Upgrading the SAM21 Shelf Controller

ATTENTION

If upgrading from SN04 or SN05 to SN06, follow the upgrade procedure described in *Upgrading the Succession Network*, NN10261-450. That procedure includes the upgrade of the SAM21 Shelf Controllers.

If upgrading from an SN06 release to a maintenance SN06 release, follow the procedure described in this document. When applying maintenance release software, follow the network element upgrade order specified in *Upgrading the Succession Network*, NN10261-450.

What's new in upgrades for SN06?

Supported upgrades from previous releases

Upgrade from SN04 and SN05 to SN06 is supported. Maintenance upgrades from SN06 to SN06 are also supported.

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 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.
- 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.

The Shelf Controllers are reconfigured to use the CS 2000 SAM21 Manager server installed on the CS 2000 Management Tools and when each 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 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 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 Shelf Controller issues a new boot request. Do not use links in the filesystem to manage bootloads since the links defeat bootload caching and increase the time required to boot each Shelf Controller.

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

During the upgrade of the Shelf Controller, the port on the router that the 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 Networks Passport 8600 series router switches, reconfigure the port on the CS LAN router to “auto-negotiate,” and then unlock the Shelf Controller. To determine which port connects to the Shelf Controller, use the **show ip arp info <ip_address>** command, with the IP address of the 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 shelf controller on page 12.

Upgrade strategy

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

Software on the Shelf Controller can affect environment and network booting parameters on the Non System Slot (NSS) cards in the SAM21 shelf. The 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 Shelf Controllers.

- hostnames

  Have the IP address of the CS 2000 Management Tools server. This address is required to migrate control of the Shelf Controllers to the CS 2000 SAM21 Manager server software that is installed and running on the CS 2000 Management Tools server. This IP address is also 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 CS2E0006 level. Check this by entering the SWIM level of the SDMMTC interface. Enter the **sdmmtc** command and then the **swim** command.

Figure 1 Check CS2E software version at SWIM level

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

SWIM
 0 Quit        Product Code                              Version
 2 Apply       CS2E0006                                  6.x
 3 Details
```

  — The CS 2000 Managment Tools server must be upgraded to SN06. 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.

Figure 2 Check SSPFS and SAM21EM software versions

```
CS2000MT# pkginfo -x NTSSPFS
NTSSFS      Succession Platform Utilities Installation
            (sparc) NTSSPFS_6_x_y

