, 569,
 583, 586, 612, 613, 622, 642, 643, 646
 Changing 118
 characteristics 250
 Column Widths 54
 Companding LAW 166
 E911 256
 How 56
 Initial 65
 Initial Discovery Settings 65
 Installed Applications 27
 IP Office 108
 Locale 149
 Manager Language 36
 Manager PC 403
 PC Registry Settings 403
 Position 56
 Services Base TCP 31
 Size 59
 TCP 115
 timeout 275
 Unit/Broadcast Address 31
 Voicemail Type 164
 Windows Registry Settings 121
 Channel 164
 Maximum No 334
 Minimum No 334
 Number 226
 Outgoing 226
 Channel Allocation 204
 Channel Monitor 450, 581
 Channel Name 201, 677
 Channel Reservation 164
 channel signaling 220
 Channel Type 782
 Channel Unit 220
 Channels 677, 702
 CHAP 382
 Chap Challenge Interval 382
 CHAP during 341
 Character 201
 character encoding 131
 character follows 867
 characteristics
 change 250
 Charge 334
 Advice 723
 ISDN Advice 166
 charge during 905
 Charge Unit 204
 Line 723
 Check Request DNS 781
 Check User Call Barring 408
 Checking
 Local IP Address 365
 Modem Enabled 488
 MultiLink/QoS 789
 Music 746
 Remote IP Address 365
 Checks level 86
 CHI 204
 Chile 810

- China 210
- Chinese Simplified 838
- ChMon 581
- chs 811
- cht 838
- CIR 354
- Circuit Id
 - Outgoing 867
- Circular 325
- Circular Group 325
- Cisco 782
- Classic/Comfort icon 558, 565, 570, 574, 575, 587, 591, 592, 598, 600, 604, 611, 614, 615, 617, 620, 630, 635, 637, 638, 639, 649
- Clear 511, 513, 564, 582, 583, 584, 624, 632, 636
- Clear Call 582, 741
- Clear Channel 64K 216
- Clear CW 452, 582
- Clear Hunt Group Night Service 317, 583
- Clear Hunt Group Out
 - Service 453, 583
- Clear Hunt Group Out Of Service 317, 583
- Clear Quota 454, 584
- Clear-Back 204
- ClearCW 452
- ClearHuntGroupNightService 453
- ClearHuntGroupOutOfService 453
- ClearQuota 338
- CLI 149
 - match 599
- CLI Routing
 - existing 899
- CLI Routing Action
 - replaces 899
- CLI signalling 149
- CLI Type 904
- clicking
 - Add 138
 - OK 181
 - Run STUN 152
- CLID 676
- Client 334
 - according 100
- Client Certificate Checks
 - according 100
- Client IP Office Certificate Store 100
- Clock Quality 226
- Close Configuration 115
- Close Configuration/Security Settings After 117
- Close Configuration/Security Settings After Send 117
- Close Manager 899
- Close Security Settings 141
- closing 141
 - Manager 899
- ClrCW 452, 582
- cn 175
- CnfMM 585
- CnfRV 454, 585
- CnLWC 580
- Cnslt 585
- CO 220
- Code 201
 - Telephone Number 73
- Code Dialed 867
- Code Features 297
- Code Field Characters 425
- Code Fields 408
- Code List 373
- Code Matching Examples 432
- Code Programming
 - Small Community Networks 798
- Code Toggles 478
- Code Used 373
- codec 250
- codecs 905
- codes beginning 430
- Collapsing
 - Appearances 692
 - Appearances Example 692
- Colleague 657, 664, 665, 666, 670, 693
- Colleague's Phone 664, 666
- Collect 164, 652
- collect Voicemail 652
- Collective 309
- Collective Group 325
- Colombia 812
- Colors 27
- Columbia 744
- column heading 45
- Column Widths
 - Changing 54
- Columns 45
 - Customizing 54
- Columns Displayed
 - Customizing 54
- COM Port 341
- Comfort phones 638
- Comma Separated Variable Text Files 73
- Committed Burst
 - calculate 354
- Committed Information Rate 354
- Common Branch Prefix 250
- Common Branch Prefix Leading Digit Routing 250
- Communication 45
- Compact Business Center 770
- Compact Contact Center 770
- Compact DECT 905
- Compact Flash Card 181
- Compact Mode 295
- Companding 828
- Companding LAW
 - Changes 166
- companding method 166
- compared 152
 - LCR 905
- complete 164
 - Centrex Transfer 766
 - Dialing 331
- complete dialing 403
- complete ringing 309
- Compression Mode 382
- computer' 86
- Computers 342
- Condition Code 875
- Conf 454, 584
- CONF HOLDER 275
- conferenc 502
- Conference Add 454, 584
- CONFERENCE button
 - Pressing 660, 692
- Conference Calls 767
- Conference Capability 767

Conference Center 767
 Book 268
 Conference Center IP Address 268
 Conference Center URL 268
 Conference Handling 768
 Conference Meet Me 585, 899
 Conference Meet Me button 899
 pressing 768
 conference parties 767
 Conference Resources
 Other Use 767
 Conference Starts 660
 Conference Starts/Call Appearances Collapse 692
 ConferenceAdd 454
 Conferences 349
 Book 295
 DSP 767
 Ending 767
 Recording 767
 conferences involving 10 767
 conferences totaling 767
 conferencing 693
 Conferencing Center 693
 Conferencing Overview 767
 Conferencing Tone 166, 693, 700
 config 67
 Configuration
 Erasing 78
 Loading 67
 Saving 75
 Sending 76
 Configuration Icons 59
 Configuration Interface
 Altering 59
 Configuration Mode 45
 Configuration Mode Interface 44
 Configuration Mode Screen Elements 45
 Configuration onto PC
 Saving 75
 Configuration Received
 Saving 75
 Configuration Settings 45
 Revalidating 58
 Configuration Stored
 Loading 67
 Configurations 462
 Configure Preferences 295
 configuring 295
 Access 858
 IP Office 859
 Line Appearances 201
 Manager 70
 Confirm 164
 confirm routing 31
 conforming
 Belcore 256
 BT SIN 227 256
 CONN 275
 Connected Call 742
 Existing 327
 Connecting
 IP Office 72
 IP Office 3.2 31
 Manager 31
 SES 899
 WAN 352
 Consult 585
 consume 220
 CCC 770
 Contact 250
 Internet 365
 Windows 2000 Server Active Directory 175
 Contact Information 67
 Contact Information Check 67
 ContactStore 31
 IP Office application 349
 contains 334
 Busy 905
 Line Renumber 905
 Contains User 862
 Continue 326
 continue dialing 428
 continue ringing 277
 control
 auto attendant records 863
 IP Office's System Password 858
 control outgoing external 144
 Control Unit
 IP Address 789
 selected 152
 timeouts 334
 type 780
 Voice Compression Card 788
 Control Unit checks 334
 Control Unit IP
 including 152
 Control Unit on LAN1 152
 control unit runs 905
 Control Unit's LAN1 78
 converts 226
 URL 163
 copy 130
 IP Office Manager 67
 IP Offices 109
 Manager 86
 Phone Manager application 268
 Voicemail 314
 Corrections 196
 corresponding
 Call Sequence 495
 IP Protocol 365
 Manager application 105
 Managers 86
 RingType1 495
 corresponds 546, 640, 642
 IP Office 642
 Cost Per 723
 Cost Per Charging Unit 204
 Country 175
 according 212
 set according 212
 Country Locales 800
 Cover 656, 657, 661, 662, 668, 671, 672, 677, 683, 692, 695, 698
 User 670
 User Answers 670
 Coverage 508, 586, 600, 642, 657, 671, 672, 696, 698, 899
 Call Alerts 670
 Coverage Appearance 586
 Coverage Appearances 297
 Coverage window 288

- Covered User 657, 670, 671, 672, 683, 695, 698
 - Call 670
- covered user alerting 683, 695
- Covering
 - Extension 288
 - User 288
- Covering Extensions 288
- Covering User Answers 670
- covers 516, 586
 - IP Office 508
- CPark 572
- CPE 220
- CpkUp 444, 574
- CRAM-MD5 181
- CRC 220
- CRC Checking 220
- Create Configuration tool 72
- Create New Config 72
- Create New Configuration 50
- Create New Record 50
- Create Offline Configuration Wizard
 - during 861
- Create Offline Configuration Wizard stage
 - template 861
- cross
 - firewall 364
- CSM only 856
- CSU Operation 220
- CSV 250
 - set 131
- CSV file
 - display 250
- CSV File Formats 73
- CTI 556, 557, 559, 560, 561, 580, 585, 619, 621, 623, 627, 643
- Ctrl key 210
- Currency 204
- Current Cadence 840
- Current Configuration 899
 - Loading 67
- Current Frequency 828
- Current User 462
- Current User Certificate Store 121
- Currently IP Office Manager 98
- cust 492, 636
- Custom 502
- Custom Firewall Entry 364
- Custom Label 515
- Customer Premises Equipment 220
- Customize Columns 54
- Customize Locale Settings 149
- Customizing 149
 - Columns 54
 - Columns Displayed 54
 - set 813
 - Text Labels 515
- CW 457, 589
- CWOff 449, 578
- CWOn 449, 578
- CWSus 449, 579
- Cyrillic 832
- D**
- D3K1 587
- D4 220
- D56K 588
- D64K 588
- Daily
 - Range 338
 - set 338
- damage
 - IP Office 773
- dan 814
- Danish 800
- DAP 175
- Data 334
- Data 56K 345
- Data 64K 345
- Data Call 334, 588, 594, 595
- Data Channel 780
- Data Link Connection Identifier 354
- Data Packet 342
- Data Pkt 342
- data producing 86
- data relating
 - unit 70
- Data Routing
 - Overview 780
- Data Settings 78
- Data Tagging 899
- Data V110 345
- Date 875
- Date Format 187
- Date Record 875
- Day 338, 584
 - Time 645, 747
- Day/Month 866
- dB 216
- D-channels 220
- DCLIs 789
- DCW 457, 589
- DDI 698, 899
- DDI Numbers 899
- DDI System 899
- De 354
- deciding
 - TEI's 204
- DECT 265
- DECT Line ID 265
- de-DE 36
- Dedicated T1/PRI ISP Link 782
- Default All button
 - Advanced 212
- Default Blank Call Routes 345
- default companding 435
- Default Currency 166
- Default Message Waiting 828
- Default No Answer Time 166, 701
- Default Ring 745
 - selecting 495
- default ringing tones 745
- Default Route 782
- Default Service 86
- Default Value 782
 - occurs 350
- DefaultRing 277
- defaults
 - MWI 258
 - On selects 744
 - UK English 800
- define 334
 - DTMF key 863
 - ICLID 785

define 334
 WAN 340
 Definity 465, 595
 Delay 123, 657, 662, 668, 672, 674, 677, 679, 683, 688, 690, 693, 695, 700, 701
 set 277
 Delay Count 428
 Delay Dial 216
 Delay End 216
 delay following 166
 Delay Time 408
 Delay Waiting
 Caller ID Information 196
 Delayed Ring 683
 set 688, 695
 use 688
 Delayed Ring Preference 277, 683, 688, 690, 701
 Delayed Ring Preference setting 688
 Delayed ringing 277
 Delete 67
 Delete Contact Information 67
 Delete Entry 50
 Delete Incoming Call Route 107
 Deleting
 Entry 56
 IP DECT 236
 Delta 770
 Delta Server 181
 Delta Server application 403
 Delta Server Failure 181
 Delta Server Operational 181
 Denmark 744
 Deny/ClearCall 452
 Depending
 dongle 378
 DER 86
 DES 383
 DES CBC 384
 DES_40 105
 DES_56 105
 DES-40 86
 DES-56 86
 describes 50
 Manager 30
 deselected 302
 Deselecting
 Enable Time Server 149
 deskier 277
 deskiers 770
 desking 462, 509, 697
 desking settings 771
 desking user 771
 Destination
 Twinning 297
 destination exists 370
 Destinations
 profile specifying 361
 set 181
 Details Pane 45
 Details Pane Actions 56
 Details Toolbar 50
 Determining
 User's Busy Status 762
 deu 818
 Device ID 181
 Device Manager menu 857
 Device Number 253
 Device Type 256
 Device Version Numbers 899
 DH Group 383
 DHCP 31
 addresses 780
 IP Office 237
 starting address 152
 DHCP Client 163
 DHCP IP Addresses 152
 DHCP Mode 785
 DHCP Server 163
 DHCP Server on LAN1 152
 DHCP/BOOTP 31
 Dial 660, 662, 668, 671, 677, 690, 693, 703, 704
 Dial 3K1 456, 587
 Dial 56K 456, 588
 Dial 64K 588
 Dial By Name 794
 Dial CW 589
 Dial Delay Count 166
 Dial Delay Time 428
 Dial Delay Time expiring 432
 Dial Direct 589
 Dial Direct Hotline 431
 Dial Emergency 274, 590
 Line Group ID 422
 respond 422
 Dial Emergency Short Codes 459
 Dial Guard
 Outgoing 216
 Dial In 789
 Dial In Authorization 341
 Dial In On 286
 Dial In Service 789
 Dial In Tab 781
 Dial Inclusion 460, 590
 Dial Intercom 288, 591
 Dial Paging 592
 Dial Physical Extn 421
 Dial Physical Extn By ID 593
 Dial Physical Extn By Number 593
 Dial Speech 463, 594, 618
 Dial Tone 561, 601, 637, 760
 Dial V110 594
 Dial V120 595
 Dial Video 596
 Dial/0 425
 Dial3K1 373
 Dial56K 373
 Dial64K 373
 DialCW 457
 DialDirect 458
 DialDirectHotLine 458, 703
 Dialed Number 875
 DialEmergency 373
 DialExtn 459
 DialIn 340
 DialIn window 340
 DialInclusion 460
 Dialing Prefix 359
 Adding 738
 Dialling Timeout 802
 DialP 462, 593
 DialPhysicalExtnByNumber 462
 DialPhysicalNumberByID 462

- DialSpeech 373
- DialV110 373
- DialV120 373
- DialVideo 373
- DID 201, 698
 - result 446, 575
- DID call 446
- DID routing 138
- differing
 - Telephone Number 408
- DiffServ
 - IP Office supports 152
- DiffServ Code Point 152
- DiffServ QoS 148
- DiffServe 152
- DiffServe Marking 250
- DiffServe Settings 250
- DiffServer 250
- DiffServer Settings 250
- Digital Station 256
- Digital Station V2 146
- Digital Trunk Clock Source Change Alarm 899
- Digital56 357
- Digital64 782
- Digits 201
 - Matching 196
- digits following 406
- Dir 359, 516, 598
- Dirct 458, 589
- Direct 326, 519, 589, 597, 651
- direct call 794
- Direct Hot Line 458
- Direct Inward Dial 220
- Direct Media 349
- Direct Remote Access 785
- Directed Call Pickup 597
- Directed Call Pick-Up 794
- Directed Pickup 597
- Direction 211
- Directories 268
 - selecting 118
 - Working 118
- Directory 516, 548, 549, 598
- Directory | Directory Entry 359
- Directory Access Protocol 175
- Directory Entry
 - creates 175
- Directory Name Matching 738
- Directory System Agent
 - called 175
- Disable
 - StaLZS 382
- Disable Account 86
- Disable Account creates 98
- Disable ARS Form 408
- Disable CCP
 - set 342
- Disable Internal Forward Busy 465
- Disable Internal Forward Unconditional 464
- Disable Internal Forwards 464
- Disable Speakerphone 899
- Disabled 481
 - BOOTP 146
 - IP Office's 747
- Disconnect 309
 - Outgoing 216
 - tone disconnect clearing 166
- Disconnect Clear 258
- Disconnect Guard
 - Outgoing 216
- Disconnect Pulse Width
 - selected 258
- Disconnect Tone 828
- Disconnected Signal Error 216
- discover 856
 - IP Office 65
- Discovery 118, 152
- Discovery Addresses 65
- Displ 465, 595
- Display 781
 - AOC 723
 - CSV file 250
 - Withheld 275
- Display All 52
 - selecting 509
- Display All Buttons
 - selecting 290, 509
- Display Charges
 - User 723
- display existing ports 782
- display existing routes 782
- Display Mode 528
- Display Msg 465, 595
- Display Name 832
- displays calling 738
- Displays HdSet 615
- Displays HfAns 620
- Displays LIST 570
- Displays S1 630
- DISTINCT_HOLD_RINGBACK 275
- Distinctive Ringing 745
- distinguishing
 - IP Office 386
 - ringback 498
- Distributed Network 250
- diverted 497
 - Voicemail 441
- DLCI learning 353
- DLCIs 789
 - automatic learning 353
 - learning 353
 - Listen 353
- DLCIs arriving 353
- DMS100 220
- DND 466, 549, 600, 667, 676
 - Enabling 752
 - including 327
- DND Exception 751
- DND Exception Numbers List 751
- DNDOF 327, 600
- DNDOOn 327, 600
- DNDX 466, 599
- DNS 118
 - address 163
 - making 365
- DNS Domain 163
- DNS Server 365
- DNS Service IP Address 163
- DNS/Use DNS 163
- DNS/Use DNS forwarding 163
- DO 899

