Upgrading the SAM21 Shelf Controller

ATTENTION

If upgrading the entire Nortel Carrier Voice over IP solution, do not use this document. Follow the upgrade procedure in *Upgrading the Carrier Voice over IP Network*, NN10440-450. The document includes the upgrade of the SAM21 Shelf Controllers in the context of an office upgrade.

What's new in upgrades for SN08

June 2005, 06.02 Standard

The SAM21 Shelf Views have been updated to reflect the shelf configuration in the NTRX51TA Call Control Frame (CCF). In the NTRX51TA CCF, the SAM21 shelf does not contain a STORage Management (STORM) card. A redundant pair of SAM-XTS servers, referred to as the STORM Integrated Array (STORM-IA), support STORM functionality. For more information, refer to the following documents:

- *SAM21 Shelf Controller Basics*, NN10025-111
- *STORM Basics*, NN10024-111

March 2005, 06.01 Preliminary

The Shelf Controller Upgrade Tool, **scuptool**, allows customers to upgrade the software on the SAM21Shelf Controller automatically through the command line user interface (CLUI). Refer to Upgrading the Shelf Controller using the Shelf Controller Upgrade Tool.

Customers still can upgrade the Shelf Controller manually. Refer to Manual software upgrade procedure.

ATTENTION
Using the automatic upgrade tool is the preferred method for upgrading the SAM21 Shelf Controller in SN08. Use the manual method only when necessary.

Supported upgrades from previous releases
Upgrade from SN06 and SN07 to SN08 is supported. Upgrade from SN05 to SN08 is *not* supported. For the SAM21 platform, there was no specific SN06.2 load. It is assumed that customers with SN06.2 loads and higher have the SAM21 Manager on the CS 2000 Management Tools server, and therefore do not need to migrate.

What's new in upgrades for SN07

December 2004, 05.02 Standard

Procedure Electronic Software Delivery (ESD) for SAM21 Shelf Controller is available for customers with an ESD agreement with Nortel. The procedure describes how to install a SAM21 Shelf Controller software load.

September 2004, 05.01 Preliminary

Supported upgrades from previous releases
Upgrade from SN05 and SN06 to SN07 is supported. Maintenance upgrades from SN07 to SN07 are also supported.

If upgrading from SN05, refer to CS 2000 SAM21 Manager server changes platform on page 3. and 10 Base-T to 100 Base-T auto-negotiation with CS LAN router on page 3. An intermediate upgrade to SN06 is not necessary.

Delivery of software is on CDROM. The CDROM is inserted in the Sun Microsystems server that provides the CS 2000 Management Tools.

Using file links (hard or soft symbolic links) in the file system to manage software loads for any card in the SAM21 shelf is unsupported. File links prevent the SAM21 Shelf Controller from booting cards over the backplane because the SAM21 Shelf Controller cannot access software loads with Network File System (NFS) protocol if the datafilled load is a file link.

What's new in upgrades for SN06

October 2003, post SN06 release

10 Base-T to 100 Base-T auto-negotiation with CS LAN router

During the upgrade of the SAM21 Shelf Controller, the port on the router that the SAM21 Shelf Controller uses must be set to auto-negotiate Ethernet parameters after the lock and before the unlock request.

If the Communications Server LAN (CS LAN) is provided by Nortel Ethernet Routing Switch 8600 series router switches, reconfigure the port on the CS LAN router to "auto-negotiate," and then unlock the SAM21 Shelf Controller. To determine which port connects to the SAM21 Shelf Controller, use the **show ip arp info <ip_address>** command, with the IP address of the SAM21 Shelf Controller. Use the **config ethernet <slot/port> auto-negotiate enable** command with the slot and port numbers returned from the show command. After enabling auto-negotiation, commit the change with the **save config** command. More information is provided in Upgrading software on the SAM21 Shelf Controller on page 58.

October 2003, 04.02 Standard

CS 2000 SAM21 Manager server changes platform

The platform for the CS 2000 SAM21 Manager server changes for the SN06 release from the CS 2000 Core Manager to the CS 2000 Management Tools server. Upgrade of the SAM21 Shelf Controller software takes place during the migration of the server to the CS 2000 Management Tools server. Prerequisites are listed:

- Upgrade of the CS 2000 SAM21 Manager server software on the CS 2000 Core Manager to the temporary SN06 version. Refer to *Upgrading the CS 2000 Core Manager*, NN10060-461.
- Upgrade of the temporary CS 2000 SAM21 Manager client software to SN06. Refer to *Upgrading the CS 2000 Core Manager*, NN10060-461.
- Installation of the CS 2000 SAM21 Manager server software on the CS 2000 Management Tools server. Refer to *Upgrading the CS 2000 Management Tools*, NN10062-461. (In the SN08 documentation, the material is located in *Upgrading the Carrier Voice over IP Network*, NN10440-450.)
- Installation of the CS 2000 SAM21 Manager client software on the CS 2000 SAM21 Manager client workstation. Refer to *Upgrading the CS 2000 Management Tools*, NN10062-461*Upgrading the CS 2000 Management Tools*, NN10062-461. (In the SN08 documentation, the material is located in *Upgrading the Carrier Voice over IP Network*, NN10440-450.)

The SAM21 Shelf Controllers are reconfigured to use the CS 2000 SAM21 Manager server installed on the CS 2000 Management Tools and when each SAM21 Shelf Controller loads the upgrade software, control is transferred from the CS 2000 Core Manager to the CS 2000 Management Tools server.

Store bootload in flash
Starting with SN06, the SAM21 Shelf Controller maintains a copy of the bootload in local, non volatile storage. The integrity of the bootload is ensured during each boot by verifying the checksum of the bootload against the bootload checksum stored on the CS 2000 Core Manager.

Bootload validity checks
As an improvement to fault management, the SAM21 Shelf Controller compares the name of the file provided by the BOOTP response to the name of the bootload compiled into the bootload. If the values do not match, the SAM21 Shelf Controller issues a new boot request. Do not use file links (hard or soft symbolic links) in the filesystem to manage bootloads since the file links defeat bootload caching and increase the time required to boot each SAM21 Shelf Controller.

Upgrade strategy

For SN08, the Shelf Controller Upgrade Tool, **scuptool**, performs all necessary actions in a specific sequence by invoking the functions of the CS 2000 SAM21 Manager.

Software upgrades for the SAM21 Shelf Controllers provide improved software for the maintenance and management of the cards in the SAM21 shelf.

Software on the SAM21 Shelf Controller can affect environment and network booting parameters on the Non System Slot (NSS) cards in the SAM21 shelf. The SAM21 Shelf Controller applies these changes during the lock request on an NSS card. To ensure these enhancements are applied to all NSS cards, all NSS cards must go through a lock and unlock cycle during the office upgrade.

Required information

The following information is required to complete the upgrade of the SAM21 Shelf Controllers.

- hostnames

  The IP address is required to install and run the Java Web Start version of the CS 2000 SAM21 Manager client.

- dependencies
  - The CS 2000 Core Manager must be upgraded to the CS2E0008 level. Check this by entering the SWIM level of the SDMMTC interface. Enter the **sdmmtc** command and then the **swim** command.

Check CS2E software version at SWIM level

```
    SDM         CON      NET      APPL     SYS       HW     CLLI:
     .           .        .        .        .        .      Host:

SWIM
 0 Quit          Product Code                                Version
 2 Apply         CS2E0008                                     8.x
 3 Details
```

  - The CS 2000 Management Tools server must be upgraded to SN08. Check the version of the NTSSPFS and NTsam21em packages at a terminal connected to the CS 2000 Management Tools server. Use the commands shown in the following figure.

Check SSPFS and SAM21EM software versions

```
CS2000MT# pkginfo -x NTSSPFS
NTSSPFS     Succession Platform Utilities Installation
            (sparc) NTSSPFS_8_x_y

CS2000MT# pkginfo -x NTsam21em
NTsam21em   Succession SAM21 Element Manager
            (noarch) SAM21EM_8_x_y
```

Tools and utilities

The Shelf Controller Upgrade Tool, **scuptool**, is distributed with the CS 2000 SAM21 package. The tool requires that the CS 2000 SAM21 Manager server is configured and running properly.

The CS 2000 SAM21 Manager client is the interface for a software upgrade of the SAM21 Shelf Controllers in the SAM21 shelf. Upgrades from SN07 to SN08 require only the Java Web Start client.

Note: If a Card View window is opened and a task or maintenance is completed, close the window rather than minimize the window. Memory consumption is kept to a minimum, but several unused and open Card View windows can consume memory on the CS 2000 SAM21 Manager client workstation.

