Nortel SAM21 Shelf Controller Upgrades

Use the following procedures to upgrade software on the Services Application Module 21 Shelf Controller (SAM21 SC).

The SAM21 SC resides in a Services Application Module 21 (SAM21) shelf. Each SAM21 shelf includes two SAM21 SC blades.

New in this release

This section describes to changes to SAM21 SC upgrades in this release.

Feature changes

None

Other changes

The following additional changes affect upgrades of this component:

- New high-level procedures to guide you through the upgrade process
- New requirement and procedure to test each SAM21 SC blade before the upgrade

Upgrade paths

The following procedures support the following upgrade paths:

- (I)SN08 to (I)SN09FF
- (I)SN09 to (I)SN09FF

Impacts of an upgrade

This section provides the following information:

- the estimated time to complete a software upgrade
- the service impacts of a software upgrade
- other information affecting a software upgrade

Time to complete an upgrade

The following table lists the tasks to upgrade SAM21 Shelf Controller software and the estimated time to complete each task.

Table 1 Estimated time to complete a software upgrade

Task	Time
Preparing for the upgrade	30 minutes
Upgrading the software	25 minutes
Completing the upgrade	15 minutes
Total estimated time	70 minutes
Performing a rollback	25 minutes

Service impacts

None

Notes

The following additional information applies to the upgrade of SAM21 Shelf Controller software:

- Make sure all ATM connections are established before performing the upgrade switch of activity (SWACT).

System capacity

The software upgrade procedure can impact the system capacity. This means that additional disk space on the OAMP workstation is required for converting existing databases.

System performance

You must perform software upgrade procedures during maintenance periods, as network capacity is reduced during the software upgrade

System limitations during upgrade

During a software upgrade, the system prohibits the following actions:

- System administration
  - adding, deleting, or modifying users
  - setting the time of day
  - changing passwords
- System management
  - modifying the system name
  - adding or deleting system nodes
  - modifying the IP addresses

Shelf Controller Upgrade Tool

The Shelf Controller Upgrade Tool supports software upgrades through the command line user interface (CLUI). The tool automatically performs the following tasks:

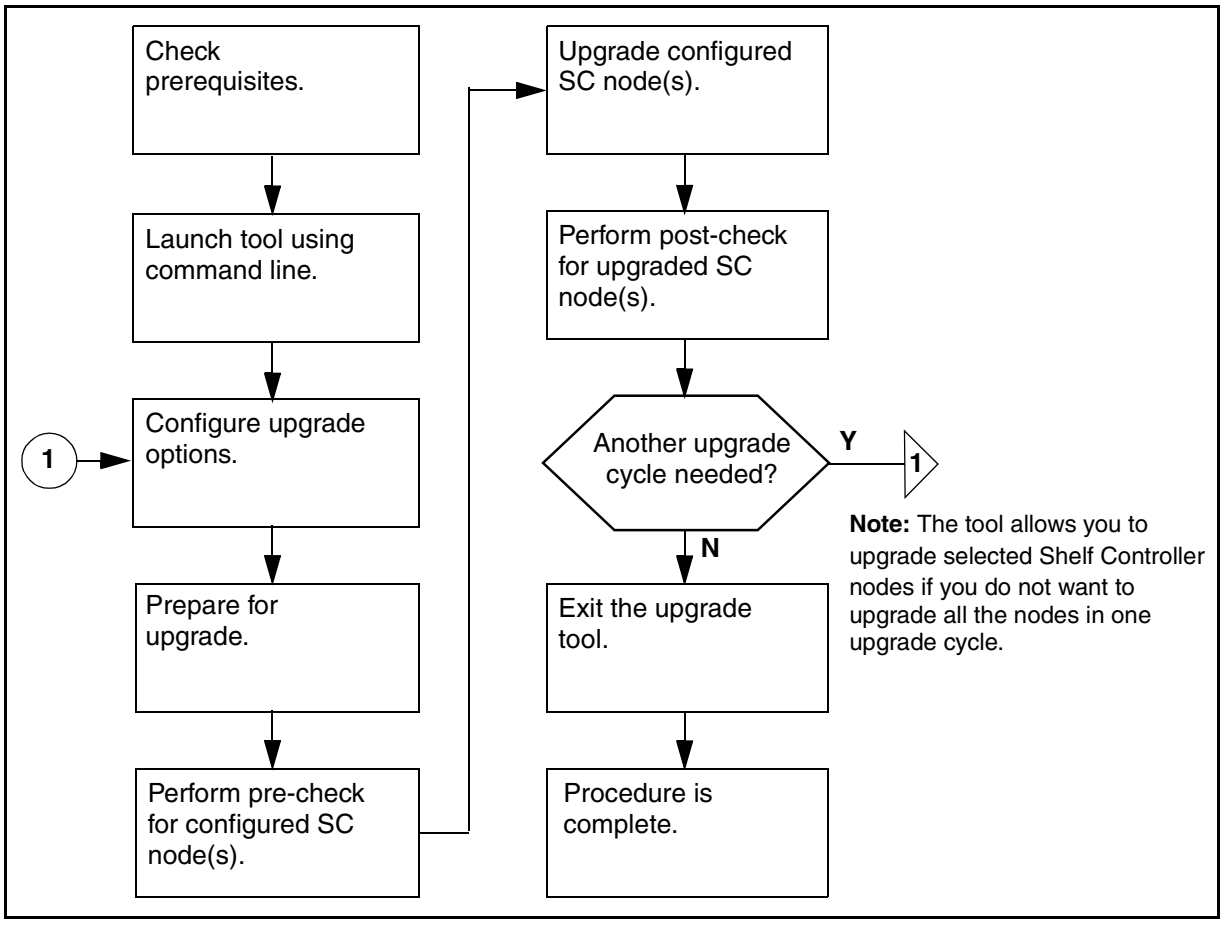
- locks and unlocks the inactive unit
- swacts the inactive unit
- locks and unlocks a newly inactive unit

The automated Shelf Controller Upgrade tool supports the following upgrade modes:

- single, which allows you to upgrade one or more configured Shelf Controller nodes one at a time
- bulk, which allows you to upgrade all configured Shelf Controller nodes simultaneously

The following figure shows the high-level steps to upgrade Shelf Controller nodes using the Shelf Controller Upgrade Tool.

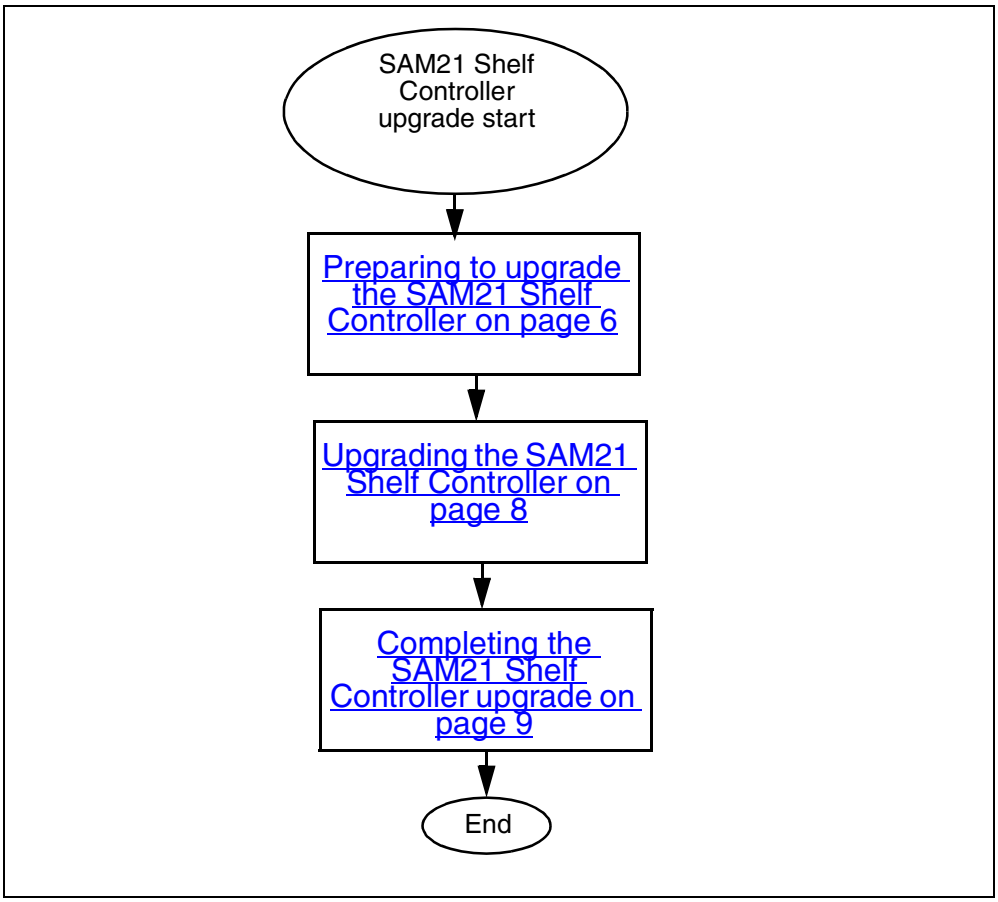
Figure 1 Automated upgrade overview



SAM21 Shelf Controller upgrade tasks

This taskflow shows you the sequence of tasks you perform to upgrade this component.

Figure 2 SAM21 Shelf Controller upgrade tasks



Aborting an upgrade

If failure occurs and you need to abort the upgrade, perform Aborting a SAM21 Shelf Controller software upgrade on page 107

Preparing to upgrade the SAM21 Shelf Controller

CAUTION
Possible upgrade failure if blade not tested
Test each Shelf Controller no more than 24 hours before the software upgrade. An unhealthy Shelf Controller blade can cause the software upgrade to fail.

The following procedure provides the steps you need to execute prior to upgrading the SAM21 Shelf Controller. When applicable, a reference to the procedure that contains the detailed steps is provided.

Prerequisites

You have completed the following tasks:

- Know the load server for the SAM21 Shelf Controller. The load server can be any of the following devices:
  - CS 2000 Core Manager
  - CBM
- Know the amount of available disk space on the CS 2000 Core Manager or CBM. Nortel recommends a minimum of 25 megabytes of disk space in the /swd/sam21 volume for an upgrade of the SAM21 Shelf Controller.
- Make sure the load server and CS 2000 Management Tools server use the same level of software as the upgraded SAM21 Shelf Controller. Perform Checking software versions before an upgrade on page 16

Action

Perform the following procedures:

1. Test each Shelf Controller blade. Perform Testing the inactive Shelf Controller blade before an upgrade on page 10.
2. If necessary, remove old filesets.
   - If old filesets are stored on the CS 2000 Core Manager, perform Removing old SAM21SC filesets on the CS 2000 Core Manager on page 20.
   - If old filesets are stored on the CBM, perform Removing old SAM21 SC filesets on the CBM on page 22.
3. Load the new software.
   - If you receive Shelf Controller software through Electronic Software Delivery (ESD), perform the following procedures:
     – Transferring and mounting an ISO image on an SPFS-based server on page 25.
     – Loading the Shelf Controller software delivered through ESD on page 36.
   - If you receive Shelf Controller software on compact disk (CD), perform Loading the Shelf Controller software from CD on page 43.

When you have finished preparing the SAM21 Shelf Controller for an upgrade, go to Upgrading the SAM21 Shelf Controller on page 8.

Upgrading the SAM21 Shelf Controller

The following procedure provides the steps you need to execute to upgrade the SAM21 Shelf Controller. When applicable, a reference to the procedure that contains the detailed steps is provided.

Prerequisites

You have completed procedure Preparing to upgrade the SAM21 Shelf Controller on page 6.

Action

ATTENTION
If you wish to manually upgrade the SAM21 Shelf Controller, perform Upgrade the Shelf Controller manually on page 95.

Perform the following procedures:

- Make sure the Shelf Controller meets the prerequisites. Perform Checking the Shelf Controller upgrade prerequisites on page 48
- Upgrade the Shelf Controller using the Shelf Controller Upgrade Tool on page 51

When you finish these procedures, go to Completing the SAM21 Shelf Controller upgrade on page 9.

Completing the SAM21 Shelf Controller upgrade

Perform the procedures listed below to complete the software upgrade of a SAM21 Shelf Controller. The SAM21 Shelf Controller Upgrade tool performs most completion task s. These procedures verify the upgrade was successful.

Prerequisites

All procedures listed in Upgrading the SAM21 Shelf Controller on page 8

Action

Perform the following steps to complete this procedure.

Completing the SAM21 Shelf Controller upgrade

From the Application Launch Point

1 Launch the CS 2000 SAM21 Manager.

Response

The main window of the CS 2000 SAM21 Manager appears.

2 Use the following table to determine your next step.

If the GUI	Do
launches	step 4
does not launch	Contact your next level of support.

3 Make sure each SAM21 SC you upgraded is unlocked. If the SAM21 Shelf Controller remains locked, the SAM21SC failed to reboot.

Perform Check a Shelf Controller that does not unlock on page 76 to determine if a SAM21SC is unlocked or troubleshoot a locked SAM21 SC.

4 Make sure the SAM21 Manager displays the correct software load for each SAM21 SC you upgraded. Check the software load running on each SAM21 Shelf Controller you upgraded. Perform Confirming SAM21 Shelf Controller loads after an upgrade on page 83.

5 You have completed this procedure and the upgrade of the SAM21 Shelf Controller.

Testing the inactive Shelf Controller blade before an upgrade

CAUTION
Possible upgrade failure
Make sure the shelf has NOT been provisioned with new software before you begin this procedure. Hardware must take place before the software upgrade.

Perform the following procedure to test the inactive Shelf Controller blade before an upgrade of SAM21 Shelf Controller software. Repeat this procedure as necessary to test each Shelf Controller blade before a software upgrade.

Perform this procedure no more than 24 hours before the upgrade of SAM21 Shelf Controller software.

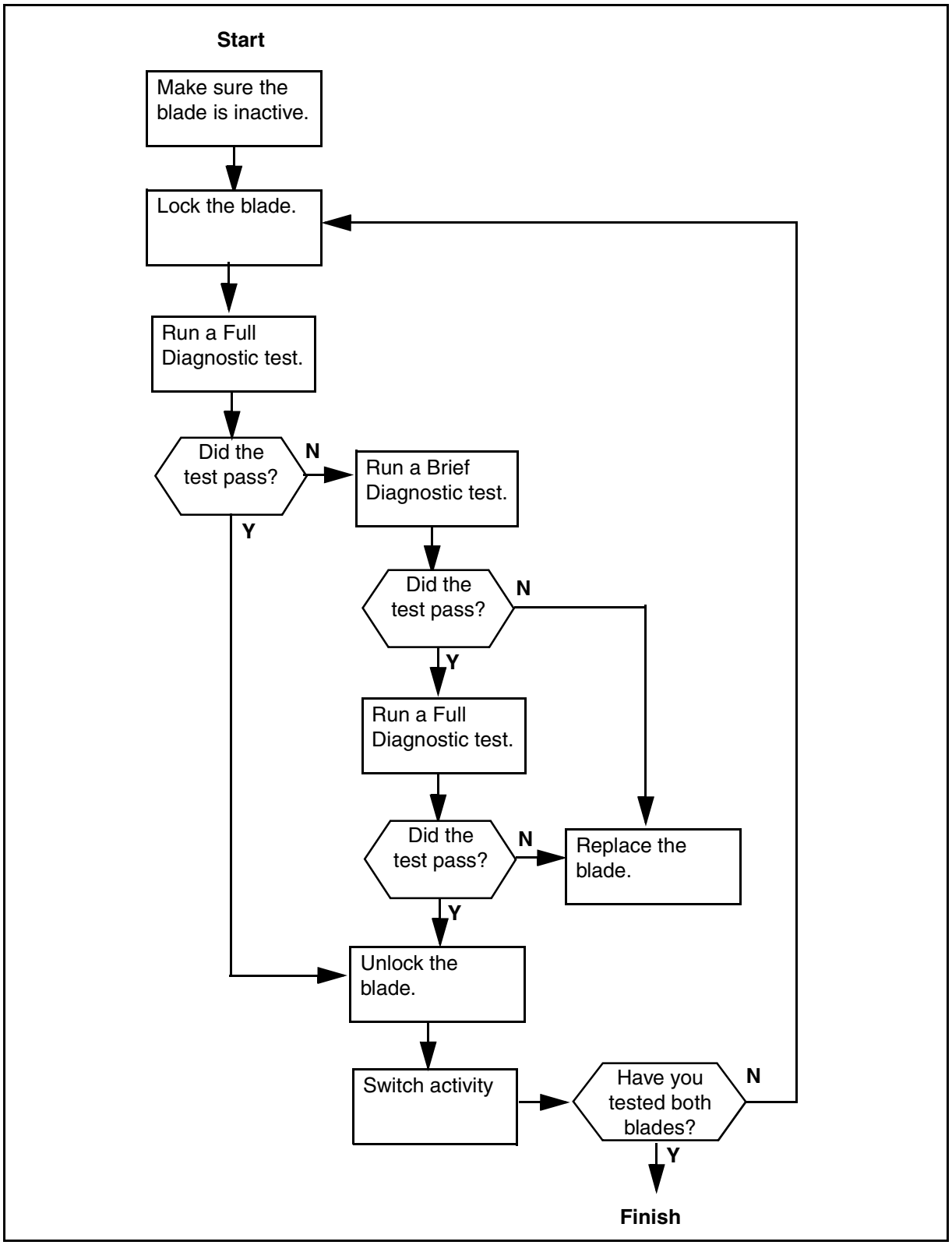
Prerequisites

This procedure has no prerequisites.

Action

The following flowchart shows a high-level summary of the tasks performed during this procedure. Use the step-by-step instructions after the flowchart to perform the procedure.

