Carrier VoIP

SAM21 Shelf Controller Configuration Management

NN10111-511

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SAM21 Shelf Controller Configuration Management

New in this release

Feature changes

There are no feature changes.

Other changes

The new Shelf Controller card MCP820, mentioned in the procedure "Provision an unconfigured shelf" (page 20), is supported in this release. (The (I)SN09 FVS edition of this document also mentioned the new Shelf Controller card MCP820, but described it as a proposed new card.)

In step 2of the procedure "Re-provision a shelf controller MAC address" (page 15), we retained the illustration specific to the (I)SN09FF release, and deleted the illustration specific to the (I)SN09 release. (The (I)SN09 FVS edition of this document contained both illustrations.)

Configuration management strategy

Initial configuration of the SAM21 Shelf Controllers is completed by Nortel personnel. Reconfiguration is available when a SAM21 Shelf Controller is replaced.

Tools and utilities

The primary user interface for the SAM21 Shelf Controllers is the CS 2000 SAM21 Manager.

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.

Configuration management procedures

The following procedures are available from SAM21 Shelf Controllers.

Procedure
"Deprovision a SAM21 shelf" (page 5)
"Add ATM connection sets" (page 7)
"Delete ATM connection sets" (page 10)
"Reconfigure ATM connection sets" (page 11)
"Reconfigure ATM PMC addresses" (page 12)
"Edit a SAM21 network element" (page 14)
"Re-provision a shelf controller MAC address" (page 15)
"Reconfigure NTP service" (page 16)
"Provision an unconfigured shelf" (page 20)

Unavailable procedures

The following procedures are not available for the SAM21 Shelf Controllers.

Deprovisioning a SAM21 Shelf Controller card

The SAM21 does not support complete deprovisioning of a SAM21 Shelf Controller card since the SAM21 network element requires two SAM21 Shelf Controllers. A SAM21 Shelf Controller can be reprovisioned or replaced.

Reprovisioning a SAM21 Shelf Controller card

Once the initial configuration of a shelf is complete, the IP addresses of the SAM21 Shelf Controllers cannot be changed. When SAM21 Shelf Controllers are replaced, the MAC address of the replacement SAM21 Shelf Controller is reprovisioned, but the replacement SAM21 Shelf Controller assumes the IP address of the replaced SAM21 Shelf Controller. Reprovisioning a SAM21 Shelf Controller is possible if the shelf is powered off. Contact Nortel support personnel for assistance.

Deprovision a SAM21 shelf

CAUTION
Service interruption
Gateway Controllers and other non-system slot cards will power down with the shelf. Perform this procedure at the direction of Nortel support personnel.

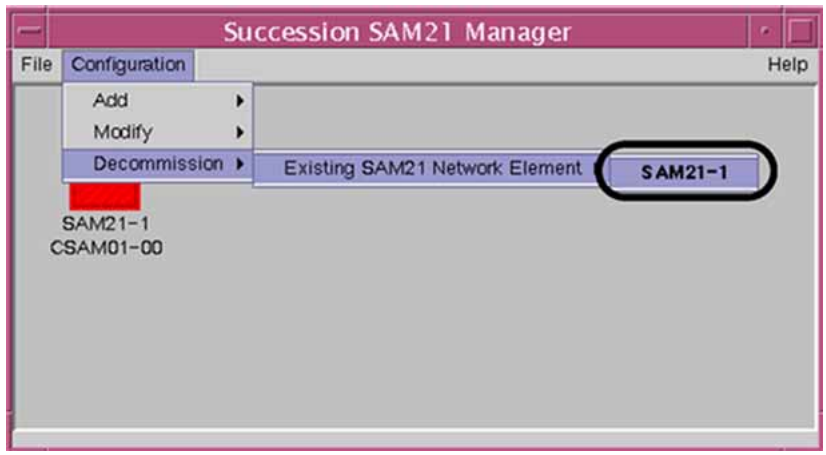
The CS 2000 SAM21 Manager client does not allow deprovisioning a shelf that provides service. To disable the shelf, power the shelf down or isolate the Shelf Controller (SC) cards by removing the Ethernet links from the Shelf Controller faceplates. A shelf in this state has one critical loss of communication alarm.

