Call Agent Security and Administration

Each of the three interfaces to the Call Agent have security features and user administration.

- Call Agent Manager
- MAP
- CS 2000 SAM21 Manager client

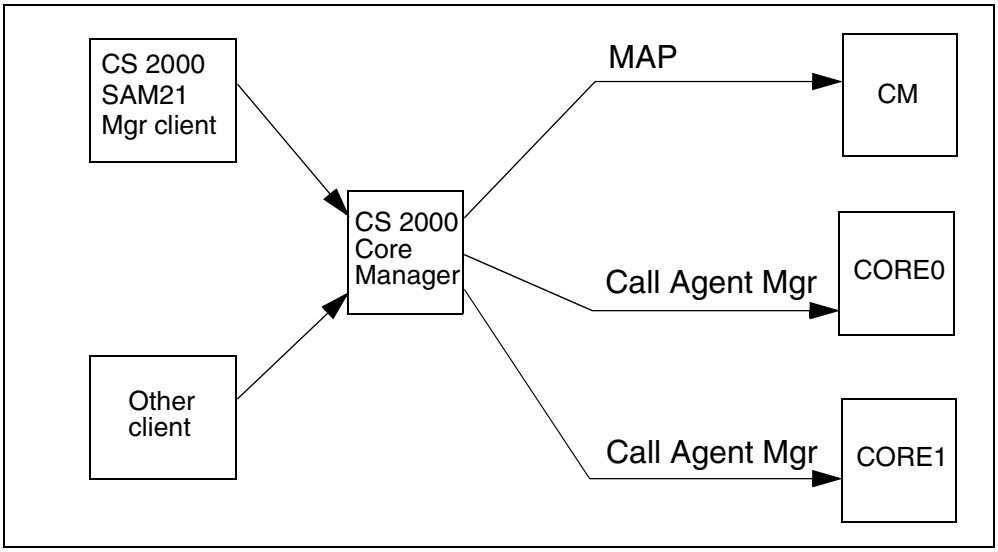
What's new for SN08

There are no changes to this document in SN08.

Security strategy overview

The Call Agent platform hardware and software is protected by the CS 2000 SAM21 Manager server and client. For security features about these elements, refer to the *CS 2000 Management Tools Security and Administration*, NN10172-611.

The Call Agent Manager and MAP are available after the PassThru feature is configured on the CS 2000 Core Manager. Logging into the CS 2000 Core Manager with one of the configured PassThru usernames provides a connection between the local machine and the Call Agent Manager or MAP.



Access to the MAP is available by telnetting to the CS 2000 Core Manager as user “cmusr” and then logging in with a valid username and password. This username, like the next two, are Nortel suggested names, but the usernames are configurable when the PassThru feature is configured at the CS 2000 Core Manager.

Access to the Call Agent Manager on the unit 0 Call Agent is available by telnetting to the CS 2000 Core Manager as user “core0usr” and then providing a valid username and password. Once logged in, type **ccamtc** and press the Enter key.

Access to the Call Agent Manager on unit 1 Call Agent is available by telnetting to the CS 2000 Core Manager as user “core1usr” and then providing a valid username and password. Once logged in, type **ccamtc** and press the Enter key.

User authentication is required at the client workstation, and the destination host.

Call Agent Manager procedures

The Call Agent Manager provides an interface to the platform software and utilities of the Call Agent. Platform software includes the operating system and other non-call processing software.

User administration is available for the Call Agent platform software. Refer to Changing a user password and Performing platform user administration for details.

Dropping call processing application synchronization

The **DpSync** command is available from the active Call Agent only.

At the active Call Agent Manager

1 Enter the CoreMtc level.

```
CoreMtc
```

2 Enter the Appl level.

```
Appl
```

3 Enter the DpSync command.

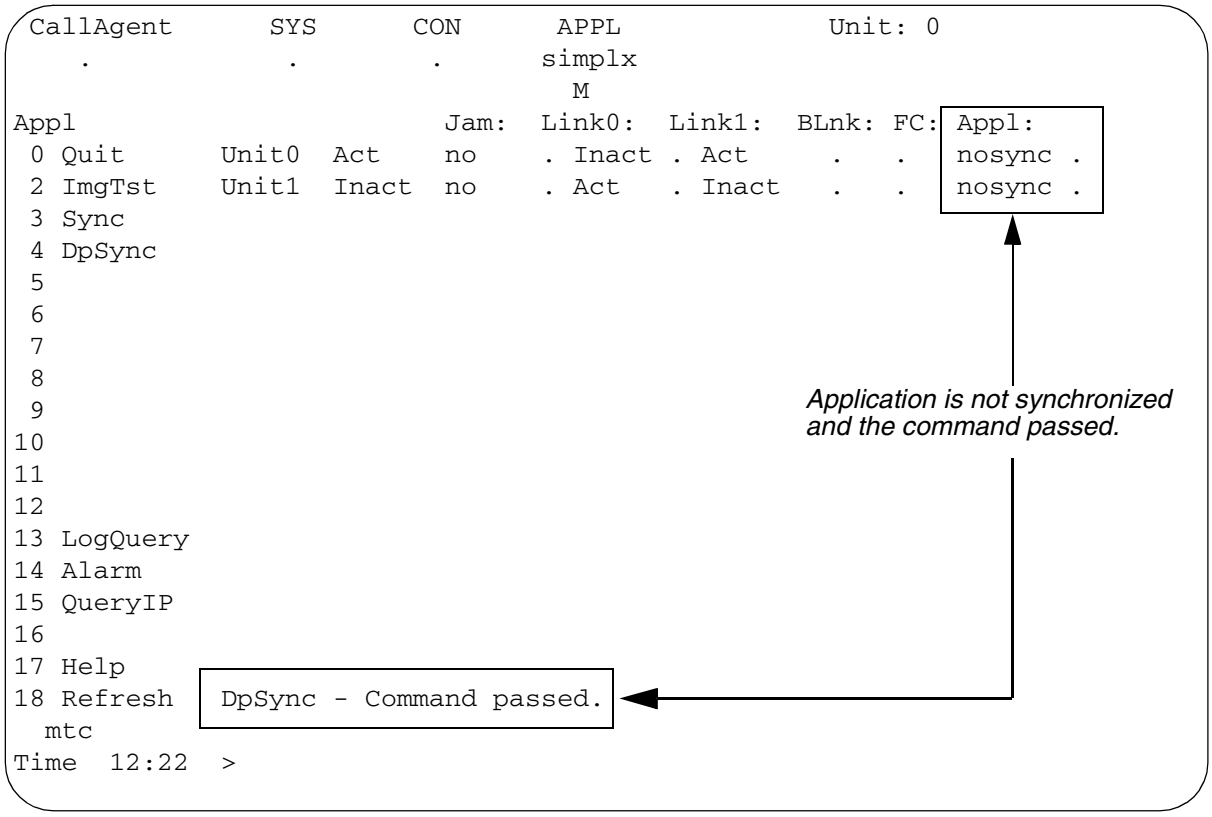
```
DpSync
```

```
CallAgent       SYS       CON       APPL              Unit: 0
    .            .         .       simplx
                                       M
Appl                        Jam:  Link0:  Link1:  BLnk: FC: Appl:
 0 Quit       Unit0  Act     no     . Inact . Act     .    .   nosync .
 2 ImgTst     Unit1  Inact   no     . Act   . Inact   .    .   nosync /restart
 3 Sync
 4 DpSync
 5
 6
 7
 8
 9
10
11
12
13 LogQuery
14 Alarm
15 QueryIP   DpSync:   Drop application synchronization.
16                     Parms: [RestartType]
17 Help                   Restart   - ( WARM | COLD | RELOAD | NORESTART )
18 Refresh                (default) -  COLD
  mtc
Time  12:25
```

4 This procedure is complete.

Additional information

Successful completion of the command is indicated with a screen similar to the following:



If the command is attempted from the inactive unit, the Call Agent responds:

```
DpSync - Command rejected. Reason: Not active unit.
```

Testing application images

The **ImgTst** command is available from the active Call Agent only.