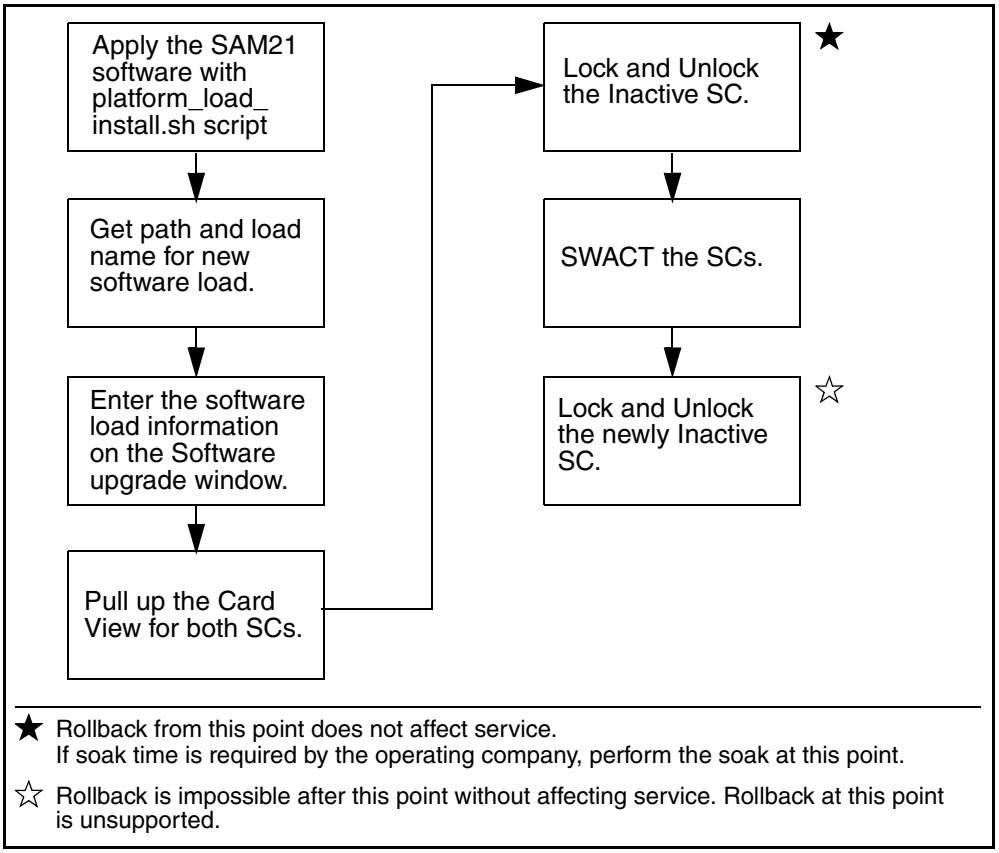
Software is delivered on CDROM. To extract the files from CDROM, the **/opt/nortel/sspfs/Scripts/platform_load_install.sh** script is used to move software from the CDROM to the CS 2000 Management Tools server filesystem. If a CS 2000 Core Manager or Core Business Manager (CBM) is available, the software is transferred there, and installed.

To install the script, use procedure Installing SAM21 Platform software on page 14.

Upgrade procedures

The following figure provides an overview of the steps required to upgrade software on the SAM21 Shelf Controllers in a SAM21.

Upgrade overview



Preparing for CPU upgrade

Ensure that the CS 2000 SAM21 Manager software on the client workstation and the server have been upgraded before upgrading the software on the SAM21 Shelf Controllers.

In advance of the upgrade, check that all ATM connections are carried on the active SAM21 Shelf Controller. This is only necessary for SAM21 Shelf Controllers with ATM interfaces. Refer to step 4 of Upgrading software on the SAM21 Shelf Controller on page 58 for more information.

Patching software on CPU

The SAM21 Shelf Controller software does not use patches.

Upgrading circuit pack on element

For procedures on upgrading Non System Slot (NSS) cards in the SAM21 shelf, refer to the documentation for that component.

Upgrading whole element

Follow the steps below to upgrade software for all the cards in the SAM21 shelf.

1. Upgrade the element server software for the SAM21 and NSS cards.
2. Upgrade the element client software for the SAM21 and NSS cards.
3. Upgrade SAM21 Shelf Controller software.
4. Upgrade non-system slot software for additional cards.

Electronic Software Delivery (ESD) for SAM21 Shelf Controller

Software loads for the SAM21 Shelf Controller are available for electronic transfer from Nortel to a customer dropbox.

Audience

This procedure is intended for use by operating company personnel who have an ESD agreement with Nortel. When the agreement was established, the operating company furnished Nortel with the location of an electronic dropbox and a username and password pair for delivering software loads. When Nortel delivers a software load to the dropbox, an electronic mail notification is sent to the email address specified by the telephone operating company when the ESD agreement was established.

When to use this procedure

Use this procedure after receiving electronic notification for the following software loads:

- SAM20080.n.R.NCL.NAP.vault.nn.D.tar.gz — NCL
- SAM2M0080.n.R.NCL.NAP.vault.nn.D.tar.gz — MNCL

n
is an integer value such as 8 and is part of the product order code

vault
is a string that identifies the Nortel software vault that holds the software

nn
is an integer value that indicates the repository version of the software

Action

At a CS 2000 Management Tools server terminal

1 Make a temporary directory to store the ESD software:

```
$ mkdir /data/iso_esd
```

2 Change directory to the newly created location:

```
$ cd /data/iso_esd
```

3 Ensure that enough disk space is available for the ESD software, 350 MB is recommended.

```
$ df -k /data
```

The free space on the device that /data is mounted is printed. The value for "avail" is the number of free kilobytes. Divide that number by 1000 to determine the number of free megabytes.

```
$ df -k /data
Filesystem            kbytes    used   avail capacity  Mounted on
/dev/md/dsk/d20      3082223  144121 2876454     5%    /data
```

2876454 / 1000 = 2876 MB free

4 Transfer the ESD software files from the dropbox on the repository server. The repository server is the machine owned by the telephone operating company that was selected to be the destination for the ESD software files:

```
$ ftp <repository_server>
```

Log in and change directory to the dropbox location on the repository server.

5 Change the transfer mode to binary.

```
ftp> bin
```

6 Retrieve the ESD software load:

```
ftp> get <esd_filename>.tar.gz
```

Example
ftp> get SAM20080.80.R.NCL.NAP.SDC.1.D.tar.gz

Note: Determine the actual ESD filename from the Nortel notification, or listing the contents of the dropbox with the **ls** command.

7 Repeat step 6 for all ESD software loads recorded in the notification from Nortel and then end the FTP session:

```
ftp> bye
```

8 Extract the ESD software load from the tape archive format:

```
$ gtar xvzf <esd_filename>.tar.gz
```

Example
$ gtar xvzf SAM20080.80.R.NCL.NAP.SDC.1.D.tar.gz

The ESD software load is uncompressed, and a new directory named after the ESD software filename is created. The directory name is the name of the ESD filename without the .tar.gz suffix. The contents of the ESD software load are placed in this new directory.

9 Change directory to the newly created directory:

```
$ cd <esd_filename>
```

Example
$ cd SAM20080.80.R.NCL.NAP.SDC.1.D

10 You are now in the directory that contains the image file that you extracted in step 8. Use the mv command to remove the ".tape" extension from the file name:

```
$ mv <iso_image>.iso.tape <iso_image>.iso
```

Example
$ mv image.iso.tape image.iso

11 Become the root user:

```
$ su - root
```

A prompt for the root password is presented. Enter the root password.

12 The ESD software is formatted as an ISO 9660 image. Use the mount_iso.ksh script to mount the ISO 9660 image:

```
# /opt/nortel/sspfs/Scripts/mount_iso.ksh mount
/data/iso_esd/<esd_filename>/<iso_image>.iso.
tape
```

Example
 # mount_iso.ksh mount
/data/iso_esd/SAM20080.80.R.NCL.NAP.SDC.1.D/image.iso

A response is printed to the terminal. Use the response to determine if the command was successful:

mount_iso.ksh command responses

Response	Meaning
You MUST unmount an image before removing the image file. If the file is deleted while the OS has it mounted, it can be harmful to the runtime applications on this unit	This response indicates success.
Provided full path to ISO image does not exist	Verify the location and name of the ISO 9660 image, such as /data/iso_esd/SAM208000.../image.iso, and retry.
ISO Image Already Mounted	Enter **mount_iso.ksh umount** to unmount whatever ISO 9660 image is currently mounted, and retry.
Error creating the image device location	This response indicates an operating system error with the loopback file driver. Retry the command, and if it fails a second time, contact Nortel support personnel.
ERROR MOUNTING <ESD_filename>	This response indicates that either the ISO 9660 file is corrupt, or the `/tmpmnt` directory has been deleted.

The contents of the ESD software file are available in directory `/tmpmnt`.

13 To install the software now, list the contents of the `/tmpmnt/noarch` directory (**ls /tmpmnt/noarch**) and record the name of the .rpm file.

Enter the **platform_load_install.sh** command.

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

Enter the .rpm filename when prompted.

Enter /tmpmnt/noarch when prompted for the location of the .rpm file.

When asked if you want to continue, enter y.