Do Not Disturb 462, 547, 548, 579, 593, 599, 600, 627, 635, 661, 667, 671, 676
 selecting 327
 Do Not Disturb Exception 466
 Do Not Disturb Exception Add 466, 599
 Do Not Disturb Exception Delete 466, 599
 Do Not Disturb Exception list 466, 599, 600, 635, 661, 671
 Do Not Disturb Exception Numbers List 466
 Do Not Disturb On 600
 Domain Name Server 163
 Domain Name Server addresses
 use 148
 Domain Name Service 31
 Domain Name System 175
 Done 317
 dongle 31
 Depending 378
 Dongle Serial Number 149
 dongles 378
 DoNotDisturbExceptionAdd 466
 DoNotDisturbExceptionDel 466
 DoNotDisturbOff 467
 DoNotDisturbOn 467
 Dont 492
 Door Phone 1/Door Phone 258
 DpkUp 597
 Drop 45, 601, 612
 10 334
 NetBIOS 365
 Drop button 601
 Program 288
 Drop disconnects 601
 Drop-Down 265
 Drop-Down List Options 350
 DS 78, 640, 642
 functions 465, 595
 DS16 V2 535
 DS30 535
 DSA 175
 DSCP 152
 DSCP Mask 152
 DSP
 conferencing 767
 DSP Conferencing 767
 DSpch 463, 594
 DSS 149, 511, 513, 519, 558, 565, 570, 574, 575, 587, 591, 592, 598, 600, 604, 611, 614, 615, 617, 620, 630, 635, 637, 638, 639, 649
 DSS key
 pressing 149
 DSS Link 519, 558, 565, 570, 574, 575, 587, 591, 592, 598, 600, 604, 611, 614, 615, 617, 620, 630, 635, 637, 638, 639, 649
 DSS Link LED 558, 565, 570, 574, 575, 587, 591, 592, 598, 600, 604, 611, 614, 615, 617, 620, 630, 635, 637, 638, 639, 649
 DSS Link Unit 519
 DSS Status 149
 DSS/BLF 794
 DSSN 435
 DT 525
 DTMF 211
 DTMF 2/3 270
 DTMF Dialing 425
 DTMF key 402
 defines 863
 DTMF Mark 196

DTMF pin/account 425
 DTMF signalling 256
 DTMF Space 196
 DTMFA 256
 DTMFA/FSKD 838
 DTMFB 256
 DTMFC 256
 DTMFD 826
 DTMFF 256
 Duration-minutes 875
 Duration-tenths 875
 minute 871
 Dutch 826
 DV110 594
 DV120 595
 Dvite 596
 dvpots.bin 146
 DWORD 403
 Dynamic Host Configuration Protocol 780

E

E&M 220
 E&M DID 220
 set 216
 E&M Switched 216
 E&M Switched 56K 220
 E&M Tie
 set 220
 E&M-TIE
 set 216
 E1 PRI 657, 702, 703
 E1R2 657, 702
 E1-R2 220
 E1R2 Edit Channel 211
 E1R2 Edit Channel Settings 211
 E1-R2 Options 210
 E911 459
 changes 256
 E911 Adjunct 422
 E911 adjunct detects
 error 421
 E911 Adjunct Settings 421
 Echo Return Loss 189
 e-commerce
 including 86
 EConf 31
 Edit 509, 515, 698, 702
 Edit buttons 274
 Edit menu 75
 effect
 NAT firewalls 152
 EIR 354
 Email 31
 send 270
 email address 181
 email application 314
 Email From Address 181
 Email Mode 270
 Email Reading 270
 emails 181
 Embedded Voicemail 361, 651
 appears 904
 running 863
 Embedded Voicemail Auto Attendant Short Codes 899
 Embedded Voicemail Installation Manual 401
 Embedded Voicemail Memory 401
 Embedded Voicemail on IP Office 4.0 270

- Embedded Voicemail Storage Alarms 181
- EMC 773
- Emergency 274, 590
- Emrgy 459, 590
- Emulation 465
 - set 747
- EN41003 773
- EN60950 773
- ena 805
- Enable Application Idle Timer 121
- Enable ARS Form 408
- Enable BootP 117
- Enable CDRs 187
- Enable DHCP Support 237
- Enable Faststart 232
 - non-Avaya IP Phones 260
- Enable Internal Forward Busy 468
- Enable Internal Forward Unconditional 468
- Enable Internal Forwards 468
- Enable intra-switch CDRs 187
- Enable Local Recording 401
- Enable NAT 152
- Enable Port
 - Serial Communication 117
- Enable RSVP 237
- Enable SNMP 181
- Enable Time Server 117
 - deselecting 149
- Enable User AOC Display 723
- Enable VoIP
 - sets 295
- enable/disable 342, 620
- Enabled'
 - Software 287
- enabled/disabled 899
- enabler
 - Small Community Networking 796
- Encapsulated Security Payload 384
- Enconf 31
- Encrypted Password 781
- End 334, 361
 - Conferences 767
 - IP Office 275
 - Outgoing 216
 - PVC 354
 - VoIP 425
- end prompts 357
- End Time 361
- Ends Overlap Send 232
- eng 800
- English 800
- Enhanced 214
- Enhanced Called Party Number 214
- Enhanced Conference Meet Me 899
- Enquiry Call Between Colleagues 666
- ens 834
- enter 511, 513, 515, 516, 556, 557, 558, 560, 569, 573, 587, 602, 604, 605, 607, 634, 637, 640, 642
 - Wait 561
- Entry 164
 - Deleting 56
 - Editing 56
 - Validating 56
- Entry List 361
- Entry Types 50
- entry/exit 700
- enu 800
- en-US 36
- enz 800
- Erase 78
- Erase Configuration 78
- Erasing
 - Configuration 78
 - IP Office Configuration 78
- Error 334
 - E911 adjunct detects 421
 - Jumping 58
 - timeout lapses 356
- Error Pane 59
 - hides 136
 - Show/Hide 50
- Error Pane Actions 58
- Error Threshold Counter 356
- ESF 220
- esl 810
- esm 825
- es-MX 36
- eso 812
- ESP 835
- esr 829
- ess 804
- establish 334
 - SA 383
- esv 842
- ETA 345
- etcissue.txt 27
- Ethernet 905
- Ethernet LAN 13
- ethernet LAN/WAN 905
- ETN 224
- ETSI
 - set 220
 - sets 222
- ETSI CHI 204
- EU24 519, 520
- EU24/EU24BL 832
- EU24BL 519
- Europe 386
- European 773
- European Union 773
- Event State 181
- Events 899
- Events Counter 356
- EVM 828
- Ex Directory 268
- Example 656, 659, 660, 661, 664, 665, 666, 667, 670, 674, 675, 680, 683, 686, 687, 688, 690, 692, 695, 702, 703, 704, 706
 - Joining 693
- example telemarketing 680
- exceeding
 - Bc 354
- Excel 131
- except 466
 - IP 256
 - IP500 859
 - Legacy Card Carrier 899
 - Small Office Edition 785
- except Call Waiting 905
- Excess Information Rate 354
- exchange 226
 - IPSec 31

- exchange allocating
 - TEI's 199
- exchange deciding 204
- exchange gives
 - busy 166
- exchange passing 138
- Exchange Type 383
- Excl 623
- excluding
 - Home Editions 27
 - T3 899
 - WAN3 72
- exe file 36
- Execute 445
- existing
 - CLI Routing 899
 - Connected Call 327
 - Flash Hook 766
 - IP Office 698, 859
 - IP Office firewall 385
 - IP Office SES 250
 - Rights Groups 84
 - ringback 580
 - Service Users 84
- Existing User 769
- Exit 511, 513, 515, 768
 - Manager application 135
- exp 131
- Expanded 899
- Expansion 72
- Expansion Module 152
- Expansion Port 253
- expects 250
 - H323 Proceeding 232
- expiry 314
- Expiry Date 899
- Expiry Reminder Time
 - set 110
- Expl
 - Selecting 511, 513
- Export 100
- Exporting 86
 - Settings 73
- Exporting Settings 73
- EXT O/P 489, 629, 630
- ExtendDirectLimit 275
- Extended Callback Control Protocol 342
- Extended CBCP 342
- Extended Length Name Display 738
- ExtendLDAPDirectLimit 275
- Extension 201
 - Covering 288
 - ID 352
 - matching 769
 - User 462
 - User Restriction/Rights 73
- Extension | Analog 258
- Extension | Extn 421
- Extension | IP DECT 265
- extension clicking 50
- Extension ID 350
- Extension ID's 422
- extension initiating 471
- Extension Length Routing 250
- Extension List 327
 - Ann 329

- Extension Number 453
- extension number sharing 232
- extension number specified 471
- Extension Number*Login Code 469
- extension rings 288
- extension specified 459
- Extension VoIP 899
- Extension*Login Code 469
- extension/users 288
- extension/VCM 72
- Extensions Renummer 137
- External 466
 - automatic recording 322
 - place 904
- External Call 751
 - Making 359
- External Calls 661, 693
- External Dialing Prefix 455
- external handling 341
- External Inbound Calls Only 772
- External Incoming 277
- External MOH 746
- External Music on Hold 746
- External Transfers
 - Barring 737
- Externally Forwarded Calls
 - Retrieving 751
- Extinguish
 - C/F LED 499
- ExtLogout 769
- extn 469, 602
 - set 744
- Extn Login 277, 602
- Extn Logout 469, 602
- Extn201 502, 652
- Extn201's Voicemail 502
- Extn202 78
- Extn205 443
- Extn221 649
- Extnlogin 769
- ExtnLogin button 769
- ExtnLogout 469
- Extra Bandwidth 334
- Extra BW Mode 334
- Extra BW Threshold 334
- Extrn 598

F

- F7 365
- facsimileTelephoneNumber 175
- Failure 152
- Fallback
 - set 226
- fallback during 339
- Fallback Extension 401
- Fallback Service 361
- Fallback Service list 339
- Fast Busy 828
- Fast Busy Tone 828
- Fast Flash 662, 668, 672, 677, 706
- Fast Forward 905
- Faststart 260
- Favor 149
- Favor RIP Routes 149
- Favour RIP Routes 149
- Fax 250
 - includes 905

- Fax Transport Support 232
- FC 152
- FCC 773
- FCN 530, 531
- FEATURE 520, 526
- Feature Button Labeling 515
- Feature Key 27
- Feature Key dongle 149
 - match 378
- Feature Key Server PC 149
- Feature/Action 317
- features/button 317
- features/button programming actions 317
- Feed 875
- FF 620
- Field Description 875
- FIFO 899
- File Directory Used 125
- File Menu 114
- File Sizes 64
- File Type 73
- Files 334
- files during 13
- Filters 365
- Find 704
- FINGER 364
- Finish 771
- Finland 744
- Finnish 800
- FIPS 140-2 86
- Firewall 905
 - create 365
 - cross 364
 - following 365
- Firewall Entry 365
- firewall facing
 - Internet 365
- Firewall IP Office Service Controls 905
- firewall list 364
- Firewall Profile 365
- Firewall/NAT Type 152
- firewalls 152
- First Call 659, 660, 664, 666, 686, 687, 690, 692, 693, 706
 - User 680, 683
- First Call Abandons 683
- First Call Alerting 686
- First Call Alerts 659, 683, 686
- First Caller Abandons 680, 683
- First Incoming Digit 216
- First In-First Out
 - order 899
- Fixed Length Numbering 72
- Flag 226
 - set 302
- flash 470, 662, 668, 672, 677, 704, 706
 - IP Office 766
- Flash Hook 216, 603
 - dialing 766
 - existing 766
 - set 766
- Flash Hook button 766
- Flash Hook Detect 216
- Flash Hook Generation 216
- Flash Hook Pulse Width 258
- Flash Pulse Width 196
- flash signal 766
- FlashHook 470
- Flemish 806
- Flutter 706
- FNE32 714
- Follow Me 462, 549, 579, 593, 604, 605, 627, 636, 661, 671
 - cancel 472
 - including 754
 - Number 754
 - set 472
- Follow Me Calls 763
- Follow Me Controls 754
- Follow Me Here 471, 549, 604
- Follow Me Here Cancel 472, 604
- Follow Me Number
 - entering 754
- Follow Me To 605, 754
- Follow Me To Number
 - set 754
- following
 - firewall 365
 - Incoming Call Route 242
 - IP Office 765
 - ISDN 905
 - Microsoft 121
 - T1 782
 - T1 PRI 782
 - toolbars 50
- Follow-Me 802
- FollowMeHere 471
- FollowMeHereCancel 472
- FollowMeTo 472
- FollowTo 754
- FolTo 472, 605
- Force Authorization 331
- Force Authorization Code 331
 - selecting 403
- Force Authorization Codes on All External Calls 403
- Force Authorization Codes on Specific Calls 403
- Force New Password 110
- Forced Account Code 331
- Forced Login 469
 - set 770
- Forced-Release 204
- Forcing
 - Account Code Entry 737
 - Authorization 403
 - Authorization Codes 403
- Foreign Exchange 220
- Form 741
 - ID 86
 - Quality 152
- Format Code 875
- Formatting
 - Options 187
- Forward 516, 547, 548, 549, 569, 579, 593, 601, 606, 607, 609, 610, 611, 627, 636
- Forward Hunt Group Calls 284, 661
- Forward Hunt Group Calls Off 473, 606
- Forward Hunt Group Calls On 473, 606
- Forward Internal 609, 610, 611, 751
- Forward Internal Calls 284
- Forward Multicast Messages 381
- Forward Number 473, 569, 606, 607, 609, 610, 611
 - uses 475

Forward on Busy 475, 579, 607, 609, 610, 611, 661, 706
 Forward On Busy Number 607, 609, 610, 751
 Forward On Busy Off 475, 609
 Forward On Busy On 475, 609
 Forward on No Answer 277, 579, 601, 607, 610, 611
 Forward On No Answer Off 476, 610
 Forward On No Answer On 476, 610
 Forward Unconditional 477, 547, 548, 569, 579, 606, 611, 661
 Having 284
 set 327
 Forward Unconditional Controls 756
 Forward Unconditional Off 477, 611
 Forward Unconditional On 477, 569, 611
 Forwarded Extension 738
 Transfers 764
 forwarded/diverted 288
 ForwardHuntgroupCallsOff 473
 ForwardHuntgroupCallsOn 473
 Forwarding 473
 Maximum Number 763
 selecting 327
 UDP 31
 Forwarding All 516, 549, 569, 611
 Forwarding tab 765
 Forwarding/Divert 288
 ForwardNumber 474
 ForwardOnBusyNumber 474
 ForwardOnBusyOff 475
 ForwardOnBusyOn 475
 ForwardOnNoAnswerOff 476
 ForwardOnNoAnswerOn 476
 ForwardUnconditionalOff 477
 ForwardUnconditionalOn 477
 FR 64
 FR_link 789
 fra 800
 Fragmentation Method 353
 Frame Learn Mode 353
 Frame Link Type 789
 Frame Management Type 353
 Frame Relay 789
 supporting 352
 Frame Relay Connection 789
 Frame Relay Management Type 789
 FrameRelay Tab 789
 France 149
 frb 807
 frc 800
 Free 478
 French 816
 German 36
 French Canadian 800
 Frequency 338
 Frequency Shift Keying 256
 Frequency/Channel 386
 FRF12 354
 FRFLMI 353
 fr-FR 36
 Friday
 00PM Monday 337
 Monday 361
 FRL 875
 FROM
 affects 243
 From Making Any External Calls 737

FSK 149
 FSK V23 149
 FSKA 256
 FSKB 256
 FSKC 256
 FSKD 810
 FTP 334
 Full Cone NAT 152
 Full Control 486
 Full Hot Desking 771
 Full Names 268
 Full Status Inquiry 356
 Full Status Polling Counter 356
 Func 277
 function 291
 DS 465
 user's 478
 Function | Reclaim 764
 function attempts 448
 Further Calls 309
 FwBNo 474, 607
 FwBOf 475, 609
 FwBOn 475, 609
 Fwd 760
 Fwd on Busy 758
 Fwd on No Answer 760
 FwdH 327, 606
 FwdNo 474, 607
 FwdOf 450, 579
 FwNOF 476, 610
 FwNOff 610
 FwNOn 476, 610
 FwUOf 477, 611
 FwUOn 477, 611