CS2000MT# pkginfo -x NTsam21em
NTsam21em   Succession SAM21 Element Manager
            (noarch) SAM21EM_6_x_y
```

Tools and utilities

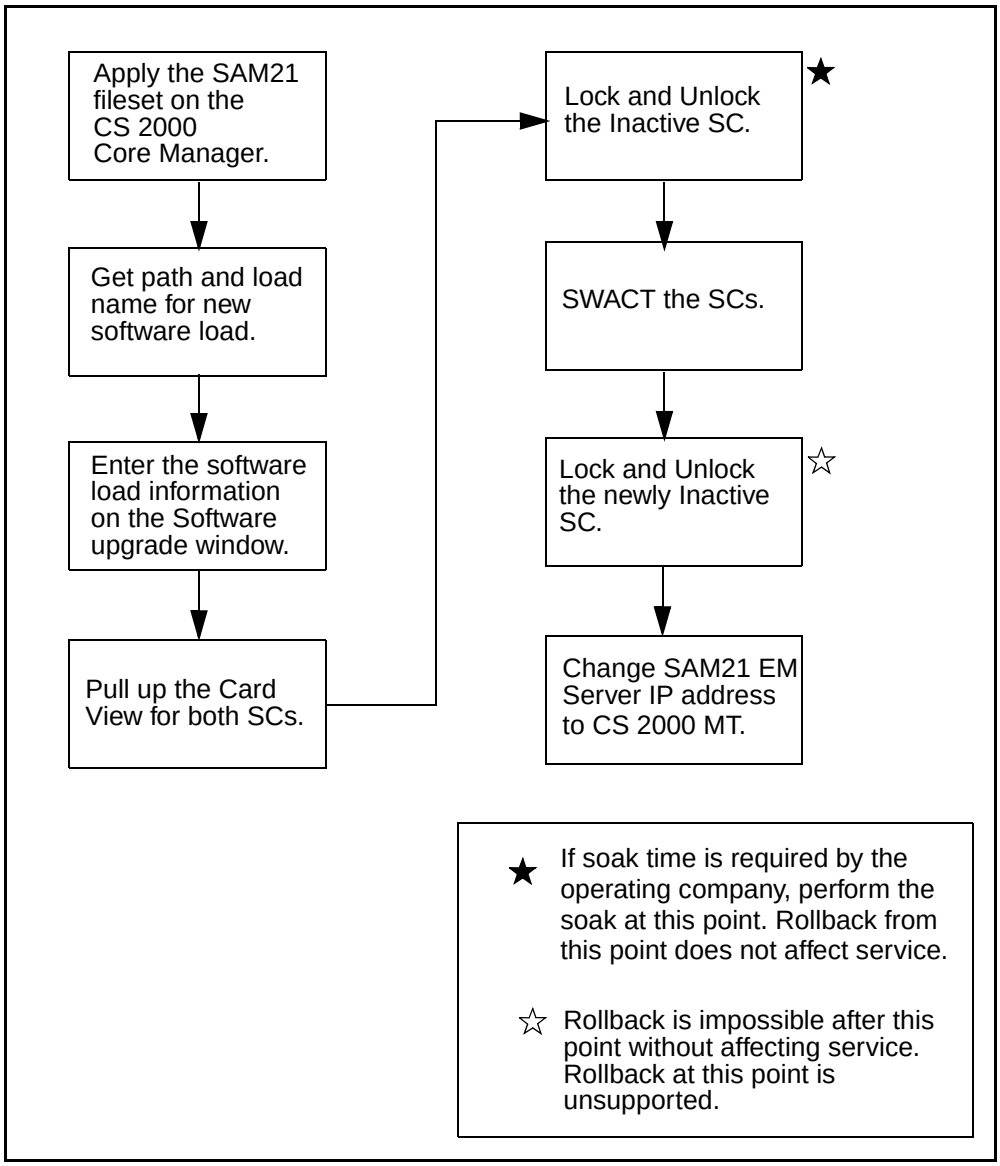
The CS 2000 SAM21 Manager client is the interface for a software upgrade of the SCs in the SAM21 shelf. The upgrade from SN04 or SN05 to SN06 requires the Java Web Start client and the **/sdm/bin/sam21gui** client application. Upgrades from SN06 to SN06 require only the Java Web Start client.

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.

Upgrade procedures

Figure 3 provides an overview of the steps required to upgrade software on the Shelf Controllers in a SAM21.

Figure 3 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 Shelf Controllers.

For the SN06 release, verify that the CS 2000 SAM21 Manager software package is installed and running on the CS 2000 Management Tools server.

In advance of the upgrade, check that all ATM connections are carried on the active Shelf Controller. This is only necessary for Shelf

Controllers with ATM interfaces. Refer to step 4 of Upgrading software on the shelf controller on page 12 for more information.

Patching software on CPU

The 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.

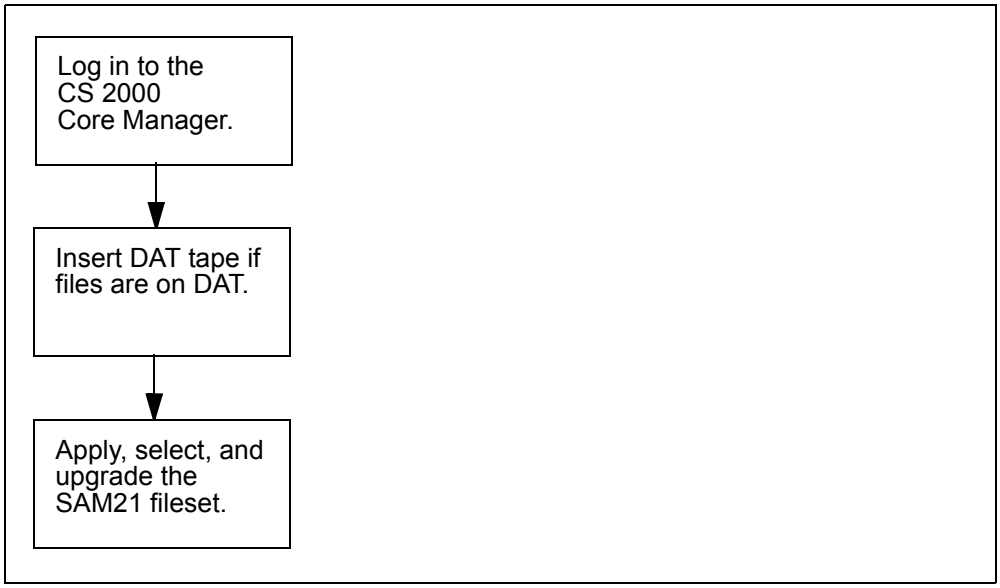
1. upgrade the element manager server software for the SAM21 and NSS cards
2. upgrade the element manager client software for the SAM21 and NSS cards
3. upgrade Shelf Controller software
4. upgrade non system slot software for additional cards

Installing SAM21 fileset

This procedure installs the Shelf Controller software on the CS 2000 Core Manager so that the CS 2000 Core Manager can serve the software to a BOOTP request from a Shelf Controller. Before performing this procedure, upgrade the CS 2000 SAM21 Manager server software on the CS 2000 Core Manager and install the CS 2000 SAM21 Manager package on the CS 2000 Management Tools server. Refer to *Upgrading the CS 2000 Management Tools*, NN10062-461.

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 required, follow the procedure listed in section Old fileset removal on page 10.

The following figure summarizes the procedure.



At the SDM frame

1 If the SAM21 fileset is on Digital Audio Tape (DAT), insert the DAT tape in slot 2 or slot 13.

At the Core Manager console or terminal window

2 Log in to the CS 2000 Core Manager as the root user.

```
AIX Version 4
(C) Copyrights by IBM and by others 1982, 1996.
login: root
root's Password: <password>
```

3 Enter the SDM maintenance level by typing

#sdmmtc

4 Enter the Software Installation Menu level by typing

>swim

5 Enter the Apply level by typing

>apply

6 Retrieve the fileset from tape by typing

>source <dat_no>

dat_no
is 0 or 1. Use 0 if the DAT is in slot 2 and 1 if the DAT is in slot 13.

7 Select the new SAM21 Platform software from the Apply menu by typing

>select <fileset_no>

fileset_no
is an integer value and represents the new SAM21 Platform fileset such as “1”.

APPLY level of the CS 2000 Core Manager