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 ******
```

Note: If you want to install the software later, proceed as follows. Copy the contents to a location on the CS 2000 Management Tools server. When installing the software at the later date, proceed as in step 13, except specify the location of the software instead of /tmpmnt/noarch.

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 Unmount the ESD file:

```
# mount_iso.ksh umount
```

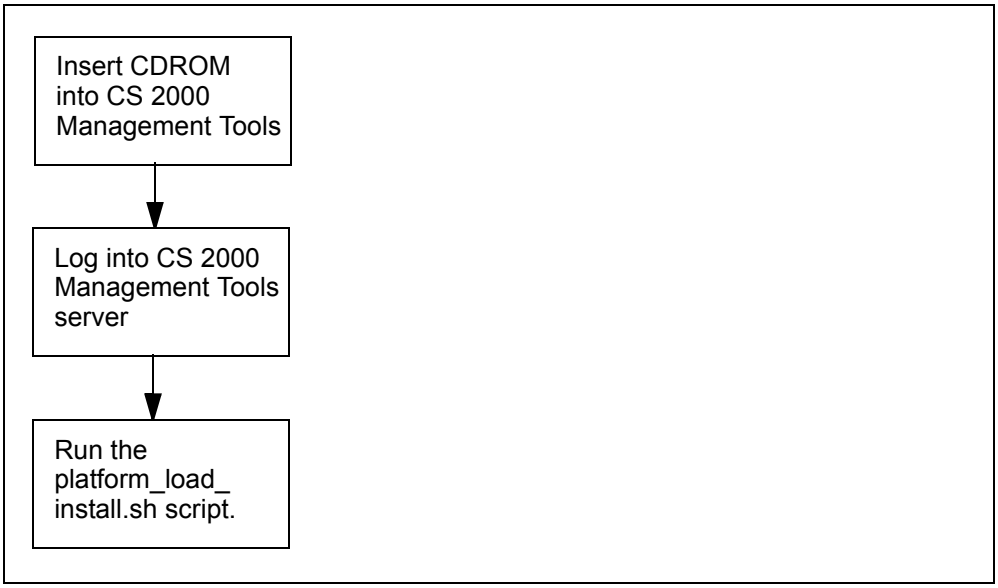
17 This procedure is complete.

Installing SAM21 Platform software

This procedure installs the SAM21 Shelf Controller software on the CS 2000 Core Manager or Core and Billing Manager 850 (CBM) so that the CS 2000 Core Manager or CBM can serve the software to a BOOTP request from a SAM21 Shelf Controller.

Do not remove old SAM21 Shelf Controller filesets (NCL and MNCL filesets of the same release) from the CS 2000 Core Manager unless there is not enough disk space in the `/swd/sam21` volume on the CS 2000 Core Manager to apply new releases. If required, follow the procedure listed in section Old fileset removal on CS 2000 Core Manager on page 19. Use procedure Old fileset removal on CBM on page 21 for removing old .rpm packages.

The following figure summarizes the procedure.



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

1 Insert the CDROM into the CDROM 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 CDROM 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 CDROM 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 This procedure is complete.

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.

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.

Old fileset removal on CS 2000 Core Manager

Do not remove old SAM21 Shelf Controller fileset (NCL and MNCL filesets of the same release) unless there is not enough disk space in the `/swd/sam21` volume to apply new releases. If there is enough disk space in the volume, skip the procedure and continue with "Upgrading software on the SAM21 Shelf Controller" in *Upgrading the SAM21 Shelf Controller*, NN10067-461.

To remove old SAM21 Shelf Controller filesets, perform the following procedure.

At the Core Manager 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 The current SAM21 Shelf Controller NCL and MNCL filesets need to be reapplied.

To reapply the filesets, use Installing SAM21 Platform software on page 14 in this document.

Old fileset removal on CBM

Do not remove old SAM21 Shelf Controller fileset (NCL and MNCL filesets of the same release) unless there is not enough disk space in the `/swd/sam21` volume to apply new releases. If there is enough disk space in the volume, skip the procedure and continue with "Upgrading software on the SAM21 Shelf Controller" in *Upgrading the SAM21 Shelf Controller*, NN10067-461.

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 CS 2000 Core Manager or 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, and stops to prompt for the root password on the CS 2000 Core Manager or CBM. If the office uses a CBM, a second root password prompt is provided 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 This procedure is complete.

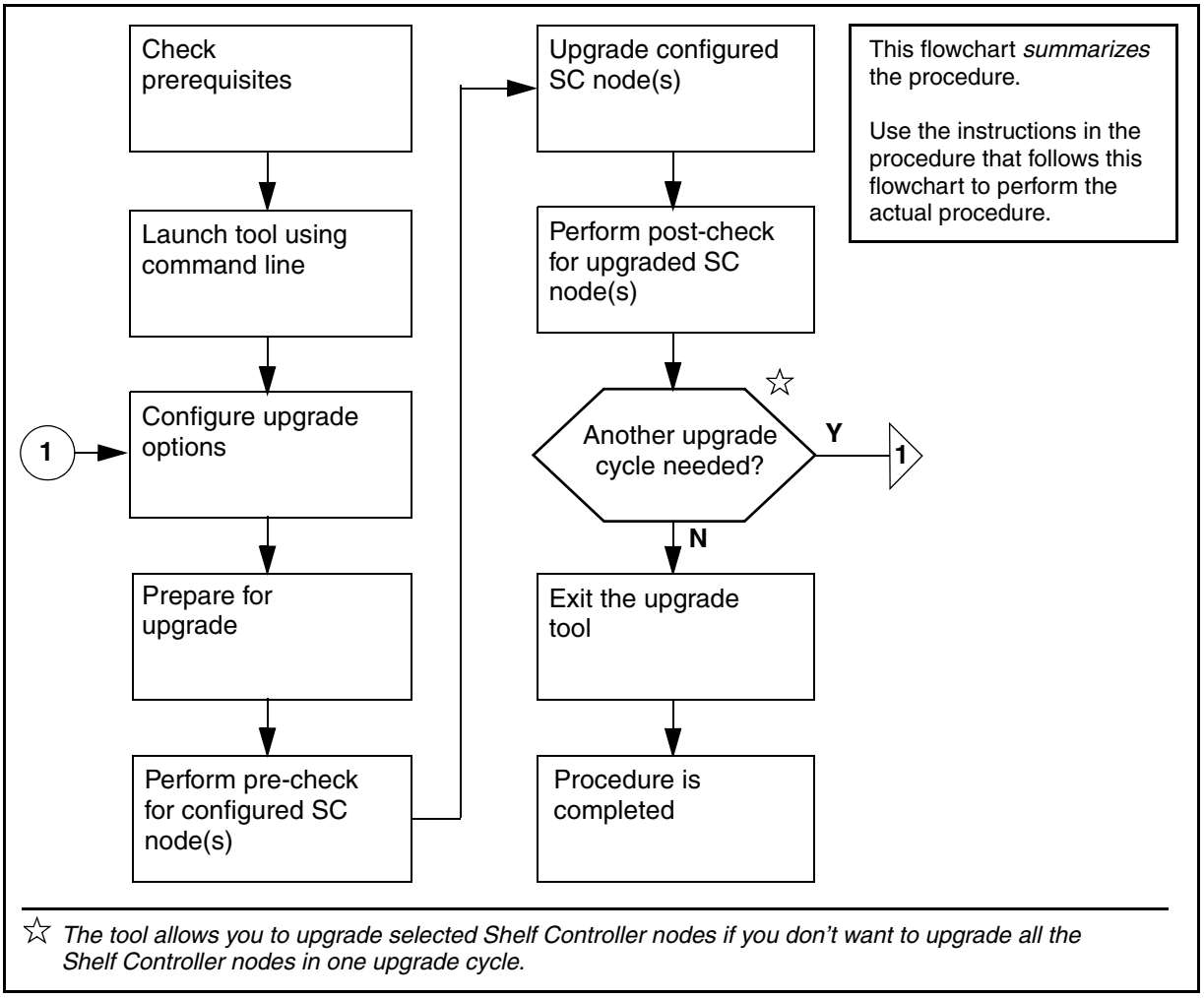
Upgrading the Shelf Controller using the Shelf Controller Upgrade Tool

The Shelf Controller Upgrade Tool is a subcomponent of the upgrade manager in the Carrier Voice over IP Upgrade Management Architecture. The tool supports Shelf Controller software upgrades via the command line user interface (CLUI) The tool automatically performs the following required manual operations:

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

The following figure provides an overview of these steps.

Automatic upgrade overview



Prerequisites

Before upgrading the Shelf Controller software with the automatic upgrade tool, perform the following prerequisite actions.

At the CS2000 Management Tool interface

1 Ensure that the Shelf Controller software load filesets are installed on the CBM or CS 2000 Core Manager (SDM). Refer to procedure Installing SAM21 Platform software.

2 Check to be sure that all prerequisites in the previous sections of this document are met. Return to this procedure and perform additional prerequisite steps 3 through 7.

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

5 Enter:

> id -a

Example of 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

Refer to the following table to determine your next step.

If	Do
you are logged in as root	step 7
you are not logged on as root	step 6

6 Use the su command (switch user) to log in as the root user. Proceed as follows.

a At the system prompt, type

su - root

and press the Enter key.

Example of system response:

```
Password:
```

b 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

Example of 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 your own user ID. Proceed as follows.

a At the system prompt, type

su - <user-ID>

and press the Enter key

where

<user-ID> is your own user ID

Example of system response:

```
Password:
```

b Type

<password>

and press the Enter key

where

<password> is the your own password

9 The prerequisite steps are completed. To begin the upgrade process, continue with step 1 in the following Detailed procedure.

Detailed procedure

CAUTION
Interruption of upgrade
Do not exit the automatic upgrade tool before the upgrade is completed.

CAUTION
Termination of automatic 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 automatic upgrades. If problems occur during the upgrade, you can terminate the upgrade and use the manual rollback procedure *Rollback software on the SAM21 Shelf Controller* in NN10067-461.

At the CS 2000 Management Tool interface

1 Launch the upgrade tool (**scuptool**) to display the Main menu for the Shelf Controller upgrade tool. Enter:

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

Example of 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 upgrade configurations
4 - Enter Upgrade Menu

x - Stop upgrade tool and exit CLUI

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

2 Configure the upgrade options. Use the following steps:

a Select Configure upgrade-related options from the main menu. Enter:

```
> 2
```

Example of system response:

```
SC upgrade configuration
Enter new load file name:
```

b Enter the load file name for the Shelf Controller. Ensure that the configured load file name exists in the load server (CBM or SDM).

Load name format:

nn.n.n.nnnnnnnnnn

Example file name entry:

11.0.0.0409151320

Example of system response:

```
SC list

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

c 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. *Enter the node names without spaces between the entries.*

Example list entry:

SC1, SC2

The system displays the current input configuration values.