G

G.711 250
 G.711 ALAW 250
 G.711 ALAW 64K 250
 G.711 ULAW 64K 250
 G.711/G.729 250
 G.723 250
 G.723.1 6K3 MP-MLQ 250
 G.729 Simple 237
 G.729 VoIP 354
 G.729 VoIP creates
 20 354
 G711 ALAW 250
 G711 ULAW 250
 G729 788
 G729a 250
 GAP 905
 Gatekeeper 232
 Gatekeeper Settings 152
 Gateway 789
 Gateway IP Address 237
 Gateway Mac Address 385
 General 86
 General Availability 37
 General IP Office Features 899
 General Manager Changes 899
 General Settings 98
 General Template 864
 generate 337
 CDR 867
 German 800
 Germany 149

- Get 86
 - Security Settings 84
- Goes Off Hook 657, 662, 672, 677, 679, 680, 704, 706
- GOPHER 364
- GRE 365
- Greece 817
- Greek 800
- Green flash 706
- greyed 121
- Ground-Start 214
- Group 516, 549, 571, 575, 583, 592, 597, 598, 606, 612, 613, 614, 617, 618, 638, 639
- Group Admin 107
- Group button 319, 612
- Group Call Waiting 327
- Group Calls 327
- Group Details 106
- Group Disable 481
- Group Edit 107
- Group Enable 481, 549
- Group Fallback 317
- Group Fallback Controls 317
- Group Group 325
- Group ID 250
 - Outgoing 201
- group ID's 905
- Group Listen 478
- Group Listen Off 478
- Group Listen On 478
- Group Listen On/Off 899
- Group Member Availability 327
- Group Member Availability Settings 327
- Group Membership 83
- Group Message Waiting Indication 744
- Group Night Service 549, 638
- Group Operation 899
- Group Paging 614
- Group Pane 45
 - hides 136
 - right 136
 - Show/Hide 84
- Group Pane Actions 54
- Group Queue Settings 319
- group reaching 309
- Group Service States 317
- Group Settings 326
- group talks 869
- Group Types 327
- Group Voicemail 326
- Group/Account Code Call Recording Destination 899
- group1 175
- group1.cn 175
- GroupListenOff 478
- GroupListenOn 478, 613
- Groups 494
 - Outgoing 250
 - Overflow Time 309
 - X's 425
- Groups Names 309
- groups Voicemail Time 309
- GrpPg 614
- GSM Silence Suppression 166
- Guest 147
- H**
- H.323 63
- H.323 Discovery 31
- H.323 Signalling 31
- H.323 Status 31
- H.323 Trunk Support 899
- H<Group Name 275
- H323 Auto-create Extn 152
- H323 Auto-create User 152
- H323 Gatekeeper Enable 152
- H323 IP 38
- H323 Proceeding
 - expects 232
- H323 Progress
 - send 232
- H323SetupTimerNoLCR Software 275
- H450 232
 - set 796
- H450 Support 232
- handsfree 478, 548, 549, 565, 591, 613, 614, 624
- Handsfree/Monitoring 547
- Happens When 268
 - Hunt Group Members Becomes Available 319
- Hard Disk Space 27
- Hardware 341
- Hardware Support 905
- Hardware Template 862
- Haul Length 220
- Having
 - 3.2 31
 - Forward Unconditional 284
- HDB3 212
- HdSet 479, 615
- Header Compression 789
- Header Compression Mode
 - Set 789
- HEADSET 478, 680
- Headset button 478, 615, 620
- Headset Force Feed 899
- Headset Toggle 479, 615
- HeadsetToggle 479
- hear 392, 690, 700
 - IP Office conferencing 693
 - system's 746
- hear ringing 277
- hears ringing 690
- Held 334, 526, 530, 531, 539, 619, 631, 646, 661, 662, 665, 668, 671, 672, 675, 677, 697, 700, 704, 706
- held call 704
- Held Calls 661, 662, 665, 675
 - Retrieving 704, 706
- Held Validation 905
- Held/Parked Call Timeout 661
- Help menus 114
- her/his 502
- Hertz 802
- HfAns 620
- HGDis 327, 618
- HGEna 327, 617
- HGNS 453, 583, 638
- HGNS+200 638
- HGOS 453, 583, 639
- HGOS+200 639
- Hgroupname
 - adding 314
- hide 50
 - Error Pane 136
 - Group Pane 136
 - ID's 383

- hide 50
 - Navigation Pane 136
 - Service Base TCP Port 117
- Hide Options 295
- Hide/Show Error Pane 59
- Hide/Show Group Pane 59
- Hide/Show Navigation Pane 59
- HIDE_CALL_STATE 275
- Hiding 382
- Hiding Panes 59
- Hiding Toolbars 50
- High 408
 - set 100
 - Set IP Office Minimum Password Complexity 86
- Hist 704
- HMAC MD5 384
- HMAC SHA 384
- HMain 275
- Hold 454, 547, 548, 549, 615, 616, 631, 657, 659, 660, 661, 662, 665, 666, 667, 668, 672, 675, 677, 679, 680, 686, 687, 688, 692, 696, 697
 - Bridged Call 693
 - Pressing 704, 706
- Hold Call 479, 615
- Hold CW 480, 616
- Hold Elsewhere 661, 662, 665, 666, 667, 668, 677, 706
- Hold Here 662, 668, 672, 677, 693
- Hold key 454
- Hold Music 232, 616
- Hold Return 166
- Hold Timeout 166
- HoldCall 479
- HoldCW 480, 616
- HoldMusic 480
- holdmusic.wav 746
- holdmusic.wav file
 - look 746
- Holmdel 359
- holmdel,ou 175
- Home Editions
 - excluding 27
- Hong Kong 819
- Hook Persistency 258
- Hook Station 483
- Host System 105
- hosting 152
 - IP Office 27
 - Voicemail Pro 794
- Hot Desking 697, 754
- Hot Desking Examples 771
- Hot Desking login 754
- Hot Desking/Logging On 706
- Hot-Desking 284
- Hot-Line Dialing 431
- hot-swappable 904
- Hours 317
 - Working 268
- Hours Route 361
 - Out 408
- Hours Routing 406
- Hours Time Profile 398
 - Working 268
- Hours User Rights
 - Out 268
 - Working 268
- Housekeeping 899
- Housekeeping tab 899
- How 326
 - Changing 56
- How Many Calls Can 319
- However BOOTP 146
- However QSIG 796
- HSales 744
- HTTP 31
- hun 820
- Hungarian 800
- Hungary 744
- Hunt Group 392, 575, 578, 583, 597, 606, 611, 612, 617, 618, 638, 639, 654
 - call 446
 - Sets 277
- Hunt Group | Call Waiting On 741
- Hunt Group Announcement 302
 - Recording 323
- hunt group call ringing 327
- Hunt group call waiting 309, 661, 704, 706
- Hunt Group Calls 327, 578, 611, 661, 704, 706
- Hunt Group Calls Off 473, 606
- Hunt Group Calls On 473, 606
- Hunt Group Disable 618
- Hunt Group Enable 494, 617
- hunt group exceeds 319
- Hunt Group Members Becomes Available
 - Happens When 319
- Hunt Group Memberships 770
- hunt group message waiting indication 744
- Hunt Group Messages 744
 - Accessing 314
- Hunt Group Operation 899
- hunt group recording 905
- Hunt Type 326
 - Set 329
- HuntGroup 73
- HuntGroupDisable 481
- HuntGroupEnable 481
- Hypertext Transfer Protocol 364
- Hz 828
- I**
- I800 224
- IANA 152
- lauto 565
- Iceland 744
- Icelandic 800
- ICLID 201, 674, 688, 693
 - define 785
 - IP Office waits 676
 - match 864
 - set 676
- ICLID numbers 599
- ICMP 365
 - sends 31
- ICMP Filtering 365
- ICR 107
- ICSeq 495, 640
- ID 250, 573, 593, 622, 648, 674, 693, 698, 702, 703
 - calling 425
 - Extension 352
 - forms 86
- ID 16 462
- ID 2010 573
- ID Numbers 425
- ID Prot 383

- identifies 781
 - IP Office 86
 - LCR 373
 - Manager 86
- ldial 591
- Idle Line Preference 679, 680, 683, 686, 688, 690, 692, 693, 701
- Idle Line Preference determines
 - user's 680
- Idle Line Preference Example 680
- Idle Period 334
- ID's 905
 - hide 383
- ie 250, 600, 635, 683, 704, 706
- IGMP 364
- Ignore 226
 - Alarm 319
- ignored during 73
- ignored during import 73
- IKE 383
- IKE Policies 383
- IMM Dial Guard
 - Outgoing 216
- Immediate 152, 657, 701
 - set 688, 695
- immediate ringing 277
- Implementation 86
- Implementing
 - IP Office Administration Security 86
- Import 378
- Import/Export 131
- IMPORTANT 13
- Importing 131
 - License Keys 378
 - Settings 73
- IMS 314
- In Firewall Profile 286
- In On 771
- In Queue Alarm 319
- In Queue Threshold 309
- In Service 250, 583
- In Time Profile 286
- In use 526, 530, 531, 539, 589, 609, 625, 649
- in/out 583
- Inactivity Timeout 250
- inc GSDN 224
- Inclu 460, 590
- Includes DHCP 148
- includes ringing 905
- Inclusion 590, 794
- Incoming
 - Calls 676
 - Outgoing 334
- incoming call alerts 288
- Incoming Call Route 201
 - Create 785
 - following 242
- Incoming call route records 349
 - users 863
- Incoming Call Routing 334
- incoming call routing occurs 242
- Incoming Caller Line Identification
 - uses 738
- Incoming Calls 201
 - ISDN 226
- Incoming CLI 242
- Incoming Group 201
- Incoming Group ID 236
- Incoming Line Group 138
- Incoming Number Short Codes 424
- Incoming Password 333
- ind 822
- Index 277, 598
- INDeX Level 10
 - Refer 277
- India 210
- indicated
 - IP Office 421
 - MAC 237
 - start ringing 490
- Indicates follow 745
- Indication 741
- Individual Coverage Time 670, 671, 695, 701
- Individual Coverage Timer 586
- Individual Hot Desking 469
- individual' 86
- Information Packet 425
- Information Protocol 364
 - Routing 370
- Inhibit Off-Switch 765
- Inhibit Off-Switch Forward/Transfer 765
- Inhibit Off-Switch Transfers 607
 - numbers 751
- Initial 334
 - Changing 65
- Initial Call 334, 660, 692
- Initial Discovery Settings
 - Changing 65
- Insert 164
 - CD 27
- Inside 317
- Inside Call Sequence 277
- Inspect 515, 619
 - button 395
- Inspt 619
- Install 295
- Installation Manager 857
- Installed Applications
 - Changing 27
- Installing
 - Manager 27
 - MIB 181
- instructs 425
 - IP Office 408
 - ISDN 736
- Insufficient 406
- INT Direct 866
- INT ISDN 866
- INT Process 866
- INT-Direct 873
- Integrated Management 856
- Integrated Management Control 67
- Inter Digit 216
- Interactive Button Menus 516
- Intercept Busy Tone 828
- Intercom 591
- Interconnect Number 253
- Interexchange Carrier Code 867
- Interface 86
- interlinking
 - Avaya 899
- Intermediate Digit Pause 196

Intermittent Flash 662, 668, 677, 706
Internal 466, 688
 CDR records 187
 set 297
Internal Auto-Answer 620, 688
Internal Call 792
Internal Data 780
Internal Forwards 464
Internal Modem Card 785
Internal Music on Hold File 166
Internal Twinning 904
Internal Twinning function 904
Internal Twinning Settings 297
International 406
international dialing 425
International Prefix 226, 703
Internet 337, 584
 browsing 780
 contact 365
 firewall facing 365
 including 175
 like 338
 routed 781
Internet Assigned Numbers Authority 152
internet email 245
internet email address 245
Internet Group Membership Protocol 364
Internet menu 364
Internet Relay Chat 364
Internet Service Provider 163
Internet Time 149
Internet" 782
Internet01 333
internet-based 86
interoperate 175
interoperation 175
INT-ISDN 874
INT-Process 875
Intranet 781
Intranet Service
 become 781
intra-switch 187
Intru 442, 570
Intruded 560, 570, 571, 590, 628, 675, 693, 701, 706, 739
Intuity 502, 651
Intuity Emulation 502
Intuity Emulation Mailbox Mode 314
Intuity Emulation Mode 502
Inverse Wink 706
involving
 10 767
Inwats 224
IP 118, 454
 allocates 78
 creating 782
 Enabling 905
 Except 256
 includes 780
 including 905
 names 163
 obtain 152
 outgoing 782
 uses 78
 working 792
IP 500 499
IP Address 163
 255.255.255.255 369
 Control Unit 789
 IP Office 440
 Leave 782
 local 152
 mask 369
 meeting 369
IP Address 192.168.42.3 440
IP Address Automatically
 Obtain 785
IP Audio Enabled license 295
IP DECT 50
 deleting 236
 during 237
IP DECT ADMM 237
IP DECT Extension 265
IP DECT Trunks 38
IP Device
 SIP Line Call 250
IP Extensions 260
IP Header Compression 342
IP Lines 425
IP Mask 78
IP Mask 255.255.255.0 78
IP Mask 255.255.255.0. 78
IP Office 500 905
IP Office 500 PRI Trunk Card 899
IP Office 500 System Unit 905
IP Office address 237
IP Office Admin 181
IP Office Admin CD 181
IP Office Admin Suite 905
 selecting 27
IP Office Administration Security
 Implementing 86
IP Office Administrator Applications CD 27
IP Office Analog DECT 905
IP Office application
 ContactStore 349
 re-connecting 100
IP Office Audit Trail 899
IP Office button 530, 531, 532
IP Office Button Programming Manual 290
IP Office CCC application 302
IP Office CDR 875
IP Office Certificate Stores 86
IP Office Client Certificate Checks 86
IP Office Conferencing Center 767
IP Office Conferencing Center application 268
IP Office Configuration 201
 Erasing 78
IP Office CSM 856
IP Office Date 488
IP Office Delta Server 740
IP Office Delta Server 5.2.5 723
IP Office Delta Server application 31
IP Office Delta Server SMDR 740
IP Office Directory 275
IP Office Directory Entries 275
IP Office DS 519, 536
IP Office DVD 27
IP Office Embedded Voicemail 27
IP Office Embedded Voicemail Installation
 refer 401
IP Office Express 585
IP Office Feature Key 149

- IP Office Feature Key Dongle 378
- IP Office Feature Key dongles 378
- IP Office Feature Key Server 149
 - running 378
- IP Office Feature Key Server application 378
- IP Office Features 149
- IP Office File 118
- IP Office firewall 250
 - existing 385
- IP Office Functions 13
- IP Office General Template 857
- IP Office Hardware Template 857
- IP Office Incoming Call Routes 242
- IP Office Installation 31
- IP Office Intuity 652
- IP Office IP DECT Installation
 - Refer 265
- IP Office IP500 454
- IP Office Key
 - Refer 195
- IP Office LAN 31
- IP Office LAN1 IP
 - traffic 31
- IP Office Mailbox Mode 270
- IP Office Manager 800
 - copy 67
 - starting 899
- IP Office Manager 6.1 117
- IP Office Manager application 800
- IP Office Manager Language 36
- IP Office Manager PC 899
- IP Office Manager supports 856
- IP Office Manager Use 86
- IP Office menu 31
- IP Office MIB 181
- IP Office Mode 314
- IP Office Monitor 793
- IP Office Monitor application 793
- IP Office negotiates 250
- IP Office Phone Manager application 744
- IP Office Professional Edition 38
- IP Office routing 243
- IP Office runs 105
- IP Office SCN 793
- IP Office Secure Administration 100
- IP Office Service 858
- IP Office Service Control 364
- IP Office Service Rights 107
- IP Office Service User 67
 - creates 858
- IP Office SES
 - existing 250
- IP Office Setting 858
- IP Office SIP 152
- IP Office Small Community Networking 164
- IP Office Small Office Edition 789
 - back 378
- IP Office SMDR 277
- IP Office SNMP 181
- IP Office SoftConsole 738
- IP Office Software Level 326
- IP Office Standard 454
- IP Office Standard Edition 454
- IP Office STUN 243
- IP Office supports 785
 - DiffServ 152
 - number 181
- IP Office System Discovery 70
- IP Office System Status 128
- IP Office System Status Application 31
- IP Office Systems 466
- IP Office TAPI 31
- IP Office Technical Bulletins 125, 904
- IP Office Time Profiles 899
- IP Office Unique System Administrator 858
- IP Office Unsecured Interfaces 86
- IP Office User Template 857
- IP Office Wireless 386
- IP Office Wireless.Net 386
- IP Office's settings 858
- IP Office's conference 739
- IP Office's DHCP 237
- IP Office's non-IP 767
- IP Office's non-IP interface 767
- IP Office's subnet 785
- IP Office's System Password 31
 - control 858
- IP Phones 515, 571, 613
- IP Port 187
- IP Protocol
 - corresponds 365
- IP Route 784
 - Create 781
- IP Search Criteria 118
 - Preferences 31
- IP Service 338
- IP subnet 152
- IP Trunk Fallback 373
- IP400 ATM4 196
- IP400 ATM4 Universal 196
- IP400 VCM 189
- ip401ng.bin 146
- IP403 461
- ip403.bin 146
- IP406 461
- IP406 V1 201
- IP406 V2 461
- ip406.bin 146
- ip406u.bin 146
- IP406V2 237
- IP412 461
- ip412.bin 146
- IP460 V2 152
- IP500 454, 585
 - except 859
- IP500 Analog 196
- IP500 Analog Trunk 196
- IP500 Licences 38
- IP500 PRI Trunk Channels 38
- IP500 PRI Universal 899
- IP500 PRI-U 220
- IP500 Universal PRI 220
- IP500 Upgrade Standard
 - adding 905
 - Professional 38
- IP500 VCM 905
- IP500 VCM 32 905
- IP500 VCM 64 905
- IP500 VCM Channels 905
- IP500 Voice Networking 220
- ip500.bin 146
- IPHC 382