At the active Call Agent Manager

1 Enter the CoreMtc level.

```
CoreMtc
```

2 Enter the Appl level.

```
Appl
```

3 Enter the ImgTst command.

```
ImgTst
```

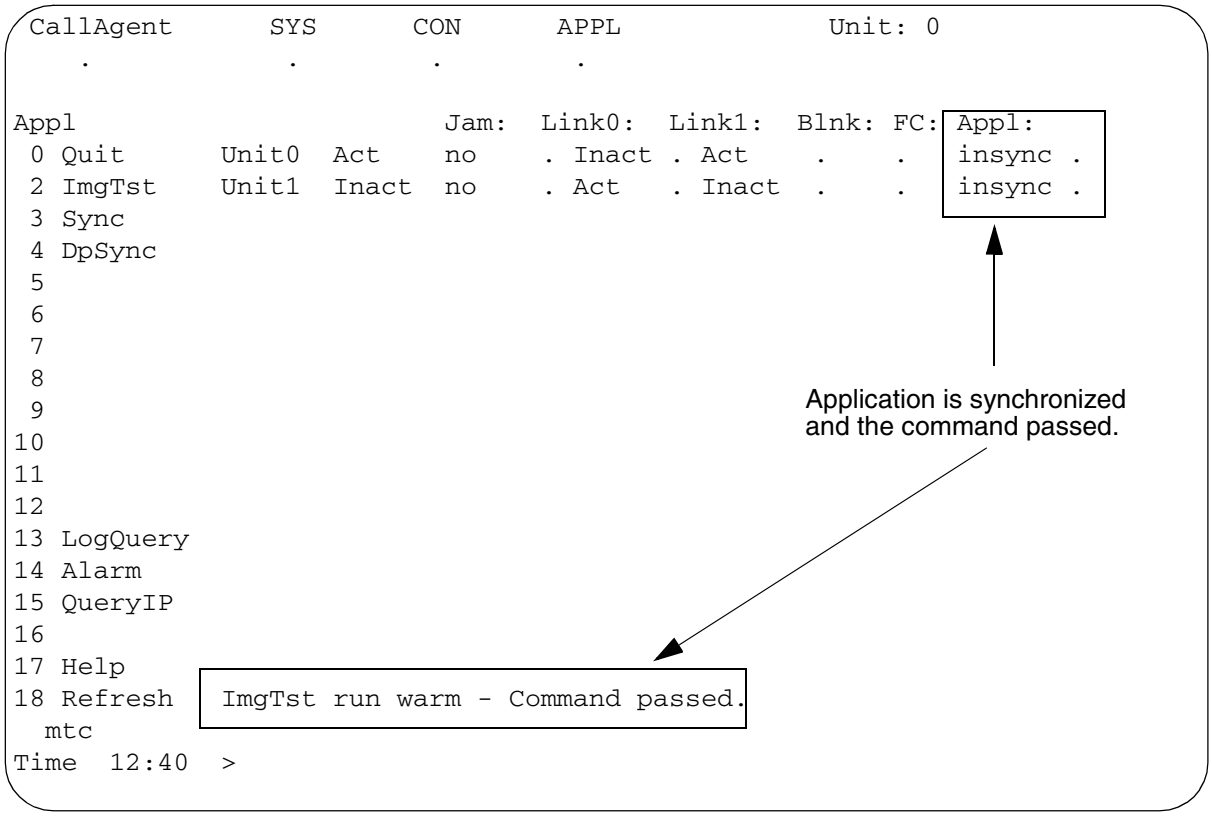
```
CallAgent       SYS       CON       APPL              Unit: 0
    .            .         .       ImgTst

Appl                        Jam:  Link0:  Link1:  Blnk: FC: Appl:
 0 Quit       Unit0  Act    no    . Inact . Act    .    .   nosync .
 2 ImgTst     Unit1  Inact  no    . Act   . Inact  .    .   nosync /imgtst
 3 Sync
 4 DpSync
 5
 6
 7
 8
 9
10
11
12
13 LogQuery
14 Alarm      ImgTst:   Test for image restartability on inactive unit.
15 QueryIP              Parms: RequestType TestType [NOSYNC]
16                         ReqType    - ( RUN | QUERY )
17 Help                    TestType   - ( WARM | COLD | RELOAD )
18 Refresh                 NOSYNC     - for no application sync after test
  mtc
Time  12:30  >imgtst run warm
```

4 This procedure is complete.

Additional information

Successful completion of the command is indicated with a screen similar to the following:



If the command is attempted from the inactive unit, the Call Agent responds:

```
ImgTst run warm - Command rejected. Reason: Not
active unit.
```

Synchronizing call processing applications

The **Sync** command is available from the active Call Agent only.

At the active Call Agent Manager

1 Enter the CoreMtc level.

```
CoreMtc
```

2 Enter the Appl level.

```
Appl
```

3 Enter the Sync command.

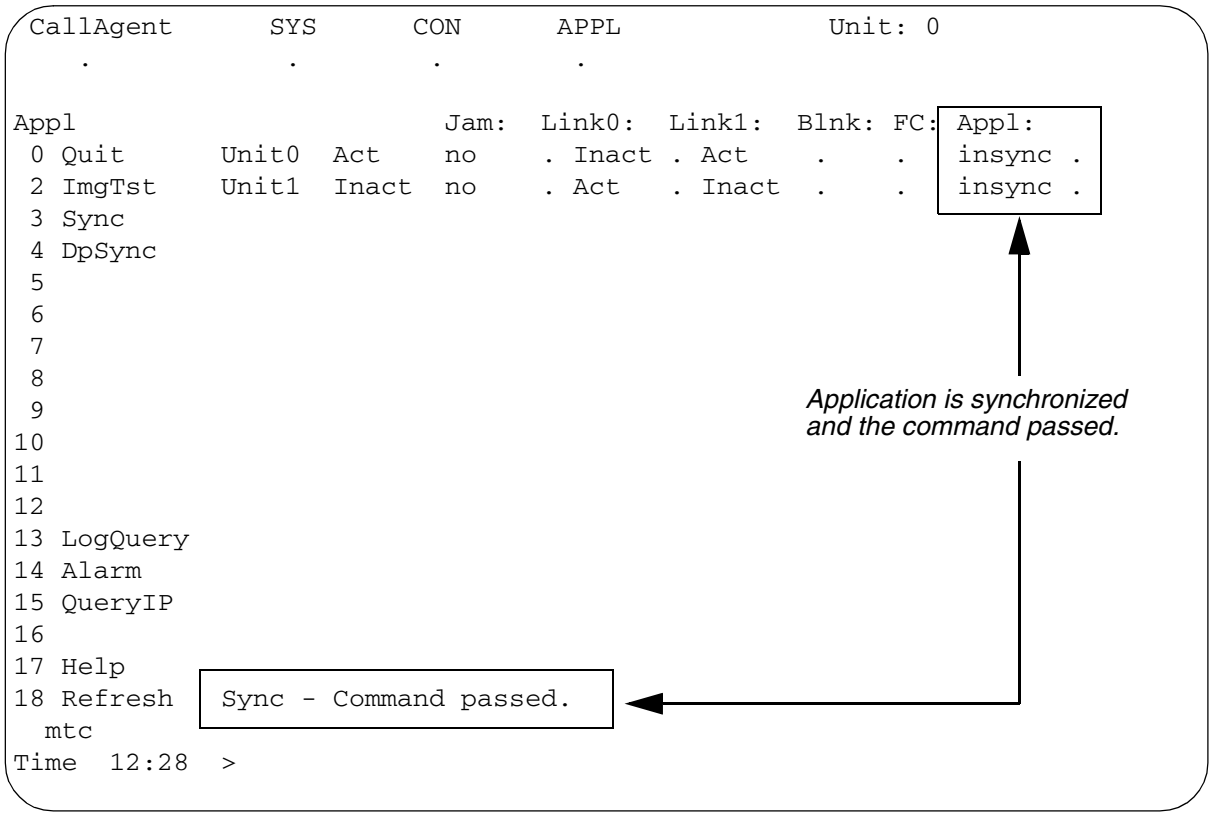
```
Sync
```

```
 CallAgent       SYS       CON       APPL              Unit: 0
    .             .         .       simplx
                                       M
Appl                         Jam:  Link0:  Link1:  BLnk: FC: Appl:
 0 Quit       Unit0  Act     no     . Inact . Act     .    .   nosync /syncing
 2 ImgTst     Unit1  Inact   no     . Act   . Inact   .    .   nosync /syncing
 3 Sync
 4 DpSync
 5
 6
 7
 8
 9
10
11
12
13 LogQuery
14 Alarm
15 QueryIP
16
17 Help
18 Refresh    Sync:     Synchronize the applications.
  mtc
Time  12:27   >
```

4 This procedure is complete.

Additional information

Successful completion of the command is indicated with a screen similar to the following:



If the command is attempted from the inactive unit, the Call Agent responds:

```
Sync - Command rejected. Reason: Not active unit.
```

Jamming a Call Agent

Jamming the Call Agent places the inactive unit in a maintenance state and prevents a Switch of Activity (SWACT) from the active unit to the inactive unit.