Testing the inactive Shelf Controller blade before an upgrade



Testing the inactive Shelf Controller blade before an upgrade

At the CS 2000 SAM21 Manager

1 Make sure you are at the Shelf View of the SAM21 shelf with the inactive Shelf Controller blade you want to upgrade.

2 Go to the Card View of the inactive Shelf Controller. Right-click the icon of the inactive Shelf Controller blade and select Card View from the list of commands.

Response

The Card View window appears.

3 Click the States tab and make sure the Status of the selected Shelf Controller is Inactive.

4 Use the following table to determine your next step.

If the status is	Do
Active	Close this window and return to step 1.
Inactive	step 5

5 Lock the blade. On the left side of the Card View window, right-click the Shelf Controller icon and select Lock from the list of commands.

Response

The CS 2000 SAM21 Manager locks the selected Shelf Controller blade.

6 Use the following table to determine your next step.

If the lock is	Do
successful	step 7
not successful	Repeat step 5. If the second attempt fails, go to step 24

7 Click the Diags tab.

8 Run a Full Diagnostic test on the locked Shelf Controller blade. At Type, select Full from the pull-down menu and click the Start button.

Response

A window asking you to confirm the diagnostic run appears. The window shows the estimated time to complete the test.

9 In the Confirm Diag Run window, click the Yes button.

Response

The CS 2000 SAM21 Manager performs a full diagnostic test on the selected Shelf Controller blade. When the test finishes, a window appears indicating success or failure.

10 Use the following table to determine your next step.

If the Full Diagnostic test	Do
passes	step 17
fails	step 11

11 Run a Brief Diagnostic test. At Type, select Brief from the pull-down menu and click the Start button.

Response

A window asking you to confirm the diagnostic run appears. The window shows the estimated time to complete the test.

12 In the Confirm Diag Run window, click the Yes button.

Response

The CS 2000 SAM21 Manager performs a brief diagnostic test on the selected Shelf Controller blade. When the test finishes, a window appears indicating success or failure.

13 Use the following table to determine your next step.

If the Brief Diagnostic test	Do
passes	step 14
fails	step 24

14 Run a second Full Diagnostic test. At Type, select Full from the pull-down menu and click the Start button.

Response

A window asking you to confirm the diagnostic run appears. The window shows the estimated time to complete the test.

15 In the Confirm Diag Run window, click the Yes button.

Response

The CS 2000 SAM21 Manager performs a full diagnostic test on the selected Shelf Controller blade. When the test finishes, a window appears indicating success or failure.

16 Use the following table to determine your next step.

If the second Full Diagnostic test	Do
passes	step 17
fails	step 24

17 Unlock the Shelf Controller Blade. On the left side of the Card View window, right-click the Shelf Controller icon and select Unlock from the list of commands.

Response

The CS 2000 SAM21 Manager unlocks the selected Shelf Controller blade.

18 Use the following table to determine your next step.

If the unlock is	Do
successful	step 19
not successful	Repeat step 17. If the second attempt fails, go to step 24.

19 Close the Card View of the inactive Shelf Controller.

Response

The Shelf View window appears.

20 Go to the card view of the active Shelf Controller. Right-click the icon of the active Shelf Controller blade and select Card View from the list of commands.

Response

The Card View Window appears.

21 Switch activity between the Shelf Controller blades. On the left side of the Card View window, right-click the Shelf Controller icon and select Swact from the list of commands.

Response

The CS 2000 SAM21 Manager switches activity between the Shelf Controller blades.

22 Use the following table to determine your next step.

If the switch of activity is	Do
successful	step 23
not successful	Repeat step 21 If the second attempt fails, go to step 24

23 Use the following table to determine your next step.

If you have successfully tested	Do
one Shelf Controller Blade	step 5
both Shelf Controller blades	step 25

24 Replace the Shelf controller blade before you continue with this software upgrade. If necessary contact your next step level of support.

25 You have completed this procedure.

Checking software versions before an upgrade

Use the following procedures to check the versions of software on the CS 2000 Management Tools server and the load server before an upgrade of SAM21 Shelf Controller software.

The load server for SAM21 Shelf Controller software can be any of the following devices:

- CS 2000 Core Manager
- CBM

The version of software on the CS 2000 Management Tools server and the load server must align with the version of software on the upgraded SAM21 Shelf Controller. For example, if you are upgrading the SAM21 Shelf Controller software to (I)SN09, the CS 2000 Management Tools server and the load server use (I)SN09 versions of software.

If you do not know the software versions for your release, check the media that delivered software to your software. Refer to any release notes for additional information.

Pre re requisites

This procedure has no prerequisites.

Action

Perform the following procedures:

- Checking the software on the CS 2000 Management Tools server on page 16
- Check the software on your load server. Perform one of the following procedures:
  - Checking the software on CS 2000 Core Manager on page 18
  - Checking the software on CBM on page 18

Checking the software on the CS 2000 Management Tools server

At your workstation

1 Log in to the CS 2000 Management Tools server.

2 Display the version of the NTSSPFS package by typing

pkginfo -x NTSSPFS

and pressing the Enter key.

Example of command and response

```
CS2000MT# pkginfo -x NTSSPFS
NTSSPFS      Succession Platform Utilities Installation
             (sparc) NTSSPFS_9_x_y
```

3 Use the following table to determine your next step

If the SPFS software	Do
does not align with the new software to be loaded on the SAM21 Shelf Controller	step 4
aligns with the new software to be loaded on the SAM21 Shelf Controller	step 5

4 Upgrade the SFPS software before you continue with the upgrade of SAM21 Shelf Controller software.

5 Display the version of the SAM21EM package by typing

pkginfo -x NTsam21em

and pressing the Enter key.

Example of command and response

```
CS2000MT# pkginfo -x NTsam21em
NTSSPFS      Succession SAM21 Element_Manager
             (noarch) SAM21EM_9_x_y
```

6 Use the following table to determine your next step

If the SAM21 EM software	Do
does not align with the new software to be loaded on the SAM21 Shelf Controller	step 7
aligns with the new software to be loaded on the SAM21 Shelf Controller	step 8

7 Upgrade the SAM21 EM software before you continue with the upgrade of SAM21 Shelf Controller software.

8 You have completed this procedure. Use one of the following procedures to check the software on your load server.

Checking the software on CS 2000 Core Manager

At your workstation

1 Log in to the CS 2000 Core Manager.

2 Open the maintenance interface by typing

`sdmmtc`

and pressing the Enter key.

Response

The Maintenance Interface appears.

3 Access the SWIM level by typing

`swim`

and pressing the Enter key.

Response

The Maintenance Interface accesses the SWIM level and displays the Product Code of the software used by the CS 2000 Core Manager.

4 Use the following table to determine your next step.

If the Product Code	Do
does not align with the new software to be loaded on the SAM21 Shelf Controller	step 5
aligns with the new software to be loaded on the SAM21 Shelf Controller	step 6

5 Upgrade the CS 2000 Core Manager software before you continue with the upgrade of SAM21 Shelf Controller software.

6 You have completed this procedure. Return to Preparing to upgrade the SAM21 Shelf Controller on page 6.

Checking the software on CBM

At your workstation

1 Log in to the CBM.

2 Open the maintenance interface by typing

`cbmmtc`

and pressing the Enter key.

Response

The Maintenance Interface appears.

3 Access the SWIM level by typing

`swim`

and pressing the Enter key.

Response

The Maintenance Interface accesses the SWIM level and displays the Product Code of the software used by the CBM

4 Use the following table to determine your next step.

If the Product Code	Do
does not align with the new software to be loaded on the SAM21 Shelf Controller	step 5
aligns with the new software to be loaded on the SAM21 Shelf Controller	step 6

5 Upgrade the CBM software before you continue with the upgrade of SAM21 Shelf Controller software.

6 You have completed this procedure. Return to Preparing to upgrade the SAM21 Shelf Controller on page 6.

Removing old SAM21SC filesets on the CS 2000 Core Manager

Purpose of this procedure

This procedure removes old SAM21 Shelf Controller filesets on the CS 2000 Core Manager before an upgrade of SAM21 Shelf Controller software.

When to use this procedure

Perform this procedure only if you need additional disk space in the /swd/sam21 volume of the CS 2000 Core Manager for a SAM21 Shelf Controller upgrade. Nortel recommends a minimum of 25 megabytes of disk space.

Prerequisites

This procedure has no prerequisites.

Action

At the console or terminal window

1 Change directory to `/var/adm/sam21`:

```
# cd /var/adm/sam21
```

2 Copy the custlog, designlog, and statlog configuration files to a backup version in the `/var/adm` directory:

```
# cp custlog ../custlog.bak
# cp designlog ../designlog.bak
# cp statlog ../statlog.bak
```

3 List the existing filesets:

```
# sdmmtc details
```

4 Find the SAM21 Shelf Controller fileset to be removed by using the filter command:

```
> filter sam21
```

Filter command example

```
    SDM        CON      NET      APPL     SYS            CLLI: clliname
     .          .        .        .        .             Host: hostname

Details
 0 Quit      Filter: SAM21 (Description View)
 2             # Fileset Description                Version         Status
 3             1 SAM21 Platform v10                10.0.117.0      APPLIED
 4             2 SAM21 Platform v7                 7.0.558.4       APPLIED
 5             3                                >> 7.0.558.0       ARCHIVED
 6             4 SAM21 Platform v8                 8.0.24.9        APPLIED
 7 Select      5                                >> 8.0.24.0        ARCHIVED
 8 Remove      6 SAM21 Platform v9                 9.0.66.5        APPLIED
 9             7                                >> 9.0.66.0        ARCHIVED
10             8 Succession SAM21 Manager          8.0.24.2        APPLIED
11                                        Filesets: 1 to 8 of 8
```

5 Remove the old SAM21 Shelf Controller fileset:

> remove <#>

#
is the number for the SAM21 Platform fileset to remove. For example, remove 3 to remove version 7.0.558.0.

6 Make the `/var/adm/sam21` directory:

 # mkdir -p /var/adm/sam21

7 Change directory to `/var/adm`, the location of the backup configuration files:

 # cd /var/adm

8 Move the backup configuration files into the `/var/adm/sam21` directory, and remove the backup suffix:

```
# mv custlog.bak sam21/custlog
# mv designlog.bak sam21/designlog
# mv statlog.bak sam21/statlog
```

9 You have completed this procedure. Return to Preparing to upgrade the SAM21 Shelf Controller on page 6

Removing old SAM21 SC filesets on the CBM

Purpose of this procedure

This procedure removes old SAM21 Shelf Controller filesets on the Core and Billing Manager (CBM) before an upgrade of SAM21 Shelf Controller software.

When to use this procedure

Perform this procedure only if you need additional disk space in the /sam21 volume of the CBM for a SAM21 Shelf Controller upgrade. Nortel recommends a minimum of 25 megabytes of disk space.

Prerequisites

This procedure has no prerequisites.

Action

At the CS 2000 Management Tools terminal

1 Log in as root and then run the platform_load_install.sh script.

The screen clears and a menu is displayed.

```
     Welcome to the Platform Installation Tool Version 3.2
=====================================================================
     RPM INSTALLATION/REMOVAL
    ============================
    1) Install RPM from CDROM       2) Install RPM from Disk
    3) Uninstall RPM                4) Query all RPMs

     OTHER
    =========
   C) Change Rotation Parameters          P) View Rotation Parameters
    V) SAM21 Platform Version Installed     X) Exit

     Please choose one of the following: 3
```

2 Select 3 and press the Return key.

The application connects to the CBM and displays the installed .rpm packages.

```
            Uninstalling RPM Software.

            The Following RPM files are installed

3PC_MC_SSPFS-7.09-1.0
SAM21_PLAT-10.0-223.0
         Please enter rpm file you would like to uninstall or q to exit>
```

3 Enter the name of the .rpm package to remove. For example, SAM21_PLAT-10.0-223.0.

Note: The .rpm package name is case sensitive.

A confirmation prompt is provided.

```
       Please enter rpm file you would like to uninstall or q to exit>
SAM21_PLAT-10.0-223.0
Sun Microsystems Inc.   SunOS 5.8       Generic Patch   December 2002
     Are you sure you want to uninstall SAM21_PLAT-10.0-223.0 (y,n)>? Y
```

4 Enter Y to confirm the uninstall prompt.

The uninstall begins. When prompted, enter the root password on the CBM. If the office uses a dual CBM configuration, a second prompt appears for the mate CBM unit.

```
      Uninstalling RPM on SDM/CBM, you will be prompted for the sdm/cbm
root passwd.
root@47.135.214.127's password: <enter root password>
Mate IP is 47.135.214.129
root@47.135.214.129's password: <enter root password>
       SAM21_PLAT-10.0-223.0 RPM has been uninstalled


              ******* Please hit ENTER key to continue ***********
```

5 Press the Return key.

The main RPM Installation/Removal menu appears.

```
     Welcome to the Platform Installation Tool Version 3.2
=============================================================================
     RPM INSTALLATION/REMOVAL
    ============================
    1) Install RPM from CDROM       2) Install RPM from Disk
    3) Uninstall RPM                4) Query all RPMs

     OTHER
    =========
   C) Change Rotation Parameters          P) View Rotation Parameters
    V) SAM21 Platform Version Installed     X) Exit

     Please choose one of the following: x
```

6 Select X and press the Return key.

7 You have completed this procedure. Return to Preparing to upgrade the SAM21 Shelf Controller on page 6.

Transferring and mounting an ISO image on an SPFS-based server

Application

Use this procedure to perform the following tasks:

- uncompress the load on your ESD load repository server
- transfer an uncompressed iso image file from your ESD load repository server to the SPFS-based server
- mount the image on the SPFS-based server

Nortel delivers compressed software loads through Electronic Software Delivery (ESD) to a local load repository server. Once the loads are uncompressed, they are then available as International Standard of Organization (ISO) 9660-compliant images for transfer to an SPFS-based server. A patch ISO image file will be included with the software load.

Prerequisites

This procedure has the following prerequisites:

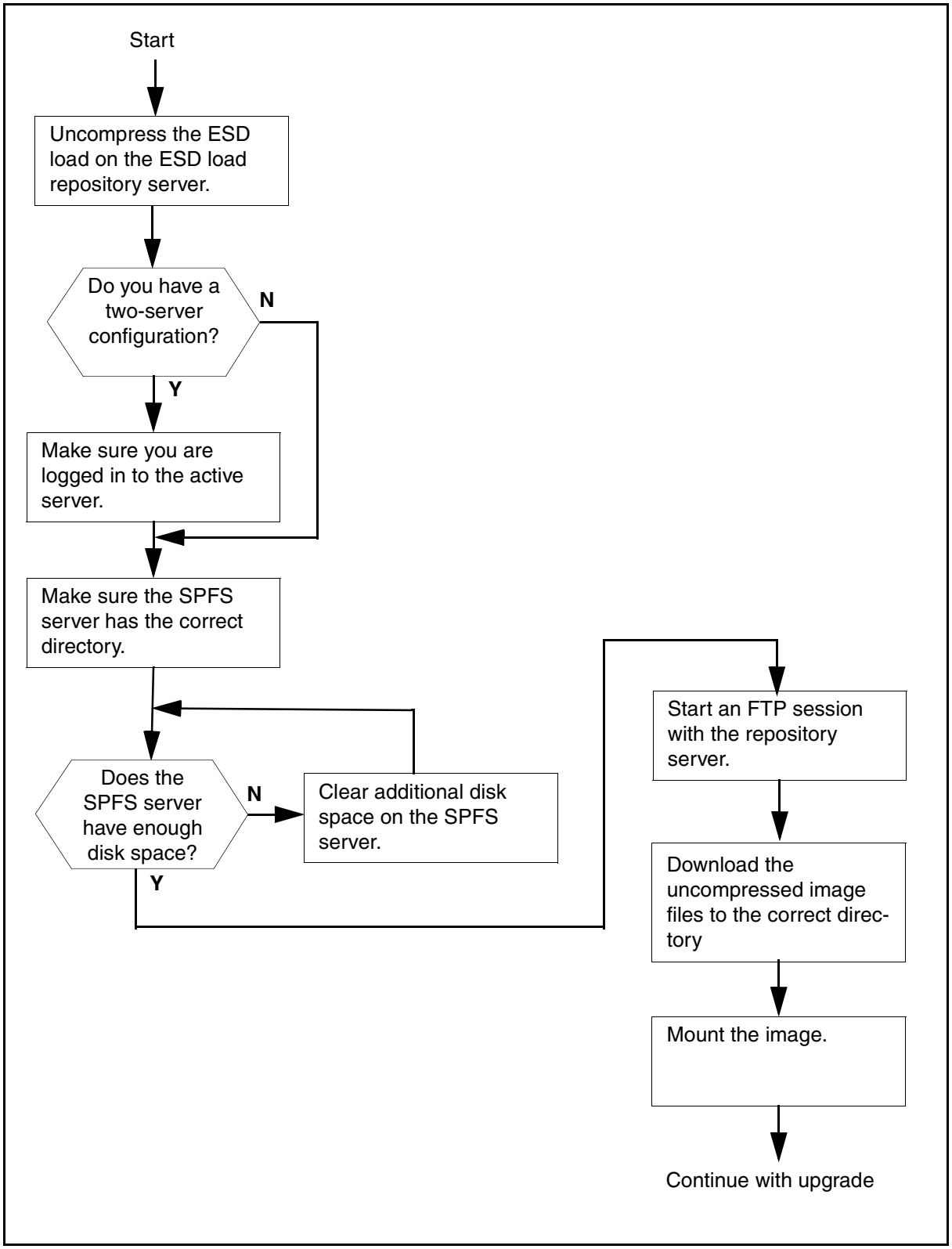
- The ESD load must be available on your ESD load repository server.
- You must know the name or IP address of the load repository server and the location of the dropbox directory on the server.
- You must know the name or IP address of the SPFS-based server.
- You must know the root password to the SPFS-based server.