Example of system response:

```
Input values
NewLoadFileName      :      11.0.0.0409151320
SCList               :      SC0,SC1
Default values
LoadDiectory         :      /swd/sam21/
OldLoadName          :      ''(ignored)
UpgradeMode          :      bulk
PausePoint           :      0(none)
LoggingLevel         :      MAJ
MaxTime              :      0(no limitation)
AlarmLevel           :      MAJ
AlarmNumber          :      2

Do you want to use these values to configure? [Y|N]:
```

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

Note: If you have a CBM configuration, you must specify a new load location. That means you want to change the values.

If	Do
you want to use the existing values	enter **Y** and go to step 4
you want to change the values	enter **N** and continue to the next substep (e)

*Example of system response (after entering **> N**):*

```
Enter load directory (default: /swd/sam21/):
```

e Enter the load file directory in the CBM or SDM. Load Directory formats are different for CBM and SDM.

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

Example of system response:

```
Enter old load name:
```

f 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 g

Example of system response:

```
Upgrade mode selection
 1 - single  2 - bulk
 h - help

Enter selection (102,h),(default:2):
```

g 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 continue with this step (g)
upgrade all configured shelf controller nodes simultaneously (*bulk*)	enter **2** and continue with this step (g)

Example of system response:

```
Pause points
 1) For the single mode SC pair.
      1, before lock the first upgrade unit of "seed" pair.
      2, before warm swact.
      3, after "seed" pair upgraded.
      4, pause on all above conditions.
 2) For bulk SC upgrade pairs.
      5, before warm-swact.

      0, no pause point. If 0 applied, ignore all other
         pause points.
 Example: 1,3
Enter pause point (default: 0):
```

h Enter the pause points for the upgrade. Pause points allow you to perform manual checks at selected intervals during the upgrade process.

Example pause point entry:

```
Enter pause point (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 of system response:

```
Logging level selection
1 - VRB 2 - MNR 3 - MAJ 4 - CRT

Enter selection (1-4),(default: 3):
```

i 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 of system response:

```
The max time limitation
 Note: 0 means no time limitation

Enter time limitation (mins), (default 0):
```

j Enter a time limitation (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 limitation check.

Example of system response:

```
Alarm level selection
1 - CRT 2 - MAJ

Enter selection, (default: 2):
```

k Enter the alarm level (CRT, MAJ).

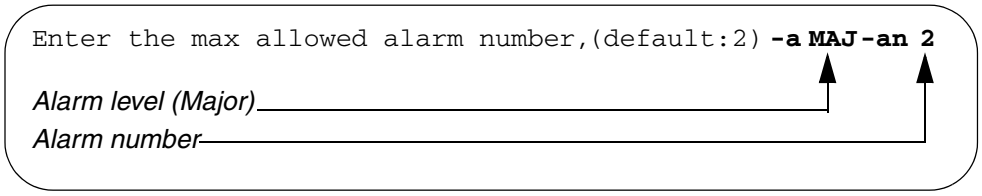
Example of system response:

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

l 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:



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 of system response:

```
NewLoadFileName : 11.0.0.0409151320
SCList          : SC0,SC1
LoadDirectory   : /sam21
OldLoadName     :
UpgradeMode     : single
PausePoint      : 0
LoggingLevel    : CRT
MaxTime         : 0
AlarmLevel      : CRT
AlarmNumber     : 3

Is this information correct? [Y|N]:
```

m 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 n.
you do not want to confirm the selections for configuration	enter **N** and return to step b on page 28, or go to step 13 to exit the upgrade tool

Example of system response:

```
Current configuration:
-----------------------------------------------------------
New load file name                       : 11.0.0.0409151320
Old load name                            :
Load directory name                      : /sam21
Upgrade mode                             : single
Check point                              : 0
log level                                : CRT
LC lists                                 : SC0,SC1
Max time for doing upgrade               : No time limitation
Max parallel number when bulk upgrade : 8
Allowed highest alarm level              : CRT
Allowed maximum alarm number             : 3
```

n The procedure for configuring upgrade-related options is completed. To continue the upgrade process, go to step 3.

3 Press **Enter** to return to the Main menu for the Shelf Controller upgrade tool.

Example of system response:

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

x  - Stop upgrade tool and exit CLUI

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

4 Enter the Upgrade menu for the Shelf Controller tool. Enter:

> 4

Example of 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):
```

5 Select the Prepare option. Enter:

> 1

Example of 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):
Configured load is available.
Invalid SC nodes: SC1

==============Upgrade Schedule==============
Group 1 :SC0
Estimated total time :660 seconds
```

Check to see if the load is available in the CBM or 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 doesn't exist. Please check and try later.`	return to step b on page 28
the load is available	step 6

6 Perform a pre-check. At the Upgrade menu, enter:

> 2

Example of system response:

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

Checking SC nodes state...
Group 1
 SC0 is ready to upgrade.

Upgrade Status Report:
SC node                  : SC0
Upgrade status           : Upgrade not started
SCUnitUpgrade order      : slot7 (inactive), slot9 (active)
Estimated time left      : 11 minutes

SC0-0 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               : 11.0.0.0410071440

SC0-1 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               : 11.0.0.0410071440
```

Review the information in the system response, and perform the following steps:

a Check the status of the SAM21 manager server (SAM21EM). If the manager is not alive, go to step 7 on page 25 of the Prerequisites procedure.

b Verify that the load is available on the load server. If the load is not available, go to step 7 on page 25 of the Prerequisites procedure.

c Clear any existing alarms.

d 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 to step e to proceed with the upgrade process
all the pre-check conditions are met	step e

e The pre-check procedure is completed. The system automatically returns to the Upgrade menu for the SC upgrade tool.

Example of 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):
```

To continue the upgrade process, go to step 7.

7

ATTENTION

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

Upgrade the configured Shelf Controller nodes. When the upgrade starts, the system performs another pre-check and displays the upgrade status. 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 2 on page 28), 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.

If	Do
the Communications Server LAN (CS LAN) is provided by 8000-series Ethernet Routing Switches (formerly known as 8000-series Passport router switches)	procedure “Reprovision Ethernet Routing Switch 8600 port to auto-negotiate” in *Upgrading the SAM21 Shelf Controller*, NN10067-461. *(This procedure is required only once.)* When the action is completed, return to this procedure and 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 completed, 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. Please resolve any issues with the ATM connections from the gateways before requesting a SWACT. Please select from the following: Retry Abort.”	wait two minutes and then retry
no problems exist	continue with the instructions in this step

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

Example of 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 SC0

Start upgrade at 2004-11-10 02:35:07.152
Upgrading with no time limitation.
Group 1
Upgrade Status Report:
SC Node               :  SC0
Upgrade Status        :  Upgrade starting.

SCUnitUpgrade 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...

Provision completed successfully.

Lock inactive (first) SC unit started.

Message received from the server:

Locking the inactive shelf controller will cause the shelf
controllers to operate in simplex mode. Do you wish to
proceed?
Please select from the following:
Continue Abort

Answer:
```

8 At the “Answer:” prompt, you can enter “Continue” or “Abort”. 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 of 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.

```
Locking in progress...

Lock completed successfully.

Unlock the inactive (first) unit started.

Unlock in progress...

Unlock completed successfully.

Swact the active (second) unit started.

Swacting in progress...

Swact completed successfully.

Lock second inactive unit started.

Locking the inactive shelf controller will cause the shelf
controllers to operate in simplex mode. Do you wish to
proceed?
Please select from the following:
Continue Abort

Answer:
```

9 At the “Answer:” prompt, you can enter “Continue” or “Abort”. 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 of 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.

```
Locking in progress...

Lock completed successfully.

Unlock the second unit started.

Unlocking in progress...

Unlock completed successfully.

Upgrade Status Report:
SC node                : SC0
Upgrade status         : Both SC units upgrade 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

SC0-0 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              : 11.0.0.04.09151320

SC0-1 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              : 11.0.0.0409151320

All SC pairs upgrade finished.
```

10 The upgrade is completed. The system automatically returns to the Upgrade menu for the SC upgrade tool.

Example of 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):
```

To continue with the post-upgrade (post-check) process, go to step step 11.

11 Perform a post-check to ensure that the load, state, and alarm conditions are correct. To display the data, enter:

```
> 5
```

Example of system response:

```
Upgrade Status Report:
SC node                 : SC0
Upgrade status          : Both SC units upgrade 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

SC0-0 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               : 11.0.0.04.09151320

SC0-1 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               : 11.0.0.0409151320
```

If	Do
you want to continue upgrading other Shelf Controller nodes	return to step b on page 28
you do not want to continue upgrading other Shelf Controller nodes	The post-check is completed. The system automatically returns to the Upgrade menu for the SC upgrade tool. Refer to the system response that follows this table.

Example of 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):
```

To complete the process, go to step 12.

12 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 of system response:

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

x  - Stop upgrade tool and exit CLUI

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

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

```
> x
```

Example of system response:

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

14 The procedure is completed.

Change CS 2000 SAM21 Manager server address

This procedure uses both CS 2000 SAM21 Manager clients. The intent of the procedure is to change the IP address of the CS 2000 SAM21 Manger server. to the IP address of the CS 2000 Management Tools server. First, the Java Web Start client hosted by the CS 2000 Management Tools server is used, then the **/sdm/bin/sam21gui** client is used.