Step Action

At the CS 2000 SAM21 Manager client

1 Double click the shelf icon to verify that communication with the SAM21 Shelf Controllers is unavailable.

2 Deprovision the SAM21 shelf.



3 This procedure is complete.

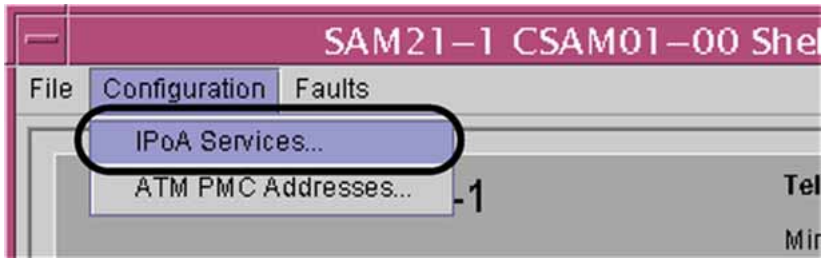
—End—

Add ATM connection sets

Step	Action

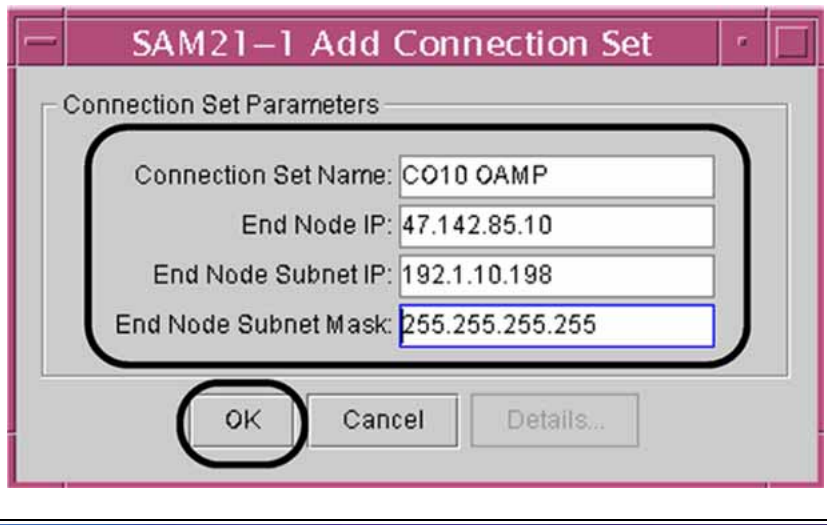
At the CS 2000 SAM21 Manager client workstation

1 From the Shelf View, select Configuration and then IPoA Services from the menu bar to open the ATM Connections window.

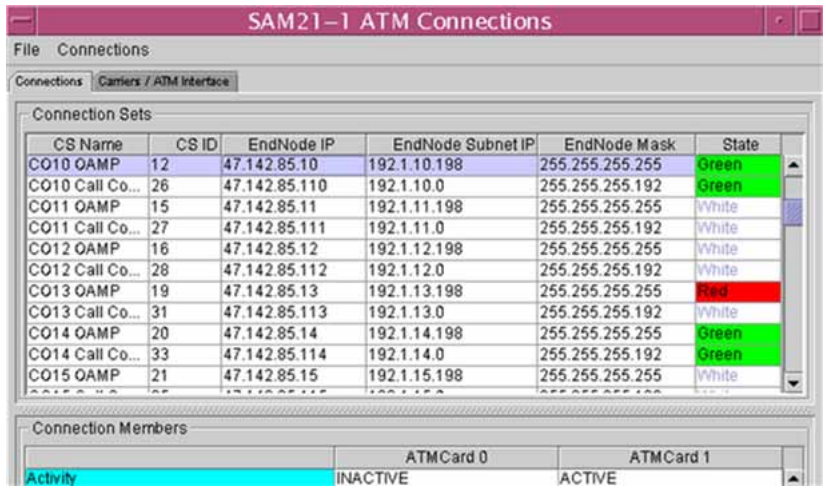


2 From the ATM Connections window, select Edit and then Add Connection Set from the menu bar to open the Add Connection Set window.