IPHC and/or VJ 382
IPO 858
IPO BLF 31
IPO TAPI 31
IPO User
 match 858
IPO User TFTP 858
IPO User TFTP Password
 match 858
IPO Voice Networking 31
iPhone 175
IPSec
 exchange 31
IPSec Policies 384
ipwan3.bin 146
IRC 364
ISDN 587, 588, 596, 615, 623, 631, 644, 872
 following 905
 Incoming Calls 226
 instructs 736
 On Incoming Calls 226
 outgoing 204
 plan 425
 set 456
 Sets 456
ISDN Advice 277
 Charge 166
ISDN CC 872
ISDN Exchange 615, 623, 631, 644
ISDN Link Between IP Offices 781
ISDN Malicious Caller ID 623
ISDN MCID 277
ISDN messaging 204
ISDN Network Service 867
ISDN NSV 872
ISDN Only 723
ISDN Remote Access Example 785
ISDN Service Provider 482
isl 821
ISP 338
ISP during 339
ISPs DNS 365
issues arising 403
it's 121
ita 823
Italian 800
 Target 36
Italy 823
Item Name 127
Items Changed 127
it-IT 36
ITSP 250
ITSP Domain Name 243
ITSP Hosts 152
ITSP IP Address 243
itsp.com 250
ITSP' 152
IUSR 175
IVR Port
 set 258
IXC 875
J
Japan 744
JAS 598
Jason 598
Java 27

Java application 27
jbloggs@bloggs.com 314
job schedules 857
Joining
 Another Call 704
 Call 706
 Calls 693
 Example 693

K

KAR 598
Karl 598
Kbps 867
KBytes 384
keep-alives 152
Kerberos 175
Key Dongle Serial Number 905
Key Server 27
Key Server PC 149
key' 86
Keys 291
Know System Discovery 70
Know Units 70
Known IP Office File 118
Known IP Office Systems 904
Known System Discovery 70
Known Systems CSV file 70
Known Units button 904
Known Units file 70
kor 824
Korea 210
Korean 800

L

L2TP 382
 numbers 382
 originating 381
L2TP peer 381
L2TP|Tunnel 382
Label 162
 Line Appearance 195
Lamp Manual 195, 563, 567, 586, 622
Lamp Operation 656, 657, 697, 739
Lamp Operation Manual 508, 739
LAN 250
 address 780
 broadcast address 780
 PC 780
LAN Settings 250
LAN1 149
 IP Office 152
 LAN2 162
 supporting 336
 units supporting 336
LAN1 IP 149
LAN1 IP Address 780
LAN1 LAN Settings 152
LAN1 pool 152
LAN1/LAN2 63
LAN2 250
 LAN1 162
LAN2 H.323 148
Language Support 832
LAN's Service Set Identifier 386
Large 123
Last In-First Out 899
Last Number Redial 482

- Latin Spanish 800
- Layer 250
- layer-2 152
- layer-2 LAN 152
- layer-3 152
- LCP 382
- LCP Echo Timeout 382
- LCR 268, 703
 - compared 905
 - identify 373
 - sets 424
- LDAP
 - terminate 175
- LDAP Directory Synchronization 175
- LDAP Enabled 175
- LDAP Entries 275
- learning
 - DLCIs 353
- Least Cost Route 373
- Least Cost Route Short Codes 373
- Least Cost Routing 373
- Leave 502
 - Base Extension 769
 - IP Address 782
 - Metric 782
 - Night Service Fallback Group 329
- Leave Mail 323
- Leave Word Calling 580, 621
- LED 519, 679, 704, 706
- LED's 354
- Legacy Card Carrier
 - except 899
- Legal Requirements 746
- Licence 181
- License 164
 - License Key 73
- License | License 73
- License Keys 149
 - Importing 378
- license polling 31
- License Required 297
- License Server IP Address 31
- License Status 378
- License Type 378
- licenses enable
 - number 378
- Life 384
- Life Type 384
- LIFO 899
- LIFO/FIFO Mailbox Operation 899
- light/button 505
- Lightweight Directory Access Protocol 175
- like 86
 - internet 338
- Limit 461
 - 1000 275
 - Maximum Transmissible Unit 357
 - RTP 152
- limits specified
 - number 326
- LINE 520, 530, 531, 656, 657, 667, 671, 674, 675, 676, 677, 679, 680, 683, 692, 693, 695, 696, 697, 698, 701, 702, 703, 704, 706, 782
 - Alerting 688, 690
 - calls arriving 661
- Line 601 683, 693
- Line Appearance 508, 600, 620, 622, 656, 657, 661, 671, 674, 675, 676, 677, 679, 680, 683, 688, 690, 692, 693, 695, 696, 697, 698, 701, 702, 703, 704, 706
 - Line Appearance Alerting 674, 693
 - Line Appearance button 297
 - Line Appearance Button Indication 677
 - Line Appearance Button State 677
 - Line Appearance Buttons 657, 661, 676, 677, 679, 680, 683, 688, 690, 693, 695, 701, 703, 706
 - Line Appearance Example 674, 675
 - Line Appearance Hot Lines 703
 - Line Appearance ID 201, 677, 702
 - Line Appearance ID Numbers
 - Programming 702
 - Line Appearance ID's 905
- Line Appearances 211
 - configuring 201
 - label 195
- Line Appearances Treated 676
- Line Break 196
- Line Channels 782
- Line Goes Active 674, 693
- Line Group ID 138
 - Dial Emergency 422
 - specify 703
- Line Groups 138
- Line Held 675
- Line ID 622
- Line Name 677, 904
- Line Number 226
- Line Preference
 - Ringing 277, 679, 680, 683, 692, 695, 701
- line preference assigns 277
- Line Preference Example
 - Ringing 683
- Line Preference Order
 - Ringing 683, 695
- Line Programming
 - Outgoing 703
- Line Renumber 137, 702
 - contains 905
- Line Renumber tool 905
- Line Retrieved 675
- Line Reversal 744
- Line Settings 702
- Line Signaling 220
- Line Signaling Timers 212
- Line SubType 220
- line/trunk 216
- Linear 325
- Linear Group 325
- lines 138
 - Charge Unit 723
- lines dedicated 196
- LINE.x.y 782
- Link Control Protocol 342
- Link Integrity Verification Polling Timer 356
- LIST 461, 570
 - allows sorting 118
 - Sorting 125
- listed having 31
- Listen 250, 571, 613, 651
 - DLCIs 353
 - RIP-1 152
 - SNMP 181
 - system's 746

Listen 250, 571, 613, 651
 TCP 31
 UDP 31
 Listen On 613
 Listen Only 152
 Listen Port 175
 Listn 443, 571
 Lite 651, 828
 Lite/Pro 164
 Lite/Voicemail Pro 314
 LKE Policies 383
 LMI 356
 Loading
 Configuration 67
 Configuration Stored 67
 Current Configuration 67
 IP Office 118
 Local
 enabling 789
 IP addresses 152
 Local Account Name 381
 Local Account Password/Confirm Password 381
 Local Busy Tone 166
 Local Computer 86
 Local Configuration 381
 Local Dial Tone 166
 Local Hold Music 232
 Local IP Address 383
 checking 365
 Local IP Mask 365
 Local Machine 100
 Local Machine Certificate Store 121
 Local Number Length 250
 Local Operator 223
 Local Recording 401
 Local Telco 220
 Local Tones 250
 Local URI 250
 Locale Specific Behavior 828
 Locales 741
 Changes 149
 locales prefer 430
 locate
 HKEY_LOCAL_MACHINE/Software/Avaya/CCCServe
 r/Setup 403
 Locate IP Office Admin Suite 27
 Locked - Expired 110
 Locked - Idle 110
 Locked - Temporary 110
 Locked Setting 56
 Log 462, 667, 697, 698, 704
 Audit Trail 98
 Out 905
 Set IP Office Service User Password Reject Action
 86
 Log In 770
 Logged Off 770
 selecting 769
 Logged On 462
 Logged On/Logged Off 327
 Logging Off 667, 697
 logging/accounting 187
 logging/accounting software 187
 Logical LAN 784
 Logical LAN Connection 784
 login 569, 602, 604, 605, 607, 634, 770
 cause 121
 include 469
 set 750
 Login Code 469
 Login Code set 634
 Login Idle Period 771
 login sequence 277
 Logof 327, 602
 logon
 RAS Service 341
 long 338
 TLS 100
 Long CLI Line 196
 Long Ring Duration 216
 LONGER_NAMES 275
 Longest Waiting 754
 set 277
 Longest Waiting Hunt Type 325
 look 268
 holdmusic.wav file 746
 Loop Start 751
 Loop Start ICLID 196
 set 688
 Loopback 181
 Loops 751
 Loop-Start
 set 214
 Low 250
 Set IP Office Minimum Password Complexity 86
 Software 98
 Low Voltage 773
 low/in 232
 LSU 866
 LSU Expanded 866
 LSU-Expanded 879
 LSU-Expanded CDR Record Formats 879
 LVM Greeting 129
 LVM Greeting Utility 129
 LVMGreeting 129
 LVMGreeting.exe 129
 LWC 621
M
 M,otherMobile 175
 MAC 260
 indicate 237
 MAC Address 237
 Mailbox 326
 Recording 349
 Mailbox Access 350
 mailbox greeting 270
 Mailbox Operation 905
 Main 164
 Main Route 373
 Main Toolbar 72
 Maintenance 86
 Maintenance Short Code 747
 Make Conference Enquiry 660, 692
 make/answer 706
 make/receive 687, 899
 making
 DNS 365
 External Calls 359
 SIP 245
 Malicious Call Identification 905
 Manager 508, 697, 701

- mandatory recording 164
- Mandatory Voice Recording 164
- Manual 317
- manual editing 121
- Manual Exclude 623
- Manual Recording Mailbox 287, 576
- Manual Renumbering 702
- Manual Transfer 764
- Manual Transfer Methods 764
- Manually Controlling
 - Service State 317
- Manually Entered Options 350
- Manually Setting
 - System Time 747
- mask 152
 - IP Address 369
- match 548, 549, 558, 598, 648
 - 4621 519
 - CLI 599
- Match Data 365
- match exists 428
- Match Length 365
- Match Mask 365
- Match Offset 365
- matches 661, 662, 664, 665, 666, 667, 668, 693
 - Outgoing Group ID 703
- matches dialing 424
- Matching Examples 432
- matching Outgoing 201
- MA-UUI 872
- Max Calls 250
- Max CDRs 187
- Max Frame Length 353
- Maximum 338
- Maximum Call Length 455
- Maximum Channels 334
- Maximum Configuration 64
- Maximum Data Channels 780
- Maximum Flash Hook Time 828
- Maximum Inactivity 402
- Maximum Inactivity Time 402
- Maximum Inter Digit 216
- Maximum No
 - Channels 334
 - Set 782
- Maximum Number 334
 - Forwards 763
 - Twinned Calls 297
- Maximum Record Time 164
- Maximum Rights Groups 100
- Maximum Security 86
- Maximum Service Users 100
- Maximum Transmissible Unit
 - limit 357
- Maximum Two Analog Trunks 693
- Maximum Width 258
- May 2007 904
- MCID 482, 623
 - Activating 736
 - trigger 736
- MCID Activate 482, 623
- MCID Activate Button 736
- MCID Activate Short Codes 736
- MCID Call Tracing
 - Enabling 736
- MD5 86
- MDA 714
- MDI 152
- meaning
 - 24-hour 361
- Medium 250
 - Set IP Office Minimum Password Complexity 86
- Medium Security 86
- Meet Me 768
- meeting
 - IP Address 369
- Meet-me conferencing 38
- MegaCom 224
- MegaCom800 224
- MegaComWats 222
- member answers 326
- Member Availability 327
- Member Availability Settings 327
- memberof 175
- Members 453
- Membership Enabled/Disabled 327
- MENU 291, 511, 704
 - pressing 277
- Menu key 291
- Menu Bar 114
- Menu Bar Commands 114
- Menu button 511
- MENU key 511, 704
- Menu Options 401
- Menu Programming 291
- MENULocale 275
- Merge 86
- Message Associated User-to-User Signaling 867
- Message Authentication 86
- Message Waiting 802
- Message Waiting Indication 744
- Message Waiting Indication Type 828
- Message Waiting Lamp 265
- Message Waiting Lamp Indication Type 265
- Method 334
- Metric 149
 - Leave 782
- Mexican Spanish 800
- Mexico 210
- MFC 211
- MFC Dialing 211
- MFC Group 212
 - return 210
- MG 232
- Mgmt 353
- MIB
 - installing 181
- Microsoft 86
 - following 121
- Microsoft application 342
- Microsoft Management Console 86
- Microsoft's Callback Control Protocol 342
- Minimum 828
- Minimum Call Time 334
- Minimum Calls 381
- Minimum Channels 334
- Minimum Flash Hook Time 828
- Minimum Name Length 110
- Minimum No
 - Channels 334
- Minimum Password Complexity 98
- Minimum Password Length 110

- Minimum Security 105
- Minimum Width 258
- Mins 338
- minute 338
 - Duration-tenths 871
- Miscellaneous 580, 603, 615, 623, 624, 632
- misconfiguration 56
- misinterpretation 378
- Missed 382
- MMC 86
- Mobile 361
 - set 297
- Mobile Dial Delay 398
- Mobile Direct Access 714
- Mobile Twinned Call Pickup 297
- Mobile Twinning 361
 - Calling Party Information 185
 - Send Original Part Information 185
 - Send Original Party Information 185
- mobile twinning destination 297
- Mobile Twinning license 496
- mobile twinning number 496
- Mobile Twinning Off 496
- Mobile Twinning On 297
- Mobile Twinning Settings 297
- mobile twinning users 297
- Mode 334
 - Set 782
 - WAN Port 354
- models 744
- Modem 341
 - auto-adapting 357
- Modem Cards 785
- Modem Enabled 196
 - checking 488
- Modem2 357
- Module 164
- Module Number 253
- MOH 746
 - relating 480
- Monday
 - Friday 361
- Monitor
 - VoIP 443
- Monitor Centrex MWI 196
- Monitor Group 571
- Monitor Password 103
- Monitored Events Counter 356
- month/day 866
- Monthly 338
- Morning/Afternoon/Evening/Menu Options 401
- Most Idle 325
- Most IP Office 166
- Most IP Office IP400 166
- Most Waiting 309
- Moving
 - Border Between 59
 - Phone Manager Options 268
 - Previous 56
 - Toolbars 50
- MPPC 382
 - set 342
- MS-CRM 899
- MSN 50
 - set 138
- MSN Configuration 345

- MSN Configuration tool 345
- MSN working 166
- MSN/DID 138
- MU 435
- Mu-Law 462
- MU-Law IP Office Systems 406
- MU-Law models 435
- MU-Law only 462
- MU-Law systems 406
- multicast 336
- Multicast Messages 381
- Multicasting 336
- Multi-Line Options 277
- Multi-Line Tabs 56
- Multilink 373
- multilink PPP 782
- MultiLink/QoS 357
 - Check 789
- MultiMessage 164
- Multiple 392
- Multiple Alerting 277, 695
- Multiple Alerting Appearance Buttons 695
- Multiple Alerting Buttons 688
- Multiple IP Offices 858
- Multiple Remote IP Offices
 - Managing 31
- Multipoint
 - Point 199
- Multi-Point
 - Point 204
- Music 302
 - Checking 746
- Music on Hold 742
- Music on Hold Tones 746
- MWI 802
 - defaults 258
- MWI Type 802
- mysip 242
- mysip@itsp.com 243
- mysipitsp 245