- the CS 2000 Management Tools server (Sun Microsystems) based SAM21 Manager must be changed first
- the CS 2000 Core Manager (SDM) based SAM21 Manager must be changed second

ATTENTION

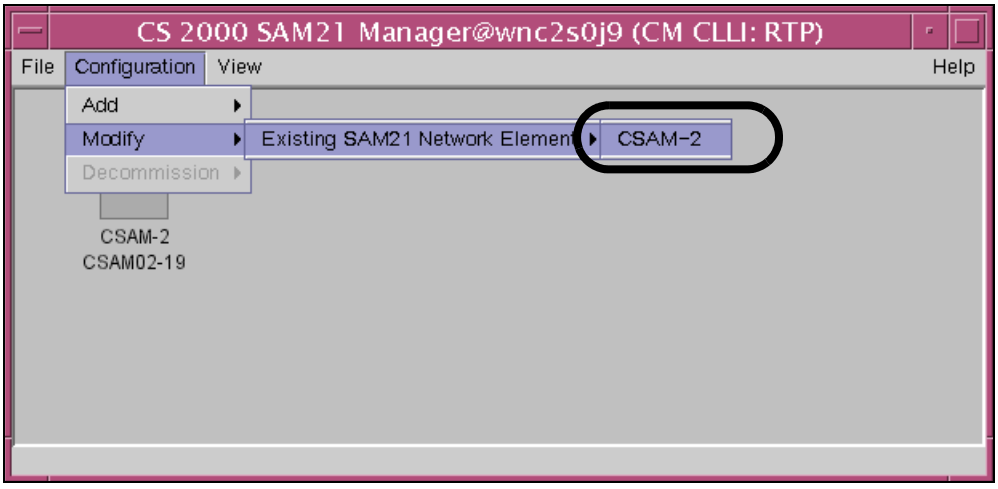
Failure to change the CS 2000 Management Tools based SAM21 Manager first can isolate the SAM21 shelf.

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)

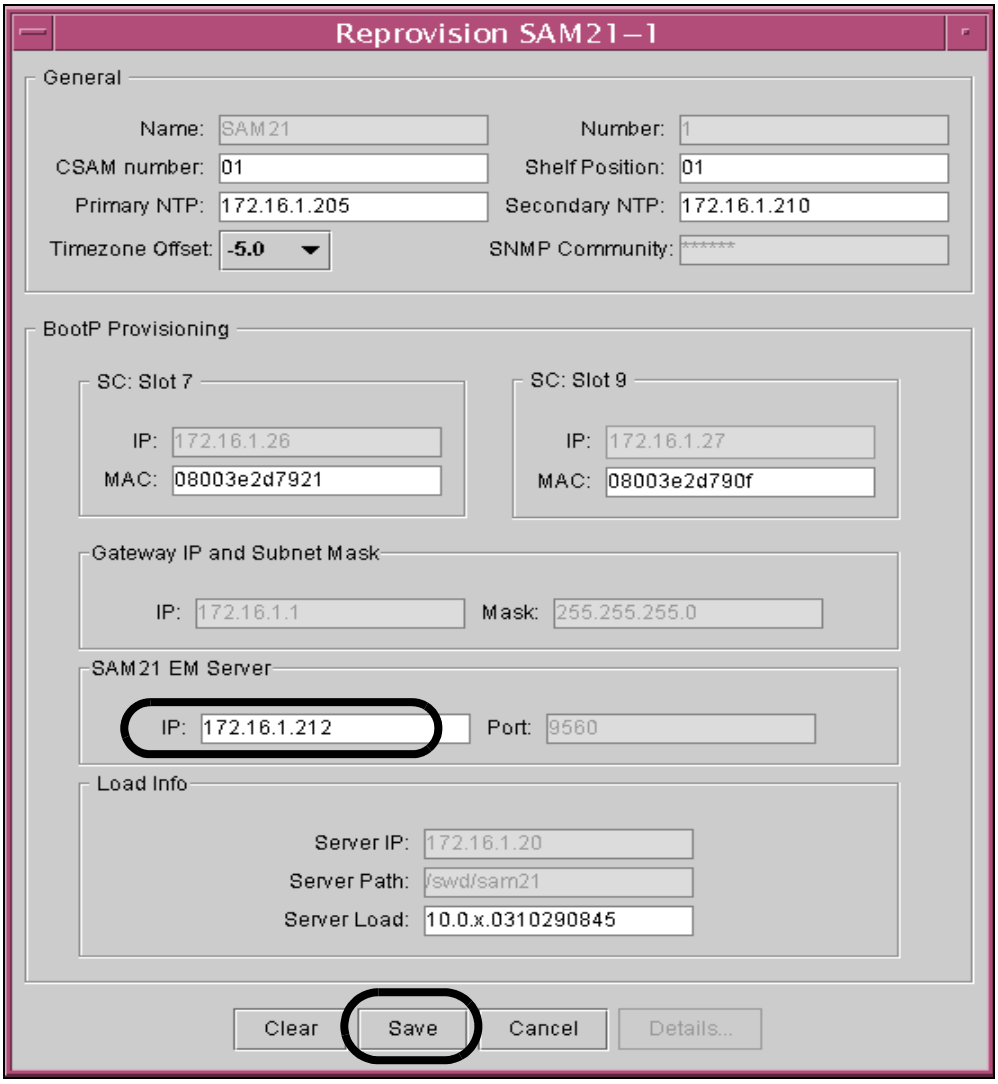
1 Use the Configuration menu to modify a SAM21 shelf and open the Reprovisioning window.

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.

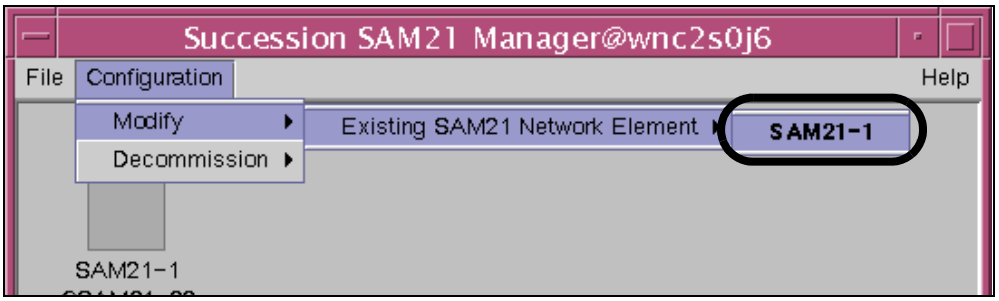
Reprovision window at Java Web Start client



At the CS 2000 SAM21 Manager client workstation

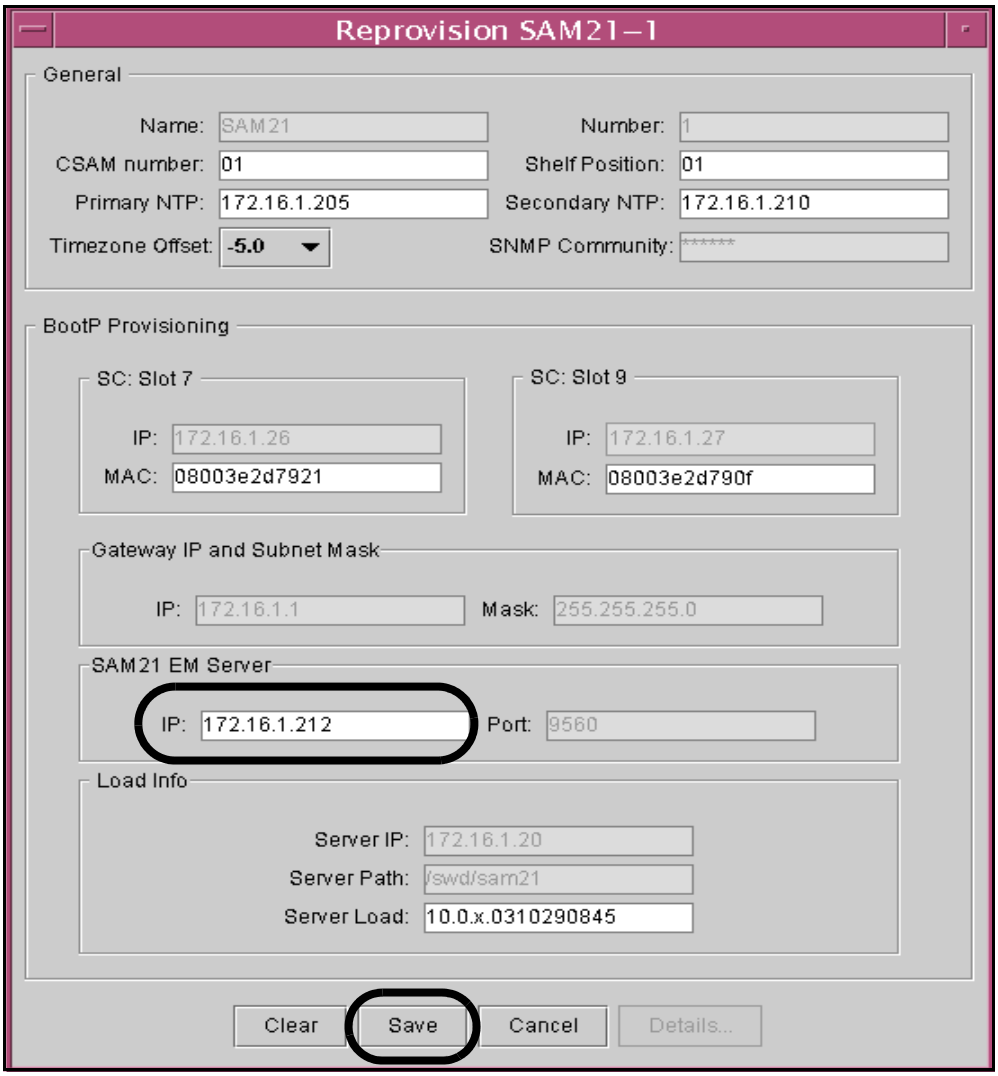
3 Use the Configuration menu to modify a SAM21 shelf and open the Reprovisioning window.