This procedure requires you to confirm the availability of disk space on the SPFS-based server. If the server does not have the required amount of available disk space, follow your local office policy to clear space. If you do not know your policy or cannot clear the required amount of available disk space, contact your next level of support.

Action

Use the flowchart as an overview of the tasks required to complete this procedure. Use the step-by-step instructions to complete the procedure.

Overview of steps to transfer and mount an ISO image to an SPFS-based server



Uncompressing the load on the ESD load repository server

At the ESD load repository server

1 Log in to the ESD load repository server, and change directory to the drop box location.

Note: Ensure you log in with a user ID that has permission to uncompress files.

2 List the contents of the drop box by typing

```
ls *.gz
```

and pressing the Enter key.

3 Locate the file you want to uncompress.

4 Uncompress the file by typing

```
gzip -d <esd_filename>.tar.gz
```

and pressing the Enter key.

where

esd_filename
is the name of the ESD software load, for example SPFS009F.9F.R.NCL.NAP.VAULT.1.D, which is the esd_filename for SPFS

5 List the uncompressed file by typing

```
ls *.tar
```

and pressing the Enter key.

Example response

```
SPFS0091.91.R.NCL.NAP.VAULT.1.D.tar
```

6 Unpack the file by typing

```
tar -xvf <esd_filename>.tar
```

and pressing the Enter key.

where

esd_filename
is the name of the ESD software load, for example SPFS009F.9F.R.NCL.NAP.VAULT.1.D, which is the esd_filename for SPFS

The unpacked file is a directory, for example, SPFS009F.9F.R.NCL.NAP.VAULT.1.D, that contains the iso image files.

7 Access this directory by typing

cd <esd_filename_directory>

where

esd_filename_directory
is the directory with the iso image files, for example, SPFS009F.9F.R.NCL.NAP.VAULT.1.D

8 List the contents of the directory by typing

ls

Example response

```
platform_disk_1.iso.tape
platform_disk_2.iso.tape
platform_disk_3.iso.tape
```

9 Rename each file without the .tape extension by typing

mv <filename.tape> <filename>

and pressing the Enter key.

where

filename.tape
is the name of the file with the .tape extension

filename
is the name of the file without the .tape extension

Example

```
mv platform_disk_1.iso.tape platform_disk_1.iso
```

10 Log out of the ESD load repository server.

11 Perform the steps under Transferring an ISO image to an SPFS-based server on page 29 to continue with this procedure.

Transferring an ISO image to an SPFS-based server

ATTENTION
In a two-server configuration, you will transfer the ISO image to the active server.

At your workstation

1 Establish a connection to the SPFS-based server through telnet or SSH, and log in using the root user ID and password.

In a two-server configuration, log in to the active server using the physical IP address of the active server, and ensure you are on the active server using the **`ubmstat`** command.

For detailed steps, refer to procedure Logging in to an SPFS-based server on page 89.

2 Make sure the server has the correct directories. Use the following table as reference to identify the directory required for the SPFS-based server type (component) to which the ISO image is to be transferred.

Component	Directory path
ERS 8600	/swd
GWC	/gwc
All other components	/data/esd_iso

List the directory for your component by typing

```
# ls <directory>
```

and pressing the Enter key.

where

directory
is /swd, /gwc, or /data/esd_iso

3 Use the following table to determine your next step.

If the response	Do
indicates no such directory exists	step 4
displays the name of the directory	step 5

4 Create the directory by typing

```
# mkdir <directory>
```

and pressing the Enter key.

where

directory
is /swd, /gwc, or /data/esd_iso

5 Display the available disk space in the directory by typing

```
# df -k <directory>
```

and pressing the Enter key.

where

directory
is /swd, /gwc, or /data

Example response

```
# df -k /data
Filesystem            kbytes    used   avail capacity  Mounted on
/dev/md/dsk/d2         3082223  144125 2876454     5%    /data
```

6 Record the amount of available disk space, which is provided in kilobytes. You will need the information later in this procedure.

7 Change directory by typing

```
# cd <directory>
```

and pressing the Enter key.

where

directory
is /swd, /gwc, or /data/esd_iso

8 Start an FTP session with the ESD repository server by typing

```
# ftp <ESD_repository_server_ip>
```

and pressing the Enter key.

where

ESD_repository_server_ip
is the machine owned by the operating company that was selected to be the destination for ESD software.

9 When prompted, enter your user ID and password.

10 List the directories on the ESD repository server by typing

```
ftp> ls
```

and pressing the Enter key.

11 Change directory to the drop box directory by typing

```
ftp> cd <dropbox_directory>
```

and pressing the Enter key.

where

dropbox_directory
is the name of the your dropbox directory.

12 List the contents of the drop box by typing

```
ftp> ls -l
```

and pressing the Enter key.

13 Change to the directory that contains the iso image files by typing

```
ftp> cd <esd_filename_directory>
```

where

esd_filename_directory
is the directory that contains the iso image files, for example, SPFS0091.91.R.NCL.NAP.VAULT.1.D

14 Locate the iso image file you want to transfer, and identify the size of the file, which is provided in bytes.

Note: Divide the number of bytes by 1024 to convert the size to kilobytes.

15 Compare the size of the iso image file with the amount of available space you recorded in step 6.

16 Use the following table to determine your next step.

If	Do
the server has enough available disk space	step 18
otherwise	step 17

17 Clear additional disk space following local office policy, before you continue with this procedure. If necessary, contact your next level of support.

18 Change the transfer mode to binary by typing

```
ftp> bin
```

and pressing the Enter key.

19 Transfer the iso image file to the SPFS-based server by typing

```
ftp> get <iso_image>
```

and pressing the Enter key.

where

iso_image
is the full name of the iso image file

Note: Do not transfer any file with a .tar.gz extension.

20 End the FTP session by typing

```
ftp> bye
```

and pressing the Enter key.

21 List the contents of the directory to ensure the files successfully transferred to the server by typing

```
# ls -l
```

and pressing the Enter key.

You are now ready to mount the iso image on the server.

22 Perform the steps under Mounting an ISO image on an SPFS-based server on page 32 to complete this procedure.

Mounting an ISO image on an SPFS-based server

ATTENTION
In a two-server configuration, you will mount the ISO image on the inactive server with the exception of the APS and Media Server 2000 ISO images, which you will mount on the active server.

At your workstation

1 Use the following table to determine your first step.

If	Do
you have a two-server configuration	step 2
otherwise	step 4

2 Use the following table to determine your next step.

If	Do
you are mounting the APS or Media Server 2000 iso image	step 4
otherwise	step 3

3 Establish a connection to the inactive server through telnet or SSH using the physical IP address of the inactive server, log in using the root user ID and password, and ensure you are on the inactive server using the **`ubmstat`** command.

For detailed steps, refer to procedure Logging in to an SPFS-based server on page 89.

4 Start the command line interface by typing

```
# cli
```

and pressing the Enter key.

5 Enter the number next to the Other option in the menu.

6 Enter the number next to the mount_image option in the menu.

7 Use the following table to determine your next step.

If the system response is	Do
`Enter full path to ISO image`	step 9
`ISO image Already Mounted`	step 8

8 Enter the number next to the umount_image option in the menu and retry step 6.

Note: If either command is unsuccessful a second time, contact your next level of support.

9 When prompted, enter the full path name of the iso image on the server by typing

<directory_path>/<iso_image>

and pressing the Enter key.

where

directory_path
is /swd, /gwc, or /data/esd_iso

iso_image
is the full name of the ISO image file

Note 1: Do not attempt to change directories to the /tmpmnt directory until the mount command is complete.

Note 2: Record the path of the ISO image file for ISO image file removal.

10 Use the following table to determine your next step.

If the response	Do
is a warning to unmount the image before removing the image file	step 11
indicates the path you provided does not exist	Verify the location and name of the image and retry step 8.
indicates an error creating the image device location	Retry step 8. An operating system error with the loopback file driver occurred. If the command fails a second time, contact your next level of support.
indicates an error mounting the file	Repeat the steps under Transferring an ISO image to an SPFS-based server on page 29. The ISO image is corrupt or the /tmpmnt directory has been deleted. If the procedure fails a second time, contact your next level of support.

11 Exit each menu level of the command line interface by typing

`select - x`

and pressing the Enter key.

12 You have completed this procedure. If applicable, return to the high level task or procedure that directed you to this procedure.

Loading the Shelf Controller software delivered through ESD

Use this procedure to prepare SAM21 Shelf Controller software delivered through Electronic Software Delivery (ESD) for an upgrade of the SAM21 Shelf Controller.

Prerequisites

Use this procedure after you have performed the procedure Transferring and mounting an ISO image on an SPFS-based server on page 25.

Do not remove old SAM21 Shelf Controller filesets (NCL and MNCL filesets of the same release) from the CS 2000 Core Manager or CBM unless you need additional space on the device to apply the new releases. It is recommended to have a minimum of 25 Megabytes of available disk space. If required, follow one of the following procedures

- Removing old SAM21SC filesets on the CS 2000 Core Manager on page 20
- Removing old SAM21 SC filesets on the CBM on page 22

Action

At a CS 2000 Management Tools server terminal

1 Make sure you are logged in as root. If necessary, perform the following steps.

a Change to the root user by typing

```
$ su -
```

and pressing the Enter key.

b When prompted, enter the root password.

2 List the contents of the `/tmpmnt/noarch` directory (**ls /tmpmnt/noarch)** .

3 Use the following table to determine your next step.

If you wish to install the software	Do
later	step 4
now	step 6

4 Copy the contents to a location of your choice on the CS 2000 Management tools server.

5 When you are ready to install the software, list the contents of the directory from step 4.

6 Record the name of the .rpm file.

7 Enter the **platform_load_install.sh** command.

8 Select **2**, Install RPM from Disk.

9 When prompted, enter the .rpm filename.

10 When prompted for the location of the .rpm file, enter /tmpmnt/noarch.

11 When asked if you want to continue, enter y.

Example system response:

```
Installing RPM package SAM21_PLAT-12.0-45.0
Sun Microsystems Inc. SunOS 5.9 Generic May 2002
aps11: Installed on May 04, 2005 at 05:56:33
SAM21_PLAT_12_0_45_0.rpm 100% 25MB 5.1MB/s 00:05
The authenticity of host '47.142.116.150 (47.142.116.150)' can't be
established.
RSA key fingerprint is cc:5a:42:6a:1e:c2:08:49:c5:c0:b7:65:cb:04:7d:c4.
Are you sure you want to continue connecting (yes/no)?
```

12 Enter yes.

Example system response:

```
Warning: Permanently added '47.142.116.150' (RSA) to the list of known
hosts.
Password:
```

13 Enter the root password of the CBM or CS 2000 Management Tools server.

The system displays messages telling of its progress through the process of installing the rpm package. The final messages it displays are as follows:

```
   Installation of Platform Load Complete.

******* Please hit ENTER key to continue ******
```

14 Press the Enter key.

System response:

```
     Welcome to the Platform Installation Tool Version 3.2
=============================================================================
     RPM INSTALLATION/REMOVAL
    ============================
    1) Install RPM from CDROM       2) Install RPM from Disk
    3) Uninstall RPM                4) Query all RPMs

     OTHER
    =========
   C) Change Rotation Parameters          P) View Rotation Parameters
    V) SAM21 Platform Version Installed     X) Exit

     Please choose one of the following:
```

15 Exit from the platform installation tool. At the prompt, enter x.

System response:

```
Exiting Installation Tool, GoodBye
```

16 Make sure you are not in the /tmpmnt directory.

17 Unmount the ESD file. Perform procedure Unmounting and removing an ISO image from an SPFS-based server on page 40.

Note: If you are in the /tmpmnt directory, you can not unmount the ESD file from the /tmpmnt directory. The unmount command will show busy if you are in the directory.

18 You have completed this procedure. If applicable, return to the higher level task flow or procedure that directed you to this procedure.

Unmounting and removing an ISO image from an SPFS-based server

Application

Use this procedure to perform the following tasks:

- unmount an ISO image on the SPFS-based server
- remove an ISO image from the SPFS-based server

Prerequisites

Determine the node, active or inactive, on which this procedure needs to be performed.

Action

Unmounting an ISO image on an SPFS-based server

ATTENTION
In a two-server configuration, you will unmount the ISO image on the inactive server where you upgraded the software. This excludes the APS and Media Server 2000 ISO images, which you will unmount on the active server where you upgraded the software.

At your workstation

1 Change out of the /tmpmnt directory to prevent a umount failure by typing

```
# cd /
```

and pressing the Enter key.

2 Access the command line interface to unmount the ISO image by typing

```
# cli
```

and pressing the Enter key.

3 Enter the number next to the option `Other` in the menu.

4 Enter the number next to the option `umount_image` in the menu.

5 Exit each menu level of the command line interface to eventually return to the root level prompt, by typing

`select - x`

and pressing the Enter key.

You are now ready to remove the ISO image from the server.

6 Perform the steps under Removing an ISO image from an SPFS-based server on page 41 to complete this procedure.

Removing an ISO image from an SPFS-based server

ATTENTION
In a two-server configuration, you will remove the ISO image from the active server.

At your workstation

1 Use the following table to determine your first step.

If	Do
you have a two-server configuration	step 2
otherwise	step 4

2 Use the following table to determine your next step.

If	Do
you are removing the APS or Media Server 2000 iso image from the server	step 4
otherwise	step 3

3 Establish a connection to the active server through telnet or SSH using the physical IP address of the active server, log in using the root user ID and password, and ensure you are on the active server using the **`ubmstat`** command.

For detailed steps, refer to procedure Logging in to an SPFS-based server on page 89.

4 Navigate to the directory where the ISO image is located by typing

```
# cd <directory_path>
```

and pressing the Enter key.

where

directory_path
is /swd, /gwc, or /data/esd_iso

5 Remove the ISO image from the server by typing

```
# rm <loadname>
```

and pressing the Enter key.

6 You have completed this procedure. If applicable, return to the high level task or procedure that directed you to this procedure.

Loading the Shelf Controller software from CD

Use this procedure to install the SAM21 Shelf Controller software from a compact disk (CD) to the CS 2000 Core Manager or Core and Billing Manager (CBM). The CS 2000 Core Manager or CBM provide the software a SAM21 Shelf Controller on a BOOTP request.

Prerequisites

Do not remove old SAM21 Shelf Controller filesets (NCL and MNCL filesets of the same release) from the CS 2000 Core Manager or CBM unless you need additional space on the device to apply the new releases. It is recommended to have a minimum of 25 Megabytes of available disk space. If required, follow one of the following procedures

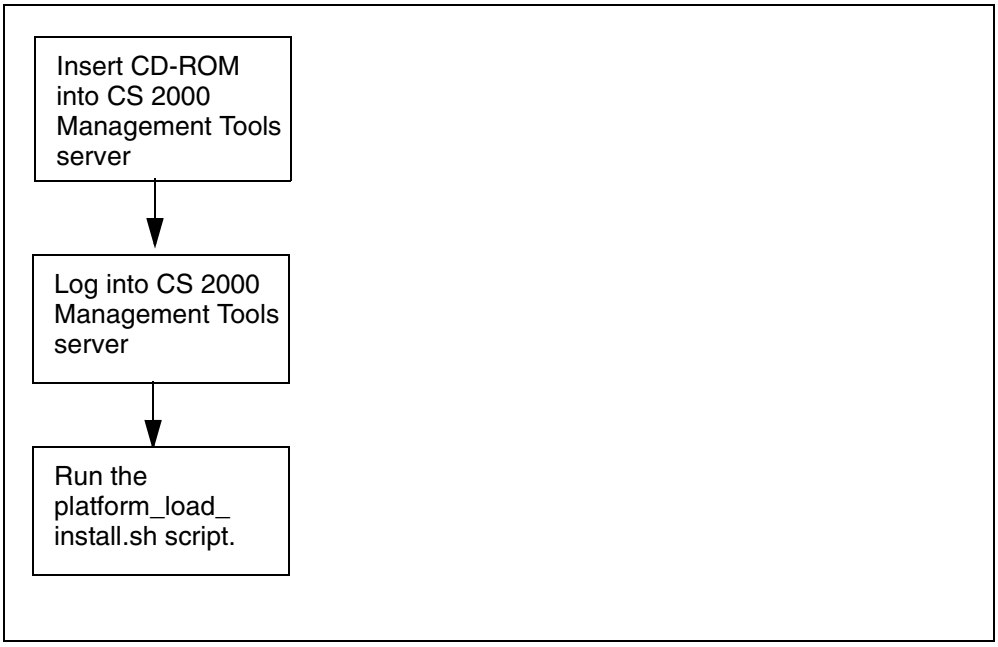
- Removing old SAM21SC filesets on the CS 2000 Core Manager on page 20
- Removing old SAM21 SC filesets on the CBM on page 22

Additional information

Do not use file links (hard or soft symbolic links) in the filesystem for bootloads. Links are not supported, they defeat the caching mechanism, and increase the time required to boot a SAM21 Shelf Controller.

Action

The following figure summarizes the procedure.



At the CS 2000 Management Tools frame (Sun Microsystems t1400 or Netra 240)

1 Insert the CD-ROM into the CD-ROM tray. If the unit is a Netra 240 in a cluster configuration, use the active Netra 240 unit. The active unit is identified by a lit USER LED on the front of the unit.

The CD-ROM label for the SAM21 Shelf Controller software includes the product code, SAM20008, on the lower half of the label.