```
    SDM        CON      NET      APPL     SYS      HW     CLLI: clli_name
     .          .        .        .        .       .      Host: hostname
                                                             Fault Tolerant
Apply
 0 Quit      Source: the tape drive 0 (DAT 0).
 2           Filter: OFF
 3 Source       # Fileset Description          Current        Available
 4 Reload       1 SAM21 Platform               NA             9.0.xxx.0
 5 Eject                        Filesets on the source: 1 to 1 of 1
 6
 7 Select
 8 Apply
 9 Upgrade
10
11
12 Up
13 Down
14 Search
15 Filter
16 View
17 Help
18 Refresh
  root
Time 11:22    >
```

The example is for an upgrade to a new release, such as SN05 to SN06. If the upgrade is a maintenance release upgrade, then the value under the “Available” column ends in a value equal to or greater than 1, such as 9.0.66.3, and the value under the “Current” column ends in a value less than “Available.”

8 Upgrade the SAM21 Platform software by typing

`>apply`

if this is a standard upgrade such as 8.0.10.0 to 9.0.xxx.0 and the CURRENT version is NA as indicated in the figure above

or

`>upgrade`

if this is a maintenance upgrade such as 9.0.xxx.y to 9.0.xxx.(y+n)

Note: The new SAM21 Platform software and flash are available to upgrade the software on the Shelf Controllers. The CS 2000 Core Manager installs these files in the /swd/sam21 directory.

9 Confirm the change by typing **YES** at the prompt. Enter **NO** to cancel the fileset upgrade.

```
> YES
```

Example of succesful application:

```
Command completed with no errors
```

At the SDM frame

10 Press the Eject button and remove the tape.

11 This procedure is complete.

Additional information

Do not use links in the filesystem for bootloads. Links defeat the caching mechanism and increase the time required to boot a Shelf Controller.

Old fileset removal

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 Remove the old SAM21 Shelf Controller fileset at the SWIM level of the **sdmmtc** tool.

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