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 This procedure is complete.

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.

SAM21 Shelf Controller does not unlock

If the SAM21 Shelf Controller does not unlock and the lock icon persists on the SAM21 Shelf View, then the SAM21 Shelf Controller failed to boot.

At the CS 2000 SAM21 Manager client

1 Ensure that the SAM21 Shelf Controller has enough time to boot. A SAM21 Shelf Controller can take up to 4 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

2 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.

3 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.

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

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

The system displays the Connection Description box.

c Enter SC in the Name field and click OK.

The system displays the Phone Number box.

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

e 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.

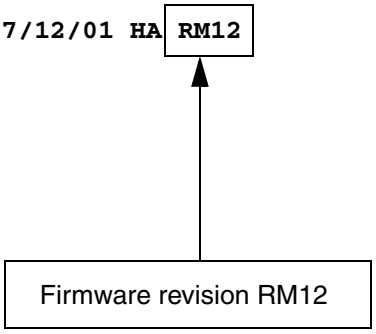
f Press the Enter key.

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

4 If the message `em respawning too fast` is displayed on the console, 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*.

```
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
```



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

6 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.

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

8 The SAM21 Shelf Controller software provides a series of prompts. Accept the default values except 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**

Prompt	Value
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**

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

10 The SAM21 Shelf Controller software provides a series of prompts. Accept the default values except 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

Prompt	Value
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
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

Prompt	Value
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)
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

11 The SAM21 Shelf Controller reboots.

12 Optionally verify that calls can originate and complete.

13 If this problem persists, contact Nortel support personnel.

14 This procedure is complete.

Appendix A Manual software upgrade procedure

This section contains the manual procedure for upgrading software on the SAM21 Shelf Controller.

ATTENTION

Using the automatic upgrade tool is the preferred method for upgrading software on the SAM21 Shelf Controller in SN08. Use the manual method in this section only when necessary.

