



Avaya Solution & Interoperability Test Lab

Application Notes for XTEND Communications AnswerPro with Avaya Communication Manager using Avaya Communication Manager Applications Programming Interface – Issue 1.0

Abstract

These Application Notes describe a compliance tested configuration comprised of Avaya Communication Manager, Avaya IP and Digital Telephones, and the XTEND Communications AnswerPro. AnswerPro is a software application that allows a user to operate a physical telephone and view call and telephone display information through a graphical user interface (GUI). AnswerPro uses the Avaya Communication Manager Application Programming Interface to share control of a physical telephone and receive the same terminal and first party call control information received by the physical telephone. During compliance testing, calls were successfully placed to and from Avaya IP and Digital Telephones that were in shared control mode with AnswerPro applications. Information in these Application Notes has been obtained through compliance testing and additional technical discussions. Testing was conducted via the Developer*Connection* Program at the Avaya Solution and Interoperability Test Lab.

1. Introduction

These Application Notes describe a compliance-tested configuration comprised of Avaya Communication Manager, Avaya Communication Manager Application Programming Interface (API), Avaya IP and Digital telephones, and XTEND Communications AnswerPro. AnswerPro is a Windows-based application that allows a user to operate a physical telephone and view call and telephone display information through a graphical user interface (GUI) on his/her computer. AnswerPro uses the Communication Manager API to share control of a physical telephone and receive terminal and first party call control information.

Figure 1 illustrates a sample configuration consisting of an Avaya S8500 Media Server, an Avaya G650 Media Gateway, an Avaya Communication Manager API server, Avaya IP and Digital Telephones, an XTEND Communications Database Server, and PCs with AnswerPro installed and running. Avaya Communication Manager runs on the S8500 Media Server, though the solution described herein is also extensible to other Avaya Media Servers and Media Gateways. The Avaya C364T-PWR Converged Stackable Switch supports the illustration and verification of the Avaya/XTEND solution. Its configuration is not the focus of these Application Notes and is thus not described here.

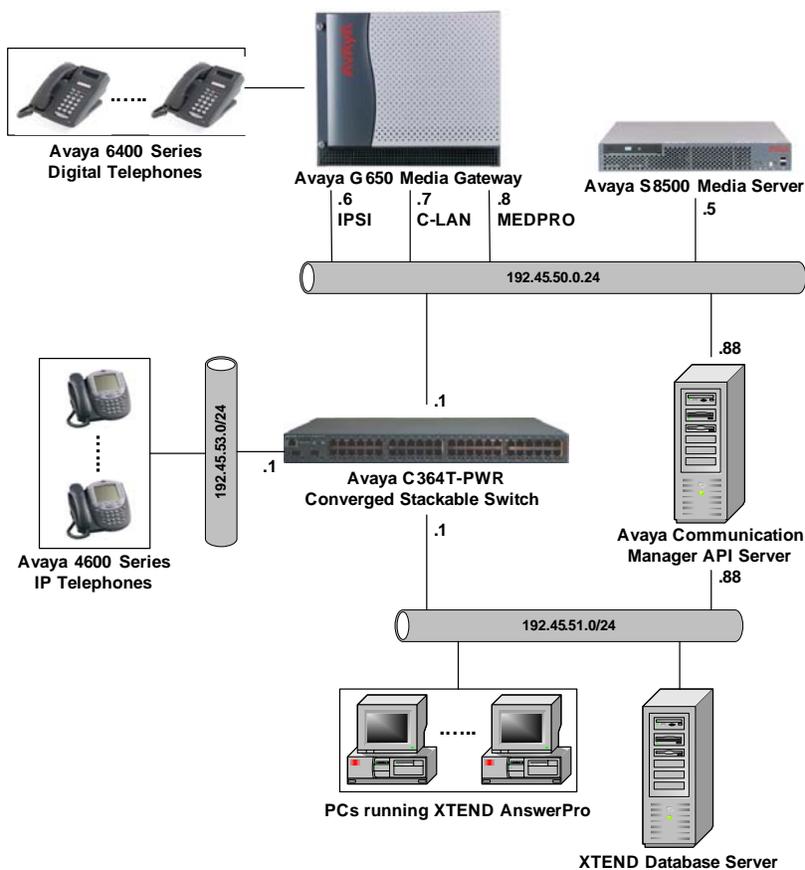


Figure 1: Sample configuration.