```
# mkdir -p /var/adm/sam21
```

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

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

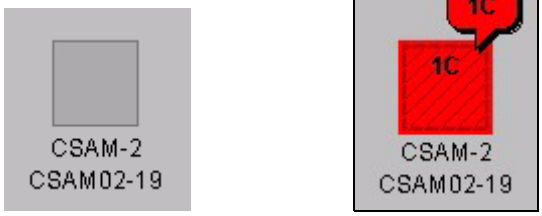
6 Move the backup configuration files into the `/var/adm/sam21` directory, and remove the backup suffix:

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

7 Reapply the current SAM21 Shelf Controller NCL fileset and then apply the current MNCL fileset again using the **sdmmtc apply** tool.

Upgrading software on the shelf controller

If this is an SN05 software upgrade to SN06, the shelf icon will appear isolated.



Not isolated Isolated

ATTENTION

During an upgrade to SN06, after the following procedure is completed, it is necessary to perform a Swact, Lock, and Unlock on the Shelf Controller that was upgraded first so that firmware parameters can be configured.

Monitor the progress text at the States tab as each Shelf Controller boots. The Shelf Controller that is upgraded first configures the second Shelf Controller. In order to configure the first Shelf Controller, it must be locked and unlocked so that the second Shelf Controller can configure it. This additional step is only performed once for each SAM21 shelf.

Before the firmware parameters for a 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 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 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 Shelf Controllers includes `SC firmware parameters are up to date.`

Client interfaces

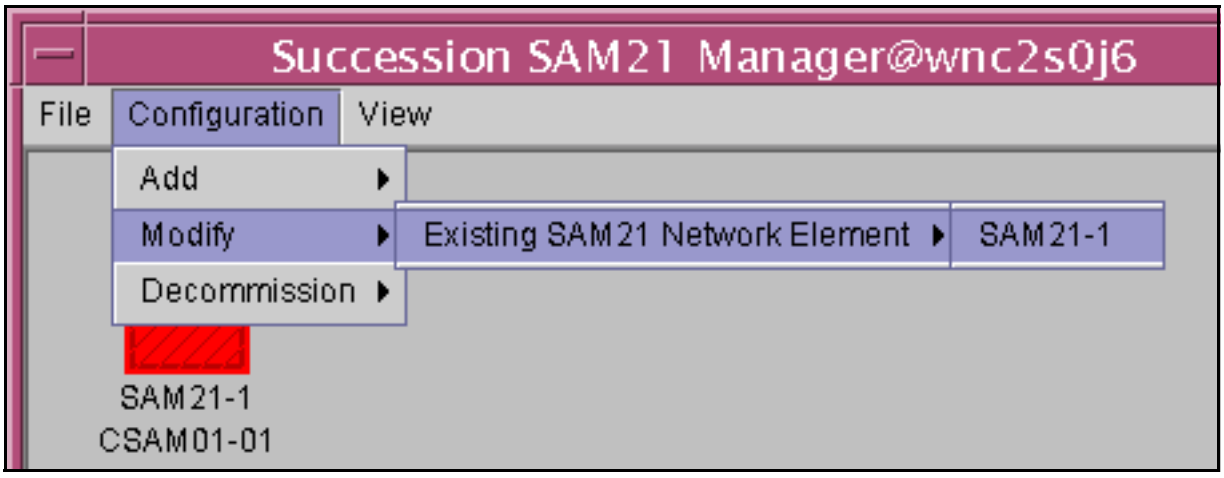