Upgrading software on the SAM21 Shelf Controller

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
```

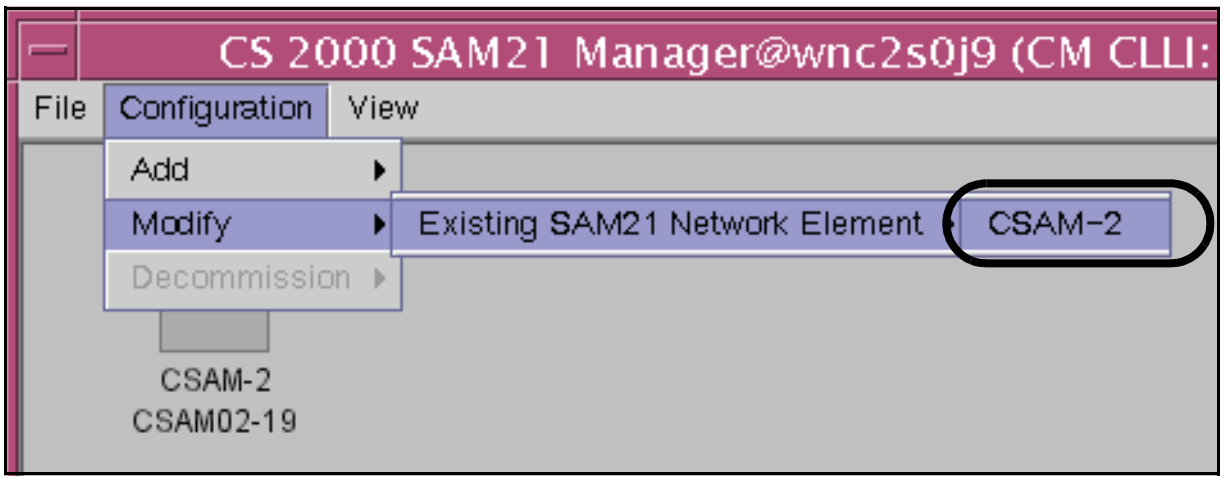
Ensure that the progress text for both SAM21 Shelf Controllers includes `SC firmware parameters are up to date.`

Detailed procedure

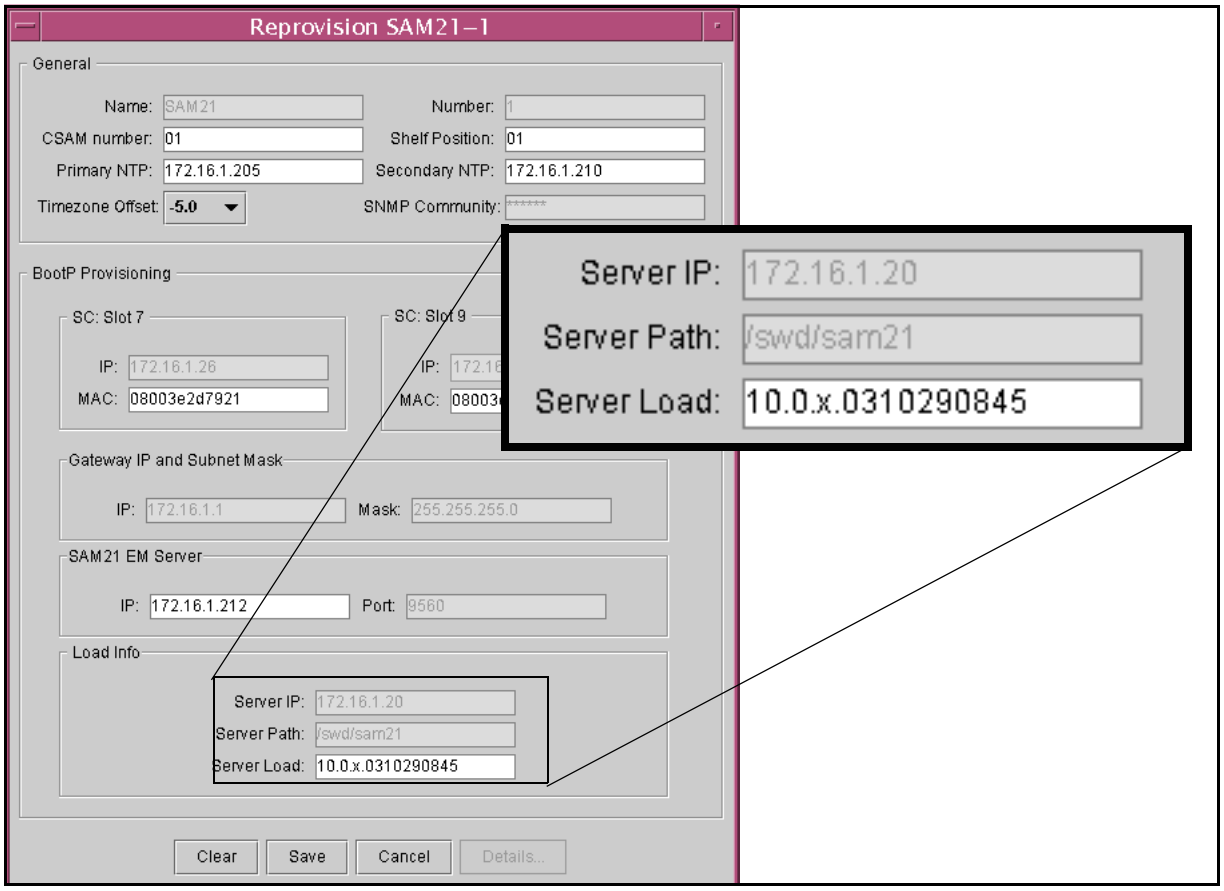
At the CS 2000 SAM21 Manager client (Java Web Start client)

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

Upgrade from SN06 to SN07 or newer



2 Enter the new software load name in the Server Load field on the Reprovision window. This action updates /etc/bootptab on the CS 2000 Core Manager. A warning is generated if the provisioning fails.

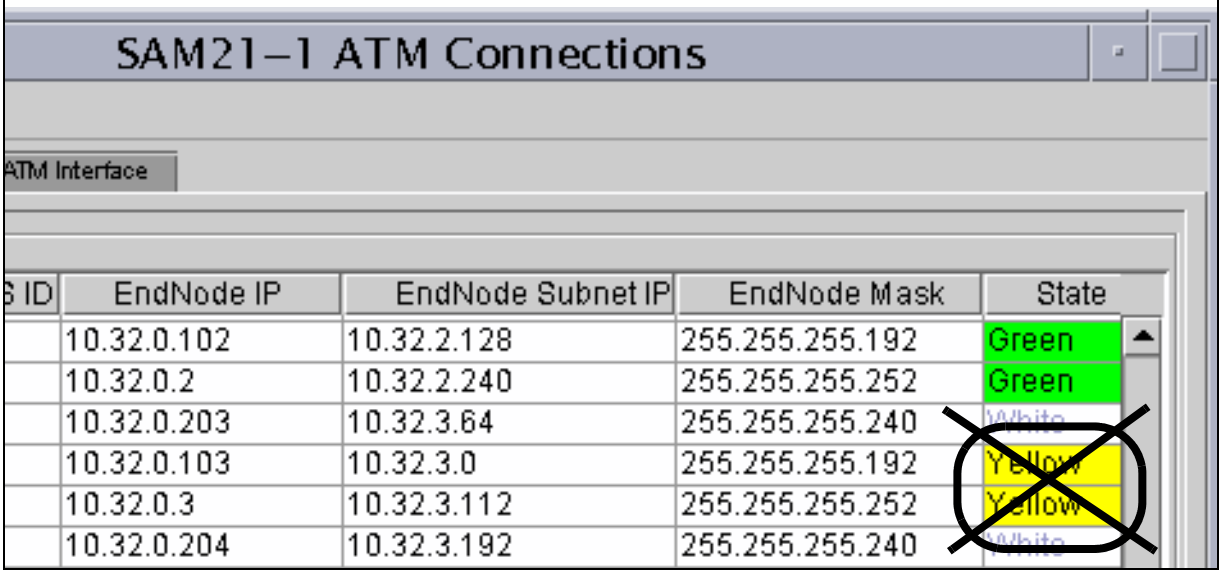


Note: ‘ x’ is greater than or equal to zero. Refer to page 1-1 of the *SAM21 Platform Base Release Notes* for the correct value.

3 Click Save on the Reprovisioning window to save the data. 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.

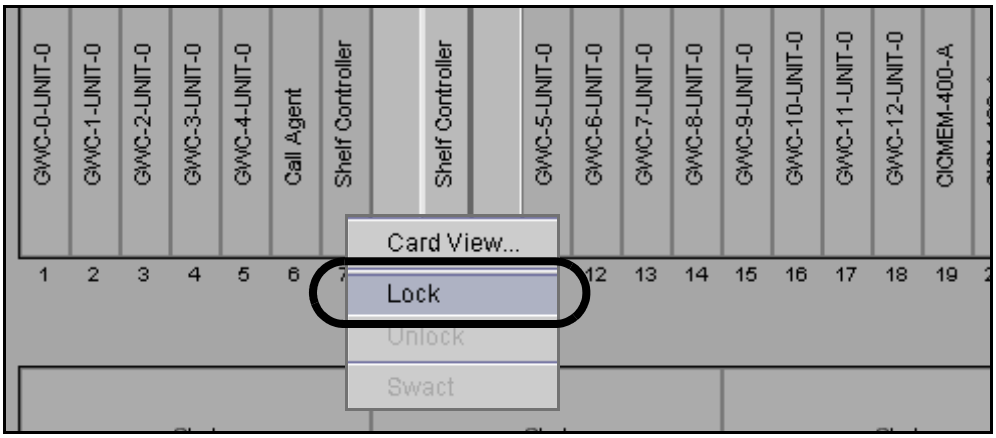
Green - active ATM link is on active SAM21 Shelf Controller
Yellow - active ATM link is on inactive SAM21 Shelf Controller
Red - connection between SAM21 Shelf Controller and end node existed but is currently broken
White - connection between SAM21 Shelf Controller and end node is provisioned, but never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



If all the connections are yellow, then 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, 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, and then proceed.

5 From the Shelf View window, right click on the card icon for the inactive SAM21 Shelf Controller and select Lock from the context menu.

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

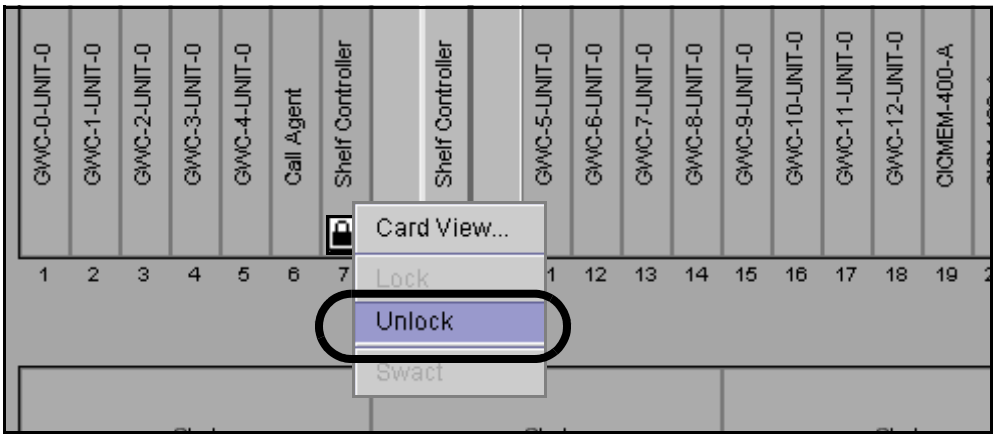


6 Wait for the Lock icon to appear on the SAM21 Shelf Controller icon and the other SAM21 Shelf Controller to indicate that it is in simplex, indicated by alarm 3C on the other SAM21 Shelf Controller). The 3C alarm reasons are defined as follows:

- `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.)

Note: If the CS LAN is provided by Nortel Ethernet Routing Switch 8000 series, reprovision the port on the Ethernet Routing Switch 8600 to auto-negotiate. Refer to Reprovision Ethernet Routing Switch 8600 port to auto-negotiate on page 22. This only needs to be done once. If this procedure was completed during the upgrade to SN06, do not reconfigure the port.

7 Right click on the same SAM21 Shelf Controller and select Unlock from the context menu and optionally verify that calls can originate and complete. The unlock request can require up to 10 minutes.



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 SAM21 Shelf Controller does not unlock on page 50 for information about configuring firmware parameters.

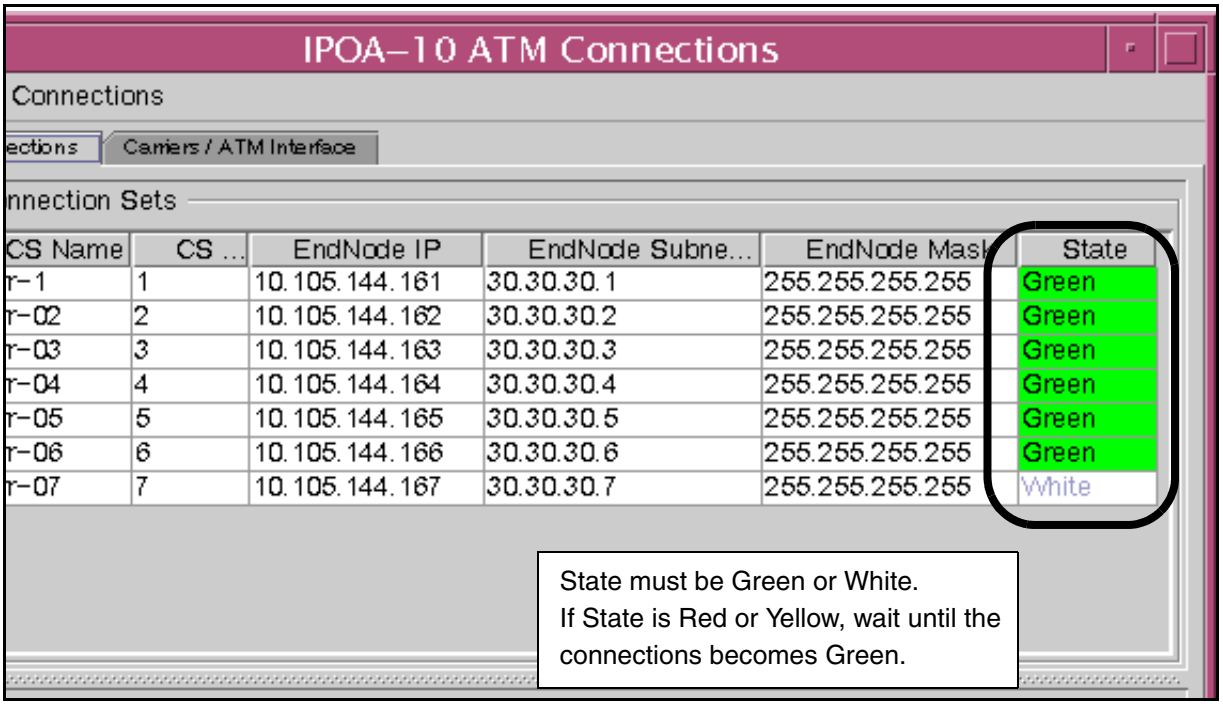
A successful boot reports the following message at the States tab of the Card View window:

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

8 If required by operating company personnel, soak the new software load. If rollback to the previous release is required, refer to Rollback software on the SAM21 Shelf Controller on page 67.

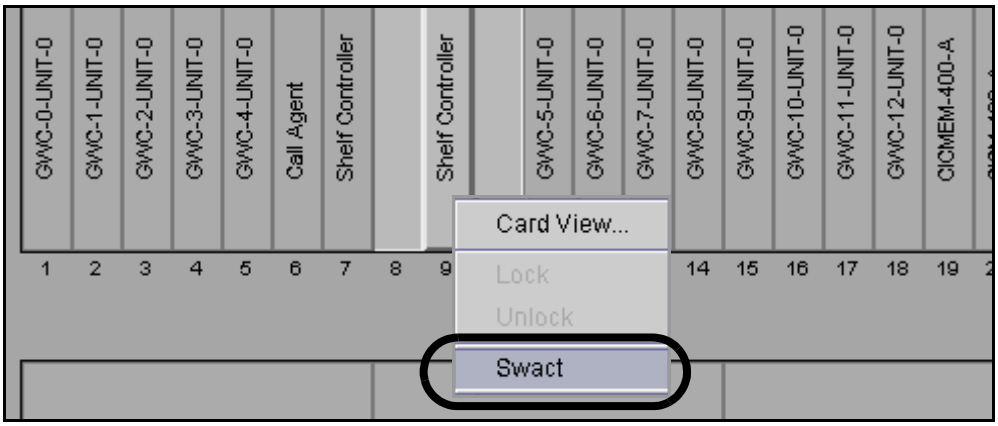
9 If the SAM21 Shelf Controller is configured with an ATM interface, verify that all ATM connections are green at the ATM Connections window before proceeding.

Check for Green state



10 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 context menu.

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



11

ATTENTION
Rollback is not supported after this step is completed.

Lock and unlock the newly Inactive card as in steps 5 and 7. If firmware configuration was required with the first card, perform the firmware configuration on the newly inactive card.

12 This procedure is complete.

Reprovision Ethernet Routing Switch 8600 port to auto-negotiate

To enable auto-negotiation of the Ethernet port speed and duplex state, perform the following steps at the command line interface to the Ethernet Routing Switch 8600. Read, write, and administrative privileges are required for this procedure.

At the CLI for the Ethernet Routing Switch 8600

1 Determine the slot and port on the Ethernet Routing Switch 8600 that connects to the device:

`> show ip arp info <ip_address>`

ip_address
is the physical IP address of the SAM21 Shelf Controller, the Gateway Controller, or USP

The slot and port are reported.