N

- Name 511, 513, 515, 565, 566, 567, 575, 584, 586, 589, 590, 591, 592, 597, 598, 604, 605, 611, 612, 614, 627, 649, 652
- Name.x 440
- named greeting files 129
- named Page 775
- Names 781
 - IP 163
 - place 268
 - Recording 401
 - set 275
- names beginning 598
- names starting 598
- nas0-16.bin 146
- NAT 250
 - type 152
- NAT firewall 152
- NAT firewalls
 - effect 152
- NAT/Firewall
 - type 152
- NATim 497, 642
- National 195
 - International 204
 - type 425

- National Prefix 226, 703
- Navigation Pane 45
 - hides 136
 - Show/Hide 84
- Navigation Pane Actions 52
- Navigation Toolbar 45
- Negligible Security 86
- NET 27
- NET1 27
- NET2 27
- NetBIOS
 - Dropping 365
- Netherlands 826
- Network 338
 - set 226
- network address 175
 - services 336
- Network Address Translation 780
- Network Hot Desking 905
- Network Layouts 793
- Network Selection 223
- Network Selection table 223
 - number 224
- Network Time Protocol 747
- Network Tone 408
- Network Topology 250
- Network Topology Settings 152
- Networking Enable Fast Start 796
- Networking Features 440
- NetworkMgmt 353
- New Configuration
 - Creating 72
- New Entry 75
 - Adding 56
- New Label 515
- New WAN Service
 - Create 782
- New Zealand 275
- New/Delete 107
- News Transfer Protocol 364
- Next 326
- Next Available Members 284
- Next Entry 56
- NI2 220
- NIC 118
- NIC IP/NIC Subnet 118
- Night Service 326, 583, 638, 639
 - set 317
- Night Service Destination 361
- Night Service Fallback 317
- Night Service Fallback Group
 - leaving 329
- Night Service Group 323
- Night Service Profile 345
- Night Service Time Profile 905
- nlb 806
- nld 826
- NLDS 224
- nl-NL 36
- NMC 856
- NNTP 364
- No Account Expiry 110
- No Answer 326
- No Answer Controls 760
- No Answer Time 302, 671, 701
- No Answer Time/Allocated Answer Interval 564, 632
- No Ring 683, 696
 - set 297, 688, 695
- No Ring set 683, 688
- No Service 110
- No User 268
- NO_CONF_TONES 275
- NO_FREE_CODECS 275
- NO_INTRUDE_TONES 275
- NO_XFER 275
- Node 872
- Node Number 872
- non-Avaya IP 260
- non-Avaya IP Phones
 - Enable Faststart 260
- Non-Digit 429
- Non-Digit Short Codes 429
- none answers 326
- non-IP 519
- non-IP models 519
- non-ISDN 723
- Nonlinear Processor Mode 189
- Non-Standard
 - Browsing 365
- Non-Standard Port Numbers
 - Browsing 365
- non-VoIP 275
- Normal 528, 536, 565, 591, 602, 640, 642
- Normal Mode 528
- Normal Service 781
 - Create 781
- Normal Transfer 402
- Normalise Queue Length 319
- Normalize Queue Length 319
- Normally Manager 146
- North America 406
- North American 236
- North-American 331
- Norway 828
- Norwegian 828
- NOT 771
- Not Available 164
- Not Being Answered Quick Enough 326
- Not Defined 402
- Not Disturb 327, 547, 548
- Not Disturb Controls 752
- Not Disturb Exception Add 466, 599
- Not Disturb Exception Delete 466, 599
- Not Disturb Exception List 273
- Not Disturb Off 467, 600
- Not Disturb On 467, 600
- NOT LOGGED ON 771
- NotFound 61
- Notify
 - Analog Extension 319
 - Pots Extension 899
- NoUser 201, 602
 - return 771
- NoUser Source Numbers 275
- NoUser User 201
- NoUser User Source Numbers 275
- NSF 223
- Nt
 - points 163
- NT Servers 163
- NTP 747
- NU 802

NU Tone 196
 Number 656, 657, 661, 670, 671, 674, 677, 693, 696, 697, 698, 701, 702, 703, 704, 706
 Calling 867
 IP Office 697
 number beginning 798
 Number corresponding 495
 Number Field Characters 425
 number flashing 530, 531
 Number Of Channels 236
 number parsing 223
 Number Short Codes 424
 number specified 455, 569, 604
 number string 359
 Number/Incoming Trunk Access Code
 Calling 867
 numbers 201
 Call-by-call table 223
 Channels 226
 Follow Me 754
 Inhibit Off-Switch Transfers 751
 IP Office supports 181
 L2TP 382
 licenses enable 378
 limits specified 326
 Network Selection table 224
 services according 224
 numbers starting 585
 NW 455
O
 objectClass 175
 Obtain 175
 IP 152
 IP Address Automatically 785
 Occasional Hot Desking 771
 occurs 164
 Default Value 350
 IP Office 408
 OCSeq 497, 642
 Off
 Software 701
 Software Level 701
 Off Hook 530, 531, 624, 754
 Off Hook Station 483, 624
 Off Maximum 196
 offer 86
 Manager 121
 Offer Server Certificate 100
 Offhook Station 277
 Off-Hook Timer 432
 OffHookStation 483
 offline 72
 send 124
 offline editing 73
 offline/created 76
 Offset 365
 Off-Switch 751
 Off-Switch Forwarding Restrictions 751
 Off-Switch Transfer Restrictions 765
 OHStn 624
 OK 698, 700, 701, 702
 On Hold 526, 530, 531, 536, 539, 568, 582, 584, 616
 only during 398
 Only routing 138
 open 338
 CD 27
 IP Office 50
 Sales 329
 Service 339
 Open Configuration 121
 Open File 124
 Open Internet 152
 Opened Offline/Newly Created Configuration 76
 Operating
 System 27
 Operator
 Transfer 402
 Operator Rights 107
 Operator View 45
 Option 511, 513, 515, 516, 528, 530, 531, 542, 558, 563, 567, 569, 585, 586, 606, 607, 612, 622, 623, 634, 637, 651
 option Customize 904
 option increases 214
 option requires 623
 option specifies 345
 Options 334
 Formatting 187
 options exist 326
 options give 334
 Options greeting 401
 Options requests'
 remote 152
 options Ringing 295
 Order 326
 First In-First Out 899
 Manager 86
 remove/replace 904
 SNMP 181
 order morning 401
 Organizational Unit 175
 originating
 L2TP 381
 Other Appearance Buttons 762
 Other Buttons 690, 695, 706
 Other Extension 572
 Call Park 573
 Other LDAP 175
 Other non-Active Directory LDAP 175
 Other People 86
 Other Use
 Conference Resources 767
 otherfacsimileTelephone Number 175
 otherIpPhone 175
 otherPager 175
 Otherwise 309
 otherwise create 319
 Out 334, 602
 Band 260
 Hours Route 408
 Hours User Rights 268
 Logging 905
 Service 317, 583, 639
 Service Fallback 329
 Service Fallback Group 317
 Service Route 408
 Service" 782
 set 317
 Outcalling 164
 Outcome 127
 Outgoing 406
 Call Bar 765
 Calls 676

- Outgoing 406
 - Channels 226
 - Circuit Id 867
 - Dial Guard 216
 - Disconnect 216
 - Disconnect Guard 216
 - End 216
 - Group 250
 - Group ID 201
 - IMM Dial Guard 216
 - Incoming 334
 - IP 782
 - ISDN 204
 - Line Programming 703
 - Only 334
 - Pulse Dial Break 216
 - Pulse Dial Inter Digit 216
 - Pulse Dial Make 216
 - Pulse Dial Pause 216
 - Seizure 216
 - SES 250
 - SES Line Call 250
 - SIP 243
 - Trunk Type 216
- Outgoing Call Bar 765
- outgoing call part 696
- Outgoing Caller ID Matching 345
- Outgoing Calls 680, 696
- Outgoing Group ID
 - matches 703
 - matching 201
- Outgoing Group ID's 331
- Outgoing Line Appearance Calls 703
- Outgoing Line Group 164
- Outgoing Trunk Type 216
- Outlook 295
- Outside 317
- Outside Call Sequence 277
- Over 334
 - Taking 448
- Overflow 319
- Overflow Calls 319
- Overflow Group List 309
- Overflow Groups 326
- Overflow Time 327
 - groups 309
- Overview
 - Data Routing 780
 - Manager 13
 - Security Settings 80
- P**
- P917325559876 275
- Packet Count 872
- pagemsg3.wav 775
- Pagers 175
- Paging 592
 - 3rd-party 773
 - Speaker 258
 - Via Voicemail Pro 775
- Paging Amplifier 258
- Paging Speaker 258
- Panes 45
- PAP 341
- Parameters 226
- Park 572, 573, 625, 626, 648, 661, 671, 676, 688, 693, 704, 706
- Park Call 572, 573, 625, 626, 648, 742
- Park Return 166
- Park Timeout 742
- Park To Other Extension 573
- PARK1 625, 626
- ParkCall 742
- Parked 349
 - Calls 742
 - user wants 485
- Parked Calls 661, 693, 704
 - Retrieving 706
- Partial Dialing 429
- Partial Number 556, 587
- Partial Rerouting 905
- Particular Numbers 403
- Particular Numbers/Number
 - Barring 737
- Particular Numbers/Number Types
 - Barring 737
- Particular Systems 125
- parts 740
 - Phone Manager 396
- Party Information
 - Calling 185
- pass 341
 - shortcode 403
- passing
 - Account Expiry 110
- Passive CCBS 204
- Password 781
 - Updating 858
- Password - Pre-3.2 Systems Only 76
- Password Administration 858
- password ageing 67
- Password Change Period 110
- Password Change Required 13
- Password Expired 110
- Password Lockout 905
- Password Reject Action 110
 - perform 98
- Password Reject Limit 67
- password/account 98
- Pasting 75
- Paul 481
- Paul wants 481
- PBX 706
- PC 794
 - address 378
 - LAN 780
 - Phone Manager 295
- PC application 181
- PC file 794
- PC IP Address 127
- PC Login 127
- PC MAC Address 127
- PC making 336
- PC Registry Settings
 - Changing 403
- PC Requirements 27
- PC running 164
- PC running Manager 118
- PC Softphone 260
- PC Softphone None 260
- PC's
 - editing 121
- Pcall 487, 627

PCM 129
 PCMCIA 149
 pcol 365
 PCPartner 31
 PC's
 editing 403
 match 36
 PEM 86
 perform 334
 BOOTP 146
 Centrex Transfer 766
 Password Reject Action 98
 UDP 65
 Performance 354
 Period 338
 Periodic Pulse Metering 867
 periods during 334
 Permanent Virtual Channel 354
 Persistency 196
 Personal 342
 Personal | Certificates 86
 Personal Calls 706
 Personal Directory 770
 Personalized Ringing 745
 Peru 829
 pfx 86
 pfx file 86
 Phone Add-On 520
 Phone Change 181
 Phone Clearing 828
 Phone Defaults 771
 Phone Display 403
 phone displays 528, 558, 600, 611, 617, 635
 user's 569
 Phone Idle 659, 664, 665, 670, 680, 683, 686, 688, 690
 phone ignoring 696
 Phone Manager 454, 624, 625
 parts 396
 PC 295
 Phone Manager Lite/Pro 905
 Phone Manager 4.1 295
 Phone Manager application 765
 copy 268
 Phone Manager Installation Manual 899
 Phone Manager Lite 295
 Phone Manager login 295
 Phone Manager Options
 moved 268
 Phone Manager PC Softphone 295
 Phone Manager Pro 268
 Phone Manager Pro 4.1 899
 Phone Manager Pro Agent Mode 295
 Phone Manager Pro IP Audio Enabled 295
 Phone Manager Pro PC Softphone 268
 Phone Manager Pro PC Softphone application 260
 Phone Manager Pro Telecommuter 295
 Phone Manager Pro/Phone Manager PC Softphone 295
 Phone Manager Status Options 295
 Phone Manager Type 268
 Phone Manager User Guide
 refer 899
 Phone Manager/SoftConsole 697
 Phone Manager's 697
 Phone Managers PIN Code 166
 PHONE on IP Office 258
 phone returns 654
 Phone Software Level 327
 Phone V1 258
 Phone V2 744
 phone/ISDN Control Unit 489
 phones display 656, 662
 PhyEx 462, 593
 Physic Extension By ID 462
 Physical Extension By Number 593
 Physical Extensions 268
 Physical Extn By ID 593
 Physical WAN 152
 Pick 444
 PickA 444, 574
 PickG 445, 575
 PickM 446, 575
 Pickup 549, 574, 597, 649
 Pickup Any 574
 Pickup Group 575
 Pickup Members 575
 PIM 859
 PIN 166
 Ping Verify 216
 PINGs
 Stopping 365
 PKCS#12 86
 place 454
 External 904
 Name 268
 plan
 ISDN 425
 Play Configuration Menu 760
 Play List 775
 plk 830
 Point 204
 Multipoint 199
 Multi-Point 204
 Point Protocol 357
 sharing 204
 Point Protocol
 Point 357
 Point Tunneling Protocol 364
 points 334
 Base specifies 175
 NT 163
 Point-to-Multipoint
 sharing 199
 Point-to-Point 342
 Point-to-Point Protocol 342
 Poland 744
 Polling
 Verification Timer 356
 POP3 364
 Port 117
 Port Number 152
 Port Restricted Cone NAT 152
 Port Restricted NAT's 152
 Port Used 31
 ports used during VoIP 31
 Portugal 831
 Portuguese 800
 Pos 879
 position 875
 Changing 56
 Manager toolbars 50
 Post Dial 775
 Post Office Protocol 364

- Post-Dialing 424
- Post-Dialing Short Codes 424
- POT 802
- POT Port 802
- POT Port Settings 802
- Pots Extension
 - Notify 899
- PPM 875
- PPP 152
 - set 381
 - VoIP 354
- PPP Access Mode 357
- PPP Callback Mode 342
- PPP Compression Mode 382
- PPP Dial 152
- PPP Dial In 152
- PPP Tab 782
- ppppppp 465
- PPTP 364
- PR 204
- pre-2.1 IP Office 37
- pre-3.0 IP Office 166
- Pre-3.2 IP Office Software 127
- pre-4.0 152, 696, 701
- pre-4.0 IP Office 152
- Pre-4.0 IP Office Secondary Dial Tone 430
- pre-6.0 Manager 800
- Preferences 250
 - IP Search Criteria 31
 - selecting 117
- Preferences menu 905
- Prefix 466, 703
- Prefix Allocation Check 250
- Prefix Dialing 766
- Present 781
 - IP Office 138
- Presentation Digits 138
- presented following 424
- Press Transfer 768
- Press Done 747
- Press Hold 747
- Press MENU 704
- pressing
 - CONFERENCE button 660, 692
 - Conference Meet Me button 768
 - DSS key 149
 - Hold 704, 706
 - Menu 277
 - Recall 454
 - Second Call Appearance 659
 - Shift 210
 - SPEAKER 680
 - Spkr button 706
 - Transfer 899
- Presubscribed Operator 223
- prevents 338
- Previous 482
 - Moving 56
- Previous Password Limit 98
- PRI 38
 - Set 220
- PRI E1 345
- PRI Line 204
- PRI Trunk Channels 38
- Primary 152
 - set 243
- primary address 336
- Primary Authentication Name 243
- Primary Authentication Password 243
- Primary Incoming Translation Address 364
- Primary Registration Expiry 243
- Primary Trans 152
- Primary Transfer IP Address 336
- Printer 175
- Priority 268
- Priority Call 345, 627
- Priority Calling 627
- Priority Routing 406
- PriorityCall 487
- PRI-U 899
- Private Call 628, 740
 - set 486
- Private Call Off 740
- Private Call On 486
- Private Line 224
- PrivC 628
- Pro 828
- Pro PC Softphone 260
- Pro Short Code 503
- Pro Storage Alarms 181
- Professional 899
 - IP500 Upgrade Standard 38
- Professional Edition 899
- Profile 337
- Profile Entry 64
- Profile Overview 361
- profile specifying
 - destination 361
- PROG 511, 557
- ProgA 511, 513
- Program
 - Automatic Intercom button 288
 - Drop Button 288
 - Send All Calls button 288
 - Voicemail Collect button 288
- Programmable Button 454
- Programmable Button Control 454
- Programming 703, 740
 - Appearance Buttons 698
 - Appearance Buttons Using IP Office Manager 698
 - Button via 511, 513
 - Buttons 508
 - Buttons Using IP Office Manager 509
 - Line Appearance ID Numbers 702
 - User Settings 701
- Programming Actions 740
- Programs depending 30
- Progress Ends Overlap Send 232
- progress/proceeding 425
- ProgressEndsOverlapSend 232
- Properties 175
- Protocol 86, 587, 588, 594, 595, 596
- Protocol Control 364
- Provider 334
- Providing
 - Active MCID Control 736
 - BOOTP 146
- Proxy ARP 369
- ptb 808
- pt-Br 36
- ptg 831
- Public IP Address 250