At a CS 2000 Management Tools terminal

2 Log in and then use the su command to gain root privilege.

```
Trying <hostname>...
Connected to <hostname>.
Escape character is '^]'.

Authorized use only, activities logged.
login: username
Password: <password>
Last login: Fri Jan 30 12:48:10 from <otherhost>
prompt:>
prompt:> su - root
Password: <root_password>
#
```

3 Execute the platform_load_install.sh script.

```
# /opt/nortel/sspfs/Scripts/platform_load_install.sh
```

The screen clears and a menu is displayed.

```
      Welcome to the Platform Installation Tool Version 3.2
  ======================================================================
      RPM INSTALLATION/REMOVAL
     ============================
     1) Install RPM from CDROM       2) Install RPM from Disk
     3) Uninstall RPM                4) Query all RPMs

      OTHER
     =========
    C) Change Rotation Parameters          P) View Rotation Parameters
     V) SAM21 Platform Version Installed     X) Exit

      Please choose one of the following: 1
```

Note: *Options C and P are not available for offices configured with a CS 2000 Core Manager or a CBM.*

4 Enter 1 and press the Return key to install the software.

The screen clears and the contents of the .rpm package are displayed.

```
                Verifying CDROM is mounted
/cdrom/cdrom on /vol/dev/dsk/c0t0d0/cdrom read only/nosuid/mapl-
case/noglobal/rr/traildot/dev=16c0001 on Sat Mar 27 16:34:13 2004
                CDROM is mounted.
                Listing file names in the rpm on the cd.

/swd/sam21/10.0.0.0401211453
/swd/sam21/10.0.0.0401211453.cksum
/swd/sam21/F695_flash.10.0.0.0401211453
/swd/sam21/F695_flash.10.0.0.0401211453.chksum
/swd/sam21/N765.flash.10.0.0.0401211453
/swd/sam21/N765a.flash.10.0.0.0401211453
/swd/sam21/Sitka.flash.10.0.0.0401211453
/swd/sam21/checkLoad
/swd/sam21/hostsmodify
/swd/sam21/hostsmodify.sh
/swd/sam21/hostsmodify.sspfs
/swd/sam21/logs/logfile
/swd/sam21/logs/slgcleansam
/swd/sam21/sc-atm-tools.rpm
/swd/sam21/sc-ip-tools.rpm
/swd/sam21/sc-mtc-tools.rpm

                Do you want to continue (y/n)? Y
```

Note: *If the message* `There is no cd in the CDROM drive, please check drive` *is displayed, ensure that the CD-ROM is inserted in the tray for this unit.*

5 Enter Y to proceed with the software installation.

The software is extracted from the .rpm package. The .rpm package is transferred to the CS 2000 Core Manager or CBM.

```
                Extracting files from the rpm archive on the cd.

Installing RPM package SAM21_PLAT-10.0-223.0
Sun Microsystems Inc.   SunOS 5.8       Generic Patch   December 2002
sam21_plat_10_0_223_0.rpm                   100%   11MB 750.4KB/s   00:14
root@47.135.214.127's password: <enter root password>
```

6 Enter the root password for the CS 2000 Core Manager or the CBM.

The software is installed on the CS 2000 Core Manager or CBM. If a CBM is used, the .rpm package is then copied to the inactive CBM unit and another prompt for the root password appears. If this happens enter the root password and press Return. After the load file is installed on the CS 2000 Core Manager or CBM, the transferred .rpm package is deleted from the CS 2000 Core Manager or CBM.

```
               Extracting files from the rpm archive on the cd.

Installing RPM package SAM21_PLAT-10.0-223.0
Sun Microsystems Inc.   SunOS 5.8       Generic Patch   December 2002
sam21_plat_10_0_223_0.rpm                    100%   11MB 750.4KB/s   00:14
root@47.135.214.127's password: <enter root password>
Mate IP is 47.135.214.129
Sun Microsystems Inc.   SunOS 5.8       Generic Patch   December 2002
root@47.135.214.129's password: <enter root password>

     Configuring syslog to add designlog, statlog and customerlog files.
      Log files already added to syslog.

      Adding log rotation for designlog/statlog/customerlog files.
      Installation of Platform Load Complete.

      ******* Please hit ENTER key to continue ***********
```

Note: *After the first installation, syslog and log rotation will not be reconfigured.*

7 Enter X to exit.

8 Enter the eject command:

```
# eject
```

9 Log out of the CS 2000 Management Tools server.

At the CS 2000 Management Tools frame

10 Remove the CDROM.

11 You have completed this procedure. If applicable, return to the higher level task flow or procedure that directed you to this procedure.

Note: For customers experienced with upgrading the SAM21 Shelf Controllers in earlier releases, no action is required at the CS 2000 Core Manager for software installation.

Checking the Shelf Controller upgrade prerequisites

Purpose of this procedure

This procedure checks that suitable conditions exist for using the automated Shelf Controller Upgrade Tool. It includes checks such as for the correct filesets, authorized group membership for the operator, and status of the SAM21 and CORBA servers.

When to use this procedure

Use this procedure before upgrading the Shelf Controller software using the automated Shelf Controller Upgrade Tool.

Prerequisites

Complete the Preparing to upgrade the SAM21 Shelf Controller on page 6.

Action

At the CS 2000 Management Tool interface

1 Log in as a user other than root. This user will be referred to as “operator” throughout this procedure.

2 Enter:

```
> id -a
```

System response:

```
$ id -a
uid=104(ptm)  gid-104(succssn)
groups=105(succssn),1001(trkadm(,1006(1nadm),1001
(mgcadm),1016(mgadm),1021(emsadm)
$
```

Group names

3 Ensure that the operator belongs to one of the following groups that can launch the upgrade tool: mgcmtc, mgcadm, emsmtc or emsadm.

If the operator	Do
belongs to group mgcmtc, mgcadm, emsmtc or emsadm	step 4

If the operator	Do
does not belong to group mgcmtc, mgcadm, emsmtc or emsadm	add the operator to one of the required groups. (Refer to procedure “Setting up local user accounts on an SPFS-based server” in *ATM/IP Solution-level Security and Administration*, NN10402-600.) When the operator has been added, return to this procedure and go to step 4.

4 Refer to the following table to determine your next step.

If the operator belongs to	Do
group mgcmtc or emsmtc	step 5
group mgcadm or emsadm	telnet into the CMT server using the CMT gui userid and password, and go to step 5

5 Use the su command (switch user) to log in as the root user.

At the system prompt, type

su - root

and press the Enter key.

System response:

```
Password:
```

6 Type

<password>

and press the Enter key

where

<password> is the root password.

7 Check the status of the SAM21 element server and CORBA server and ensure they are running properly. Enter:

```
> servquery -status all
```

System response:

```
$ servquery -status all
APP NAME              STATUS
========              ======
DATABASE              RUNNING
CINOTIFIER            RUNNING
BACKUP_MANAGER        Group Started. Current status unavailable
BOOTP                 RUNNING
WEBSERVER             RUNNING
CORBA                 RUNNING
OMPUSH                RUNNING
SESMService           RUNNING
WEBSERVICES           RUNNING
DDMSPROXY             RUNNING
ORA_AUTO_BACKUP       RUNNING
DELEGATE              RUNNING
ORA_ARCHIVE_ROTATOR   RUNNING
NPM                   RUNNING
PROP_SRV              RUNNING
SAM21EM               RUNNING
SNMP_POLLER           Group Started. Current status unavailable
QCA                   RUNNING
```

Server states

8 Use the su command (switch user) to log in using operator as the user ID.

At the system prompt, type

su <user-ID>

and press the Enter key

where

<user-ID> is your own user ID.

System response:

```
Password:
```

9 Type

<password>

and press the Enter key

where

<password> is the your own password.

10 You have completed this procedure. If applicable, return to the higher level task flow or procedure that directed you to this procedure.

Upgrade the Shelf Controller using the Shelf Controller Upgrade Tool

Purpose of this procedure

This procedure upgrades the Shelf Controller software using the automated Shelf Controller Upgrade Tool.

When to use this procedure

Use this procedure after checking the upgrade prerequisites (see procedure Checking the Shelf Controller upgrade prerequisites on page 48).

Prerequisites

The prerequisites for this procedure are as described in Checking the Shelf Controller upgrade prerequisites on page 48.

Aborting an upgrade

If the automated upgrade fails and you need to abort the upgrade, perform Aborting a SAM21 Shelf Controller software upgrade on page 107

Action

CAUTION
Interruption of upgrade
Do not exit the automated upgrade tool before the upgrade is complete.

CAUTION
Termination of automated upgrade tool
Do not press CTRL+C or close the TERM window. These actions terminate the upgrade tool.

ATTENTION
The scuptool does not support rollback for automated upgrades. If problems occur during the upgrade, you can terminate the upgrade and use the manual rollback procedure *Roll back the SAM21 Shelf Controller software* in NN10067-461.

At the CS 2000 Management Tool interface

1 Launch SC upgrade tool

Launch the upgrade tool (scuptool) to display the Main Menu for the Shelf Controller upgrade tool:

```
> /opt/nortel/sam21em/bin/scuptool.sh
```

Example system response:

```
$ /opt/nortel/sam21em/bin/scuptool.sh
Starting ....

Main Menu for SC upgrade tool
1 - Display all SC pairs
2 - Configure upgrade-related options
3 - List current configuration values
4 - Enter Upgrade Menu

x - Stop upgrade tool and exit CLUI

Enter selection (1-4,x):
```

2 Display all SC pairs

Select Display all SC pairs from the Main Menu.

Enter:

```
> 1
```

Example system response:

```
List All SC Units From SAM21EM:
=========================================
SC2 GTWD-SAM21-2 slot 7 ip: 172.16.0.74
 SCUnit Status:
   Card Status          :       Unlocked
   Operational state    :       Enabled
   Activity state       :       Active
   Availability state   :       None

 Total Alarms:
  Critical Alarms       :       0
  Major    Alarms       :       1

 Load name              :       11.0.0.0503041646

SC2 GTWD-SAM21-2 slot 9 ip: 172.16.0.75
 SCUnit Status:
   Card Status          :       Unlocked
   Operational state    :       Enabled
   Activity state       :       Inactive
   Availability state   :       None

 Total Alarms:
  Critical Alarms       :       0
  Major    Alarms       :       1

 Load name              :       11.0.0.0503041646
```

3 Configure upgrade options

Select Configure upgrade-related options from the Main Menu. Enter:

> 2

Example system response:

```
[Step 1 - LOAD SERVER TYPE]
Values:
1 - SDM
2 - CBM

Enter the load server type (1-2), (default 1):
```

4 Select the load server type. Enter 1 for CS 2000 Core Manager/SDM (the default load file is under /swd/sam21/) or enter 2 for CBM (the default load file is under /sam21).

System response (after entering 1):

```
Load server is SDM, default load directory is /swd/sam21
fetching load file list

1) 11.0.0.0503041646
2) 12.0.0.0509021118
3) 13.0.0.0511110436
```

System response (after entering 2):

```
Load server is CBM, default load directory is /sam21
fetching load file list

1) 11.0.0.0503041646
2) 12.0.0.0509021118
3) 13.0.0.0511110436
```

System response:

```
[Step 2 - LOAD FILE NAME]
Enter the index No. of the new load file (Example: 1):
```

5 Enter the index number of the load file name. Ensure that the load file exists in the load server (CBM or CS 2000 Core Manager/SDM).

For instance, enter:

> 1

System response:

```
[Step 3 - SC LIST]
Input the SCs to be upgraded.
Separate the names with comma, for example: SC1,SC2,SC3,SC4

Enter the SC list (default: all):
```

6 Enter the list of Shelf Controllers to be upgraded. The Shelf Controller contains node names to be upgraded in the same upgrade cycle with the same configured options.

Note: Enter the node names without spaces between the entries.

Example list entry:

SC1,SC2

The system displays the current input configuration values.

Example system response for CBM:

```
[Step 4 - INPUT VALUES]
NewLoadFileName      :      13.0.0.0511110436
SCList               :      SC1
Default values
LoadDirectory        :      /sam21
OldLoadName          :      "(ignored)
UpgradeMode          :      bulk
PausePoint           :      0(none)
LoggingLevel         :      MAJ
MaxTime              :      0 (no time limit)
AlarmLevel           :      MAJ
AlarmNumber          :      2

Do you want to use these configuration values [Y|N]
(default: N):
```

7 Review all values displayed in the system response, including the default values, to ensure they are acceptable.

Note: By default, no pause points are defined. Pause points allow you to perform manual checks at selected intervals during the upgrade process. At each pause point, you are prompted to continue the upgrade. If you do not specify any pause points, you are not prompted at any point to continue the upgrade unless an error condition occurs. If you want to be prompted at certain points during the upgrade, enter N in the next step to change the default value for PausePoint.

8 Refer to the following table to determine your next step

If	Do
all the values, including the Default values, are acceptable	step 9
one or more of the values are not acceptable and you want to change	step 10

9 Enter **Y** and go to step 20.

10 Enter **N**.

*System response (after entering **N**):*

```
Do not use the default values.

[Step 5 - LOAD DIRECTORY]
Enter the load directory : (current value is /swd/sam21/):
```

11 Enter the load file directory in the CBM or CS 2000 Core Manager/SDM. Load file directory formats are different for CBM and SDM.

If you want to configure for	Do
CBM	enter /sam21, and go to step 12
SDM	enter /swd/sam21 and go to step 12

Example system response:

```
[Step 6 - OLD LOAD NAME]
Enter the old load name:
```

12 Refer to the following table to determine your next action.

If you want to	Do
enter the old load name	enter the old load name of the Shelf Controller
ignore this option	press Enter, and go to step 13

Example system response:

```
[Step 7 - UPGRADE MODE]
Values:
1 - single  2 - bulk
h - help


Enter the upgrade mode (1-2,h), (default: 2): 1
```

13 Refer to the following table to determine your next action.

If you want to	Do
upgrade all configured Shelf Controller nodes one at a time (*single*)	enter 1 and review the system response
upgrade all configured Shelf Controller nodes simultaneously (*bulk*)	enter 2 and review the system response

Example system response:

```
[Step 8 - PAUSE POINTS]
Values:
0 - no pause point. If 0 is applied, all other pause points
are ignored

(1) For the single mode SC pair.
1 - before lock.
2 - before warm swact.
3 - after upgrade.
4 - pause on all the above conditions.

(2) For bulk upgrade of SC pairs.
5 - before warm swact.

Separate the numbers with comma, for example, 1,3
Enter the pause points (default: 0):
```

14 Enter the pause points for the upgrade. Pause points allow you to perform manual checks at selected intervals during the upgrade process. At each specified pause point, you will be prompted to continue the upgrade. If you do not specify any pause points, you will not be prompted at any point to continue the upgrade unless an error condition occurs.

Example pause point entry:

```
Enter the pause points (default: 0): 1,3
```

*These selections allow pause points for a Shelf Controller pair in single mode to pause before the first upgrade unit of the "seed" pair is locked **(1)** and after the pair is upgraded **(3)**.*

Example system response:

```
[Step 9 LOGGING LEVEL]
Values:
1 - Verbose(VRB)
2 - Minor(MNR)
3 - Major(MAJ)
4 - Critical(CRT)

Enter the logging level (1-4),(default: 3): 1
```

15 Enter one of the logging levels: VRB, MNR, MAJ or CRT (default: MAJ). Upgrade logs are stored in a file in upgrade.log under /opt/nortel/sam21em/logs/. Use the logs for troubleshooting.

Example system response:

```
[Step 10 - TIME LIMIT]
Note: 0 means no time limit

Enter the time limit in minutes, (default 0):
```

16 Enter a time limit (in minutes) for the upgrade. If the upgrade cannot complete on all Shelf Controller pairs in the specified time, the non-upgraded pairs remain un-upgraded and the process ends. The default value, 0, disables the time limit check.

Example system response:

```
[Step 11 - ALARM LEVEL]
Values:
1 - Critical(CRT)
2 - Major(MAJ)

Enter the alarm level, (default: 2):
```

17 Enter the alarm level (CRT, MAJ).

Example system response:

```
[Step 12 - ALARM NUMBER]

Enter the maximum allowed alarm number, (default: 2):
```

18 Enter the maximum alarm level and number allowed during the upgrade. If the current alarm state has a higher priority than is defined in this entry, the upgrade process pauses and the system notifies the end user.

Command format:
-a <alarm_level> -an <alarm_number>

Example command:

```
Enter the maximum allowed alarm number, (default: 2): -aMAJ-an2
```

Alarm level (Major)

Alarm number

The entries in the example allow a maximum number of two Major (MAJ) alarms during the upgrade process. In this case, if three MAJ alarms occur in the element server for the pair, the upgrade tool pauses. If one MAJ alarm occurs, the upgrade tool ignores it and continues the upgrade process. If one Critical (CRT) alarm occurs, the upgrade tool pauses because CRT alarms have a higher priority than MAJ alarms.

Example system response:

```
Configuration values:
NewLoadFileName : 13.0.0.0511110436
SCList          : SC1
LoadDirectory   : /sam21
OldLoadName     :
UpgradeMode     : single
PausePoint      : 1,3
LoggingLevel    : VRB
MaxTime         : 0
AlarmLevel      : MAJ
AlarmNumber     : 2

Is this information correct? [Y|N] (DEFAULT: n): y
```

19 Review the values displayed in the system response and refer to the following table to determine your next action.

If	Do
you want to confirm the selections for configuration	enter Y. Note the following system response, and go to step 20
you do not want to confirm the selections for configuration	enter N and return to step 4 on page 53, or go to step 38 to exit the upgrade tool

Example system response:

```
Current configuration values:
-------------------------------------------------------------
New load file name                          : 13.0.0.0511110436
Old load name                               :
Load directory name                         : /sam21
Upgrade mode                                : single
Check points                                : 1,3
Log level                                   : VRB
SC lists                                    : SC1
Max Time for Doing upgrade                  : no time limit
Max parallel number for bulk upgrade        : 8
Allowed Highest alarm level                 : MAJ
Allowed Maximum alarm number                : 2
```

20 You have completed the procedure for configuring upgrade-related options. Press Enter to return to the Main Menu for the Shelf Controller upgrade tool.