2. Equipment and Software Validated

The following equipment and software/firmware were used for the sample configuration provided:

Equipment	Software/Firmware
Avaya S8500 Media Server	2.2 (R012x.02.0.111.4)
Avaya G650 Media Gateway	-
TN2312BP IP Server Interface	12
TN799DP C-LAN Interface	12
TN2302AP IP Media Processor	95
Avaya 4600 Series IP Telephones	2.1.3 (4610SW) 2.1.3 (4620SW)
Avaya 6400 Series Digital Telephones	-
Avaya Communication Manager API Server	2.1.24
Avaya C364T-PWR Converged Stackable Switch	4.3.12
XTEND Communications AnswerPro Console	10.2.243
XTEND Communications Gencmapi Module	1.0.0.3

3. Configure Avaya Communication Manager

The AnswerPro applications appear as “virtual” stations/softphones to Avaya Communication Manager. Each of these virtual stations, hereafter called Communication Manager API stations, requires an “IP_API_A” license. Note that this is separate and independent of Avaya IP Softphone licenses, which are required for Avaya IP Softphones but not required for Communication Manager API stations. From the Avaya Communication Manager System Access Terminal (SAT) interface, enter the **display system-parameters customer-options** command and verify that there are sufficient **IP_API_A** licenses.

```
display system-parameters customer-options                               Page 10 of 11
                                MAXIMUM IP REGISTRATIONS BY PRODUCT ID
```

Product ID	Rel. Limit	Used
IP_API_A	: 1000	3
IP_API_B	: 0	0
IP_API_C	: 0	0
IP_Agent	: 1000	0
IP_IR_A	: 1000	0
IP_Phone	: 1000	8
IP_ROMax	: 5	0
IP_Soft	: 1000	0
IP_eCons	: 0	0
	: 0	0
	: 0	0
	: 0	0
	: 0	0
	: 0	0

Enter the **change station s** command, where **s** is the extension of a registered, physical Avaya IP or Digital telephone. On Page 1 of the **station** form, set **IP Softphone** to “**y**.” Repeat this for every physical Avaya IP or Digital telephone that will be shared controlled by an AnswerPro application.

```
change station 50001                                                    Page 1 of 4
                                STATION
```

Extension: 50001	Lock Messages? n	BCC: 0
Type: 4610	Security Code: 12345	TN: 1
Port: S00118	Coverage Path 1:	COR: 1
Name: STA-50001	Coverage Path 2:	COS: 1
	Hunt-to Station:	
STATION OPTIONS		
Loss Group: 19	Personalized Ringing Pattern: 1	
	Message Lamp Ext: 50001	
Speakerphone: 2-way	Mute Button Enabled? y	
Display Language: english		
Survivable GK Node Name:	Media Complex Ext:	
	IP SoftPhone? y	

4. Configure XTEND AnswerPro

XTEND Communications installs and customizes AnswerPro for their end customers.

5. Interoperability Compliance Testing

The interoperability compliance testing included feature, serviceability, and performance testing. The feature testing evaluated the ability of AnswerPro to operate Avaya IP and Digital telephones and view their display and first party call information. The serviceability testing introduced failure scenarios to see if AnswerPro can resume operation after failure recovery. The performance testing stressed the AnswerPro application by continuously placing calls to a telephone controlled by AnswerPro over extended periods of time.