At the active Call Agent Manager

1 Enter the CoreMtc level.

`CoreMtc`

2 Enter the CAMtc level.

`CAMtc`

3 Enter the Jam command.

`Jam`

```
CallAgent       SYS       CON       APPL              Unit: 0
  JInact          .         .         .

CAMtc                       Jam:  Link0:  Link1:  Blnk: FC: Appl:
 0 Quit       Unit0  Act    no    . Inact . Act     .    .   insync .
 2 Jam        Unit1  Inact  yes   . Inact . Act     .    .   insync .
 3 RelJam
 4 RExTst
 5 SwAct
 6
 7
 8
 9
10
11
12
13 LogQuery
14 Alarm
15 QueryIP
16           Jam:      Jam the inactive unit, to prevent it taking activity.
17 Help                 Parms: [FORCE]
18 Refresh                 FORCE     - bypass system stability checks
  mtc
Time  10:38  >
```

4 This procedure is complete.

Additional information

The Jam command must be issued from the active Call Agent. A request on the inactive Call Agent is refused with the following message.

```
Jam - Command rejected. Reason: Not active unit.
```

Successful execution returns a screen similar to the following figure:

```
CallAgent       SYS       CON       APPL              Unit: 1
  JInact          .         .         .

CAMtc                        Jam:  Link0:  Link1:  Blnk: FC: Appl:
 0 Quit       Unit0  Inact  yes    . Act    . Inact  .     .   insync .
 2 Jam        Unit1  Act    no     . Act    . Inact  .     .   insync .
 3 RelJam
 4 RExTst
 5 SwAct
 6
 7
 8
 9
10
11
12
13 LogQuery
14 Alarm
15 QueryIP
16
17 Help
18 Refresh    Jam - Command passed.
  mtc
Time  12:15  >
```

Releasing a jammed Call Agent

Releasing a jammed Call Agent removes the inactive unit from a maintenance state and prepares the inactive unit for service.

At the active Call Agent Manager

1 Enter the CoreMtc level.

```
CoreMtc
```

2 Enter the CAMtc level.

```
CAMtc
```

3 Enter the RelJam command.

```
RelJam
```

```
CallAgent       SYS       CON       APPL              Unit: 0
  JInact         .         .         .

CAMtc                        Jam:  Link0:  Link1:  BLnk: FC: Appl:
 0 Quit       Unit0  Act     no     . Inact . Act     .     .   insync .
 2 Jam        Unit1  Inact   yes    . Inact . Act     .     .   insync .
 3 RelJam
 4 RExTst
 5 SwAct
 6
 7
 8
 9
10
11
12
13 LogQuery
14 Alarm
15 QueryIP
16
17 Help
18 Refresh    RelJam:   Release jam on the inactive unit.
  mtc
Time  10:38   >
```

4 This procedure is complete.

Additional information

Successful completion returns the following message:

```
RelJam - Command passed.
```

If the command is attempted from the inactive unit, the Call Agent responds:

```
RelJam - Command rejected. Reason: Not active unit.
```

Executing a routine exercise test

Routine Exercise Tests (RExTst) are executed every 24 hours as a part of automatic maintenance. Use this procedure to invoke a manual RExTst.

At the active Call Agent Manager

1 Enter the CoreMtc level.

```
CoreMtc
```

2 Enter the CAMtc level.

```
CAMtc
```

3 Enter the RexTst command.

```
RExTst RUN
```

```
CallAgent       SYS       CON       APPL              Unit: 0
    .             .         .         .

CAMtc                       Jam:  Link0:  Link1:  BLnk: FC: Appl:
 0 Quit       Unit0  Act    no    . Inact . Act     .    .   insync .
 2 Jam        Unit1  Inact  no    . Inact . Act     .    .   insync .
 3 RelJam
 4 RExTst
 5 SwAct
 6
 7
 8
 9
10
11
12
13 LogQuery
14 Alarm
15 QueryIP   WARNING: The RExTst command runs an image test, hardware
16                    diagnostics, a hardware reset and a reboot of the
17 Help               inactive unit.
18 Refresh   Please confirm ("YES", "Y", "NO", or "N"):
  mtc
Time  14:07  >
```

4 Confirm the test.

System response:

The system runs the REx test, and initiates a controlled hot SwAct. For more information on the controlled hot SwAct, refer to How to change REx Tst (routine exercise test) intensity in this document.

5 Query the results of the RexTst.

`RExTst QUERY`

6 This procedure is complete.

Additional information

The command must be run from the active unit or the system rejects the command with the following message:

```
RExTst run - Command rejected. Reason: Not active
unit.
```

Progress indicators

During the routine exercise test, the screen looks similar to the following figure:

```
CallAgent       SYS       CON       APPL              Unit: 1
  RExTst          .         .       ImgTst

CAMtc                       Jam:  Link0:  Link1:  BLnk: FC: Appl:
 0 Quit       Unit0  Inact  no    . Act   . Inact  .    .   nosync /imgtst
 2 Jam        Unit1  Act    no    . Act   . Inact  .    .   nosync .
 3 RelJam
 4 RExTst
 5 SwAct
 6
 7
 8
 9
10
11
12
13 LogQuery
14 Alarm
15 QueryIP   WARNING: The RExTst command runs an image test, hardware
16                    diagnostics, a hardware reset and a reboot of the
17 Help               inactive unit.
18 Refresh   Please confirm ("YES", "Y", "NO", or "N"):
  mtc
Time  14:08  >y
```

Queried results for success routine exercise tests look similar to the following figure.

```
 CallAgent       SYS       CON       APPL              Unit: 1
    .             .         .         .

CAMtc                        Jam:  Link0:  Link1:  BLnk: FC: Appl:
 0 Quit       Unit0  Inact  no    . Act   . Inact  .    .   insync .
 2 Jam        Unit1  Act    no    . Act   . Inact  .    .   insync .
 3 RelJam
 4 RExTst
 5 SwAct
 6
 7
 8
 9
10
11
12            Results for QUERY LAST REX TEST:
13 LogQuery
14 Alarm       Last run on: Mon Nov  5 12:32:03 2001
15 QueryIP     Unit Tested: 0
16               Initiator: MANUAL
17 Help              Class: FULL
18 Refresh          Result: PASSED
  mtc
Time  12:36  >
```

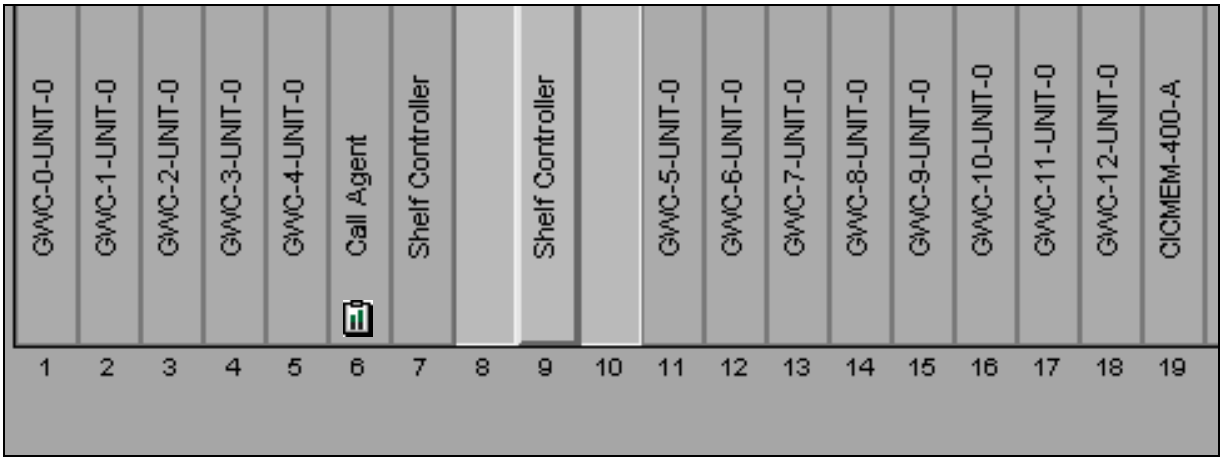
CS 2000 SAM21 Manager client progress indicators

The RExTst has 5 stages:

1. image test
2. sanity test
3. hardware diagnostic test
4. reset and reboot
5. call processing application synchronization

During stages 3 and 4, the CS 2000 SAM21 Manager client indicates that the Call Agent is unlocked-disabled-in test. Otherwise, the

Call Agent appears as unlocked-enabled-none. The following figure shows the Call Agent in the unlocked-disabled-intest state.



After the RExTst completes successfully, the Call Agent is restored to unlocked-enabled-none. If the RExTst fails, the Call Agent card icon turns red and the SAM21 Shelf Controller begins recovery of the Call Agent.

Log reports

Successful completion of the RExTst generates the following logs:

- CCA660 “REx Test Started”
- CCA620 “Image Test Started”
- CCA315 “Application Out-of-Sync (simplex)”
- CCA616 “Application In-Service”
- CCA615 “Application In-Sync”
- CCA621 “Image Test Finished”
- CCA661 “REx Test Finished”

Use the **LogQuery** command from the Call Agent Manager to review logs.