Example system response:

```
Main Menu for SC upgrade tool
1  - Display all SC pairs
2  - Configure upgrade-related options
3  - List current configuration values
4  - Enter Upgrade Menu

x  - Stop upgrade tool and exit CLUI

Enter selection (1-4,x):
```

21 Enter the Upgrade Menu for the Shelf Controller tool:

```
> 4
```

Example system response:

```
Upgrade Menu for SC upgrade tool
1 - Prepare
2 - Pre-check
3 - Upgrade
4 - Query upgrade status
5 - Post-check

x - Exit

Enter selection (1-5,x):
```

22 **Prepare for upgrade**

Select the Prepare option:

> 1

Example system response:

```
Upgrade Menu for SC upgrade tool
1 - Prepare
2 - Pre-check
3 - Upgrade
4 - Query upgrade status
5 - Post-check

x - Exit

Enter selection (1-5,x): 1
The configured load is available.

==============Upgrade Schedule==============
Group 1 :SC1
Estimated total time :660 seconds
```

23 Check whether the load is available in the CBM or CS 2000 Core Manager/SDM (as the example shows). Make an upgrade plan for the Shelf Controller and calculate the estimated time (in seconds) for the upgrade. The example shows an estimated total time of 660 seconds.

If the load	Do
is not available, the system responds: `SC load file does not exist. Please check and try later.`	return to step 4 on page 53
is available	step 24

24 **Perform pre-check**

At the Upgrade Menu, enter:

> 2

Example system response:

```
SAM21EM is alive.
Configured load is available.

Checking SC nodes state...
Group 1
 SC1 is ready to upgrade.

Upgrade Status Report:
SC node                    : SC1
Upgrade status             : Upgrade not started
SCUnitUpgrade order        : slot7 (inactive), slot9 (active)
Estimated time left        : 11 minutes

SC1-0 slot7 ip: 47.142.128.182
 SCUnit Status:
   Administrative state    : Unlocked
   Operational state       : Enabled
   Activity state          : Active
   Card status             : None

 Total Alarms:
  Critical alarms          : 0
  Major alarms             : 0

 Load name                 : 11.0.0.0503041646

SC1-1 slot9 ip: 47.142.128.183
 SCUnit status:
   Administrative state    : Unlocked
   Operational state       : Enabled
   Activity state          : Inactive
   Card status             : None

 Total Alarms:
  Critical alarms          : 0
  Major alarms             : 0

 Load name                 : 11.0.0.0503041646
```

Review the information in the system response (step 25 to step 28).

25 Check the status of the SAM21 manager server (SAM21EM). If the manager is not alive, go to step 7 of procedure Checking the Shelf Controller upgrade prerequisites.

26 Verify that the load is available on the load server. If the load is not available, refer to Loading the Shelf Controller software from

CD on page 43 or Loading the Shelf Controller software delivered through ESD on page 36.

27 Clear any existing alarms.

28 Verify that the two physical units of the Shelf Controller pair are in service.

If	Do
any of the pre-check conditions is not met	resolve the conditions and continue at step 29 to proceed with the upgrade process
all the pre-check conditions are met	step 29

29 You have completed the pre-check procedure. The system automatically returns to the Upgrade Menu for the SC upgrade tool.

Example system response:

```
Upgrade Menu for SC upgrade tool
1  - Prepare
2  - Pre-check
3  - Upgrade
4  - Query upgrade status
5  - Post-check

x  - Exit

Enter selection (1-5,x):
```

30

ATTENTION
The automated upgrade tool does not allow provisioning activity on the system while the upgrade is in progress.

Upgrade SC nodes
When the upgrade starts, the system performs another pre-check and displays the upgrade status (refer to the example system response shown in step 24).

If any of the problems or conditions in the following table occur, resolve the problem as indicated.

If	Do
pause points are enabled by the configuration step (step 14 on page 57), when the tool pauses at the specified intervals during the upgrade	enter the desired value(s), and continue with this step
the Shelf Controller has an active ATM link	verify that the inactive SAM21 Shelf Controller does not carry the active ATM link. Select Configuration and then IPOA Services from the Subnet View to open the ATM Connections window. If all the connections are in the yellow state, then SWACT the SAM21 Shelf Controller at a period of low activity before proceeding. If some of the connections are in the green state and some are in the yellow state, then check for alarms at the ATM equipment between the SAM21 Shelf Controller and the end node with the yellow connection. Correct the condition, check again that all connections are green. Then return to this procedure and continue with this step.
the Communications Server LAN (CS LAN) is provided by Nortel Ethernet Routing Switch (ERS) 8000 series	Reprovision the port on the routing switch to auto-negotiate according to procedure Reprovision the Ethernet Routing Switch 8600 port to auto-negotiate on page 73. (This procedure is required only once.) When the reprovisioning is complete, continue with this step.

If	Do
the Communications Server LAN (CS LAN) is provided by a switch other than Nortel Ethernet Routing Switch (ERS) 8000 series	Reprovision the port on the routing switch to auto-negotiate according to the appropriate router product documentation. When the reprovisioning is complete, continue with this step.
the real alarms on the Shelf Controller card exceed the configured alarm state	perform the appropriate alarm clearing procedures. When the action is complete, return to this procedure and continue with this step.
the upgrade is in progress, and you want to query the overall status of the upgrade (for example, if the upgrade is taking longer than expected)	launch another telnet or SSH session to the server, and enter: **>/opt/nortel/sam21em/bin/scuptool.sh -query**
you have an AAL1 solution, and the system displays the following message: `SWACT denied. The inactive Shelf Controller does not have a complete set of redundant ATM connections. A SWACT would isolate the affected gateways, resulting in an outage. Resolve any issues with the ATM connections from the gateways before requesting a SWACT. Select from the following: Retry Abort.`	wait two minutes and then retry

31 To begin the upgrade, select the Upgrade option from the Main Menu. Enter:

> 3

The upgrade tool

- provisions the software load in the inactive Shelf Controller card
- prompts for confirmation that it can lock the inactive Shelf Controller card if pause points were configured in step 14

Example system response:

Note: The entire system response as shown below will not necessarily appear instantaneously. The system will display some output, then pause, then continue. Such pauses are normal.

```
==============Upgrade Schedule==============
Group 1 SC1

Start upgrade at 2004-11-10 02:35:07.152
Upgrading with no time limit.
Group 1
Upgrade Status Report:
SC node               :  SC1
Upgrade status        :  Upgrade starting.

SC unit upgrade order:  slot7 (inactive), slot9 (active)
Start time            :  2004-11-10 02:35:07.542
Estimated time left   :  10 minutes

Provision software load on the inactive (first) unit.

Provisioning in progress...

Provisioning completed successfully.

Lock the inactive (first) SC unit started.

Message received from the server:

Locking the inactive SC will cause the SCs to operate
in simplex mode. Do you wish to proceed?

Please select from the following:
Continue

Answer:
```

If the value for pause points	Do
was the default value or zero	step 34
was any other value	step 32

32 At the Answer: prompt, you can enter Continue. To continue the upgrade, type

Continue

and press the Enter key.

The upgrade tool

- locks the inactive Shelf Controller card
- unlocks the inactive Shelf Controller card
- swacts the current active Shelf Controller card
- prompts for confirmation that it can lock the second inactive Shelf Controller card

Example system response:

Note: The entire system response as shown below will not necessarily appear instantaneously. The system will display some output, then pause, then continue. Such pauses are normal.

```
Lock in progress...

Lock completed successfully.

Unlock the inactive (first) unit started.

Unlock in progress...

Unlock completed successfully.

Swact the active (second) unit started.

Swact in progress...

Swact completed successfully.

Lock the inactive (second) unit started.

Locking the inactive SC will cause the SCs to operate
in simplex mode. Do you wish to proceed?

Please select from the following:
Continue

Answer:
```

33 At the Answer: prompt, you can enter Continue. To continue the upgrade, type

Continue

and press the Enter key.

The upgrade tool

- locks the newly inactive Shelf Controller Card
- unlocks the newly inactive Shelf Controller Card.

Example system response:

Note: The entire system response as shown in the figure that follows will not necessarily appear instantaneously. The system will display some output, then pause, then continue. Such pauses are normal.

```
Lock in progress...

Lock completed successfully.

Unlock the second unit started.

Unlock in progress...

Unlock completed successfully.

Upgrade Status Report:
SC node               : SC1
Upgrade status        : Both SC units finished successfully.

SCUnitUpgrade order   : slot7 (inactive), slot9 (active)
Start time            : 2004-11-10 02:35:07.542
Stop time             : 2004-11-10 02:47:25.305
Elapsed time          : 12 minutes 17 seconds

SC1-0 slo7 ip: 47.142.114.222
SCUnit status:
Administrative state  : Unlocked
Operational state     : Enabled
Activity state        : Active
Card status           : None

Total alarms:
Critical alarms       : 0
Major alarms          : 1

Load name             : 13.0.0.05111104360

SC1-1 slot9 ip: 47.142.114.223
SCUnit status:
Administrative state  : Unlocked
Operational state     : Enabled
Activity state        : Inactive
Card status           : None

Total alarms:
Critical Alarms       : 0
Major alarms          : 1

Load name             : 13.0.0.0511110436

Upgrade of both SC units finished successfully.
```

34 The upgrade is complete. The system automatically returns to the Upgrade Menu for the SC upgrade tool.

Example system response:

```
Upgrade Menu for SC upgrade tool
1  - Prepare
2  - Pre-check
3  - Upgrade
4  - Query upgrade status
5  - Post-check

x  - Exit

Enter selection (1-5,x):
```

35 Perform post-check

The post-check ensures that the load, state, and alarm conditions are correct. To display the data, enter:

> 5

Example system response:

```
Upgrade Status Report:
SC node               : SC1
Upgrade status        : Both SC units finished successfully.

SCUnitUpgrade order   : slot7 (inactive), slot9 (active)
Start time            : 2004-11-10 02:35:07.542
Stop time             : 2004-11-10 02:47:25.305
Elapsed time          : 12 minutes 17 seconds

SC1-0 slo7 ip: 47.142.114.222
SCUnit status:
Administrative state  : Unlocked
Operational state     : Enabled
Activity state        : Active
Card status           : None

Total alarms:
Critical alarms       : 0
Major alarms          : 1

Load name             : 13.0.0.0511110436

SC1-1 slot9 ip: 47.142.114.223
SCUnit status:
Administrative state  : Unlocked
Operational state     : Enabled
Activity state        : Inactive
Card status           : None

Total alarms:
Critical Alarms       : 0
Major alarms          : 1

Load name             : 13.0.0.0511110436
```

36 Refer to the following table to determine your next action.

If	Do
you want to continue upgrading other Shelf Controller nodes	return to step 4.
you do not want to continue upgrading other Shelf Controller nodes	The post-check is complete. The system automatically returns to the Upgrade Menu for the SC upgrade tool. Refer to the system response that follows this table.

Example system response:

```
Upgrade Menu for SC upgrade tool
1  - Prepare
2  - Pre-check
3  - Upgrade
4  - Query upgrade status
5  - Post-check

x  - Exit

Enter selection (1-5,x):
```

37 **Exit SC upgrade tool**

Exit the Upgrade Menu for the Shelf Controller upgrade tool and return to the Main Menu for the Shelf Controller upgrade tool. Enter:

> x

Example system response:

```
Main Menu for SC upgrade tool
1  - Display all SC pairs
2  - Configure upgrade-related options
3  - List current configuration values
4  - Enter Upgrade Menu

x  - Stop upgrade tool and exit CLUI

Enter selection (1-4,x):
```

38 Stop the upgrade tool and exit the CLUI. Enter:

> x

Example system response:

```
SC Upgrade Manager Stopped successfully at 2004-11-09
05:37:25.813
```

39 You have completed this procedure. If applicable, return to the higher level task flow or procedure that directed you to this procedure.

Reprovision the Ethernet Routing Switch 8600 port to auto-negotiate

Purpose of this procedure

If the Communication Server LAN (CS LAN) is provided by Nortel Ethernet Routing Switch 8600 routers, the port on the CS LAN router must be set to auto-negotiate the Ethernet port speed and duplex state. The port is normally configured that way. However, if the setting is incorrect, the port must be reconfigured before launching the SAM21 Shelf Controller or Gateway Controller upgrade tool.

When to use this procedure

If the Ethernet port on the CS LAN router is not set to auto-negotiate, use this procedure before launching the Shelf Controller or Gateway Controller upgrade tool.

Prerequisites

You must use READ/WRITE/ALL (RWA) login and/or password privileges when performing this procedure. For more information about RWA privileges, refer to the Ethernet Routing Switch 8600 configuration documentation.

Action

At the CLI for the Ethernet Routing Switch 8600

1 Determine the slot and port on the router that connects to the device. Type:

```
> show ip arp info <ip_address>
```

and press the Enter key

where <ip_address>
is the physical IP address of the Shelf Controller, Gateway Controller, or Universal SignalingPoint.

Example system response:

```
prompt:cpu> show ip arp info 172.30.242.25
================================================================================
                                      Ip Arp
================================================================================
  IP_ADDRESS       MAC_ADDRESS      VLAN  PORT    TYPE    TTL
--------------------------------------------------------------------------------
172.30.242.25    00:90:69:1a:d4:fc   200   1/2   DYNAMIC 272
```

Record the slot and port number; you will need this information in the next step of this procedure.

Note: If the response indicates MLT instead of the slot and port, perform this operation from the mate unit. If the response indicates that no arp entry is found, ping the IP address from the CLI, and retry the command.

2 Use the values recorded in step 1 to set the slot and port to auto-negotiate. Type:

`> config ethernet <slot>/<port> auto-negotiate enable`

and press the Enter key.

System response:

```
prompt:cpu> config ethernet 1/2 auto-negotiate enable
prompt:cpu>
```

The system configures the slot and port to auto-negotiate, and the prompt returns.

3 Verify the port configuration. Type:

`> show ports info config <slot>/<port>`

and press the Enter key.

System response:

```
prompt:cpu> show ports config info 1/2

================================================================================
                                    Port Config
================================================================================

PORT                AUTO  SFFD  ADMIN       OPERATE     DIFF-SERV  QOS MLT
NUM   TYPE          NEG.        DUPLX SPD   DUPLX SPD   EN   TYPE  LVL ID
--------------------------------------------------------------------------------
1/2   100BaseTX     true  false  half  100   full  100   fals  core  1   0
```

The system displays the slot and port configuration.

4 Commit the change. Type:

`> save config`

and press the Enter key.

5 You have completed this procedure. If applicable, return to the higher level task flow or procedure that directed you to this procedure.

Check a Shelf Controller that does not unlock

Purpose of this procedure

This procedure enables you to check, and if necessary correct, the condition of a Shelf Controller that does not unlock. The checks include items such as such as physical positioning, port settings, and IP addresses.

When to use this procedure

Use this procedure if the Shelf Controller does not unlock. This condition is indicated by the lock icon persisting on the SAM21 Shelf View, showing that the Shelf Controller failed to boot.

Prerequisites

This procedure has no prerequisites.

Action

At the CS 2000 SAM21 Manager client

1 Open the Shelf View of the SAM21 Shelf with the SAM21 Shelf Controller.

2 Use the following table to determine your next step.

If a lock icon	Do
appears over a SAM21 SC	step 3
does not appear over a SAM21 SC	step 21

3 Ensure that the SAM21 Shelf Controller has enough time to boot. A SAM21 Shelf Controller can take up to four minutes to boot on a slow network.

If the SAM21 Shelf Controller has enough time to boot and still has a lock icon and a hashed outline, continue with this procedure.

At the SAM21 frame

4 Verify that the SAM21 Shelf Controller is fully seated in the slot. Check the latches on the SAM21 Shelf Controller and the Hot Swap Controllers. The latch handles are perpendicular to the faceplate when the card is inserted properly and the latches are latched properly.

Note: Do not push on the faceplate to seat the card; use the levers.

5 Connect a VT100 terminal or a PC with terminal application software to the serial port labeled COM1 on the rear of the SAM21 shelf. If the SAM21 Shelf Controller in slot 7 does not boot, connect to slot 7. If the SAM21 Shelf Controller in slot 9 does not boot, connect to slot 9.

6 To start the HyperTerminal application, click Start menu, click Programs, click Accessories, and click HyperTerminal.

7 Double-click the Hyperterm.exe icon to open a new connection.

The system displays the Connection Description box.

8 Enter SC in the Name field and click OK.

The system displays the Phone Number box.

9 Select Direct to COM1 from the Connecting using: list. Leave other entries in the box empty. Click OK.

10 Open the COM1 Properties box and set the port settings to the following:

- Bits per second: 9600
- Data bits: 8
- Parity: None
- Flow control: Hardware

Click OK.

11 Press the Enter key.

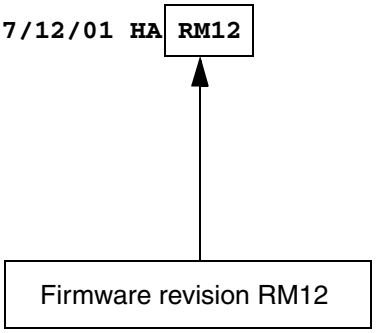
The system displays a new Hyperterm window with a login prompt.

12 If the console displays the message
`em respawning too fast`
the latches are not latched properly.

Press the reset button on the faceplate while the console is connected and verify that the firmware revision is RM12 or the firmware revision indicated in the *SAM21 Platform Base Release Notes*.