5.1. General Test Approach

The general approach was to exercise basic telephone and call operations on Avaya IP and Digital telephones using AnswerPro. The main objectives were to verify that:

- The user may successfully perform off-hook, on-hook, dial, answer, hold, retrieve, transfer, and conference operations on the physical telephone from the AnswerPro console.
- Manual operations performed on the physical telephones are correctly reflected in the AnswerPro console.
- AnswerPro and manual telephone operations may be used interchangeably; for example, go off-hook using AnswerPro and manually dial digits.
- Display and call information provided on the AnswerPro console are consistent with the actual display and call information on the physical telephones.
- Call states are consistent between AnswerPro and the physical telephones.

For feature testing, the types of calls included internal calls, inbound trunk calls, outbound trunk calls, transferred calls, conference calls, and Automatic Call Distribution (ACD) calls. For serviceability testing, cable disconnects and reconnects, application restarts, and device resets were applied. For performance testing, a call generator continuously placed calls to a Vector Directory Number (VDN) that queued the calls in a hunt/skill group, which in turn delivered the calls to an agent logged into the hunt/skill group; the agent's physical telephone was controlled by AnswerPro.

5.2. Test Results

Calls were successfully placed to and from telephones using manual methods and AnswerPro. Other telephone operations such as off-hook, on-hook, hold, retrieve, transfer, and conference were successfully performed from the AnswerPro console. Manual telephone operations, display and call information, and call states were also correctly reflected in the AnswerPro console.

For serviceability testing, AnswerPro was able to resume control of Avaya IP and Digital telephones after restarts of the AnswerPro application and the computer on which it runs, and resets of the physical telephone, Avaya Communication Manager API server, and Avaya S8500 Media Server. For performance testing, AnswerPro s off-hook, on-hook, hold, retrieval, transfer, and conference call operations under a continuous call volume for over 2 hours.

The following observations were made during testing:

- When performing a call transfer or conference from the AnswerPro console, the current line is put on hold and another line is activated to call another party. However, the AnswerPro console does not change the color of the held line to red, as it normally does when holding a call. This may cause confusion as to whether the held line is still on hold or was dropped. The held line's state can be verified on the physical telephone.
- When the AnswerPro console is used to take an Avaya IP or Digital telephone off-hook, but the call is manually placed and then hung up from the physical telephone, Avaya Communication Manager unregisters the AnswerPro application. The AnswerPro application automatically re-registers with Avaya Communication Manager. A modification of the Avaya Communication Manager API server software resolved the unregistration issue, and this modification is expected to be included in a future build of the Avaya Communication Manager API server software.

6. Verification Steps

The following steps may be used to verify the configuration:

- From the PC or laptop on which AnswerPro runs, ping IP interfaces, in particular the MedPro board(s) in the Avaya G650 Media Gateway, the Avaya Communication Manager API server, and IP telephones, and verify connectivity.
- Verify that both the physical telephone (if IP) and the AnswerPro application are registered with Avaya Communication Manager by using the **list registered-ip-stations** command on the SAT.
- Go off-hook and on-hook on the controlled telephone manually and using AnswerPro, and verify consistency.
- Place and answer calls from the telephone manually and using AnswerPro, and verify consistency.

7. Support

For technical support on XTEND Communications products, contact XTEND Communications at:

- Phone: (212) 951-7670
- Email: support@xtend.com

8. Conclusion

These Application Notes illustrate a compliance tested configuration comprised of Avaya Communication Manager, Avaya IP and Digital Telephones, and the XTEND Communications AnswerPro. AnswerPro uses the Avaya Communication Manager API to control a physical telephone and receive the same display, terminal and first party call control information received by the physical telephone. During compliance testing, calls were successfully placed to and from Avaya IP and Digital Telephones that were in shared control mode with AnswerPro applications.

9. Additional References

Product documentation for Avaya products may be found at <http://support.avaya.com>.

Product information for XTEND Communications products may be found at <http://www.xtend.com/productset.htm>.

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