How to change REx Tst (routine exercise test) intensity

Application

REx Tst intensity cannot be configured on a Call Agent. Below are listed the two types of REx Tsts that run on a Call Agent. Every night, a BASE class REx Tst is run, and on Thursday night, a FULL class REx Tst is run.

If the CS 2000 - Compact is configured with Message Controller cards, then a BASE class REx Tst is run on the one Message Controller on the Thursday night after the Call Agent completes a FULL class REx Tst. One Message Controller runs the test, and the next week, the other Message Controller runs the test.

The classes of REx tests have the following differences:

- BASE class of REx Tst is:
  - — Synchronization is dropped.
  - — An in service image test of the inactive call processing application, on the inactive Call Agent card.
  - — Synchronization is restored.
  - — BASE REx Tsts run each day of the week except Thursday.
- FULL class of REx Tst is:
  - — Synchronization is dropped.
  - — The inactive Call Agent is shutdown, reset, the Shelf Controller initiates hardware diagnostics on the card, and then the card boots the 3pclinuximage platform software load.
  - — An image test is run.
  - — Synchronization is restored.
  - — FULL REx tests run Thursday nights.

Common procedures

There are no common procedures.

Action

REx Tst intensity cannot be configured. However, to enable REx Tsts, tuple NODEREXCONTROL in table OFCVAR must be set to ‘Y.’ Refer to *DMS-100 Office Parameter Reference Manual*, 297-8001-855 (NA) or 297-9051-855 (EMEA) for information about NODEREXCONTROL.

Canceling a routine exercise test

This procedure requires a second log in to the active Call Agent card.

Canceling a routine exercise test (RExTst) is only available during the image test (ImgTst) and synchronization (sync) stages of the RExTst. The command is rejected during the diagnostics stage of the RExTst and when the Call Agent is rebooting.

At the active Call Agent Manager

1 Enter the CoreMtc level.

```
CoreMtc
```

2 Enter the CAMtc level.

```
CAMtc
```

3 Terminate the RExTst.

```
RExTst TERMINATE
```

```
CallAgent       SYS       CON       APPL              Unit: 0
    .             .         .         .

CAMtc                      Jam:  Link0:  Link1:  Blnk: FC: Appl:
 0 Quit       Unit0  Act    no    . Inact . Act    .    .   insync .
 2 Jam        Unit1  Inact  no    . Inact . Act    .    .   insync .
 3 RelJam
 4 RExTst
 5 SwAct
 6
 7
 8
 9
10
11
12
13 LogQuery
14 Alarm
15 QueryIP
16
17 Help
18 Refresh
  mtc
Time  07:57  >
```

4 This procedure is complete.

Perform a maintenance switch of activity on a Call Agent

Use this procedure to execute a switch of activity on a Call Agent.

At the active Call Agent Manager

1 Access the CoreMtc level by typing

```
> CoreMtc
```

2 Access the Appl level by typing

```
> Appl
```

3 Drop call processing application synchronization by typing

```
> DpSync
```

```
CallAgent       SYS       CON       APPL              Unit: 0
 JInact          .         .       simplx
                                     M
Appl                        Jam:   Link0:  Link1:   Ser: FC: Appl:
 0 Quit       Unit0  Act     no     . Inact . Act     .    NA  nosync .
 2 ImgTst     Unit1  Inact   yes    . Act   . Inact   .    NA  nosync /restart
 3 Sync
 4 DpSync
 5
 6
 7
 8
 9
10
11
12
13 LogQuery
14 Alarm
15 QueryIP    DpSync:    Drop application synchronization.
16                       Parms: [RestartType]
17 Help                     Restart    - ( WARM | COLD | RELOAD | NORESTART )
18 Refresh                  (default) -  COLD
  mtc
Time  12:25
```

At the MAP

4 Execute LIMITED_PRESWACT:

```
> BCSUPDATE; LIMITED_PRESWACT
```

The LIMITED_PRESWACT command presents a warning:

```
Limited_Preswact should not be used for
BCSUPGRADE SWACTs. Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
```

5 Confirm the warning with a **Y**.

The inactive unit indicates `/restart` *at the Call Agent Manager. Several more steps execute and complete at the MAP. Successful completion is indicated as follows:*

```
Total execution time for all complete procedures
00:07:31.362
All LIMITED_PRESWACT steps completed
successfully.
```

6

CAUTION
Possible loss of service
NORESTARTSWACT does not check if the inactive Call Agent is unjammed. If the inactive Call Agent is jammed and a NORESTARTSWACT is requested, service is affected. Verify that the inactive Call Agent is not jammed.

CAUTION
Possible loss of service
Use the Call Agent Manager to verify that the inactive Call Agent does not have any critical alarms. A critical alarm causes the NORESTARTSWACT to fail. Check the GUIs for CCA, SAM21 EM and Ethernet Routing Switch 8600, and clear any alarms for those devices before prodeding with NORESTARTSWACT.

Check status:

```
> BCSUPDATE;SWACTCI;STATUSCHECK
```

Success is indicated as follows:

```
SWACTCI:
Checking Nodes Status
STATUSCHECK successful
```

7 Execute the NORESTARTSWACT:

```
> NORESTARTSWACT
```

Note 1: Only simple two-port and echo calls that are in a stable talking state (that is, not in a transition state such as dialing) survive a CC WarmSWACT. Survival means that the call is kept up until the next signaling message is received (usually, for example, a terminate message, but on any other message as well, such as an attempt to use the conference feature).

Note 2: Attendant Consoles will be in night service after the SWACT if the INSV field is set to Y in table ATTCONS (Attendant Consoles).

Progress is printed and the process stops to verify that the inactive Call Agent is not jammed:

```
Beginning SWACT checks:
All the SWACT checks have finished successfully.
The VR_PRESWACT_TRANSFER step completed
successfully.
All INSV and ISTB series 1 PMs will have execs
loaded after the SWACT.
Device Checking Status:
NOMATCH option is set to OFF <default setting>.
Device matching during CC WARM SWACT Enabled.
Do you wish to continue?
Please confirm ("YES", "Y", "NO", or "N"):
>
```

8 Confirm the warning with a **Y** if the only alarm is an APPL simplx.

The final progress follows. Activity also switches at the Call Agent Manager.

```
Please confirm ("YES", "Y", "NO", or "N"):
>Y
All Pre-SWACT checks completed. Starting Warm
SWACT now.
*****   The cursor will not be returned  *****
*****  unless a critical failure occurs. *****
***** Now monitoring Warm SWACT messages.*****

Pre-initialization done
Communication established
Exchange of data with the mate done
Transfer of data done (FASPECT)
Data estimation done
```

9 The telnet session to the active call processing application is lost. Reestablish the connection.

10 Execute POSTSWACT:

```
> BCSUPDATE;POSTSWACT
```

POSTSWACT begins, steps execute, and complete. POSTSWACT stops at step BEGIN_TESTING:

```
REACTIVATE_TRIGASGN                executing
REACTIVATE_TRIGASGN                   complete

DIRP_RECOVERY                      executing
DIRP_RECOVERY                      complete
...
BEGIN_TESTING                      executing
BEGIN_TESTING                      complete
Enter Postswact after office testing has been
completed
```

11 Enter the POSTSWACT command again:

```
> BCSUPDATE;POSTSWACT
```

```
CCA_SYNC executing
Do you want to sync the Call Agent at this time?
Please confirm (“YES”, “Y”, “NO”, or “N”):
```

12 Confirm you want to sync the Call Agent with a **Y**.

A series of steps execute and complete following the SYNCing of the Call Agents.

The final warning is printed:

```
Do you wish to erase all SFDEV file(s) ending in
'$PATCH' ?
Please confirm ("YES", "Y", "NO", "N"):
```

13 Reject deleting patch files from sfdev with a **N**.

You have completed this procedure.