```
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
```

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 Set the slot and port to auto-negotiate:

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

The slot and port are reconfigured to auto-negotiate and the prompt returns.

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

3 Verify the port configuration:

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

The slot and port configuration is displayed.

```
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
```

4 Commit the change:

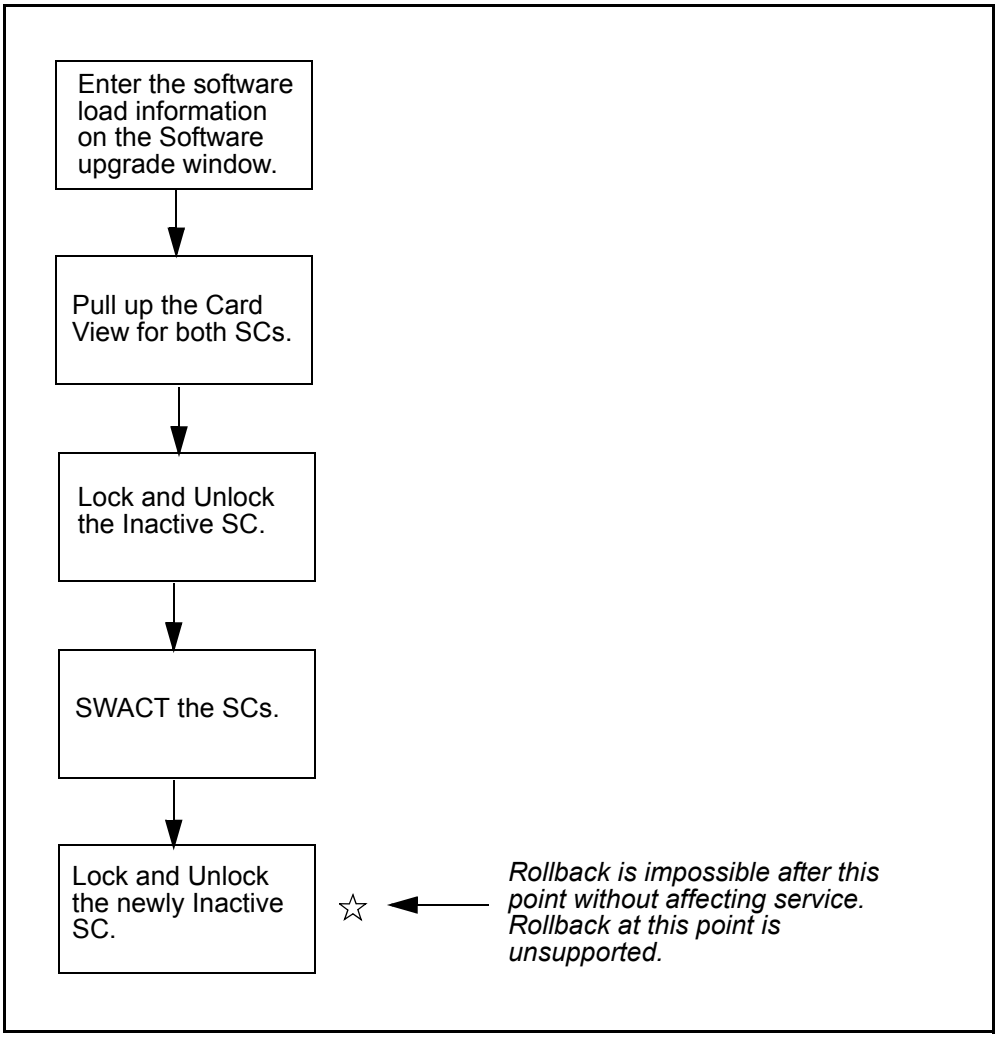
> save config

Rollback software on the SAM21 Shelf Controller

ATTENTION

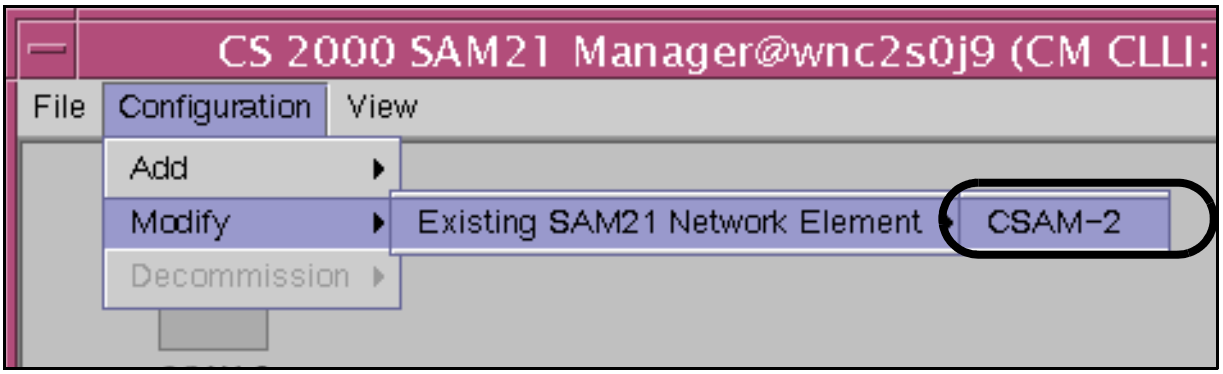
If the office is a CS 2000 - Compact, rollback the Call Agent software to SN06 before rolling back the SAM21 Shelf Controller software. Not rolling back the Call Agent software first may result in a reset loop on the next unlock or RExTst of the Call Agent.

The following figure summarizes the upgrade procedure. 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.

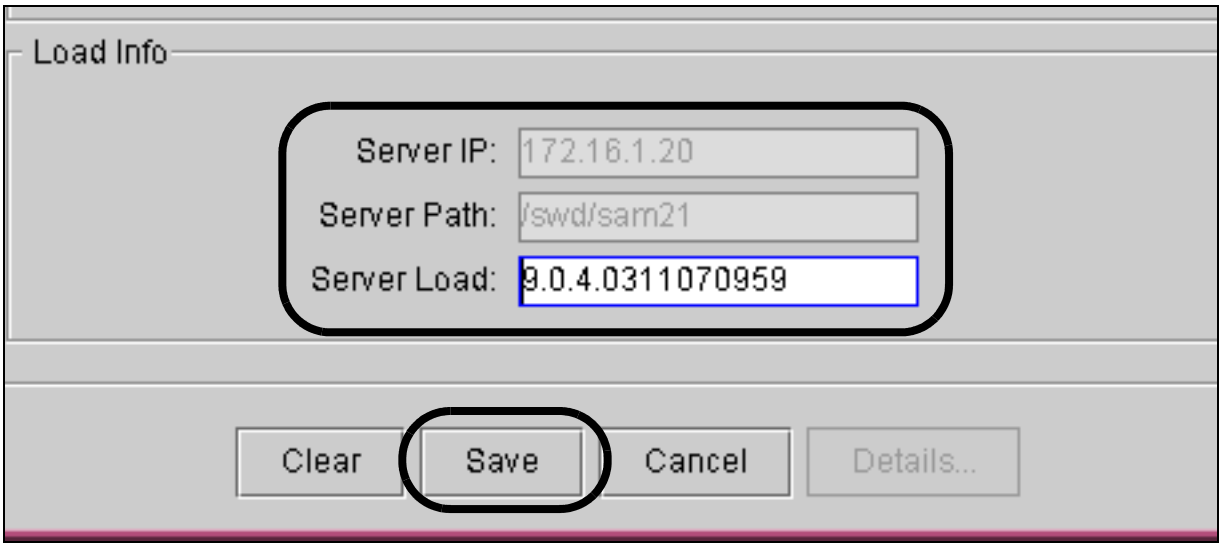


At the CS 2000 SAM21 Manager client (Java Web Start client)

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



2 Enter the software loadname of the old software load on the Reprovisioning window. For example, if the upgrade was from 9.0.4.0311070959 to 10.0.0.0301120523, enter 9.0.4.0311070959 to revert to the old software load.



3 Click Save.

4 If the active SAM21 Shelf Controller is running SN07, right click on the card icon and select Swact from the card context menu. Wait for completion of SWACT.

From the Shelf View, right click on the inactive SAM21 Shelf Controller and select Lock from the card context menu.

Note: This SAM21 Shelf Controller is the card that was loaded with the software upgrade and is being reverted to the previous software load.

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

6 From the Shelf View, right click on the inactive SAM21 Shelf Controller and select Unlock from the card context menu.

7 Wait for the hashed outline to disappear from the Inactive SAM21 Shelf Controller.

8 This procedure is complete.