For the upgrade from SN05 to SN06, two versions of the CS 2000 SAM21 Manager client are used. Use the Java Web Start client hosted by the CS 2000 Management Tools server to reprovision the software load in steps 1, 2, and 3. Use the client hosted by the CS 2000 Core Manager and started with the **/sdm/bin/sam21gui** to lock and unlock the Shelf Controllers as well as for SWACT in steps 5 through 10.

Detailed procedure

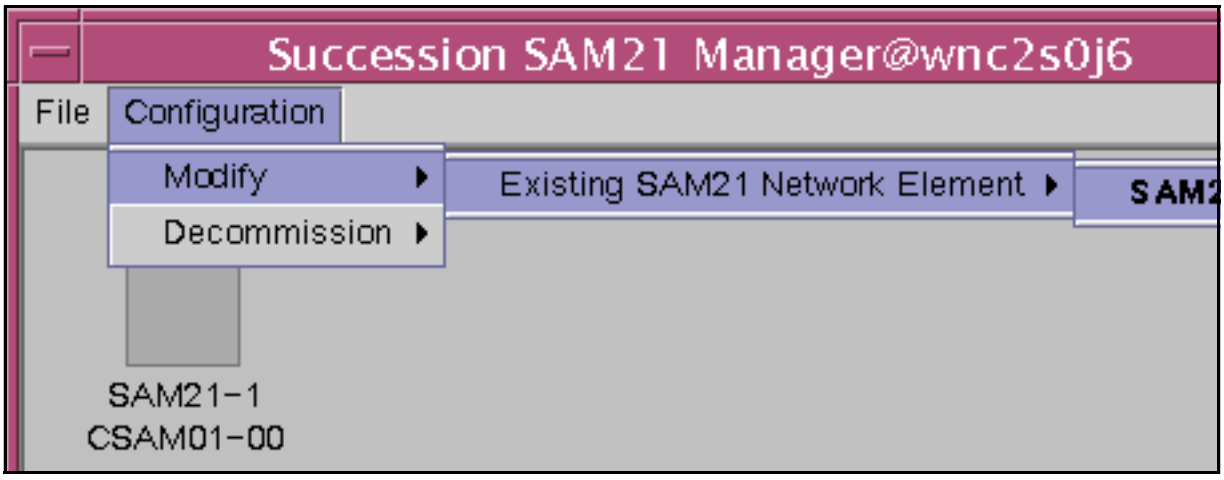
At the CS 2000 SAM21 Manager client (Java Web Start client)

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

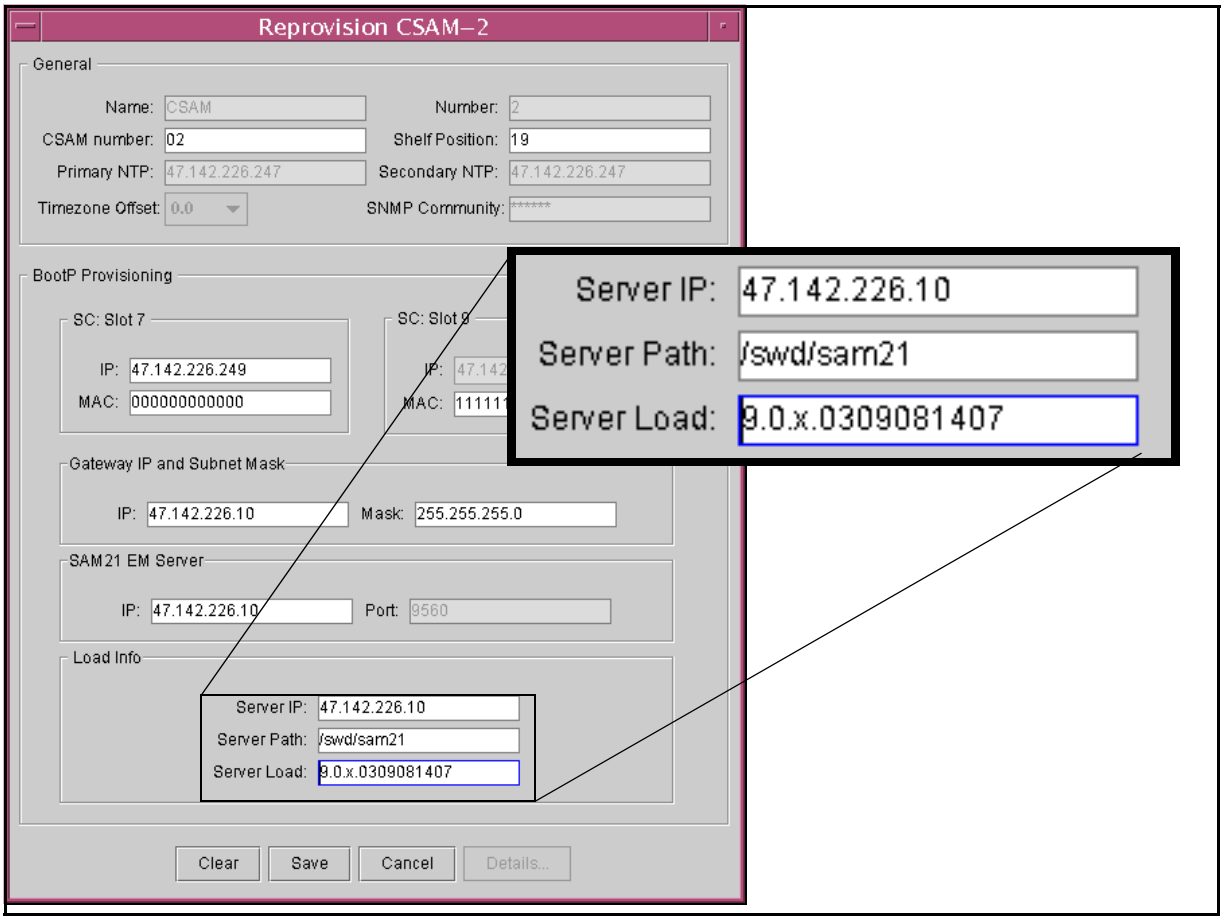
Upgrade from SN05 to SN06



Upgrade from SN06 to SN06 or newer



2 Enter the new software load name in the Server Load field on the Reprovision window.



Note 1: For upgrades such as SN05 to SN06, x is equal to zero. For maintenance release upgrades, x is greater than or

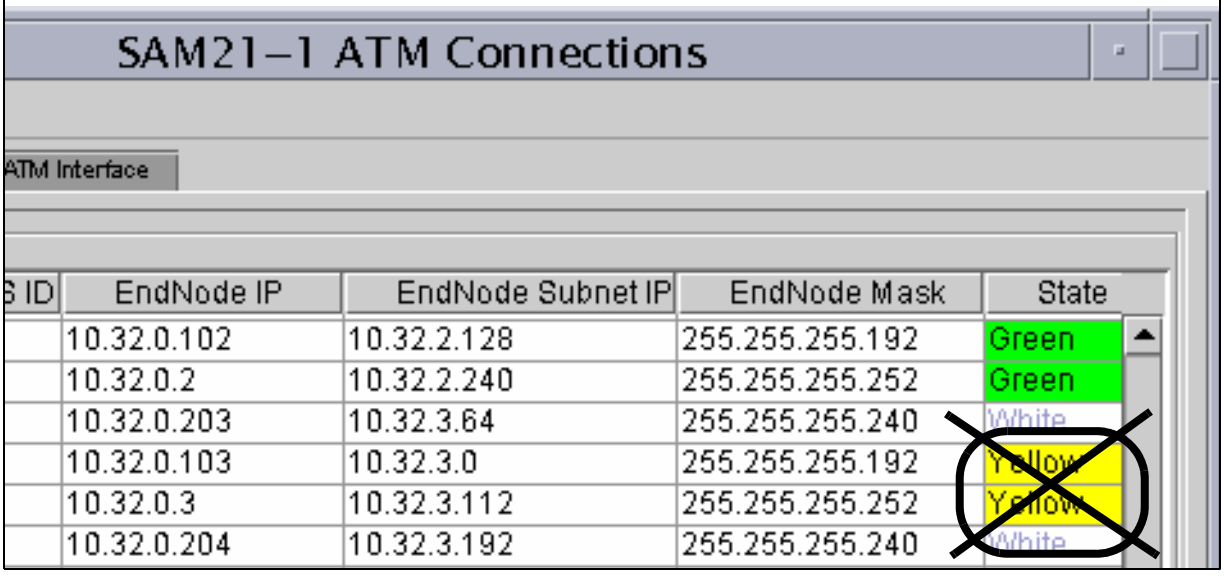
equal to zero. Refer to page 1-1 of the *SAM21 Platform Base Release Notes* for the correct value.

Note 2: This graphic shows the SN05 to SN06 upgrade. In SN06 to SN06 or newer upgrades, the Primary NTP, Secondary NTP, and Timezone Offset fields are available. During these same upgrades, the IP address, Gateway IP address, Server IP, and Server Path fields are unavailable.

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

4 If the Shelf Controllers are provisioned with ATM interfaces, verify that the inactive 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 Shelf Controller
Yellow - active ATM link is on inactive Shelf Controller