Example system response:

```
Copyright Motorola Inc. 1988-2000, All Rights Reserved

PPC1 Debugger/Diagnostics Release Version 4.9 - 07/12/01 HA RM12
COLD Start

Local Memory Found=08000000 (&134217728)

MPU Clock Speed=367Mhz

BUS Clock Speed=67Mhz

WARNING: Keyboard Not Connected

Reset Vector Location   : ROM Bank B
Mezzanine Configuration : Single-MPU
Current 60X-Bus Master  : MPU0
Idle MPU(s)             : none

L2Cache                 : 1024KB, 147Mhz
System Memory           : 128MB, ECC Enabled (ECC-Memory Detected)


HA Mesquite Abbreviated Self-Tests about to Begin...
ISABRIDGE IRQ: Interrupt Request.............Running--->   PASSED

SelfTest/Boots about to Begin... Press <BREAK> at anytime to Abort ALL

NetBoot about to begin... Press <ESC> to Bypass, <SPC> to Continue
```



13 Press the Esc key to bypass NetBoot and access the PPC-Bug prompt.

14 Type **cnfg** at the PPC-Bug prompt and press Enter.

Note: The MAC address of the SAM21 Shelf Controller card should be displayed. Verify that this is the address used in the CS 2000 SAM21 Manager client on the Reprovisioning window.

15 Type **niot** at the PPC-Bug prompt and press Enter.

16 The SAM21 Shelf Controller software provides a series of prompts. Accept the default values, except for the following options in bold. For the options in bold, enter the value indicated in the table.

Note: If an error is entered, type **.** (period) and press Enter to quit. Restart niot by typing **niot** and pressing Enter.

Prompt	Value
Controller LUN	00
Device LUN	00
Node Control Memory Address	07F9E000
Client IP Address	**0.0.0.0**
Server IP Address	**0.0.0.0**
Subnet IP Address Mask	255.255.255.0
Broadcast IP Address	255.255.255.255
Gateway IP Address	**0.0.0.0**
Boot File Name	NULL
Argument File Name	NULL
Boot File Load Address	001F0000
Boot File Execution Address	001F0000
Boot File Execution Delay	00000000
Boot File Length	00000000
Boot File Byte Offset	00000000
BOOTP/RARP Request Retry	**00**
TFTP/ARP Request Retry	**00**
Hardware Error Retry Attempts	**20**
Trace Character Buffer Address	00000000
BOOTP/RARP Request Control	**A**
BOOTP/RARP Reply Update Control	**N**
Update Non-Volatile RAM (only appears if a change has been made)	**Y**

17 Type **env** at the PPC-Bug prompt and press Enter.

18 The SAM21 Shelf Controller software provides a series of prompts. Accept the default values, except for the following options in bold. For the options in bold, enter the value indicated in the table.

Prompt	Value
Bug or System Environment	B
Field Service Menu Enable	N
Probe System for Supported I/O Controllers	Y
Auto-Initialize of NVRAM Header Enable	Y
Network PReP-Boot Mode Enable	**Y**
SCSI Bus Reset on Debugger Startup	N
Primary SCSI Bus Negotiations Type	A
Primary SCSI Data Bus Width	N
Secondary SCSI Identifier	07
NVRAM Boot List (GEV.fw-boot-path) Boot Enable	N
NVRAM Boot List (GEV.fw-boot-path) Boot at power-up only	N
NVRAM Boot List (GEV.fw-boot-path) Boot Abort Delay	5
Auto Boot Enable	N
Auto Boot at power-up only	N
Auto Boot Scan Enable	N
Auto Boot Scan Device Type List	FDISK/CDROM/TAPE/HDISK/
Auto Boot Controller LUN	00
Auto Boot Device LUN	00
Auto Boot Partition Number	00
Auto Boot Abort Delay	7

Prompt	Value
Auto Boot Default String	NULL
ROM Boot Enable	N
ROM Boot at power-up only	Y
ROM Boot Abort Delay	5
ROM Boot Direct Starting Address	FFF00000
ROM Boot Direct Ending Address	FFFFFFFC
Network Auto Boot Enable	**N**
Network Auto Boot at power-up only	N
Network Auto Boot Controller LUN	00
Network Auto Boot Device LUN	00
Network Auto Boot Abort Delay	5
Network Auto Boot Configuration Parameters Offset (NVRAM)	00001000
Watchdog prior status ignored at autoboot	**Y**
Watchdog reset at board reset	**Y**
Reset Ethernet chip after file reception	**Y**
Stop Auto Boot After Selftest Failure	N
Memory Size Enable	Y
Memory Size Starting Address	00000000
Memory Size Ending Address	08000000
DRAM Speed in NANO Seconds	50
ROM First Access Length (0-31)	10
ROM Next Access Length (0-15)	0
DRAM Parity Enable [On-Detection/Always/ Never - O/A/N]	O (letter O)

Prompt	Value
L2Cache Parity Enable [On-Detection/Always/Never - O/A/N]	O (letter O)
PCI Interrupts Route Control Registers (PIRQ0/1/2/3)	0A050000
Serial Startup Code Master Enable	N
Serial Startup Code LF Enable	N
Claim domain A	N
Claim domain B	N
Slot power control word	00000000
Ignore healthy control word	00000000
Firmware Command Buffer Enabled	**Y**
Firmware Command Buffer Delay	**20**
Firmware Command Buffer	**ma cboot**<Enter key> **pboot 14 0**<Enter key> **nbo**<Enter key> <Enter key> **ma ;l**<Enter key> (letter L) **cboot**<Enter key> **NULL**
Update Non-Volatile RAM (appears only when a change is made)	**Y**
Reset local system (CPU)	Y

On completion of the entries, the SAM21 Shelf Controller reboots.

19 Optionally, verify that calls can originate and complete.

20 If the problem persists (that is, the SAM21 Shelf Controller still does not unlock) contact Nortel support personnel.

21 You have completed this procedure. If applicable, return to the higher level task flow or procedure that directed you to this procedure.

Confirming SAM21 Shelf Controller loads after an upgrade

Use this procedure to confirm each SAM21 Shelf Controller has the correct software load after an upgrade. Repeat this procedure for each SAM21 Shelf Controller with upgraded software.

Prerequisites

Perform this procedure after you complete the upgrade of software on a SAM21 Shelf Controller.

Action

Confirming SAM21 Shelf Controller loads after an upgrade

From the main window of the CS 2000 SAM21 Manager

1 Double-click the icon of a SAM21shelf with an upgraded SAM21 Shelf Controller.

Response

The Shelf View window appears.

2 Use the following table to determine your next step.

If the Shelf View window	Do
appears	step 3
does not appear	Troubleshoot the problem or contact your next level of support. The upgrade was unsuccessful.

3 Double-click the icon of an upgraded SAM21 Shelf Controller.

Response

The Card View window appears.

4 Click the Provisioning tab. Under Load Info, note the load names identified for Provisioned Load Name and Current Running Version.

5 Use the following table to determine your next step.

If the load names are	Do
the new loads for the SAM21 Shelf Controller software	step 6
anything else	Troubleshoot the problem or contact your next level of support. The upgrade was unsuccessful.

6 Close the Card View window.

Response

The Shelf View window appears.

7 Use the following table to determine your next step.

If you confirmed the load for	Do
one SAM21 Shelf Controller blade in the shelf	step 3
both SAM21 Shelf Controller blades in the shelf	step 8

8 Close the Shelf View window.

Response

The main window of the CS 2000 SAM21 Manager appears.

9 Use the following table to determine your next step.

If you	Do
need to check additional SAM21 shelves for upgraded SAM21 Shelf Controllers	step 1
do not need to check additional SAM21 shelves	step 10

10 You have completed this procedure. Return to Completing the SAM21 Shelf Controller upgrade on page 9.

Change the CS 2000 SAM21 Manager server address

Purpose of this procedure

This procedure changes the IP address of the CS 2000 SAM21 Manager server to the IP address of the CS 2000 Management Tools server.

Note: The procedure has two stages, which must be carried out in the following order:

1. Change the CS 2000 Management Tools server (Sun Microsystems) based SAM21 Manager, using the Java Web Start client.
2. Change the CS 2000 Core Manager (SDM) based SAM21 Manager, using the /sdm/bin/sam21gui client.

When to use this procedure

Use this procedure if the IP address of the CS 2000 SAM21 Manager server does not match the IP address of the CS 2000 Management Tools server.

Prerequisites

This procedure has no prerequisites.

Action

ATTENTION

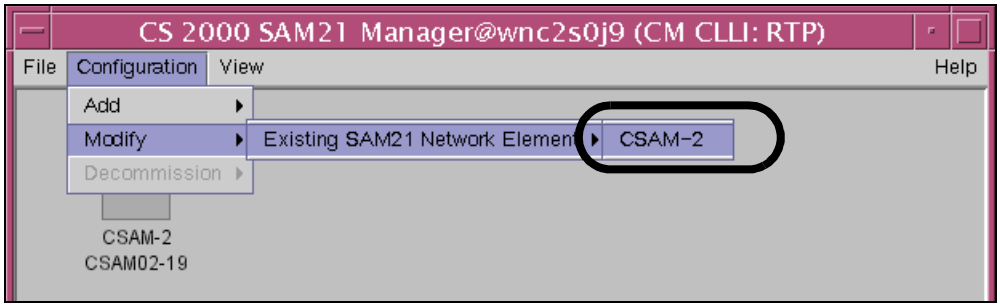
Failure to change the CS 2000 Management Tools based SAM21 Manager first can isolate the SAM21 shelf.

The CS 2000 Management Tools based SAM21 Manager client is identified as the Java Web Start client.

At the CS 2000 SAM21 Manager (Java Web Start client)

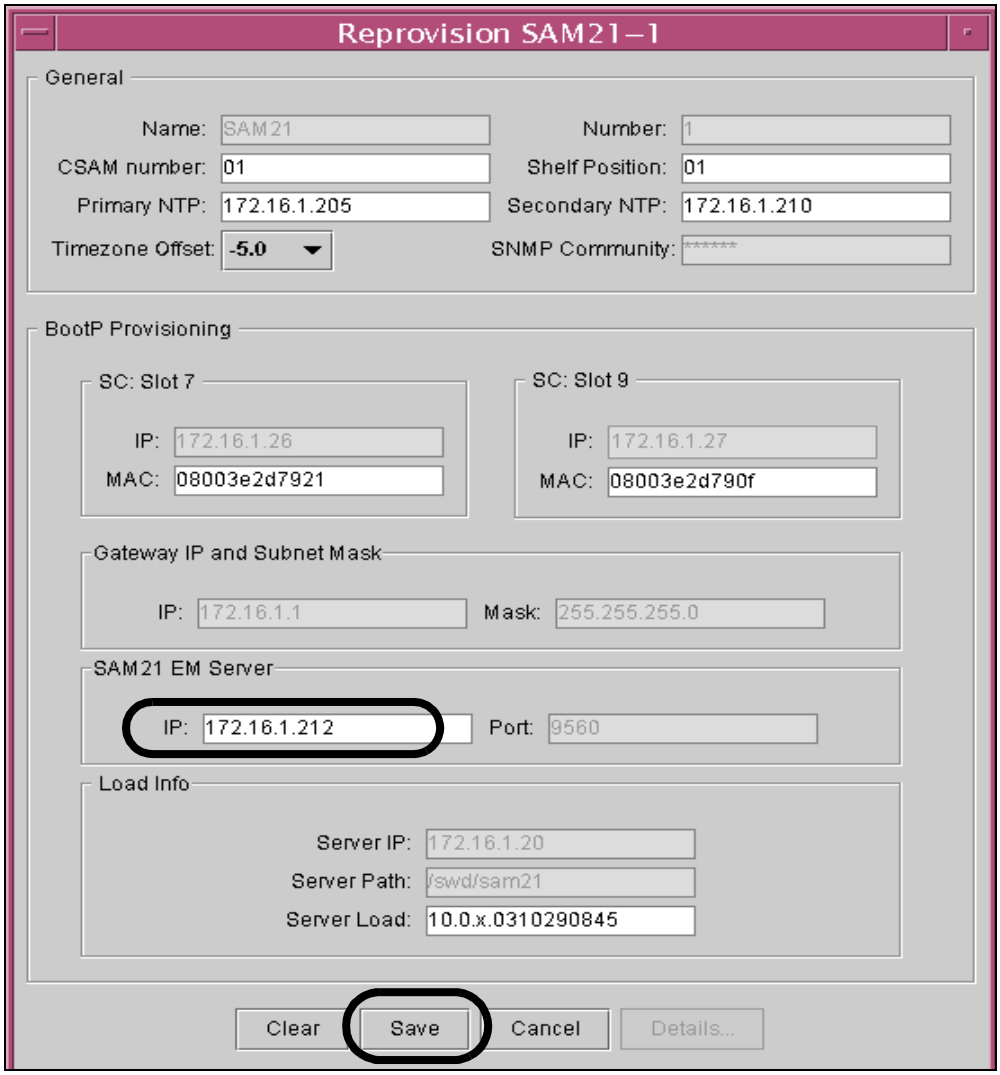
1 Use the Configuration menu to modify a SAM21 shelf and open the Reprovisioning window.

Subnet View window at Java Web Start client



2 Replace the existing IP address with the IP address of the CS 2000 Management Tools server and click Save. This action updates /etc/bootptab on the CS 2000 Core Manager. A warning is generated if the provisioning fails.

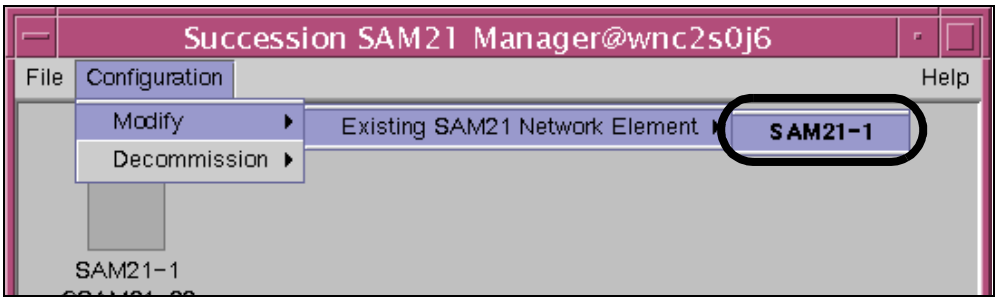
Reprovision window at Java Web Start client



At the CS 2000 SAM21 Manager client workstation

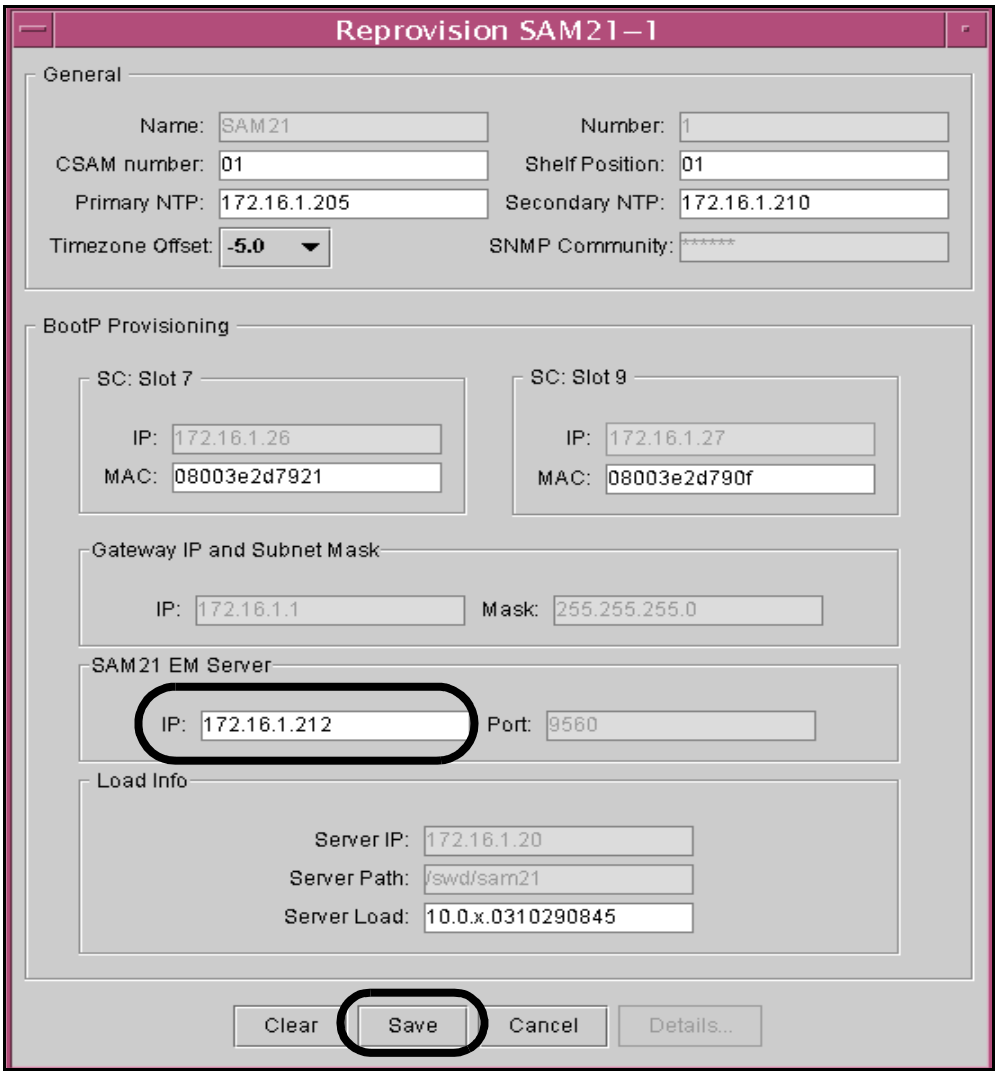
3 Use the Configuration menu to modify a SAM21 shelf and open the Reprovisioning window.