Retrieving IP addresses

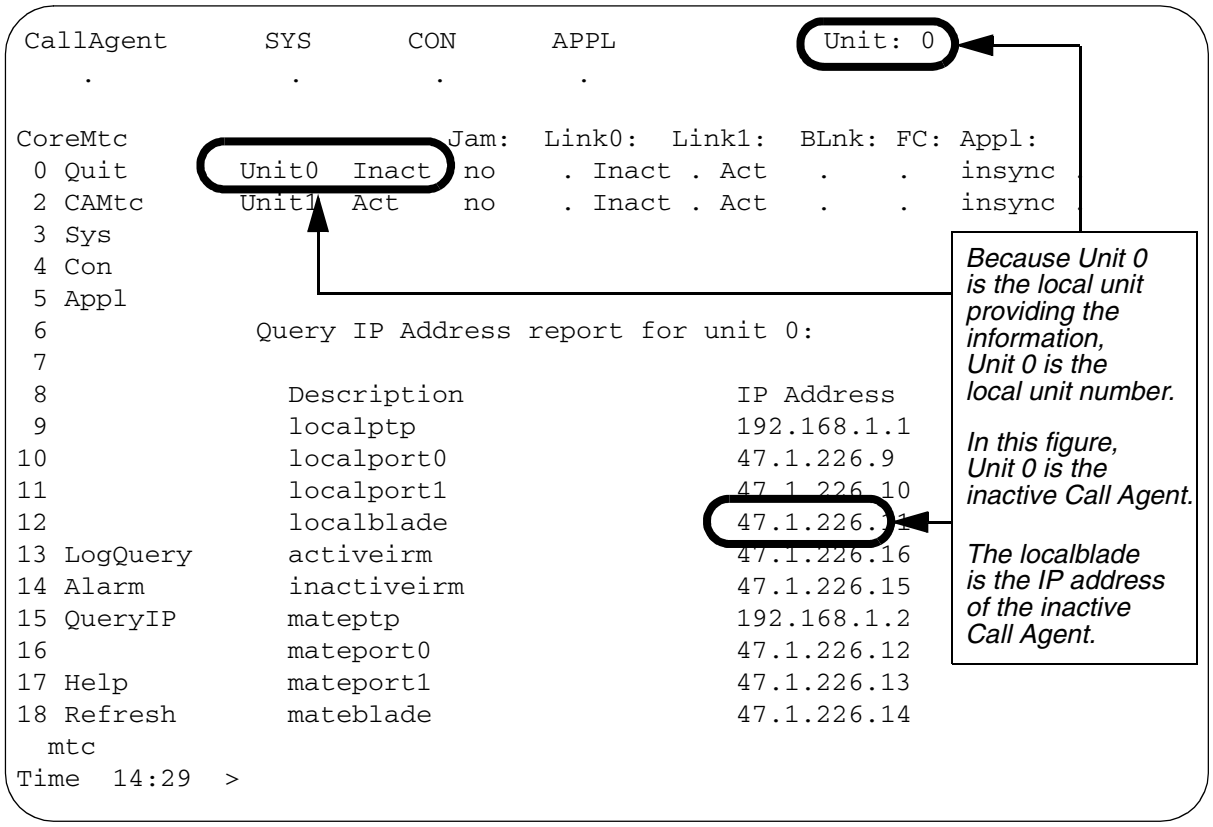
At the Call Agent Manager

1 Enter the CoreMtc level.

```
CoreMtc
```

2 Enter the QueryIP command.

```
QueryIP
```



3 This procedure is complete.

Additional information

The IP address scheme is as follows:

- localptp and mateptp

  These addresses are Point to Point (PTP) links from one unit to the other. This link is created on the fiber channel and is used for maintenance messaging. It is not available to users.

- localport0, localport1, mateport0, and mateport1

  These addresses reflect the first and second 100BaseT Ethernet interfaces for each unit.

- localblade and mateblade

  These are virtual addresses that are mapped to the active ethernet port on each unit.

- activeirm and inactiveirm

  These are virtual addresses. The address of the activeirm is the address of the call processing application.

The IP addresses for localblade and mateblade are provisioned by Nortel Installation Services Technology personnel at the CS 2000 SAM21 Manager client. Software calculates the rest of the IP addresses from the localblade and mateblade addresses. These other IP addresses are not provisionable.

Busying an Ethernet link

At the Call Agent Manager

1 Enter the CoreMtc level.

`CoreMtc`

2 Enter the Con level.

`Con`

3 Enter the BsyLnk command.

`BsyLnk`

```
 CallAgent       SYS       CON       APPL              Unit: 0
     .             .         .         .

Con                          Jam:  Link0:  Link1:  BLnk: FC: Appl:
 0 Quit       Unit0  Inact   no    . Act   . Inact  .     .   insync .
 2            Unit1  Act     no    . Act   . Inact  .     .   insync .
 3
 4
 5
 6                  The state changes from in-service ( . ) to manual busy (M)
 7 BsyLnk
 8 RTSLnk
 9 SwLnk
10
11
12
13 LogQuery
14 Alarm
15 QueryIP
16            BsyLnk:   Manually take a link out of service.
17 Help                 Parms: LinkNumber
18 Refresh                 LinkNum   -  0 or 1
  mtc
Time  09:13  >
```

4 This procedure is complete.

Additional information

The BsyLnk command must be issued on the inactive link. The command is rejected on the active link with the following message.

```
BsyLnk 1 - Command rejected. Reason: cannot lock
active link.
```

Successful completion of the command is indicated with a message similar to the following.

```
BsyLnk 0 - Command passed.
```

Returning to service an Ethernet link

At the Call Agent Manager

1 Enter the CoreMtc level.

`CoreMtc`

2 Enter the Con level.

`Con`

3 Enter the RTSLnk command.

`RTSLnk`

```
CallAgent       SYS       CON       APPL              Unit: 0
    .             .     LnkCon       .
                          M
Con                         Jam:  Link0:  Link1:  BLnk: FC: Appl:
 0 Quit       Unit0  Inact  no     . Act   M Inact  .    .   insync .
 2            Unit1  Act    no     . Act   . Inact  .    .   insync .
 3
 4
 5
 6
 7 BsyLnk
 8 RTSLnk
 9 SwLnk
10
11
12
13 LogQuery
14 Alarm
15 QueryIP
16            RTSLnk:   Manually return to service a link.
17 Help                 Parms: LinkNumber
18 Refresh                 LinkNum    -  0 or 1
  mtc
Time  09:14  >
```

4 This procedure is complete.

Additional information

The RTSLnk command must be issued on a busied link. The command is rejected on an unlocked link with the following message.

```
RTSLnk 1 - Command rejected. Reason: link already
unlocked.
```

Successful completion of the command is indicated with a message similar to the following.

```
RTSLnk 0 - Command passed.
```

This command also clears a major connection alarm that is caused by a manually busied 100BaseT Ethernet link.

Switching Ethernet link activity

At the Call Agent Manager

1 Enter the CoreMtc level.

`CoreMtc`

2 Enter the Con level.

`Con`

3 Enter the SwLnk command.

`SwLnk`

```
 CallAgent       SYS       CON       APPL              Unit: 0
    .             .         .         .

Con                        Jam:  Link0:  Link1:  BLnk: FC: Appl:
 0 Quit       Unit0  Inact  no    . Act   . Inact  .    .   insync .
 2            Unit1  Act    no    . Act   . Inact  .    .   insync .
 3
 4
 5
 6
 7 BsyLnk
 8 RTSLnk
 9 SwLnk
10
11
12
13 LogQuery
14 Alarm
15 QueryIP
16
17 Help
18 Refresh    SwLnk:    Switch link activity.
  mtc
Time  12:45  >
```

4 This procedure is complete.

Additional information

Successful completion of the command is indicated with a screen similar to the following.

```
 CallAgent       SYS       CON       APPL              Unit: 0
    .             .         .         .

Con                          Jam:  Link0:  Link1:  BLnk: FC: Appl:
 0 Quit       Unit0  Inact   no     . Inact . Act     .    .   insync .
 2            Unit1  Act     no     . Act   . Inact   .    .   insync .
 3
 4
 5
 6
 7 BsyLnk
 8 RTSLnk
 9 SwLnk
10
11
12
13 LogQuery
14 Alarm
15 QueryIP
16
17 Help
18 Refresh    SwLnk - Command passed.
  mtc
Time  12:46  >
```

Link mastership changes.

Changing a user password

The Call Agent platform software load uses the Linux operating system. Use this procedure to change a user password for access to the Call Agent Manager. Changing a user password for access to the call processing application MAP is described in Performing user administration.

At the maintenance interface

1 Become the root user with the **su** command.

Note: Each user can change his or her own password. Root can change any user's password.

2 Change the password.

 # passwd <username>

The passwd command provides two prompts to confirm the new password.

```
[root@10.40.44.67 mtc]# passwd mike
syncing password files before attempting operation
Changing password for user mike
New UNIX password:
Retype new UNIX password:
passwd: all authentication tokens updated successfully
updating backup password files
[root@10.40.44.67 mtc]#
```

3 This procedure is complete.

Performing platform user administration

Perform these procedures to add and remove users from access to the Call Agent platform and consequently, the Call Agent Manager. For call processing application user administration, refer to Performing user administration.