Red - connection between Shelf Controller and end node existed but is currently broken
White - connection between Shelf Controller and end node is provisioned, but never connected



If all the connections are yellow, then SWACT the 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 Shelf Controller and the end node with the yellow connection. Correct the condition, check again that all connections are green, and then proceed.

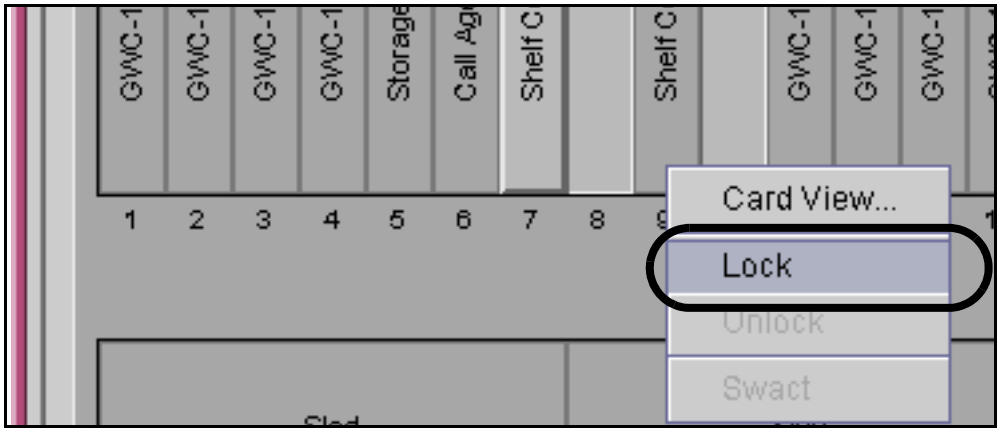
5

ATTENTION

If this is an SN05 to SN06 upgrade, perform steps 5 through 10 from the client that is hosted by the CS 2000 Core Manager and is started with the `/sdm/bin/sam21gui` command.

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

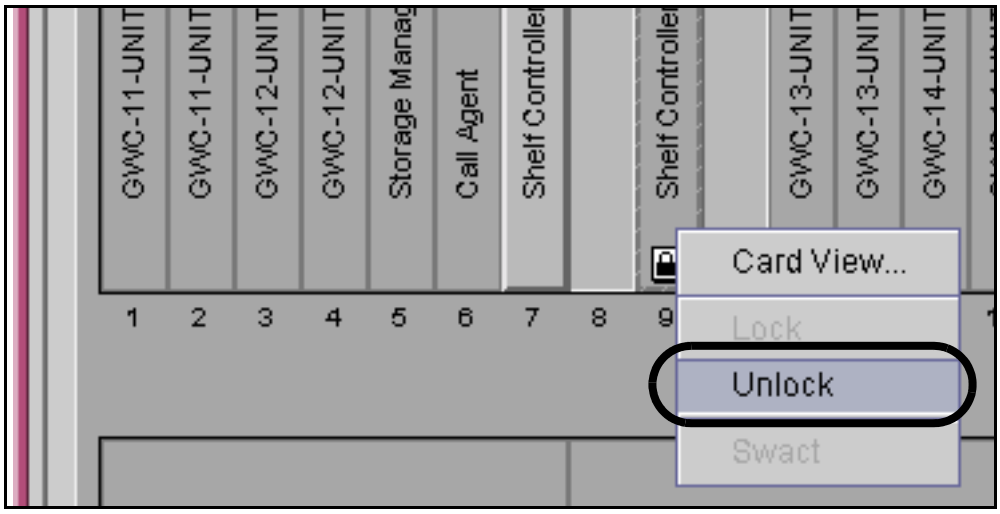
Note: The Lock menu option is only available for the inactive Shelf Controller.



6 Wait for the Lock icon to appear on the Shelf Controller icon and the other Shelf Controller to indicate that it is in simplex (alarm 2C on the other Shelf Controller).

Note: If the CS LAN is provided by Nortel Networks Passport 8000 series router switches, reprovision the port on the Passport to auto-negotiate. Refer to Reprovision Passport port to auto-negotiate on page 19.

7 Right click on the same 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 Shelf Controller does not unlock on page 24 for information about configuring firmware parameters.

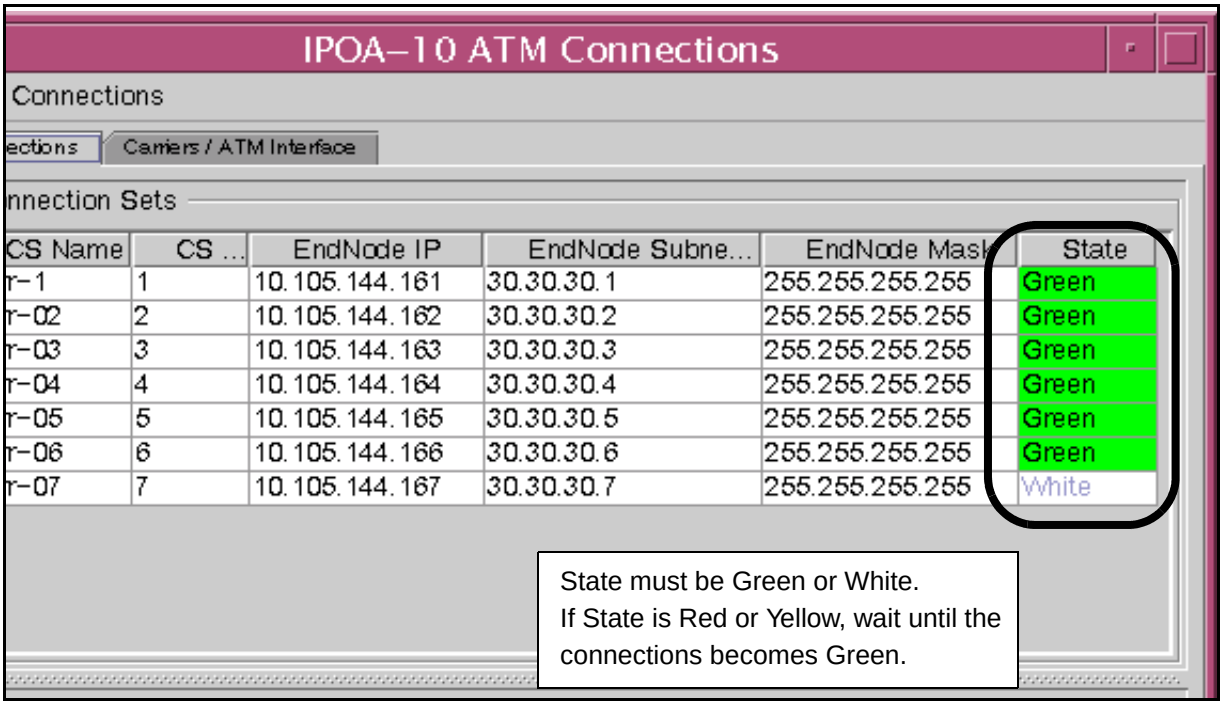
A successful boot reports the following message at the States tab of the Card View window:

```
Unlock started
Establishing control
Waiting for board to initialize
Beginning network boot
Issuing boot request
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 shelf controller on page 21.

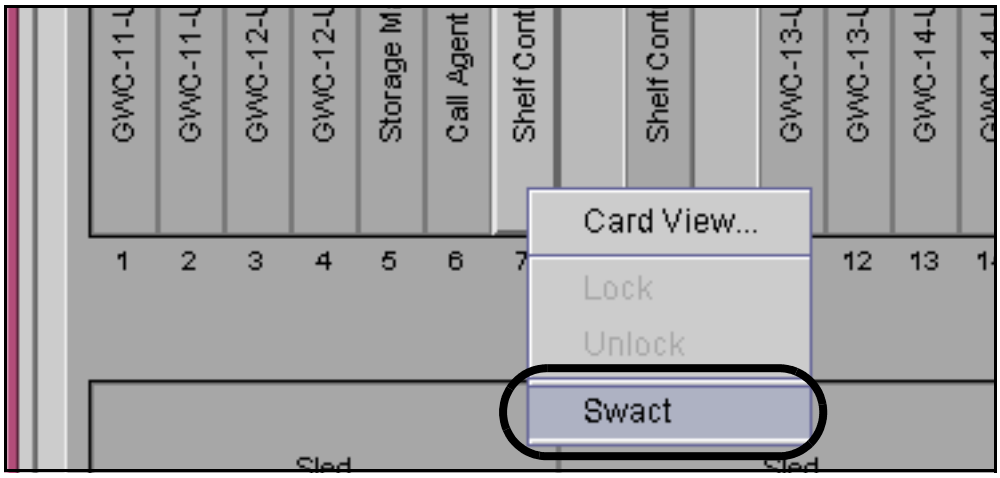
9 If the SAM21 Shelf Controller is configured with an ATM interface, verify that all ATM connections are green at the ATM Connections window before proceeding.