Public Port 152
Pulse Dial Break
 Outgoing 216
Pulse Dial Inter Digit
 Outgoing 216
Pulse Dial Make
 Outgoing 216
Pulse Dial Pause
 Outgoing 216
Pulse Dialing 211
Pulse Metering Bit 212
Pulse Width Off 196
Pulse Width On 196
Putonghua 800
PVC
 ends 354

Q

Q.931 500
Q.931 Hold 615
 uses 479
Q.931 Suspend 644
 uses 500
Q2 2007 677, 747
Q2 2007 Maintenance 747
Q2 2007 Maintenance Release 747
Q933 AnnexA 0393 353
QoS 382
QSIG 657, 702
 set 201
QSIGA 210
QSIGB 210
Quality 237
 form 152
Queue 576, 612
Queue Alarm 319
Queue Announcements 319
Queue ID 319
Queue Length 309
Queue Limit 905
 Set 329
Queue Limit Reached 314
Queue Mode
 selecting 319
Queue Monitoring 319
Queue Ring Time 319
Queue Threshold 899
Queued 326
 access 319
 On 319
 Queuing 329
 Queuing On 329
Queuing Facility 329
Queuing On 794
 Queuing 329
Quiet Headset 258
Quite Headset 277
Quota 454
 selecting 338
Quota Time
 set 338

R

R<Caller's ICLID 275
R2 DID 211
R2 DIOD 211
R2 DOD 211

R2 Loop Start 211
R7325551234 275
RAM 27
Range 688, 700, 701
Range 128
 254 152
RAS 334
 Create 341
RAS Entry 782
 Create 785
RAS Name 782
 Set 789
RAS Service 781
 logon 341
RBak 490, 580, 632
RBSeq 498, 642
RC4-128 86
Read All Configuration 109
Read All Security Settings 83
Read Configuration 83
Read Only 70
Read' 86
Real Time Control Protocol 152
Real Time Protocol 152
reason 334
 IP Office 181
Reboot Immediately 46, 81
Reboot Mode 76
reboot mode Timed 76
Reboot Time 76
Reboot When Free 46, 81
rebooting 124
 IP Office 76
REC 149
Recall 742
 pressing 454
Receive Config 124
Received BOOTP 61
Received Configuration 31
Received TFTP Error 61
Receives Message Waiting Indication 314
receiving
 ARP 369
 CDR 187
 SIP 306
 SNMP 181
Reception 250
Reception / Breakout 270
Reclaiming
 Call 448
recognised 86
recognised following
 system 253
re-connecting
 IP Office application 100
Recor 447, 576
Record 576, 628
Record Format 866
Record Greeting 440
Record Inbound 349
Record Message 302
 Specific Mailbox 502
Record Options 866
Record Outbound 349
Record Time Profile 349
Recording

- Recording
 - 1st 323
 - 2nd 323
 - Conferences 767
 - Hunt Group Announcement 323
 - Mailbox 349
 - Name 401
- Recording Name 401
- recording warning 576
- Recurrence Pattern 361
- Red LED On 706
- red/green 196
- Redial 547, 548, 549
- Reduce Bandwidth 334
- Reduce BW Threshold 334
- Refer 513
 - IP Office Key 508, 563, 567, 586, 622
 - SHOW_LINEID_NOT_OUTSIDE 677
- Refresh 338
- Refresh Time
 - Binding 152
- Regedt32.exe 121
- Registration 243
- Registration Required 243
- Registry Settings 403
- Regular Hot Desking 771
- Re-INVITE 250
- RE-INVITE Supported 250
- Relabel 515
- Related Fields 250
- relating
 - IP Office 103
 - MOH 480
- Relay 629, 630
- Relay Off 488, 629
- Relay On 488, 629
- Relay Pulse 489, 630
- RelayOff 488
- RelayOn
 - uses 488
- RelayPulse 489
- Reliable Disconnect 767
- reliable disconnect signalling 166
- Remote 334
 - Options requests' 152
- Remote Access Server 341
- Remote Access Service 144
- Remote Account Name 381
- Remote Account Password/Confirm Password 381
- Remote Audix Voicemail
 - set 164
- Remote Configuration 381
- Remote Homeworke/Agent 277
- Remote Hot Desking 440, 697
- Remote Hot Desking users 440
- Remote IP Address
 - checking 365
- Remote IP Mask 365
- Remote Manager 268
- RemoteSwitch 440
- Remove 740
- Remove Programs 27
- Remove Selection 121
- remove/replace
 - order 904
- render 125
- IP Office 83
- Renumber 905
- Repeat 781
- Repeated double-ring 745
- Repeated single-ring 745
- Repla 511
- replace 875
 - CLI Routing Action 899
 - Withheld 195
- Replace Outgoing 455
- Replace Outgoing Caller ID 455
- replaces Least Cost Routes 424
- Replay Greeting 402
- re-programmable 530, 531
- Request DNS 163
- Request Login on Save 117
- requests 117
 - IP Office 13
 - router forwards 31
- require 322
- require resetting 64
- required following 243
- required Outgoing 406
- required unlock
 - account 67
- requires 657, 662, 672, 675, 676, 696, 698, 700, 701, 703
 - IP Office 702
- Requires Authentication 181
- requires changes 403
- requires having 477
- Rerun STUN 152
- Reserve Last Appearance 762
- Reserve Last CA 275, 696, 701
- RESERVE_LAST_CA 275, 696, 701
 - adding 277
- Reserving
 - Call Appearance Buttons 696
- Reset 337
- Reset All Security Settings 83
- Reset Longest Idle Time 277
- Reset Security Settings 114
- Reset Volume 256
- resetting 114
 - Account Expiry 110
 - IP Office 899
 - Unique System Administrator 858
- Resizing
 - Manager Window 59
- Resource Flag 872
- Resource Limitation 250
- Resource Reservation Protocol 364
- respond 334
 - BOOTP 146
 - Dial Emergency 422
 - IP Offices 31
 - SNMP 181
- Rest 435
 - World 149
- Restart Manager 403
- restarting
 - IP Office 746
- restore 130, 515
 - IP Office 857
- Restore Binaries 130
- Restricted Cone NAT 152
- Restrictions 765

- result 331
 - DID 446, 575
- Resum 489, 631
- Resume Call 489, 631
- ResumeCall 489
- resync
 - 1/8th 175
- Resync Interval 175
- resynchronize 175
- retransmission 382
- Retrieve Call 490, 631
- Retrieve Messages 502
- RetrieveCall 490
- Retrieving
 - Externally Forwarded Calls 751
 - Held Calls 704, 706
 - Parked Calls 706
- Retriv 490, 631
- Retry 746
- retry loading 746
- return 326
 - ARS 464
 - IP Office 78
 - Manager application 141
 - MFC Group 210
 - NoUser 771
- Return Call 275
- return changes 108
- Return IP Route Needed 785
- Return Loss 189
- Revalidating
 - Configuration Settings 58
- RFC 1490 354
- RFC 3164 181
- RFC1490
 - set 354
- RFC1490+FRF12 353
- RFC1779 175
- RFC2254 175
- RFC2474 152
- RFC2507 342
- RFC2508 342
- RFC2509 342
- RFC2833 250
- RFC868 31
- RFT 27
- Ride Call 742
- right 86
 - Group Pane 136
- Right clicking 70
- Rights Group Membership 83
- Rights Groups 858
 - existing 84
 - set 110
- Rights Membership 398
- Rights record 862
- rights records 862
- Rights View 48
- Rights/User Restrictions Short Codes 424
- Ring Back 794
- Ring Back Sequence 277
- Ring Back When Free 166, 580, 632
 - sets 743
- Ring Delay 277, 563, 567, 586, 620, 622, 657, 676, 683, 688, 690, 695, 696, 700, 701
- Ring Normal 495
- Ring Tones 828
- Ring Type 166
 - set 309
- Ring/hold 760
- Ringback 391, 642, 654, 693
 - allow 743
 - cancel 743
 - distinguishing 498
 - existing 580
 - set 743
 - Sets 490, 564, 632
- Ringback Call 166
- ringback call alerting 166
- Ringback Off 505, 654
- Ringback On 564, 632, 654, 743
- RingBackWhenFree 490
- Ringer Off 633
- Ringing 495, 688
 - Line Preference 277, 679, 680, 683, 692, 695, 701
 - Line Preference Example 683
 - Line Preference Order 683, 695
- Ringing Line Preference 277, 657, 662, 664, 665, 666, 667, 668, 670, 672, 674, 675, 676, 677, 679, 680, 683, 686, 688, 690, 692, 693, 695, 701
- Ringing Line Preference determines
 - user's 683
- Ringing Line Preference keeps 680, 683
- Ringing Line Preference Order 683, 695
- Ringing Line Preference retain 683
- ringing/connected 319
- RingNormal 745
- RingType1 495, 745
- RingType2 745
- RingType3 745
- RingType4 745
- RingType5 745
- RingType6 745
- RingType7 745
- RingType8 745
- RingType9 745
- RIP 63
- RIP Dynamic Routing 370
- RIP Mode 152
- RIP1 152
- RIP-1
 - Listen 152
- RIP1 Compatibility 152
- RIP2 152
- RIP-2 152
- RIP2 Broadcast 152
- RIP2 Multicast 152
- RIP-2 multicast 152
- RJ45 162
- RJ45 Ethernet 899
- RJ45 Ethernet LAN 899
- RJ45 Ethernet WAN 78
- RJ45 LAN 162
- RngOf 633
- Rotary 756
- Rotary Hunt Type 325
- Rotary type 606
- routable 118
- Route 201
- route fails 149
- Route Name 408
- Route Priority Default 408

- Route Selection 406
- route sharing 370
- Route Wait Time 408
- Router 782
- router forwards
 - request 31
- Routing
 - All Internet Traffic 365
 - Calls 406
 - Calls Directly 406
 - Information Protocol 370
 - Internet 781
 - SES 250
 - VLAN 237
- Routing action 899
- Routing Digits 220
- ROW 428
- RPark 573
- RSVP 237
- RTCP 31
- RTF 27
- RTP 31
 - limit 152
 - uses 152
- RTP Port Number Range 152
- RTP Relay 250
- RTP/RTCP 31
- Run STUN 152
- running
 - IP Office 3.2 688
- rus 832
- Russia 744
- Russian 800
- Russian rus 832
- Rx 216
- Rx Gain 216
- S**
 - s123 455
 - S2 630
 - SA 384
 - establish 383
 - SA key 384
 - SAA 858
 - SAA AIMAdmin 858
 - SAA fails
 - access 858
 - SAA IPO User 858
 - SAA Setting 858
 - SAC 635
 - Sales
 - call 329
 - Open 329
 - Sales Hours 329
 - Saudi Arabia 744
 - Save 141, 515
 - Configuration 75
 - Configuration onto PC 75
 - Configuration Received 75
 - Save As 86
 - Save Configuration 117
 - Save Configuration As 75
 - Save Configuration File After Load 117
 - Save File As dialog 115
 - Save In 86
 - Saving Security Settings 141
 - Saving Sent Configurations 75
 - SBC 152
 - scan 115
 - WAN3 253
 - SCN 636, 657, 697
 - SCN Distributed Hunt Groups 905
 - SCN Features 794
 - SCN Signalling 793
 - SCN User Extension 207, 227, 231
 - Screen Pop 295
 - Screen Pop Options 295
 - SDN 224
 - SDP 152
 - Search Base 175
 - Search Filter 175
 - SEC 364
 - Second Call 659, 664, 686, 687
 - User 683
 - Second Call Alerting 686
 - Second Call Alerts 659, 683, 686
 - Second Call Appearance 683, 686, 687
 - Pressing 659
 - Secondary 828
 - set 243
 - Secondary Authentication Name 245
 - Secondary Authentication Password 243
 - Secondary Dial Tone 331
 - Secondary Registration Expiry 243
 - secs 334
 - Secure 31
 - High 86
 - level 86
 - Low 86
 - Medium 86
 - Secure Communications 899
 - Security
 - selecting 121
 - Security Administration 121
 - Security Administrator 121
 - Security Association 383
 - Security Enhancements 899
 - Security Manager 86
 - Security Manager Service User 98
 - Security Mode 86
 - Security Mode Interface 84
 - Security Mode Screen Elements 84
 - Security Service User Settings 110
 - Security Services Settings 105
 - Security Settings 86
 - Get 84
 - Overview 80
 - Save 84
 - Security Settings Pane 84
 - Security User 83
 - securitypwd 83
 - seized 201
 - Seizure
 - Outgoing 216
 - Select 657, 662, 667, 668, 672, 674, 676, 677, 679, 680, 683, 686, 688, 690, 693, 695, 696, 702, 704, 706
 - Button Programming 698
 - Telephony 700, 701
 - Select Line 702
 - Select System 700
 - Select Button Programming 509
 - Select Cont 511, 513
 - Select Directory 125

Select Group 295
 Select IP Office 115
 Select IP Office menu 115
 Select Line Appearance ID 702
 Select SHORTMODE 511, 513
 Select Tools 702
 Select User 701
 Selected Columns 54
 Selected Columns list 54
 Selected refers
 button 706
 selecting 54
 Add 422
 Agent Mode 327
 AutoLearn 353
 Cancel button 70
 Change Directory 118
 Control Unit 152
 Default Ring 495
 Directories 118
 Disconnect Pulse Width 258
 Display All 509
 Display All Buttons 290, 509
 Do Not Disturb 327
 Edit 422
 Expl 511, 513
 Force Authorization Code 403
 Forwarding 327
 IP Office 31
 IP Office Admin Suite 27
 Logged Off 769
 Preferences 117
 Queue Mode 319
 Quota 338
 Security 121
 Tab 56
 TCP Discovery Active 100
 UDP Discovery Active 100
 Use External Music 746
 User 509
 Validation 123
 Visual 120
 Visual Preferences 120
 Yes 27
 selecting Display 698
 Selection 667, 676, 679, 696
 Self Administer button 899
 Self-Administer 513, 634, 747
 set 511, 704
 Self-Administration 706
 Appearance Keys 704
 self-signed' 86
 send 117
 Call Detail Record 187
 Configuration 76
 email 270
 H323 Progress 232
 ICMP 31
 IP Office 86
 offline 124
 SMTP email 181
 TCP 31
 UDP 152
 Send All Calls 635
 Send All Calls button
 Program 288
 Send All Calls/Do Not Disturb 288
 Send Config 115
 Send Config menu 115
 Send Configuration 31
 Send Configuration menu 63
 Send Original Part Information
 Mobile Twinning 185
 Send Original Party Information
 Mobile Twinning 185
 send outgoing SIP 243
 Send Port 250
 send recurring 152
 sender address 181
 Sender available/Covering Extension 288
 Sequential 152
 calls 606
 Sequential Group 325
 Serial 117
 Serial Communication
 Enable Port 117
 Serial Number 149
 Series 72
 Series IP 152
 Series IP Phones 260
 Series phones 706
 Series/4400 Series 832
 Series/5400 Series 832
 Series/5600 Series 832
 Server 334
 set 785
 Server Certificate 100
 Server IP Address 747
 Server PC Required 378
 server PC's 181
 Server Port 175
 Server Private Key 100
 server providing 149
 Server Requires Authentication 181
 server storing 175
 server_name 175
 Server's WAVS 775
 Service 583, 584, 603
 access 108
 Clear Hunt Group Out 453, 583
 network addressing 336
 open 339
 Out 317, 583, 639
 Set Hunt Group Out 481, 639
 Service | Autoconnect 337
 Service | Bandwidth 334
 Service | Dial In 340
 Service | Fallback 317
 Out 329
 Service | IP 336
 Service | PPP 354
 Service | Quota 338
 Service | Service 333
 service calling 334
 Service Fallback Group
 Out 317
 Service Mode 453
 Service Provider 163
 Service Route
 Out 408
 Service Routing 406
 Service Security Level 86