Adding a user

At the maintenance interface

1 Become the root user by using the **su** command.

2 Use the **useradd** command to update the password file.

```
# useradd <username>
```

```
[root@10.40.44.67 mtc]# useradd mike
syncing password files before attempting operation
successfully added user
updating backup password files
[root@10.40.44.67 mtc]#
```

3 Create the user's password.

```
# passwd <username>
```

Refer to Changing a user password for details.

4 This procedure is complete.

Removing a user

The Linux operating system offers two related commands for restricting access. The first command, **userdel**, completely removes the user from the system. The second option locks the user account, preserves the account information, but prevents log ins.

At the maintenance interface

1 Become the root user by using the **su** command.

2 Delete the user from the password file.

```
# userdel <username>
```

```
[root@10.40.44.67 mtc]# userdel mike
syncing password files before attempting operation
successfully removed user
updating backup password files
[root@10.40.44.67 mtc]#
```

3 This procedure is complete.

Locking an account

Use this command to maintain the account information, but prevent user log ins.

At the maintenance interface

1 Become the root user by using the **su** command.

2 Lock the account.

 # passwd -l <username>

```
[root@10.40.44.67 mtc]# passwd -l mike
syncing password files before attempting operation
Changing password for user mike
Locking password for user mike
rawpasswd: Success
updating backup password files
[root@10.40.44.67 mtc]#
```

3 This procedure is complete.

Note: To unlock the account and restore log ins, use the -u option to the **passwd** command.

MAP Security and Administration

The call processing application provides the MAP interface. The MAP offers many levels and each level offers access to call processing activities. The command interpreter (CI) level of the MAP is used for most security and administration procedures.

The CI is the first level of the MAP available to the user after logging into the CS 2000 Core Manager as “cmusr.” Many command driven menus are available from this level.

```
CI:
>
```

Disk administration

Storage for the Call Agent is provided by pair of STORage Management (STORM) units.

Administration of the storage is completed with the STORM Manager. Refer to *STORage Management Overview*, NN10024-111 for information.

ATTENTION

Do not modify or manipulate files and volumes through the Call Agent platform shell. Storage and retrieval may be adversely affected.

Use the MAP interface and the commands described in this section for disk, file, and volume administration.

Any files placed within the volume directories from outside the MAP interface must be incorporated into the SOS file system with the DISKUT IMPORT command as soon as possible. Files residing within the SOS volume directories but not registered with the SOS file system may adversely affect volume free space calculations and lead to both service impact and data loss.

Administration of the stored data is available through the call processing application. Three MAP command increments are available for disk administration. Access to these command increments is available from all MAP levels and command increments.

- DISKADM
- DISKUT
- ITOCCI

These disk administration commands are available from all levels of the MAP.

File and volume name expressions

The name expression is a string which specifies the format of the file and volume names. The expression is composed of some of the characters of the intended file/volume names along with special character constructions. The special characters constructions include:

- * - Match any number of characters (including zero) of any type.
- ? - Match exactly one character of any type.
- [ABC...] - Matches one character of those listed between brackets.

  "-" within the left and right braces indicates a range for matching. For example, [AFX-Z135-9] would match one character of: A, F, X, Y, Z, 1, 3, 5, 6, 7, 8, or 9

Whenever one or more of the special characters are used, the entire string must be enclosed in single quotes (apostrophes). As a shortcut, a prefix may be supplied as the name expression rather than including the prefix followed by * and enclosed in quotes. The expression is not case sensitive. For examples and more information, type **Q SCANF** at the MAP.

DISKADM

The disk administration level offers the following commands:

- **BSY**

  Use this command to prevent access to storage. Use the ALL argument during a STORM upgrade.

  Note: If the BSY command fails because of open files, first determine the application with the open file. Then use the ROTATE command at the DIRP level to rotate the application from the current disk device to the other disk device.

- **RTS**

  Use this command to re-enable access to storage volumes.

- **DISPLAYDISK** (**DD**)

  Use this command to display information about the disk device. Important items shown are the number of locked volumes and free space available for new volumes. If a new volume is required and more space is needed, use the STORM Manager to modify the size of the filesystem. If “In Error” is returned as the status for “Device communication,” investigate trouble from the STORM Manager.

- **CREATEVOL** (**CV**)

  Use this command to create another volume on the device.

- **DELETEVOL** (**DDV**)

  Use this command to delete a volume from the device.

- **DISPLAYVOLS** (**DV**)

  Use this command to display the volumes on the device, the size of the volumes, the number of Image Table of Contents (ITOC) files on each volume, and the volume path for each volume. If “S” is returned for the volume state, investigate trouble from the STORM Manager.

- **EXTENDVOL** (**EXV**)

  Use this command to increase the size of a volume. This command fails if the requested size is not available on the disk device.

- **REINITVOL** (**RV**)

  Use this command to delete all the files in a volume and restore the space from used to available. This command fails if the volume contains load file registered with ITOC or open files.

Examples

The following examples show the syntax for DISKADM commands.

Enter the disk administration level.

Example
>DISKADM device

device
is SD00 or SD01

Busy all volumes on a device.

Example
>BSY ALL

Note: Volumes with open files cannot be busied. Use the LISTVOLS command in DISKUT to determine the number of open files.

Display the device information.

Example
>DV

```
Information about disk volumes on device SD00.
Volume          Create     Modify     Size  Vol. ITOC  Volume
Name And        Date       Date       Mega- No.  Files Path
State           Y/M/D      Y/M/D      bytes
------------ - ---------- ---------- ----- ---- ----- ---------------
SBA           . 2002/03/08 2002/03/08   400    0     0  /3PC/sd00/sba/
IMAGE         . 2002/03/06 2002/03/06   800    1     1  /3PC/sd00/image/
PERM          . 2001/07/26 2001/07/26   128    2     0  /3PC/sd00/perm/
TEMP          . 2001/11/26 2001/11/26   128    3     0  /3PC/sd00/temp/
IMAGE0        . 2002/03/08 2002/03/08  1024    5     0  /3PC/sd00/image0/
AMA           . 2001/09/25 2001/09/25    63    8     0  /3PC/sd00/ama/
```

Increase the volume size by 50 MB.

Example
>EXV IMAGE 50

Note: DIRP volumes cannot exceed 63 MB.

Create a volume named TEST with a size of 128 MB.

Example
>CV TEST 128

Delete a volume.

Example
>DDV TEMP

Note: Volumes with ITOC files or open files cannot be deleted.

DISKUT

The disk utilities level offers many commands. The following list shows frequently used commands:

- **LISTVOLS** (**LV**)

  Use this command to list all the volumes on all the devices. If “SYSB - Volume is system busy” is returned, investigate trouble from the STORM Manager.

- **LISTFL** (**LF**)

  Use this command to list the files on a volume. Before a file name can be used as a parameter to another command, the files must be listed with the LISTFL command.

- **DELETEFL** (**DDF**)

  Use this command to delete a file from a volume.

- **FILEATTR** (**FA**)

  Use this command to query or set file attributes. Under normal Call Agent operation it should not be necessary to change the attributes for a file.

- **IMPORT**

  Use this command to import single or multiple call processing application images directly from the native file system into the call processing application file system.

  The IMPORT command automatically sets attributes for the imported file based on the following format:

  — ‘*.<**type**><**num**>’ where <**type**> is img, bin, or txt and <**num**> is a one to four digit number expressing the record length in bytes.

If the record length for text files is not specified, it may be necessary to use the FA command to set the length.

— '*.txt<**num**>.recs<**num**>' is treated as above, but the second <**num**> is a one to five digit number expressing the file size in records.

— '*$LD' files are imported as LRECL 256 BIN

— '*$PATCH' files are imported as LRECL 128 BIN

— '*_CM' files are imported as LRECL 1020 IMAGE

— '*_MS' files are imported as LRECL 1020 IMAGE

If the volume name is provided as the only argument to the command, the IMPORT command attempts to import any candidate files in the specified directory, but not already in the volume's file table. For example, if SD00IMAGE is the only argument to the IMPORT command, the command applies the file name expression matching patterns above, and attempts to import any files in `/3PC/sd00/image` that do not already exist in the file table for the SD00IMAGE volume. When importing image files, note that the syntax is IMPORT <volume> <filename> IMAGE 1020 for SN06.

The IMPORT command ignores candidate files that do not match the file name expression matching patterns above, unless the DEFAULT or OVERRIDE arguments are used. If either if these arguments are used, the file type keyword and associated record length in bytes must be specified. A yes or no prompt is provided for each file entry unless the NOPROMPT argument is used.

Examples

The following examples show the syntax for DISKUT commands.

List the volumes with sizes in MB.

Example
>LV MB

```
Volumes found:
--------------
NAME            TYPE      TOTAL       FREE TOTAL  OPEN  ITOC    LARGEST
                         MBYTES     MBYTES FILES FILES FILES  FREE SEGMENT
-------------------------------------------------------------------------
SD00IMAGE        STD       1024        229     5     0     0        229
SD00TEMP         STD        256        200    14     0     0        200
```

List the volumes that begin with SD00 in MB.