Subnet View window at /sdm/bin/sam21gui client



4 Replace the existing IP address with the IP address of the CS 2000 Management Tools server and click Save. This action causes the SAM21 Shelf Controllers to issue a BOOTP request, read the response, and begin communicating with the CS 2000 SAM21 Manager on the CS 2000 Management Tools server. The SAM21 Shelf Controllers do not reboot.

Reprovision window at /sdm/bin/sam21gui client



5 You have completed this procedure. If applicable, return to the higher level task flow or procedure that directed you to this procedure.

Note: The instance of the CS 2000 SAM21 Manager server that is running on the host that provides the CS 2000 Management Tools needs to discover each of the SAM21 shelves. This process can take up to 20 minutes for each SAM21 shelf.

Logging in to an SPFS-based server

Application

Use this procedure to log in to a Server Platform Foundation Software (SPFS)-based server. This procedures provides the steps to establish a login session using SSH, which is secure, or telnet, which is not secure.

Some tasks will require that you log in to the server through the console (port A) using the root user ID and password.

Prerequisites

This procedure requires the following information:

- the IP address or host name of the server

  Note: In a two-server configuration, you need the physical IP address of the active or inactive server.

- a valid user id and password
- the root password if you need to perform a task on the server that requires root user privileges

Action

Perform the steps under one of the following headings to complete this procedure.

- Logging in using SSH on page 90
- Logging in using Telnet on page 92
- Logging in through the console on page 94

Logging in using SSH

At your workstation

1 Establish an SSH session.

If you have access to a server which supports the ssh command (Linux, for example) then proceed with step a below. Otherwise, connect to the server using an SSH client and proceed to step 2.

a Establish an SSH session to the server by typing

```
> ssh -l <user_id> <server>
```

where

user_id
is root or your user id

server
is the IP address or host name of the SPFS-based server, or the physical IP address of the active or inactive server as required, in a two-server configuration

2 Use the following table to determine your next step.

If you receive	Do
a message indicating a host authentication issue and a request to continue the connection	step 3
a prompt for a password	step 4

3

ATTENTION
The prompt indicates SSH is verifying whether the server is a trusted host for the workstation. SSH performs the verification the first time SSH is run on a workstation.

Continue the connection by typing

```
y
```

and pressing the Enter key.

4 Enter the password for root or your user id.

5 Use the following table to determine your next step.

If your server is a	Do
one-server configuration	step 9
two-server configuration	step 6

6 Ensure you are on the correct server by typing

```
# ubmstat
```

and pressing the Enter key.

7 Use the following table to determine your next step.

If you need to be on the	Do
active server and the response is ClusterIndicatorSTBY	step 8
inactive server and the response is ClusterIndicatorACT	step 8
active server and the response is ClusterIndicatorACT	step 9
inactive server and the response is ClusterIndicatorSTBY	step 9

8 You are logged in to the wrong server. Return to step a to log in to the other server.

9 You have completed this procedure. If applicable, return to the high-level task or procedure that directed you to this procedure.

Logging in using Telnet

At your workstation

1 Establish a telnet session to the server by typing

```
> telnet <server>
```

and pressing the Enter key.

where

server
is the IP address or hostname of the SPFS-based server, or the physical IP address of the active or inactive server as required, in a two-server configuration

2 When prompted, enter your userid.

3 When prompted, enter your password.

4 Use the following table to determine your next step.

If	Do
you need to log in as root	step 5
otherwise	step 7

5 Change to the root user by typing

```
$ su -
```

and pressing the Enter key.

6 When prompted, enter the root password.

7 Use the following table to determine your next step.

If your server is a	Do
one-server configuration	step 11
two-server configuration	step 8

8 Ensure you are on the correct server by typing

```
# ubmstat
```

and pressing the Enter key.

9 Use the following table to determine your next step.

If you need to be on the	Do
active server and the response is ClusterIndicatorSTBY	step 10
inactive server and the response is ClusterIndicatorACT	step 10
active server and the response is ClusterIndicatorACT	step 11
inactive server and the response is ClusterIndicatorSTBY	step 11

10 You are logged in to the wrong server. Log out of this server and return to step 1 to log in to the other server.

11 You have completed this procedure. If applicable, return to the high-level task or procedure that directed you to this procedure.

Logging in through the console

At the console connected to the server

1 Log in to the server through the console (port A) using the root user ID and password. In a two-server configuration, log in to the the active or inactive server as required.

2 Use the following table to determine your next step.

If your server is a	Do
one-server configuration	step 6
two-server configuration	step 3

3 Ensure you are on the correct server by typing

```
# ubmstat
```

and pressing the Enter key.

4 Use the following table to determine your next step.

If you need to be on the	Do
active server and the response is ClusterIndicatorSTBY	step 5
inactive server and the response is ClusterIndicatorACT	step 5
active server and the response is ClusterIndicatorACT	step 6
inactive server and the response is ClusterIndicatorSTBY	step 6

5 You are logged in to the wrong server. Log out of this server and return to step 1 to log in to the other server.

6 You have completed this procedure. If applicable, return to the high-level task or procedure that directed you to this procedure.

Upgrade the Shelf Controller manually

Purpose of this procedure

This procedure upgrades the Shelf Controller software using the original manual method.

When to use this procedure

Use this procedure (rather than the automated procedure) if special circumstances require this.

Prerequisites

Ensure that the progress text for both SAM21 Shelf Controllers includes the statement:

```
SC firmware parameters are up to date.
```

Note: Before the firmware parameters for a SAM21 Shelf Controller are configured, the progress text at the States tab during a lock includes the following lines:

```
Lock started
Locking in progress
Checking if SC firmware parameters are up to date
SC firmware parameters are not up to date
Configuring SC firmware parameters
Configuring netboot parameters
Configuring environment parameters
Saving configuration
SC firmware parameters configuration completed
Lock completed successfully
```

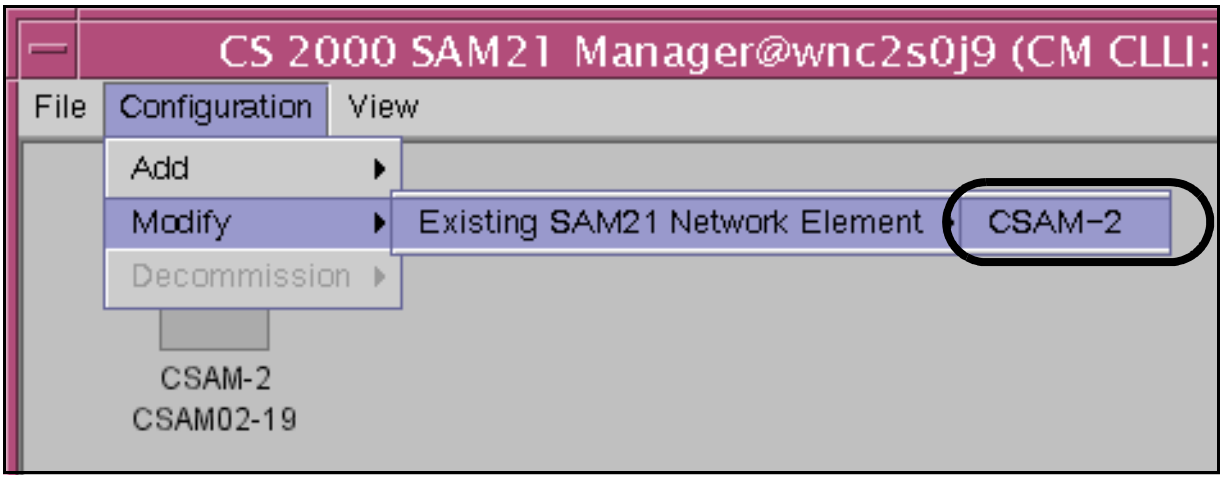
After the firmware parameters for a SAM21 Shelf Controller are configured, the progress text at the States tab includes the following lines:

```
Lock started
Locking in progress
Checking if SC firmware parameters are up to date
SC firmware parameters are up to date
Lock completed successfully
```

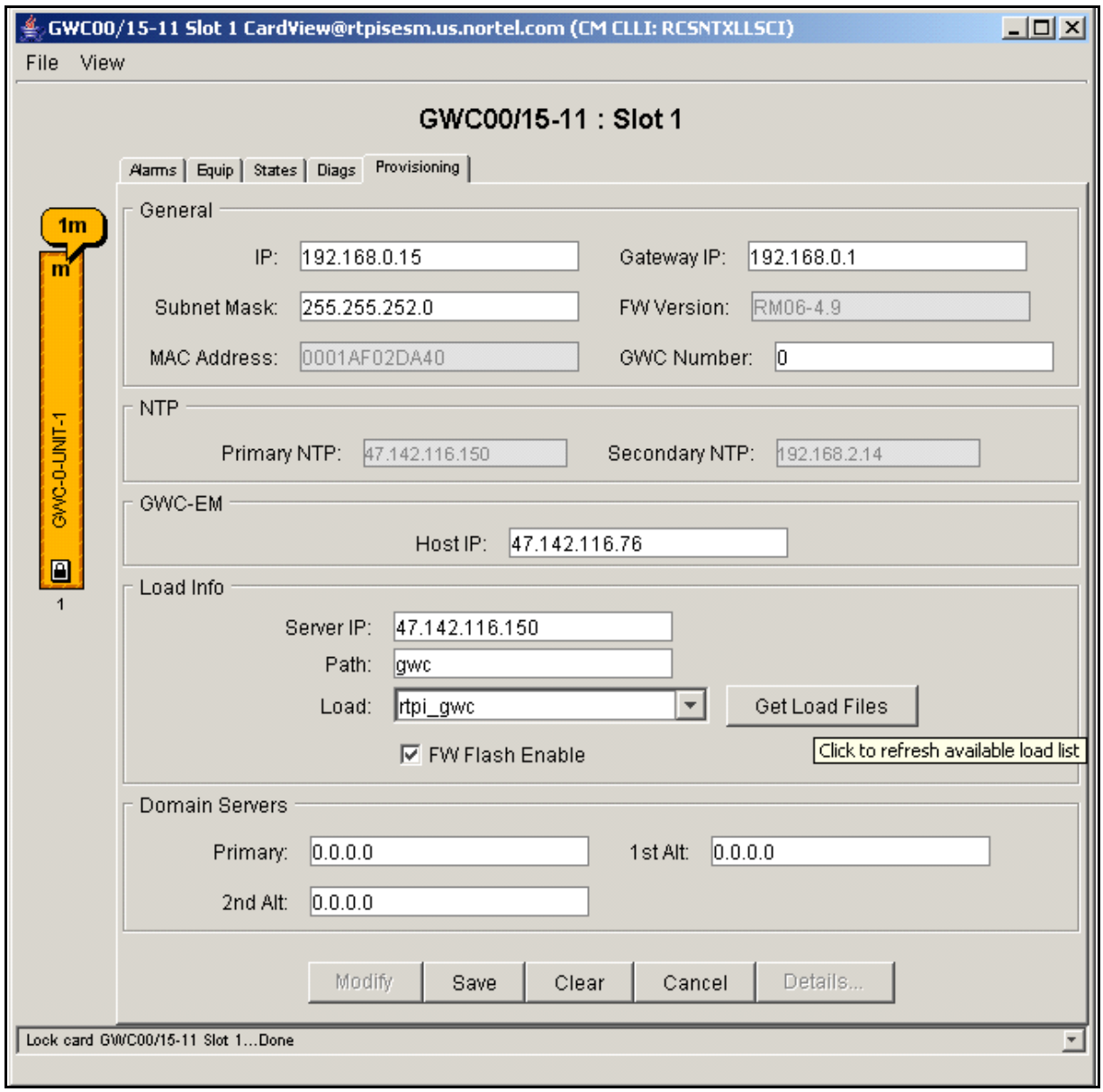
Action

At the CS 2000 SAM21 Manager client (Java Web Start client)

1 From the Subnet View, select Configuration, Modify and then the SAM21 shelf with the SAM21 Shelf Controllers to upgrade.



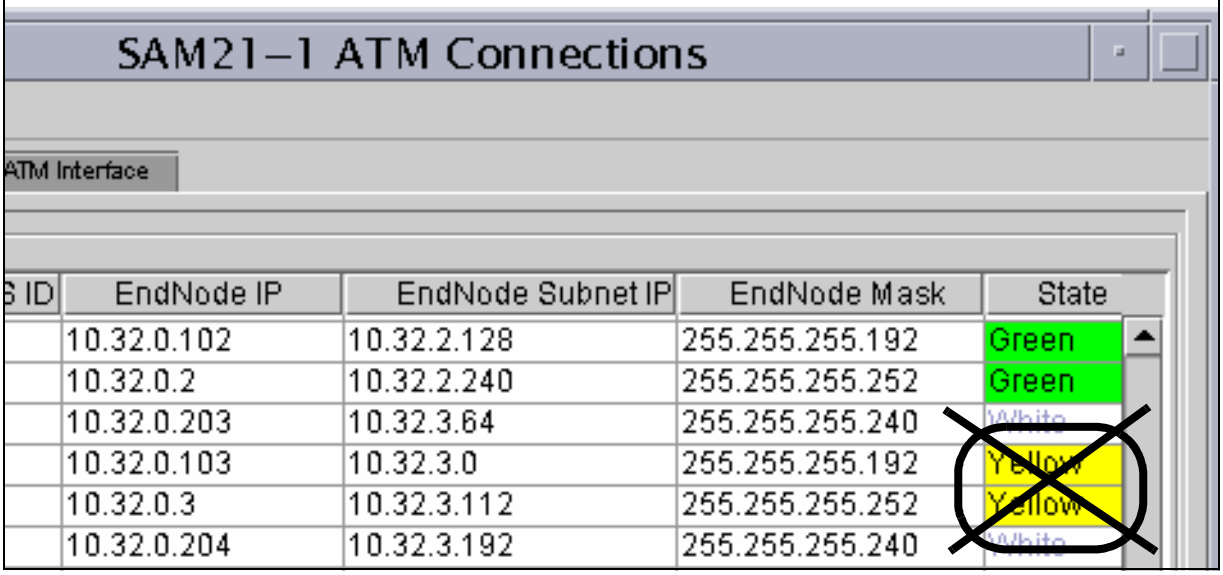
2 Click the Get Load Files button and select the required new software load name from the drop-down list. This action updates /etc/bootptab on the CS 2000 Core Manager. A warning is generated if the provisioning fails.



3 In the Reprovisioning window, click Saveto save the data, then close the Reprovisioning window.

4 If the SAM21 Shelf Controllers are provisioned with ATM interfaces, verify that the inactive SAM21 Shelf Controller does not carry the active ATM link. Select Configuration and then IPOA Services from the Subnet View to open the ATM Connections window.

Green - active ATM link is on active SAM21 Shelf Controller
Yellow - active ATM link is on inactive SAM21 Shelf Controller
Red - connection between SAM21 Shelf Controller and end node existed but is currently broken
White - connection between SAM21 Shelf Controller and end node is provisioned, but never connected

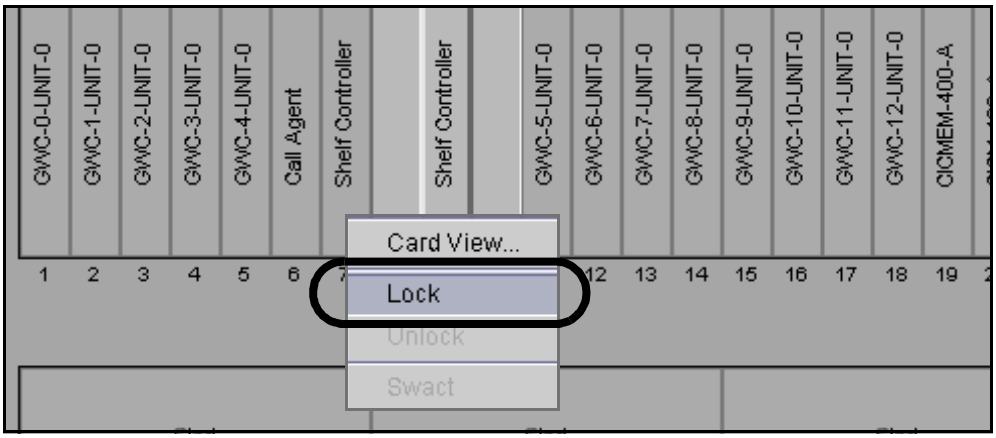


If all the connections are yellow, SWACT the SAM21 Shelf Controller at a period of low activity before proceeding. If some connections are green and some are yellow, as in the example, check for alarms at the ATM equipment between the SAM21 Shelf Controller and the end node with the yellow connection. Correct the condition, check again that all connections are green, and then proceed.

5 On the Provisioning tab of the Card View, verify the provisioned load. If it is not correct, return to step 2 to reselect the load.

6 In the Shelf View window, right-click or double click on the card icon for the first SAM21 Shelf Controller card (slot 7 in the example).

Note: The Lock menu option is available only for the inactive SAM21 Shelf Controller.



7 Refer to the following table to determine your next action.

If the drop-down menu shows	Do
Lock black	the unit is inactive; continue at step 9
Lock greyed out	the unit is active; continue at step 8

8 In the Shelf View window, right-click or double click on the card icon for the second SAM21 Shelf Controller card (slot 9 in the example). This unit should be inactive.