- Service Short Codes
 - Set Hunt Group Out 905
- service signaling 232
- Service State
 - Manually Controlling 317
- Service Tab 781
- Service User 128
 - access 107
 - account 67
 - existing 84
 - IP Office 4.0 83
 - match 67
 - Sets 110
- Service User Details 98
- Service-Idle Time 334
- services according
 - number 224
- Services Base TCP 117
 - change 31
- Services Base TCP Port 31
 - hides 117
- SES 38
 - back 250
 - connect 899
 - outgoing 250
 - routed 250
- SES Address 250
- SES Domain Name 250
- SES Line 250
- SES Line Call
 - Outgoing 250
- SES Line Call to/from Non-IP Devices 250
- SES Line Prefix 250
- SES routing 250
- SES Trunks 38
- Session Border Controller 152
- Session ID Cache 100
- Session Initiation Protocol 31
 - set 657, 661, 666, 671, 675, 679, 680, 683, 686, 687, 690, 692, 693, 696, 697, 700, 701, 702, 703, 706
 - Delayed Ring 688, 695
 - ICLID 676
 - Immediate 688, 695
 - Loop Start ICLID 688
 - No Ring 688, 695
 - Self-Administer 704
- Set Absent Text 492, 636
- set according 196
 - Country 212
- Set Account Code 493, 637
- Set Authorization Code 493
- Set button 121
- Set Certificate 86
- Set Hunt Group Night Service 481, 638
- Set Hunt Group Out
 - Service 481, 639
 - Service Short Codes 905
- Set Hunt Group Out Of Service 481, 639
- Set Hunt Group Out of Service Short Codes 905
- Set Inside Call Seq 495, 640
- Set Inside Call Sequence 640
- Set IP Office Account Idle Time 86
- Set IP Office Client Certificate Checks 86
- Set IP Office Configuration 86
- Set IP Office Minimum Password Complexity
 - High 86
 - Low 86
 - Medium 86
- Set IP Office Minimum Password Length 86
- Set IP Office Password Change Period 86
- Set IP Office Previous Password Limit 86
- Set IP Office Security Administration 86
- Set IP Office Service User Password Reject Action
 - Log 86
 - None 86
- Set IP Office Session ID Cache 86
- Set Manager Certificate Checks 86
- Set Mobile Twinning Number 496
- Set Mobile Twinning Off 496
- Set Mobile Twinning On 297
- Set No Answer Time 309, 642
- Set Outside Call Seq 497, 642
- Set Outside Call Sequence 642
- Set Ringback Call Sequence 642
- Set Ringback Seq 498, 642
- Set Wrap Up Time 498, 643
- SetAbsentText 492
- SetAccountCode 493
- SetHuntGroupNightService 494
- SetHuntGroupOutOfService 494
- SetInsideCallSeq 495
- SetNoAnswerTime 497
- SetOutsideCallSeq 497
- SetRingbackSeq 498
- Sets 508, 509, 513, 515, 516, 542, 558, 560, 563, 565, 566, 567, 569, 571, 576, 580, 584, 586, 587, 591, 592, 593, 594, 595, 598, 599, 600, 601, 602, 604, 607, 609, 610, 611, 613, 614, 616, 620, 622, 627, 634, 635, 636, 637, 638, 639, 640, 642, 643, 646
 - 56000 bps 588
 - 64000 bps 587, 588, 596
 - Button 511
 - Cannot 628
 - ringback 564, 632
 - Self-Administer 511
- setting Answer Pre-Select 657, 679, 701
- setting Answer Pre-Select allows
 - user 657, 679, 701
- setting associating 750
- setting enables 323
- setting Reserve Last CA 657
- setting stops
 - user 765
- Settings 201, 657, 661, 667, 671, 676, 688, 695, 696, 697, 698, 700, 701, 702, 704, 706
 - Exporting 73
 - Importing 73
 - Manager adjusts 37
- settings Calls 899
- settings control
 - call 667, 671
- settings cover 100
- settings following system 856
- settings including 702
- settings relating 152
 - use 398
- Setup 454
- Set-up Packet 425
- Setup RAS 781
- setup signalling 204
- setup.exe 27
- SetWrapUpTime 498
- Several LAN 780

Sfunc 560
 SHA 383
 SHA-1 86
 Shared Secret/Confirm Password 382
 sharing
 Point 204
 Point-to-Multipoint 199
 Shift 771
 pressing 210
 Shift Keying 256
 Short 454
 Dialing 424
 short burst 502
 Short Code
 Create 789
 short code feature ExtnLogin 769
 Short Code Features 331
 Short Code Field Characters 425
 Short Code Fields 425
 Short Code List 373
 short code processing 424
 Short Code Programming 798
 short code reclaims 448
 short code removes 703
 short code routing 767
 short code string 425
 Short Codes 693, 703
 Dialing 424
 match 432
 Short Codes.name 502
 Short Message Services 270
 ShortCode
 pass 403
 Shortcut Locale Setting 36
 Show In Groups 54
 Show Previous/Next Entry 50
 Show/Hide
 Error Pane 50
 Group Pane 84
 Navigation Pane 84
 SHOW_LINEID_NOT_OUTSIDE
 Refer 677
 string 201
 ShowAllowAuthorization 403
 shows 117
 Avaya IP 136
 IP Office 105
 IP Office's 146
 Shutdown 499
 Shutdown Embedded Voicemail 499
 Si 425
 SIG DSCP 152
 Signaling 220
 Type 196
 Signaling Timers 212
 Signaling Type 196
 Silence 250
 Silence Suppression 767
 Silent Interval 216
 Simple ISDN Internet Connection 781
 Simple Mail Transfer Protocol 364
 Simple Network Management Protocol 181
 Simple Traversal
 UDP 152
 SIP 149
 associates 243
 including 152
 making 245
 outgoing 243
 receives 306
 Run STUN 152
 SIP Calls 243
 SIP Display Name 306
 SIP Enablement Service 899
 SIP Incoming Call Routing 242
 SIP ITSP 152
 SIP ITSP's STUN 152
 SIP Line
 Authentication Name 245
 SIP Line Call
 IP Device 250
 SIP Name 250
 SIP Options requests' 152
 SIP Packets 152
 SIP Proxy Enabled 152
 SIP Trunk Channels 250
 SIP Trunks 250
 SIP URI 250
 Site 334
 on IP 781
 Site A on IP 781
 SiteA 788
 Size 461
 Changing 59
 SKN 435
 Slot 500
 on 195
 Small 461
 Small Community 164
 Small Community Advanced Networking 440
 Small Community Network 164, 566, 636, 657, 667, 671, 676, 693, 697
 Code Programming 798
 enabler 796
 Enabling 796
 Small Community Network signaling 31
 Small Community Networking Enable Fast Start 796
 Small Office 461
 Small Office Edition 461
 c711 129
 except 785
 Smart Card 149
 SMDR
 Add Authorization Fields 403
 SMTP 337
 SMTP email 899
 alarms 181
 sending 181
 SMTP Email Reporting 181
 SMTP Mail 337
 SMTP Mail polling 337
 SMTP Server Configuration 181
 snap-in' 86
 SNMP 856
 enabling 859
 entering 181
 listens 181
 order 181
 receiving 181
 respond 181
 SNMP Agent Configuration 181
 SNMP Enabled 181

- SNMP Info 181
- SNMP Invalid 181
- SNMP polling 181
- SNMP Port 181
- SNMP Reporting 181
- SNMP System Alarms
 - Enabling 181
- SO Trunks 207, 227, 231
- SOE 201
- SoftConsole 454, 624, 625
- SoftConsole application 742
- SoftConsole Control 454
- SoftConsole's Send Message 277
- Software 461, 701
- Software Level 461
- Software Level Interoperation 792
- software running on 253
- Solomail 31
- Sorting
 - List 125
- Source 226
- source address
 - tunnel 381
- Source Number 696
- Source Numbers 250, 696, 701
- SourceNumbers 750
- South Africa 834
- SP2 27
- SP4 27
- Spain 835
- Spanish 800
- Speak ETA 323
- Speak Position 323
- SPEAKER 478
 - Paging 258
 - pressing 680
- SPEAKER button 256
- Speaker key 704
- SPEAKER key on Avaya DS 899
- Speakerphone 256
- Special 331
- Special Access 220
- special meaning 425
- Specific Mailbox
 - Record Message 502
- Specific Option Number 152
- Specific tab 775
- Specific Voicemail Pro Module
 - Accessing 502
- specify
 - Line Group ID 703
- Speech 613, 741
 - use 594
- Speed 72
- Speed Dial 429
 - Creating 455
- Spkr button
 - press 706
- Spres 561
- Sprint 220
- SS 425
- SSA 86
- SSA on IP Office 3.2 86
- SSI 425
- SSID 386
- SSON
 - match 152
- STAC 342
- StacLZS 342
- Standard 164
- Standard Edition 899
- Standard Edition Mode 792
- Standard SCN Features 794
- Standard Telephone 402
- start dialing 403
- Start IP Office Manager 698, 700, 701, 702, 899
- Start Manager 31
- start ringing
 - indicate 490
- start searching 175
- Start Time 361
- start/add 768
- started 164
 - IP Office Manager 899
 - Manager 30
 - user wants 481
- started dialing external 430
- starting address
 - DHCP 152
- Static 152
- Static Port Block 152
- Static Routes 149
- Status
 - transmitting 356
- Status Access 128
- Status Application 103
- Status Group 83
- Status Inquiry 356
- Status Interface 105
- Status on No Answer 277
- Status Polling Counter 356
- status signalling 319
- Steady Flash 662, 668, 672, 677, 706
- Steal 577
- Step 72
- steve 268
- Steve Smith 268
- Still 334
- Still Queued 302
- Still Queued Start Points 323
- still ringing 764
- still wants 273
- Stopping
 - PINGs 365
- Stored 164
- Stored Number View 643
- string
 - SHOW_LINEID_NOT_OUTSIDE 201
- Strong' 86
- STUN Server IP Address 152
- Sub Address 345
- Sub Type 214
- subject 86, 571, 657, 696, 701
 - Can Intrude 448, 560, 570, 590
 - IP Office's 704
- subnet 369
- Subnet Mask 369
- subnets 31
- SubType 220
- Success 127
- SUM 856
- Supervised Transfer 452

- Supplementary Signaling Services 796
- Support Call 195
- Support Call Tracing 204
- Support Call Tracing Option
 - include 736
- Support group 329
- support.microsoft.com/kb/256986 121
- Supported SCN Features 794
- Supported SCN Network Layouts 793
- supporting 793
 - Frame Relay 352
 - LAN1 336
- Supports Partial Rerouting 204
- SusCW 500, 644
- Suspe 500, 644
- Suspend 631, 644
- Suspend Call 489, 631, 644
- Suspend CW 500, 644
- sve 836
- Svenska 800
- Sweden 744
- Swedish 836
- Switch Function 511
- Switch Type 220
- switchable 519
- Switches CRC 204
- Switching
 - Manager 44
 - Manager application 128
 - Manager Back 84
- Switzerland 744
- Symmetric Firewall 152
- Symmetric NAT 152
- Sync PPP 588, 596
 - set 357
- SyncFrameRelay 789
- synchronization 226
- Synchronize 45
- Synchronize Calls 323
- SyncPPP 782
- Syslog 899
 - alarms 181
- Syslog Reporting 181
- Sysmonitor 31
- SysMonitor application 905
- System 508, 509, 519, 526, 538, 539, 566, 571, 572, 574, 576, 585, 595, 598, 599, 607, 616, 625, 629, 630, 634, 639, 640, 642, 648
- System | Telephony 688, 700, 701
- System Alarms 899
 - Enabling 181
- system attempts 342
- System B's 798
- System Currency
 - Set 723
- System Defaults 745
- System Details 100
- System Discovery 100
- system during
 - upgrade 125
- System Events 899
- System Locale 268
 - appropriate 256
- System Monitor 31
- System Password 103
- System Phone 277
- System Preferences 899
- system prints 867
- system programming 676
- system sees
 - user 751
- System Settings 309, 679, 686, 688, 693, 700, 701
- system short code barring 737
- System Short Code List 435
- System Status 128
- System Status Access 128
- System Status Application 103
- System Status Interface 105
- System Time 149
 - Manually Setting 747
- system time during 149
- System Tone 408
- System Variables 899
- system waits
 - an 432
- system's
 - hear 746
 - listen 746
- Systems 201
 - 2XXX dialing 798
 - Operating 27
 - recognised following 253
 - set 408
 - System 796
 - VoIP VPN link 796
- systems make
 - matching 857
- systems running 128
- systems supporting 401
- T**
 - T1 326, 657, 702, 703
 - enable 220
 - following 782
 - Set 782
 - T1 CAS 326
 - T1 Edit Channel 216
 - T1 Edit Channel Sub-Tab Settings 216
 - T1 PRI 223, 657, 702
 - 23 204
 - following 782
 - T1 Trunk 782
 - T246 904
 - T3 260
 - excluding 899
 - T3 Direct Media Support 904
 - T3 IP 439
 - T3 Options 723
 - T3 Series 800
 - T3/T3IP 204
 - T391 356
 - T392 356
 - TA 341
 - TA Enable 341
 - Tab 201
 - Selecting 56
 - tab change 31
 - tab relate
 - use 421
 - tab selecting 319
 - Tabs Display 398
 - TAC 872
 - Taiwan 838

- take 741
 - ARS 408
 - IP Office 67
 - Over 448
- TAPI 31
- TAPI Wave Driver 31
- Target 326
 - Italian 36
- Target Line Appearance ID 445
- TBR 802
- Tc 354
- Tc Setting
 - Adjusting 354
- TCP 117, 118
 - change 115
 - listens 31
 - sends 31
 - set 65
- TCP addresses 118
- TCP Base Port 117
- TCP Discovery 31
- TCP Discovery Active
 - Selecting 100
- TCP Discovery Address Ranges 65
- TCP Dst 365
- TCP SIP 250
- TCP/IP 175
- TCP/UDP 152
- Technical Bulletins 125
- TEI 226
 - allocating 199
 - deciding 204
 - exchange allocating 199
- TEL 243
- Tel URI 242
- telecoms 27
- Telephone Features 466
- Telephone Number 454, 511, 513, 556, 569, 587, 588, 590, 594, 595, 596, 599, 607, 634, 636, 649, 652
 - differing 408
- Telephone Number Field Characters 425
- telephone number takes 595
- telephone number value 511, 513
- Telephone tabs 327
- telephonenumber 175
- telephoneNumber,otherTelephone,homePhone 175
- Telephony 331, 563, 567, 571, 586, 622, 623, 634, 657, 679, 688, 696
 - Select 700, 701
 - set 792
- Telephony Features 277
- Telephony Offhook Station 258
- Telephony Settings 772
- Teleseer 866
- TELNET 364
- Template 856
 - Create Offline Configuration Wizard stage 861
- template changes 856
- Template Records 864
- Temporary Disable 110
- Temporary Disable creates 98
- Terminal Equipment Identifier 204
- Terminal Support 905
- terminate 382
 - LDAP 175
- Test Number 220
- Test SIP 152
- Test Small Community Networking 796
- Text Labels 520, 563, 587, 649
 - Customizing 515
- Textphone 800
- TFTP 103
- TFTP Configuration Write 103
- TFTP Log 136
- TFTP Log window 136
- TFTP Server 237
- TFTP Server IP Address 149
- This configuration 72
- Those toolbars 136
- Though Manager 44
- Tick SNMP Enabled 181
- TIE 216
- Tie Automatic 211
- Tie Delay Dial 211
- Tie Immediate Start 211
- Tie Wink Start 211
- til 492
- TIME 364, 583, 584, 610, 634, 638, 639, 642, 643
 - Access 127
 - Day 645, 747
- Time Constant 354
- Time Entries 361
- Time Entry 361
- Time Offset 149
- Time on System Variables 899
- Time Profile 349
 - Create 329
 - Twinning 297
- time profile during 349
- Time Profile list 339
- Time protocol 747
- Time Server IP Address 149
- Time servers 149
- timeout 334
 - change 275
 - Dialing 802
- timeout lapses
 - error 356
- timeout routing options 166
- timeouts
 - Control Unit 334
- TimeQueued 899
- Timer 645
- timer expires 98
- Timers 337
- timers relating 216
 - account 110
- Timers Settings 211
- Timers Sub-Tab Settings 216
- TimeSystem 899
- Title Bar 760
- TLA 800
- TLS 86
 - long 100
- TmDay 645
- TNS 223
- TNS Code 223
- TO 243
- to/connected 232
- Toggl 501, 646
- Toggle Calls 501, 646
- ToggleCalls 501