Example
>LV SD00 MB

```
Volumes found matching the prefix SD00:
-----------------------------------------------
NAME            TYPE      TOTAL       FREE TOTAL  OPEN  ITOC    LARGEST
                         MBYTES     MBYTES FILES FILES FILES  FREE SEGMENT
-------------------------------------------------------------------------
SD00IMAGE       STD         800        593     2     0     2         593
SD00IMAGE1      STD         800        581     2     0     1         581
SD00TEMP        STD         200        200     3     0     0         200
SD00PAT         STD         100        100     0     0     0         100
SD00AMA0        STD          64          1   131     0     0           1
SD00AMA1        STD          64          0   128     0     0           0
SD00DLOG        STD          64          1   243     0     0           1
SD00JF          STD          64         49     9     0     0          49
SD00SBA         STD          64         64     0     0     0          64
SD00SCRATCH     STD         100         97    42     0     0          97
SD00SMDR        STD         100          0    48     0     0           0
SD00AMA         STD         300          0    99     0     0           0
SD00OCC1        STD         100          4   159     0     0           4
Total number of volumes matching prefix SD00 : 13.
```

List all image related volumes with sizes specified in MB.

Example
>LV ‘*IM*’ MB

List SD00TEMP and SD01TEMP.

Example
>LV SD0?TEMP

List the files in the SD00IMAGE volume.

Example
>LF SD00IMAGE

```
File information for volume SD00IMAGE:
{NOTE:  1 BLOCK = 512 BYTES }
-------------------------------------------------------------------------
FILE NAME               O R I O O V FILE   MAX    NUM OF    FILE   LAST
                        R E T P L L CODE   REC   RECORDS    SIZE MODIFY
                        G C O E D D        LEN        IN      IN   DATE
                          C N                        FILE  BLOCKS
-------------------------------------------------------------------------
CSNN06BM_CM             I F            0  1020    195133  388742 011129
.ITOC                   O F            0  1024         1       2 020307
CSNN06AY_CM             I F            0  1020    213853  426036 011213
```

Note: Sorting options are available for the LF command. Type Q LF for sorting options.

Change the file attributes of a text file to indicate the number of lines in the file.

Example
>FA fname.txt SET TEXT_SIZE num

fname.txt
is a text file name like `commands.txt`

num
is an integer value less than 65535 and indicates the number of lines in the text file. Use the UNIX word count command, wc, with the lines option, -l (ell), to determine the number of lines in a text file.

Note: Nortel does not support changing attributes on image files.

Import a call processing application image file from `/3PC/sd00/image` into SD00IMAGE. If fname ends in _MS or _CM, specifying the 1020 and IMAGE arguments is unnecessary.

Example
>IMPORT SD00IMAGE fname IMAGE 1020

fname
is the name of the call processing application image file in the native file system

Import all files in the `/3PC/sd00/pmloads` directory into the SD00PMLOADS volume for which the file attributes can be identified and do not already exist in the SD00PMLOADS volume file table.

Example
>IMPORT SD00PMLOADS

Import a single text file named `ci_script` from the `/3PC/sd01/temp` directory into the SD01TEMP volume.

Example
>IMPORT SD01TEMP CI_SCRIPT TEXT 120

Import all load files in the `/3PC/sd00/temp` directory into the SD00TEMP volume.

Example
>IMPORT SD00TEMP '*LD'

Import all file candidates in the `/3PC/sd01/perm` directory into the SD01PERM volume. Files without a file name extension receive a binary type and a record length of 1024 bytes.

Example
>IMPORT SD01PERM '*' BIN 1024

ITOCCI

The image table of contents command interpreter (ITOCCI) level offers the following commands:

- **LISTBOOTFILE** (**LBF**)

  Use this command to display the locations and names of files with image file attributes.

- **SETBOOTFILE** (**SBF**)

  Use this command with the ALR option to set a file for automatic loading.

- **CLEARBOOTFILE** (**CBF**)

  Use this command to clear the ITOC. This command accepts file names or volume names as arguments. Using file names is the recommended method to prevent loss of data.

- **SETALR** (**SA**)

  Use this command to set the automatic load option for a file.

Examples

The following examples show the syntax for ITOCCI commands.

Note: If the CS 2000 - Compact is equipped with Message Controller cards, these commands apply to the Message Switch software loads as well. When used for Message Switch loads, the commands use the MS argument instead of the CM argument.

List the boot files.

Example
>LBF CM

```
Image Table Of Contents:
   A Registered          Generic Device       File
   L Date       Time                          Name
   R MM/DD/YYYY HH:MM:SS
-- - ------------------- -------------------- -----------
 0 * 03/07/2003 21:43:01 SD00IMAGE2           CSNN06BI_CM
```

Enter an additional file to the ITOC.

Example
>SBF CM CSNN03BM_CM 1

```
Image Table Of Contents:
   A Registered          Generic Device       File
   L Date       Time                          Name
   R MM/DD/YYYY HH:MM:SS
-- - ------------------- -------------------- -----------
 0 * 03/07/2003 21:43:01 SD00IMAGE2           CSNN06BI_CM
 1   03/11/2003 13:18:34 SD00IMAGE            CSNN06BM_CM
```

Clear a file from the ITOC.

Example
>CBF CM FILE CSNN03BM_CM

Set the automatic load option for a file.

Example
>SA CM CSNN03BM_CM

All levels

The following disk administration-related commands are available at all levels of the MAP:

- **SCANF**

  Use this command to list files, copy files, and delete files.

  The SORT argument to this command accepts five possible arguments:

  — NAME or BY_NAME to sort alphabetically

  — CDATE or BY_CREATE_DATE to sort by creation date

  — MDATE or BY_MODIFY_DATE to sort by last modified date

  — SIZE or BY_SIZE to sort by file size in blocks

  — REV or REVERSE to reverse the order of sorting by NAME, CDATE, MDATE, or SIZE

  The SCANF command also accepts a GLOBAL (GS) argument to display the file entries in a single list rather than separate lists based on a volume basis. This argument applies to BRIEF or FULL only.

- **COPY**

Examples

The following examples show the command syntax.

List the files on SD00IMAGE

Example
>SCANF SD00IMAGE

```
File Index,     Size In     File       Record  File Name
Generation      Records     Attribute  Length
(0000 0000)      194678recs -f-i---    1020b   CSNN04BM
(0001 0000)           1recs rf---n-    1024b   .ITOC
(0002 0000)      194938recs -f-i---    1020b   CSNN04AY
(0003 0000)      189998recs -f-i---    1020b   CSNN03BM
```

Delete all the files on SD00TEMP.

Example
>SCANF SD00TEMP DELETE NOPROMPT

Note: Deleted files cannot be recovered after deletion.

List all the files in the store file device (SFDEV).

Example
>SCANF SFDEV

Copy a file named BACK14AMA_01 to a file named BACK14AMA_01 and store it on SD01TEMP.

Example
>COPY BACK14AMA_01 BACK14AMA_01 SD01TEMP

List CM image files, sorted by creation date.

Example
>SCANF '*IM*' NAME '*_CM' SORT CDATE GS

List all patch files on all TEMP volumes sorted in reverse order.

Example
>SCANF '*TEMP' NAME '*$PATCH' SORT NAME REV

List all non DIRP segment files on DLOG volumes.

Example
>SCANF '*DLG*' NOTNAME 'D*' SORT MDATE GS

Performing user administration

User administration allows for adding, deleting, and forcing users off the switch.

Adding a user

The **PERMIT** command has different password restrictions based on enhanced password datafill. The command may request the password and options on different command lines.

At the MAP terminal

1 Permit the new user.

```
>PERMIT username password 4500 ENGLISH ALL
```

username
is the system name for the new user

password
is the password

Note: For the full syntax and available options, type HELP PERMIT at a prompt.

2 This procedure is complete.

Deleting a user

At the MAP terminal

1 Delete the user.

```
>UNPERMIT username
```

username
is the system name for the user

2 This procedure is complete.

Forcing out a user

At the MAP terminal

1 Force the user off the switch.

```
>FORCEOUT username
```

username
is the system name for the user

Note 1: The user can reconnect. Use the UNPERMIT command to prevent the user from logging on again.

Note 2: This command requires administrator privilege.