9 Select Lock from the drop-down menu.

10 Wait for the Lock icon to appear on the SAM21 Shelf Controller icon and the other SAM21 Shelf Controller to indicate that it is in simplex (shown by alarm 3C on the other SAM21 Shelf Controller). The 3C alarm reasons are defined as follows:

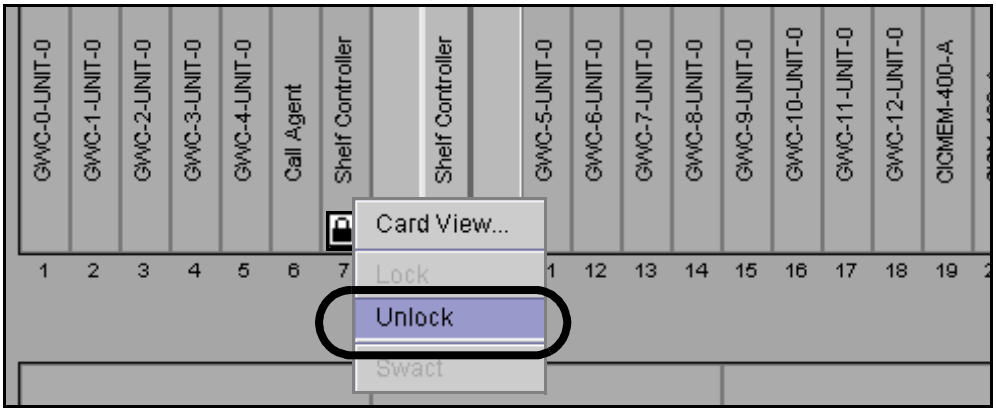
- `Shelf controller unavailable, operating in simplex`
- `Mate shelf controller unavailable, operating in simplex`
- `Loss of Communication ISCS, mate ethernet, serial connection 1, serial connection 2 is down...`(etc.)

11 Refer to the following table to determine your next action.

If the CS LAN is provided by	Do
Nortel Ethernet Routing Switch (ERS) 8000 series	Reprovision the port on the routing switch to auto-negotiate according to procedure Reprovision the Ethernet Routing Switch 8600 port to auto-negotiate on page 73. When the reprovisioning is complete, continue at step 12
a switch other than Nortel Ethernet Routing Switch (ERS) 8000 series	Reprovision the port on the routing switch to auto-negotiate according to the appropriate router product documentation. When the reprovisioning is complete, continue at step 12

Note: The reprovisioning needs to be done only once.

12 Right-click on the same inactive (currently locked) SAM21 Shelf Controller and select Unlock from the drop-down menu. The unlock request can take up to 10 minutes to complete. Optionally, verify that calls can originate and complete.



Note: Optionally monitor the download and boot of the card from the States tab of the Card View window. If the card does not boot or if the *SAM21 Base Platform Release Notes* indicates that upgraded firmware is included in the load, refer to procedure Check a Shelf Controller that does not unlock on

page 76 for information about configuring firmware parameters.

A successful boot reports the following message at the States tab of the Card View window:

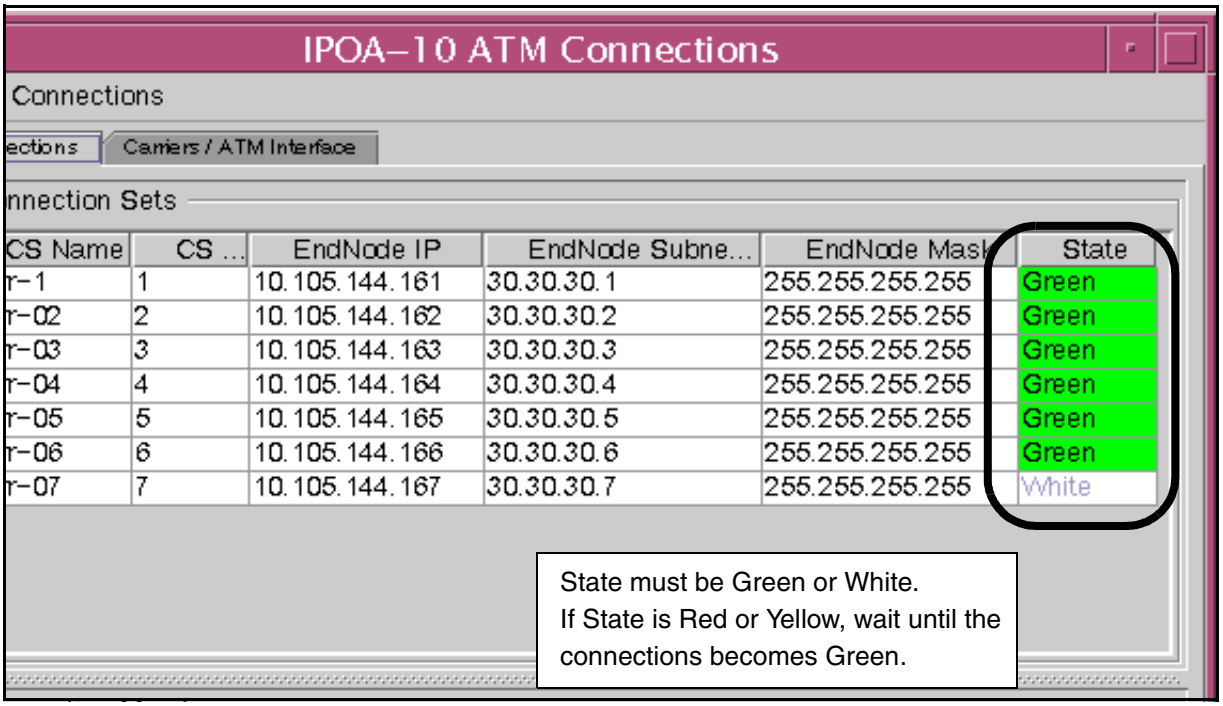
```
Unlock started
Establishing control
Waiting for board to initialize
Unlock in progress
Waiting for SC to boot
SC is booting...
Unlock completed successfully
```

13 On the Provisioning tab of the Card View, verify that the correct load is installed. The Provisioned Load Name should match the Current Running Version. If the installed load is not correct, return to step 2 to repeat the procedure.

14 If required by operating company personnel, soak the new software load. If rollback to the previous release is required, refer to procedure Roll back the Shelf Controller software on page 103.

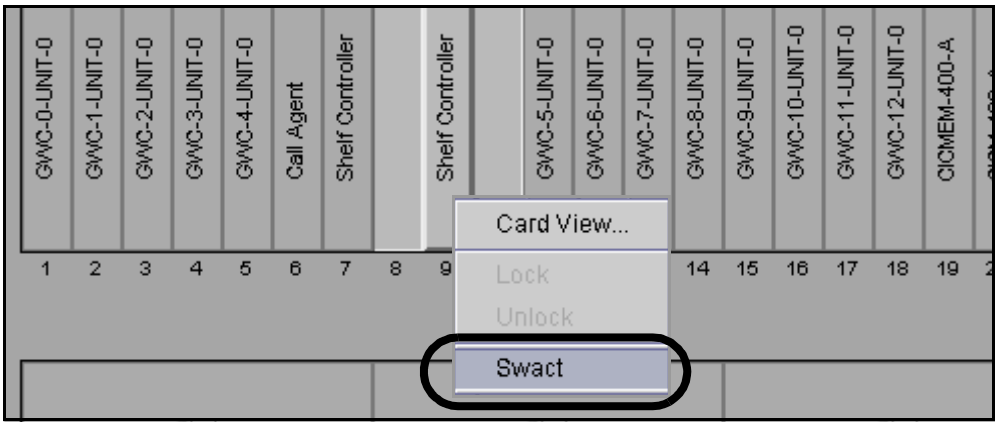
15 If the SAM21 Shelf Controller is configured with an ATM interface, verify that all ATM connections are green at the ATM Connections window before proceeding.

Check for Green state



16 After the hashed outline disappears from the inactive SAM21 Shelf Controller, right-click on the icon for the active SAM21 Shelf Controller and select Swact from the drop-down menu.

If required by operating company personnel, soak the new software and firmware after the Swact.



17

ATTENTION
Rollback is not supported after this step is completed.

Lock and unlock the newly inactive card as in step 6 and step 12. If firmware configuration was required with the first card, perform the firmware configuration on the newly inactive card.

18 You have completed this procedure. If applicable, return to the higher level task flow or procedure that directed you to this procedure.

Roll back the Shelf Controller software

ATTENTION
If the office supports CS 2000 - Compact, roll back the Call Agent software before rolling back the SAM21 Shelf Controller software. If you do not roll back the Call Agent software first, a reset loop may occur on the next unlock or RExTst of the Call Agent.

Purpose of this procedure

This procedure enables you to restore the software on the SAM21 Shelf Controller to a previous software load following an unsuccessful upgrade.

When to use this procedure

Use this procedure if problems occurred during the automated or manual upgrade of SAM21 Shelf Controller software and the upgrade was terminated.

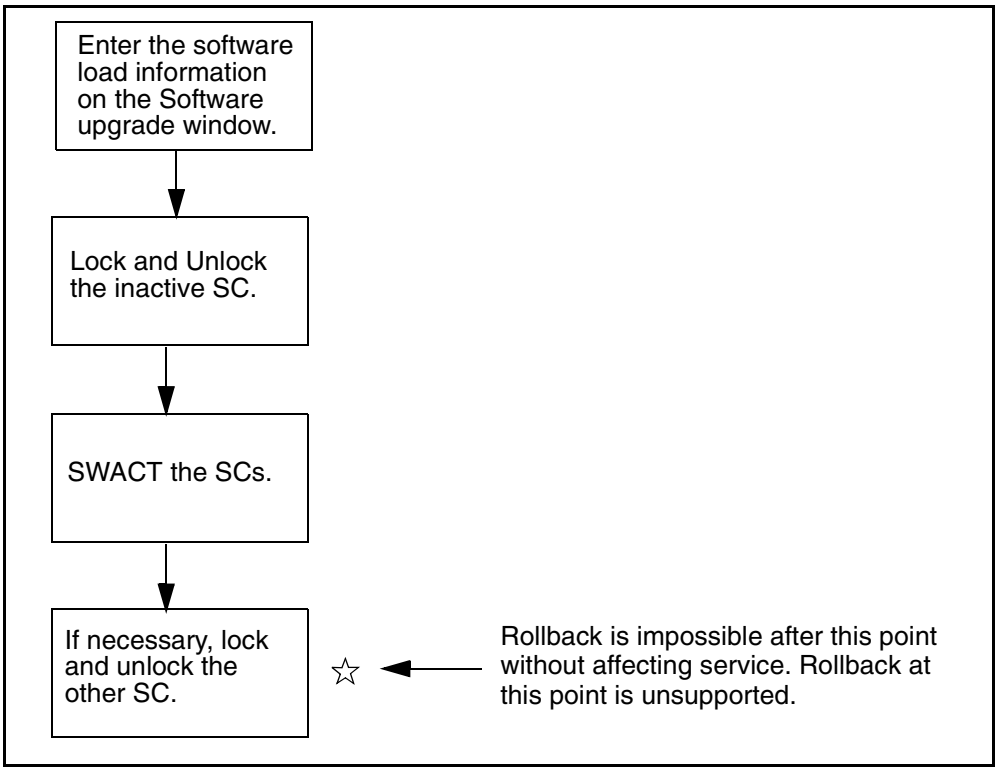
Prerequisites

This procedure has no prerequisites.

Action

The following figure summarizes the upgrade procedure. Use the step-by-step instructions that follow the figure to perform the procedure.

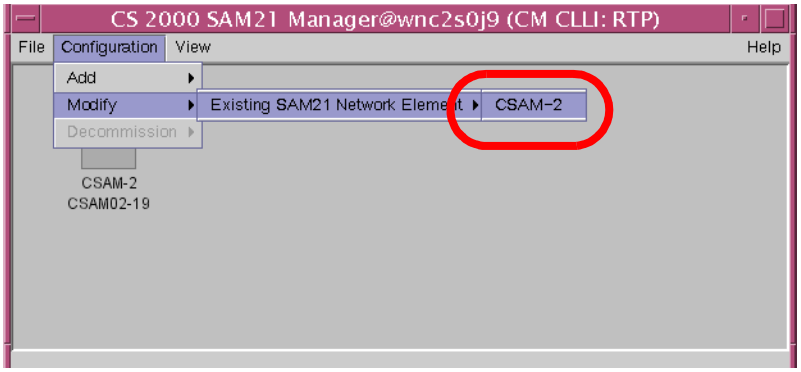
Rolling back Shelf Controller software



Note: Rollback is available until the second SAM21 Shelf Controller is unlocked and upgraded to the new software load. This point is indicated with the star.

At the CS 2000 SAM21 Manager client (Java Web Start client)

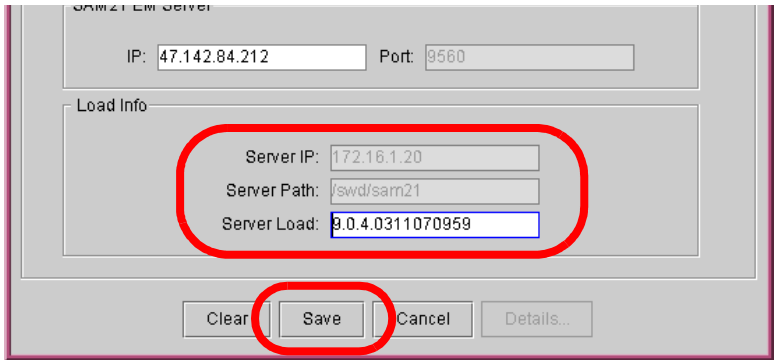
1 From the Subnet View, select Configuration->Modify->Existing SAM21 Network Element and the SAM21 shelf with the SAM21 Shelf Controllers that need a software rollback.



2 In the Reprovision window, enter the name of the old software load in the Server Load field.

Example

If you upgraded from 9.0.4.0311070959 to 10.0.0.0301120523, enter 9.0.4.0311070959 as the name of the old software load.



3 Click Save.

4 Open the Shelf View of the SAM21 Shelf with the SAM21 Shelf Controllers that need a software rollback.

5 Double-click the card icon of a SAM21 Shelf Controller that needs a software rollback.

6 In the Card View window, click the States tab and check the Status of the SAM21 Shelf Controller.

7 Use the following table to determine your next step.

If the SAM21 Shelf Controller is	Do
active	step 9
inactive	step 14

8 Close the Card View window

9 Right-click on the card icon of the active SAM21 Shelf Controller and select Swact from the menu.

10 Wait for completion of the switch of activity.

11 Double-click the card icon of the SAM21 Shelf Controller.

12 In the Card View window, click the States tab and make sure the Status is Inactive.

13 Close the Card View window

14 Right click on the card icon of inactive SAM21 Shelf Controller and select Lock from the menu.

15 Wait for the lock icon to appear on the inactive SAM21 Shelf Controller.

16 Right-click on the card icon of the inactive SAM21 Shelf Controller and select Unlock from the menu.

17 Wait for the hashed outline to disappear from the inactive SAM21 Shelf Controller.

18 Right-click on the card icon of the active SAM21 Shelf Controller and select Swact from the menu.

19 Wait for completion of the switch of activity.

20 Use the following table to determine your next step.

If you	Do
need to rollback software on the other SAM21 Shelf Controller	step 14
do not need to rollback software on the other SAM21 Shelf Controller	step 21

21 You have completed this procedure. If applicable, return to the higher level task flow or procedure that directed you to this procedure.

Aborting a SAM21 Shelf Controller software upgrade

Use this procedure to abort an upgrade of SAM21 Shelf Controller software when a failure occurs during the upgrade.

Prerequisites

Perform this procedure after you receive an error message with a prompt to retry or abort the upgrade step. An error message can indicate a card could not be locked or unlocked, a a load could not be changed, or a switch of activity could not be completed. Following is an example of an error message.

Action

Aborting a SAM21 Shelf Controller software upgrade

At the CLUI

1 At the prompt to retry or abort, abort the upgrade by typing

`abort`

and pressing the Enter key.

Response

The Upgrade Menu for the SAM21 Shelf Controller appears.

2 Exit the Upgrade Tool by typing

`x`

and pressing the Enter key.

Response

The Main Menu for the SAM21 Shelf Controller appears

3 Stop the upgrade and exit the CLUI by typing

`x`

and pressing the Enter key.

Response

The CLUI exits and a command prompt appears.

At the CS 2000 SAM21 Manager

4 Make sure you are at the Shelf View of the SAM21 shelf with the inactive Shelf Controller blade you want to upgrade.

5 Go to the Card View of the inactive Shelf Controller. Right-click the icon of the inactive Shelf Controller blade and select Card View from the list of commands.

Response

The Card View window appears.

6 Click the States tab and make sure the Status of the selected Shelf Controller is Inactive

7 Use the following table to determine your next step.

If the status is	Do
Active	step 4
Inactive	step 8

8 Check the state of the card, as displayed in the following OSI fields:

- Card Status
- Operational
- Availability

9 Use the following table to determine your next step.

If	Do
Card Status is Locked Operational is Enabled Availability is None	step 10
Card Status is Unlocked Operational is Enabled Availability is None	step 12
anything else	Contact your next level of support.

10 Unlock the Shelf Controller Blade. On the left side of the Card View window, right-click the Shelf Controller icon and select Unlock from the list of commands.

Response

The CS 2000 SAM21 Manager unlocks the selected Shelf Controller blade.

11 Use the following table to determine your next step.

If the unlock is	Do
successful	step 12
not successful	Repeat step 10. If the second attempt fails, contact your next level of support.

12 Close the Card View of the inactive Shelf Controller.

Response

The Shelf View window appears.

13 You have aborted the upgrade of the SAM21 Shelf Controller software. Troubleshoot the upgrade failure or contact your next level of support.

To resume the upgrade, go to Upgrade the Shelf Controller using the Shelf Controller Upgrade Tool on page 51.