Check for Green state



After the hashed outline disappears from the Inactive Shelf Controller, right click on the icon for the Active 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.



10

> **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.

11 If this is the initial upgrade to SN06, Swact the Shelf Controllers again, and then Lock and Unlock the Shelf Controller that was upgraded first. This step ensures that the firmware parameters are configured correctly. Monitor the progress text at the States tab as the Shelf Controller boots.

12 This procedure is complete.

Reprovision Passport 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 Passport router switch.

At the CLI for the Passport

1 Determine the slot and port on the Passport 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 Passport 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.

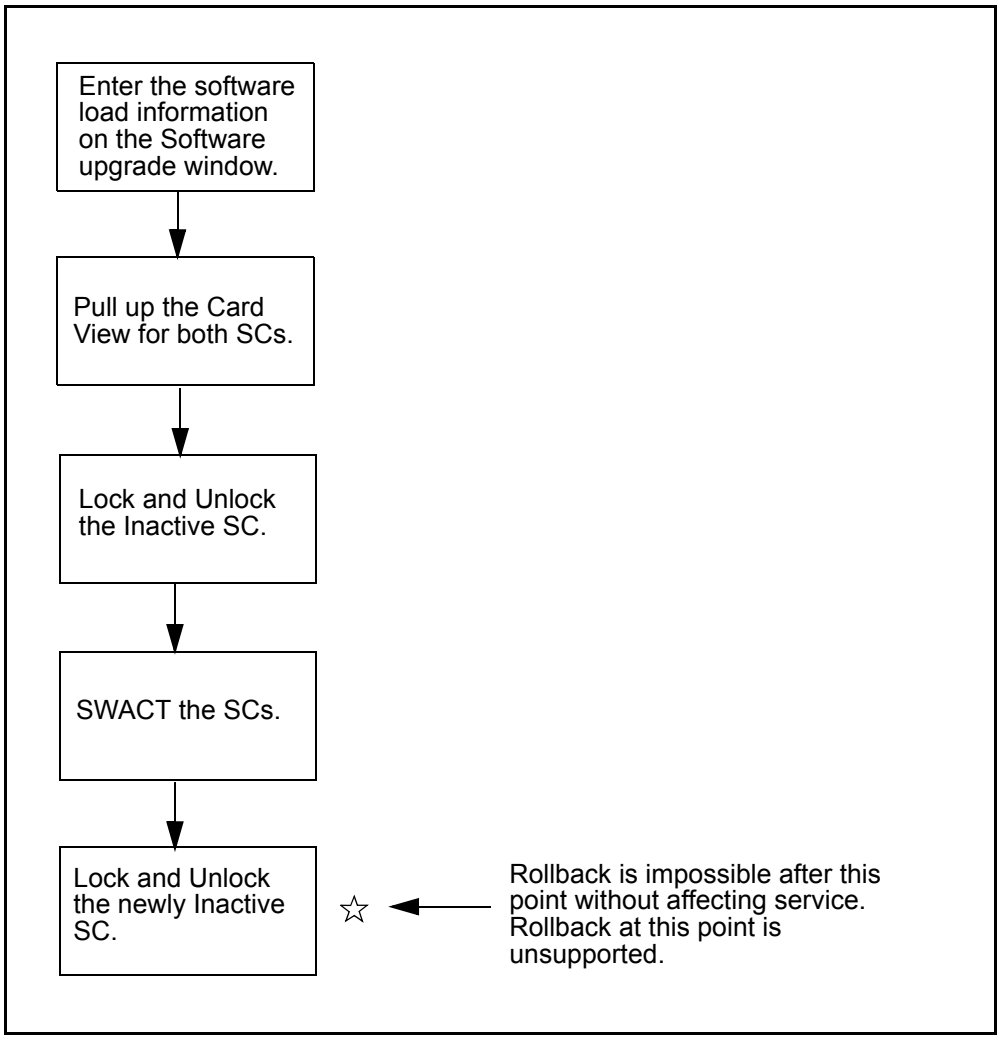
```
prompt:cpu> show ports config info 1/2

================================================================================
                                      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

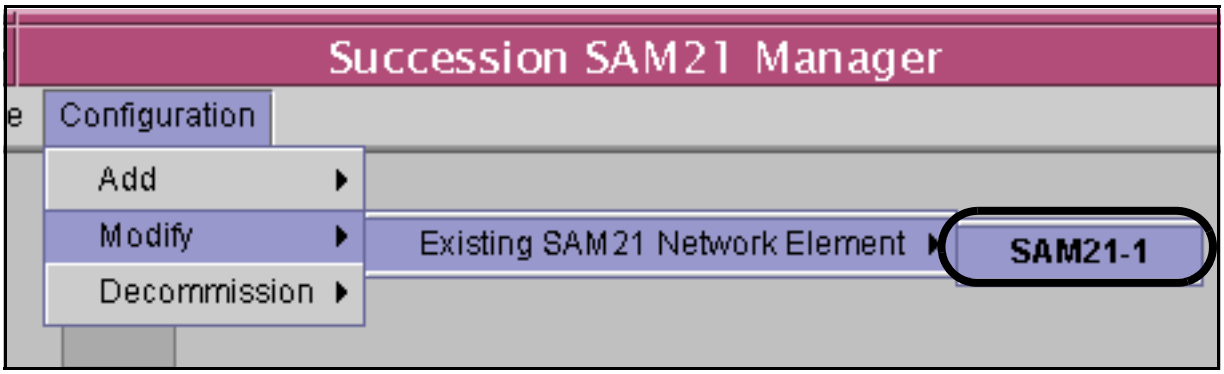
Rollback software on the shelf controller

The following figure summarizes the upgrade procedure. Rollback is available until the second Shelf Controller is upgraded. This point is indicated with the star.

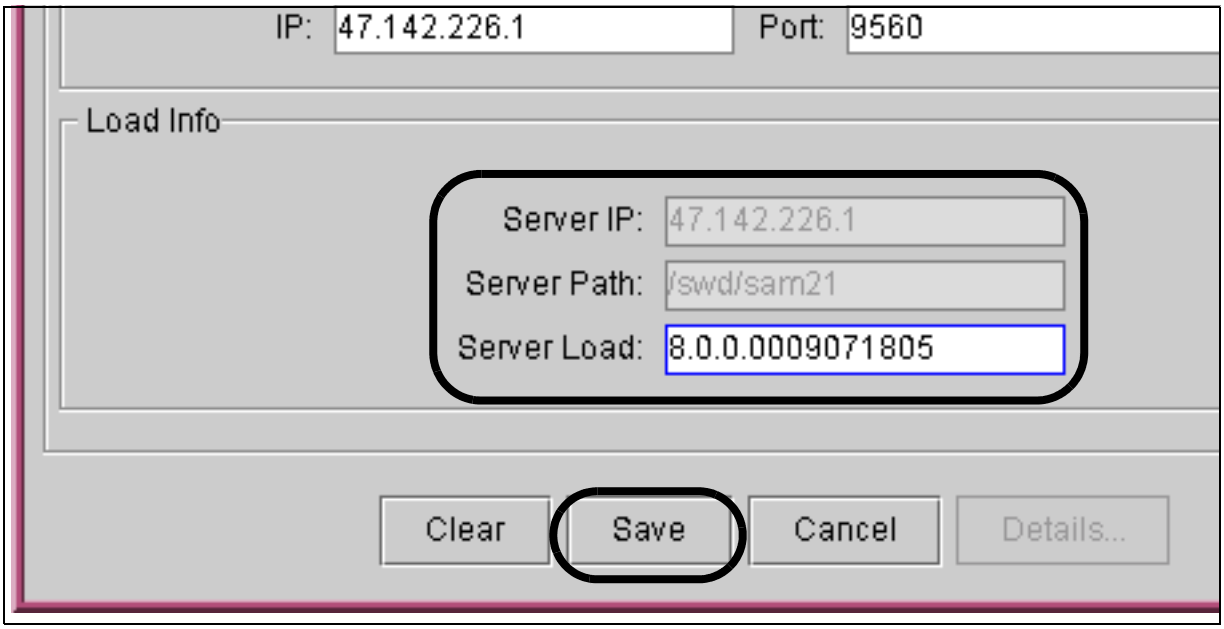


At the CS 2000 SAM21 Manager client (Java Web Start client)

1 From the Subnet View, select Configuration, Modify and then the SAM21 shelf with the 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 8.0.0.0009071805 to 9.0.0.0301120523, enter 8.0.0.0009071805 to revert to the old software load.



3 Click Save.

4

ATTENTION

If this was an SN05 to SN06 upgrade, perform steps 4 through 8 from the client that is served by the CS 2000 Core Manager and is started with the `/sdm/bin/sam21gui` command.

If the active Shelf Controller is running SN06, 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 Shelf Controller and select Lock from the card context menu.

Note: This 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 Shelf Controller.

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

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

8 This procedure is complete.

Shelf Controller does not unlock

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

At the CS 2000 SAM21 Manager client workstation

1 Ensure that the Shelf Controller has enough time to boot. A Shelf Controller can take up to 4 minutes to boot on a slow network.

If the 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 Shelf Controller is fully seated in the slot.

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 Shelf Controller in slot 7 does not boot, connect to slot 7. If the 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 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
```

Firmware revision RM12

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 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 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**
Trace Character Buffer Address	00000000
BOOTP/RARP Request Control	**A**

Prompt	Value
BOOTP/RARP Reply Update Control	**N**
Update Non-Volatile RAM (this prompt only appears if a change has been made)	**Y**

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

10 The 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

Prompt	Value
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
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**

Prompt	Value
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)
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**

Prompt	Value
Firmware Command Buffer	**cboot**<Enter key> **pboot 14 0**<Enter key> **nbo**<Enter key> <Enter key> **ma ;l**<Enter key> (letter L) **ma cboot**<Enter key> **NULL**
Update Non-Volatile RAM (this prompt appears only when a change is made)	**Y**
Reset local system (CPU)	Y

11 The Shelf Controller reboots.

12 Optionally verify that calls can originate and complete.

13 If this problem persists, contact Nortel Networks support personnel.

14 This procedure is complete.