2 This procedure is complete.

SAM21 Manager Security and Administration

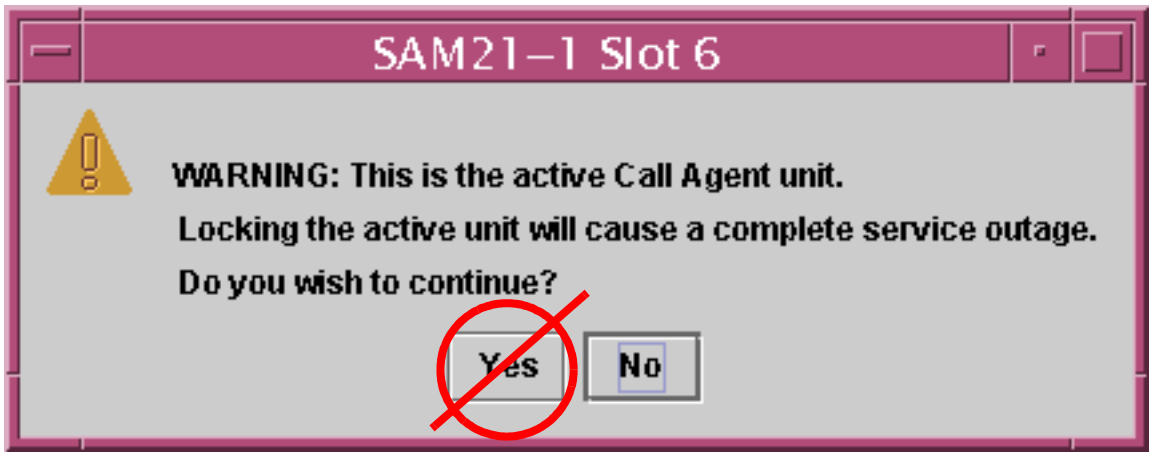
The CS 2000 SAM21 Manager manages the hardware and hardware states of the Call Agent.

Locking the Call Agent

CAUTION
Possible service interruption
Do not lock the active Call Agent.

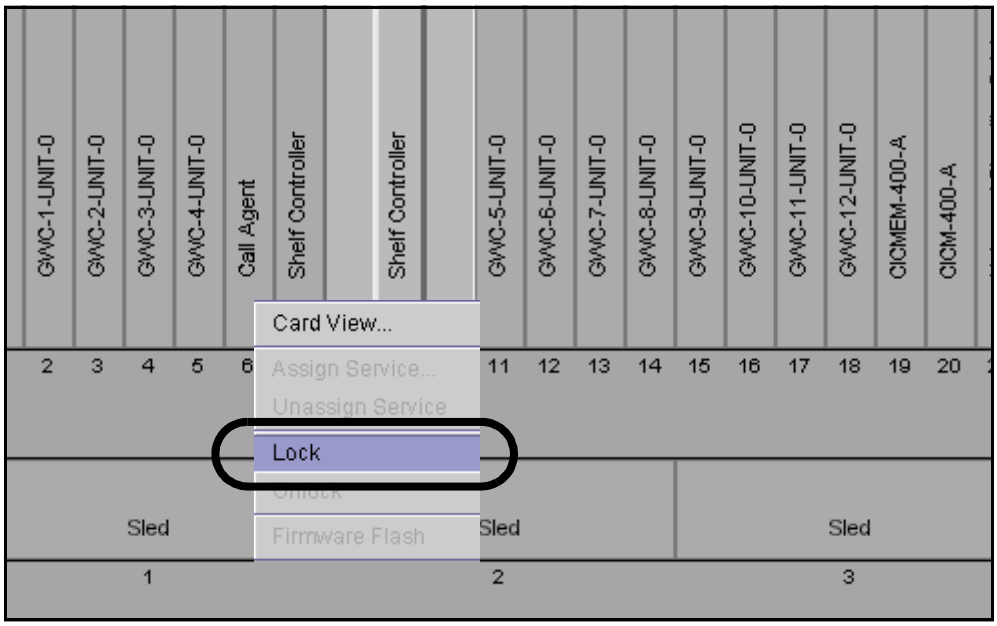
The CS 2000 SAM21 Manager client responds to an active Call Agent lock with the prompt show in figure Call Agent lock warning. Do not click Yes. The inactive Call Agent is located in the other CS 2000 SAM21 Manager shelf and a lock request does not provide a prompt when the Call Agent is inactive.

Call Agent lock warning



At the CS 2000 SAM21 Manager client

1 From the Shelf View, right click on the card and select Lock from the context menu.



Note: Lock is also available from the States tab of the Card View window.

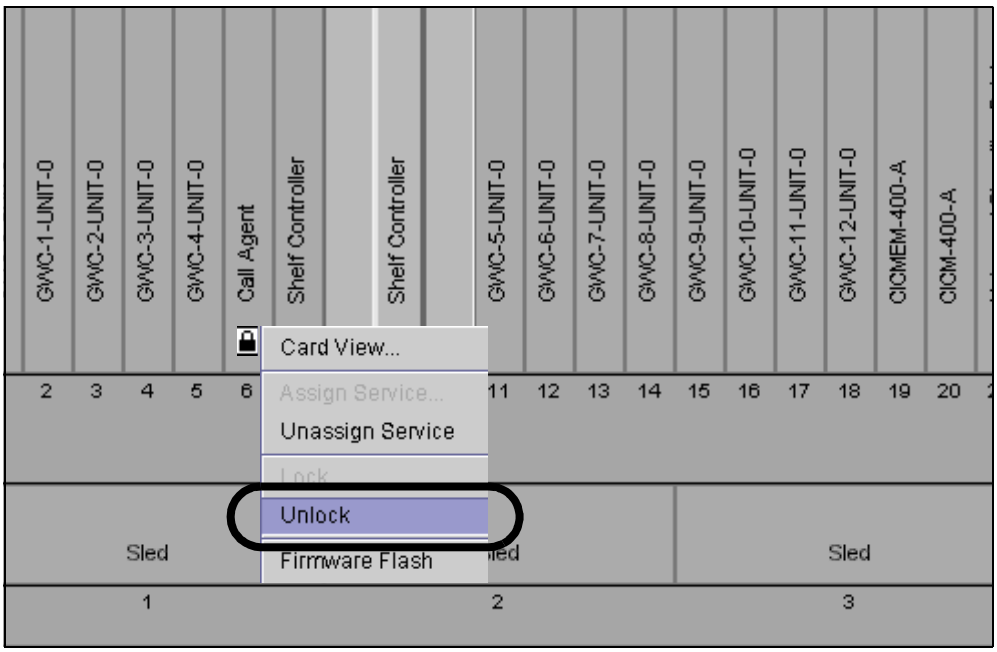
2 Do not confirm a lock warning. The warning is only available for the active Call Agent. Wait for the lock icon to appear on the selected card.

3 This procedure is complete.

Unlocking the Call Agent

At the CS 2000 SAM21 Manager client

1 From the Shelf View, right click on the card and select Unlock from the context menu.



Note: Unlock is also available from the States tab of the Card View window.

The card resets, downloads software, and reboots.

2 Wait for the lock icon to disappear.

Note: Do not perform any patching activities on the Call Agent until ten minutes have passed.

3 This procedure is complete.

Message controller

Procedures in this section are related to the security and administration of Message Controller cards.

Administration of the Message Controller cards is completed through two user interfaces. The Call Agent Manager provides an interface for viewing alarms, logs, performance statistics, and controlled shutdown of the card. The CS 2000 SAM21 Manager provides a graphical user interface to complete out of service tasks and initial provisioning.

For offices with Message Controllers, management of the Message Switch software is completed through ITOCCI as with the Call Agent. Refer to Disk administration on page 37 for information.

Translating ATM links to the Message Switch

Use this procedure to determine the Message Switch, card, and port number termination for an ATM link from the Message Controller. Use this information to busy the ports on the Message Switch before removing a Message Controller from service or when troubleshooting connectivity problems.

At the Call Agent Manager

1 Enter the MCMtc level.

MCMtc

2 Translate the ATM links on a Message Controller to the termination on the Message Switch.

Trnsl <mc_no>

mc_no is either 0 or 1

Example
Trnsl 0

```
 CallAgent      SYS      CON      APPL      MC     Unit: 0
    .            .        .        .         .

MCMtc            Blade:   Eth0:     Eth1:     Atm0:     Atm1:
 0 Quit      MC0    .        . Act     . Inact   open      open
 2           MC1    .        . Act     . Inact   open      open
 3
 4
 5 QryLd
 6 QryHits
 7 ClrHits
 8 Trnsl
 9
10
11           Connectivity report for MC0 retrieved on:
12                Fri Apr  4 10:35:47 2003
13 LogQuery
14 Alarm                                            Cod    Connection
15                                 MS   Card  Port  Present   Status
16           -------------------------------------------------------
17 Help      ATM0 connected to:  0     24    0      NO        GOOD
18 Refresh   ATM1 connected to:  1     25    0      NO        GOOD
  mtc
Time   10:35  >  Trnsl 0
```

3 This procedure is complete.