- Toggling 327
- Tone 466
- Tone Detection 402
- Tone Disconnect 166
- tone disconnect clearing
 - disconnect 166
- Tone Plan 149
- Tone Tone 842
- Toolbars
 - Altering 50
 - following 50
 - Moving 50
- Tools 114
- Tools menu 114
- ToS 152
- Total Control Retransmission Interval 382
- Trace Calls 277
- Trace Options 736
- traffic 31, 162
- traffic routing 792
- Transfer 334, 585, 701, 704
 - Attendant 402
 - Calls 764
 - Forwarded Extension 764
 - Operator 402
 - pressing 899
- transfer address 336
- TRANSFER button 585, 899
- Transfer function
 - phone 704
- Transfer key 696
- Transfer Protocol 364
- Transfer Return Time 277
- Transferring 657, 671, 688, 696, 697, 701
 - Calls 704, 706
- Transferring Calls 448
- Transit Network Selection 223
- transmitted/received 334
- transmitting
 - Status 356
- Transport Layer Security 86
- Transtalk 9040 520, 546, 679, 905
- Trap 365
- Trap Both 365
- Trap Ping Replies 365
- Trap Pings 365
- trigger 349
 - MCID 736
- triggered during 736
- Trnsfr 706
- Trunk 201
- Trunk Access Code 871
- trunk call 869
- Trunk Connect
 - Allow Analog Trunk 196
- Trunk Connection
 - Analog Trunk 765
- trunk receiving 345
- Trunk Transfer 869
- Trunk Type 207, 227, 231
 - Outgoing 216
- trunk type carrying 297
- Trusted Root Certification Authorities 86
- Trusted Source Access 270
- TSC 867
- TSC Flag 872
- TUI 302
- Tunnel 63
 - source address 381
- Tunnel | IPSec Policies 384
- Tunnel | LKE Policies 383
- Tunnel | PPP 382
- Tunnel | Tunnel 381
- Tunnel Endpoint IP Address 383
- Tunneling Protocol 31
- Tunnnel 383
- Turning
 - Busy 441
- Turns CRC 220
- Twin 657, 679, 688, 696, 704, 706
- Twin Bridge Appearances 297
- Twin Coverage Appearances 297
- Twin LED Button Users 706
- Twin LED Button Users Lamp States 706
- Twin Line Appearances 297
- Twinned Call Pickup 297
- Twinned Calls 185
 - Maximum Number 297
- Twinned Handset 297
- Twinned Line/Bridge/Coverage Appearances 657
- Twinned Mobile Number 297
- twinning 185
 - Destination 297
 - on/off 646
 - Time Profile 297
 - Type 297
- Twinning action 297
- Twinning tab 297
- Twinning Type 297
- Tx 216
- Tx Gain 216
- type 326
 - CDR 187
 - Control Unit 780
 - IP Office 72
 - NAT 152
 - NAT/Firewall 152
 - National 425
 - Signaling 196
 - Twinning 297
 - uses 152
- Types 515, 520, 573, 589, 602, 606, 612, 634, 640, 642
- Types Blocked 752
- Types Forwarded 474
- Types Redirected 754
- types; Forward Unconditional 474
- Typically
 - 3rd-party 773
- Typically MU-Law 435
- Typically U-Law 166
- U**
- UDP 118
 - 17 365
 - forward 31
 - listens 31
 - performs 65
 - send 152
 - set 65
 - Simple Traversal 152
- UDP Broadcast 70
 - 255.255.255.255 31
- UDP broadcast address 65

- UDP Discovery 31
- UDP Discovery Active
 - Selecting 100
- UDP SIP 152
- UDP/TCP 31
- UK
 - matching 256
- UK English
 - back 800
 - defaults 800
- UK20 831
- U-Law models 166
- Unanswered Calls 772
- Unblock 30
- Under Custom 365
- Under Custom create 365
- Under Destination 781
- Under UDP Discovery 65
- unencrypted 86
- Unformatted 866
- unhold 697
- Unique Security Administrator 858
- Unique Security Control Unit 83
- Unique System Administrator
 - reset 858
- Unit IP Address 253
- Unit Type 70
- Unit/Broadcast Address 115
 - changes 31
- United Kingdom 149
 - RingNormal 745
- Units
 - data relating 70
- units running 162
- units supporting
 - LAN1 336
- Universal Dial Plan
 - Avaya Communication Manager 164
- Unknown 226
- Unlike pre-4.0 IP Office 323
- Unobtainable 327
- unpark 501, 572, 648, 706
- Unpark Call 648, 742
- UnparkCall 742
- unparked 349, 573, 676, 693, 704
- Unparking Calls 704
- unparks 742
- Unprogrammed/Inaccessible Keys 704, 706
- Unreserved Channels 164
- unsecure 100
- Unsecure Only 105
- Unsecure Only' 105
- Unsecured Interfaces 103
- Unsuitable
 - set 226
- Unsupervised Transfer 402
- untick Enable 146
- unticked 146
- unticking 327
- unvalidated 125
- Update Service 148
- Updating
 - Passwords 858
- Upgrade 856
 - IP Office 859
 - Manager during 125
 - system during 125
- Upgrade Wizard 31
- Upgrade Wizard tool 125
- URI 250
- URI's Incoming Group
 - match 245
- URI's Outgoing 245
- URI's Outgoing Group 245
- URL
 - converts 163
- US 204, 657, 687, 700, 703, 704, 706
 - Base Extension 256
- US English 800
- US PRI 703
- US T1 204
- US T1 PRI 204
- US/Japan 428
- USA 149
- USA/Japan 166
- USB 149
- USB Feature Key dongles 149
- Use 656, 657, 660, 661, 662, 664, 665, 666, 667, 668, 672, 674, 676, 677, 679, 680, 683, 686, 690, 692, 697, 701, 703, 706
 - Action Data 698
 - Cannot 693
 - Delayed Ring 688
- Use 2A
 - button 747
- Use Authentication Name
 - set 243
- Use Elsewhere 661, 662, 664, 665, 666, 668, 674, 676, 677, 692, 693
- Use External Music 166
 - selecting 746
- Use External Music on Hold 166
- Use Here 662, 668, 672, 677, 693
- Use Hiding 382
- Use Just 680
- Use Network Topology 243
- Use Network Topology Info 243
- Use Port 162
- Use System Defaults 258
- Use User Data
 - set 306
- use/idle 706
- User
 - Covering 288
 - create 781
 - match 781
- User | Button Programming tab 747
- User Answers
 - Call 686
 - Covering 670
- User A's 472
- user attempts
 - set 765
- User Button
 - Enabling 747
- User Call Barring 408
- User Call Waiting 741
- user changes 31
- User Data 245
- User dialing 331
- User forwarding 751
- User From Making Any External Calls

User From Making Any External Calls
 Barring 737
 user joins
 call 693
 user leaves
 call 693
 user lifts 690
 User Makes Call 665
 User Name 781
 user presses 686, 747
 user programming 634
 user receives 771
 User recording 905
 User Registered 736
 User Restriction 331
 set 268
 User Restriction/Rights 73
 User Rights 75
 User Rights Admin 107
 User Rights Membership 398
 User Rights/User 424
 User Rights/User Restrictions Short Codes 424
 user selects 31
 User Settings
 Programming 701
 User Short Code 331
 Create 443
 user waits 764
 user wants 688, 690
 user wishes 495
 user's 478, 613
 function 478
 user's phone 613
 User's 453
 busy signal 441
 Call Intrude attempt 442
 Call Tracing 736
 Display Charges 723
 Incoming call route records 863
 setting stops 765
 system sees 751
 voicemail prompts 391
 User's Busy Status
 Determining 762
 users entering 455
 users exchange 675
 users existing 739
 user's forwarding 676
 user's forwarding settings 676, 760
 User's Guide 742
 Users Lamp States 706
 users making external 388
 user's Manual Recording Mailbox setting 576
 users outgoing 770
 User's Password 781
 users retrieving 314
 User's Settings 166
 users wanting
 park 485
 set 497
 start 481
 user's Working 268
 user's Working Hours 268
 users,dc 175
 uses 334
 Domain Name Server addresses 148

Forward Number 475
 Incoming Caller Line Identification 738
 IP 78
 Q.931 Hold 479
 Q.931 Suspend 500
 RelayOn 488
 RTP 152
 settings relating 398
 tab relate 421
 Type 152
 uses alternating 802
 Using IP Office Manager 509
 Using Line Appearances 675
 Using Manager 508, 509
 UTF8 131
V
 V.110 357, 594
 V.120 357, 595
 V.32 488
 V.90 785
 V<Caller's ICLID 275
 v1.0 86
 V110 357, 594
 V120 357, 595
 V32 196
 V42 196
 valid/invalid
 including 403
 Validate 164
 Validate Configuration 123
 Validate Entry 905
 Validate option 125
 Validating 123
 Entry 56
 Validation 152
 selecting 123
 Validation Control 905
 value equal 334
 values 309
 10700 204
 Variable 899
 Variable Routing 899
 Variable Routing action 899
 Various IP Office 103
 VCM 250
 Venezuela 842
 Verification Timer
 Polling 356
 Verify Duration 216
 Verizon's 196
 Very strong' 86
 Via Nat 250
 Via Voicemail Pro 502
 Paging 775
 Video 596
 Video Call 463, 596
 View 515, 634, 643
 View/Edit 175
 Viewing 175
 Virtual WAN Port
 Create 782
 Vista 899
 Vista Business Ultimate
 refers 899
 Vista Enterprise 899
 Vista Home Basic 899

- Vista Home Premium 899
- Visual 56
 - selecting 120
- Visual Preferences 56
 - selecting 120
- Visual Voice 275, 651
- VJ 357
- VLAN
 - routing 237
 - sets 237
- VLAN ID 237
- VLAN marking 237
- VM 103
- VM Lite 800
- VM Pro 103
- VM Pro Password 103
- VM Ringback 760
- VM_TRUNCATE_TIME
 - adding 275
- VMCol 502, 652
- VMOff 504, 653
- VMon 504, 653
- VMRB 505, 654
- Voice 349
- Voice Call 357
- Voice Channels 226
- Voice Compression Card
 - Control Unit 788
- Voice Compression Channels 767
- Voice Grade Data 867
- Voice Mail Lite 27
- Voice Networking 232
- Voice Packet Size 250
- Voice Payload Size 232
- Voice Recording 361
- Voice Recording Library 349
- voice recording triggered 361
- voice signaling 152
- Voice56 357
- voicemail 466, 661, 671, 676, 688, 693, 696
 - copy 314
 - diverted 441
 - Voicemail On 329
- Voicemail Answer Time 309
- Voicemail application 27
- Voicemail Code 314
- Voicemail Collect 288, 652
 - set 275
- Voicemail Collect button
 - Program 288
- Voicemail Destination 164
- Voicemail Email 73
- Voicemail Email Reading 270
- Voicemail file
 - attaching 270
- Voicemail Help 314
- Voicemail Installation
 - Refer 314
- Voicemail IP Address 164
- Voicemail Lite 149
- Voicemail Lite Server 149
- Voicemail Lite/Pro
 - set 164
- Voicemail Node 503
- Voicemail Off 653
- Voicemail On 505, 653, 661
- Voicemail 329
- Voicemail Password 164
- Voicemail Pro 502, 576, 651, 652, 800
 - hosting 794
 - IP Office 899
- Voicemail Pro Assisted Transfer 739
- Voicemail Pro Installation 800
 - Refer 302
- Voicemail Pro provide 323
- Voicemail Pro Queued 323
- Voicemail Pro running 502
- Voicemail Pro Server 322
- Voicemail Pro Server/Service 747
- Voicemail Pro Service 149
- Voicemail Pro Short 164
- Voicemail Pro Short Codes 164
- Voicemail Pro Storage Alarms 181
- voicemail prompts 800
 - user 391
- Voicemail ringback 504, 671, 688
- Voicemail Ringback Off 654
- Voicemail Ringback On 654
- Voicemail Server 794
- Voicemail Server IP 149
- voicemail server running 164
- Voicemail Server's WAVS 775
- voicemail sever 164
- Voicemail Support 794
 - Adding 329
- Voicemail Time 309
- Voicemail Type
 - Changes 164
- Voicemail/Auto-Attendant 766
- VoicemailCollect 502
- VoicemailNode 503
- VoicemailOff 504
- VoicemailOn 504
- VoicemailRingbackOff 505
- VoicemailRingbackOn 505
- VoIP 357, 693
 - carrying 354
 - create 789
 - end 425
 - Monitoring 443
 - PPP 354
- VoIP call signaling 152
- VoIP Extension 295
- VoIP IP 295
- VoIP Line 796
- VoIP Link
 - Creating 789
- VoIP Mode 295
- VoIP Settings 232
- VoIP Silence Suppression 250
- VoIP VPN
 - create 796
- VoIP VPN link
 - System 796
- VoIP WAN 357
- VPN 789
- VPN IP 899
- VPN IP Extensions 899
- VPN IP Extensions Licenses 899
- VPN Line 381
- VPN Phone Allowed 899
- VPNremote

VPNremote
 running 899
 VRL 31
W
 Wait 560, 576, 578, 579, 582, 589, 612, 616, 644, 649, 654
 enter 561
 Waiting Off 578
 Waiting On 578
 Waiting Suspend 579
 WAN 781
 attach 789
 connect 352
 define 340
 WAN Ethernet
 including 152
 WAN IP 381
 WAN links 782
 WAN Mode Override 166
 WAN Port 789
 Mode 354
 Wan Port Form 789
 WAN Port Using Frame Relay 789
 WAN Port Using PPP 788
 WAN PPP 782
 WAN PPP link 782
 WAN Service
 become 781
 Create 789
 WAN_MODE_OVERRIDE 275
 WAN3 146
 excluding 72
 scan 253
 WAN3 10/100 146
 WANPort 788
 WanPort Tab 789
 WARNING 86
 WARNINGS 773
 Wats 224
 wav 314
 WAV file 401
 allow 863
 Week 361
 Weekly 361
 Weekly Time Pattern 361
 WEP 386
 What's New 899
 When Free 745
 Widths 54
 WiFi 297
 wildcards 899
 Window Size 59
 Windows 382
 Create 36
 Windows 2000 27
 Windows 2000 Professional 27
 Windows 2000 Server 175
 Windows 2000 Server Active Directory
 Contacts 175
 Windows 2003 SBS 27
 Windows 2003 Server 27
 Windows 95 DUN 382
 Windows Certificate Store Import 86
 Windows Certificate Store Organisation 86
 Windows Certificate Store Usage 86
 Windows Control Panel 27
 Windows Internet Name Service 163
 Windows Notepad 27
 Windows operating system 86
 Windows Operating System Support 899
 Windows PC 13
 Windows PCs 163
 Windows Registry
 editing 121
 Windows Registry Settings
 Changing 121
 Windows Security Alert 30
 Windows Server 2003 86
 Windows Vista 86
 Windows XP 86
 Windows XP Pro 899
 Windows XP Professional 86
 Wink Delay 216
 Wink End 216
 Wink Signal 216
 Wink Start 216
 Wink Validated 216
 Wink-Start 216
 WinProxy 365
 WinProxy Server 365
 WINS 163
 WINS Scope 163
 WINS Server IP Address 163
 Wireless 149
 Wireless | Security 386
 Wireless | SSID 386
 Wireless IP Phones 904
 Wireless Mac Address 386
 Withheld 345
 display 275
 replace 195
 Within IP Office Manager 696
 Within Manager 317
 Within Phone Manager 295
 Within Preferences 118
 Within SAA 858
 Word 580, 621
 WordPad 27
 Working
 Directory 118
 Hours 268
 Hours Time Profile 268
 Hours User Rights 268
 IP 792
 Working Directory 130
 Working Hours 268
 Working Hours Time Profile 268
 Working Hours User Rights 268
 World 435
 Rest 149
 WorldCom 220
 Wrap-Up 498
 Wrap-up Time 498, 643
 Write 86
 Write All Security Settings 83
 Write Configuration 83
 Writer IP Address 149
 WUTim 498, 643
 www.avaya.com 163
X
 X.500 175
 X.509 v3 86

X.509v3 100
X509 86
XM24 519, 520
XM24 Add-On 520
XX02 403, 558, 569, 637
XXX 572
XXX0 572
XXX1 572
XXX9 572
xxxx 595

Y

y,n,text 636

Z

Zealand 275
Zero Suppression 220
zhh 819

Performance figures and data quoted in this document are typical, and must be specifically confirmed in writing by Avaya before they become applicable to any particular order or contract. The company reserves the right to make alterations or amendments to the detailed specifications at its discretion. The publication of information in this document does not imply freedom from patent or other protective rights of Avaya or others.

Intellectual property related to this product (including trademarks) and registered to Lucent Technologies have been transferred or licensed to Avaya.

All trademarks identified by the ® or ™ are registered trademarks or trademarks, respectively, of Avaya Inc. All other trademarks are the property of their respective owners.

This document contains proprietary information of Avaya and is not to be disclosed or used except in accordance with applicable agreements.

Any comments or suggestions regarding this document should be sent to "wgctechpubs@avaya.com".

© 2009 Avaya Inc. All rights reserved.

Avaya
Unit 1, Sterling Court
15 - 21 Mundells
Welwyn Garden City
Hertfordshire
AL7 1LZ
England.

Tel: +44 (0) 1707 392200
Fax: +44 (0) 1707 376933

Web: <http://marketingtools.avaya.com/knowledgebase>