3 Enter data for the ATM connection set and click the OK button.



Note: The connection set appears in the ATM Connections window.



4 This procedure is complete.

—End—

Additional information

Nortel anticipates that each far end node will require two ATM connections. One connection is for call control signalling and the other connection is for OAM&P. Using two connections enables more efficient use of bandwidth.

The following table provides information about the required values.

Note: Refer to the office address engineering guidelines for specific values.

Field	Value	Meaning
Connection Set Name	string	Nortel recommends the practice of identifying the far end node and the connection set type in the name. For example: • CO10OAMP indicates that the far end node is in the central office, the ATM interface has an IP address that ends in 10, and is an OAM&P connection. • PL2CallControl

Field	Value	Meaning
		indicates that the far end node is located at PL, the ATM interface has an IP address that ends in 2, and is a call control signalling connection.
End Node IP	IP address	This is the IP address of the ATM interface on the far end node. If the far end node offers two interfaces, use one IP address for OAM&P and the other address for call control.
End Node Subnet IP	IP address	The OAM&P connection requires the IP address to which the Shelf Controller will offer maintenance messaging and software download. When provisioning the far end node, use this address to provision the floating IP address. The call control connection requires the network IP address. Network IP addresses end in zero. For example, 192.1.10.0.
End Node Subnet Mask	IP address	The OAM&P connection requires an IP address of 255.255.255.255. The call control connection requires an IP address of 255.255.255.nnn. The last value must be less than the last value specified for the End Node Subnet IP. For example, 255.255.255.192.

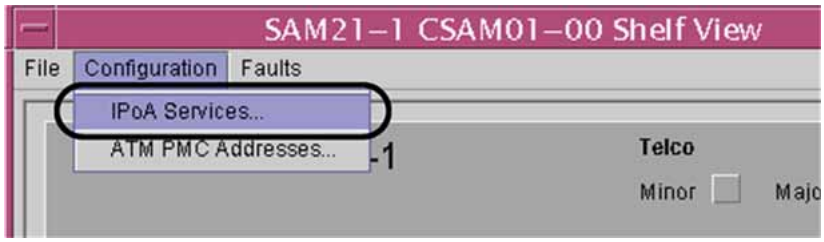
Delete ATM connection sets

ATTENTION
Perform this procedure at the direction of Nortel support personnel.

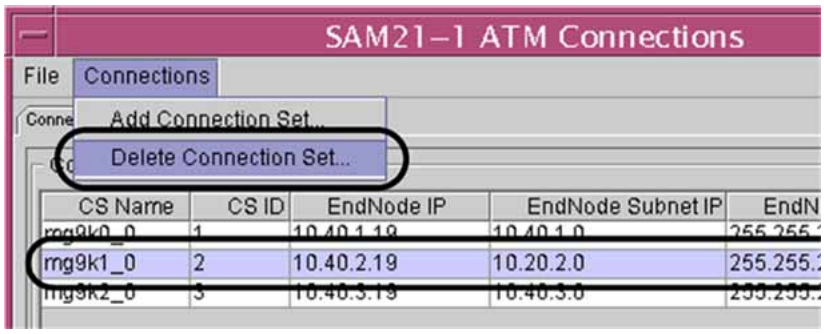
Step Action

At the CS 2000 SAM21 Manager client workstation

1 From the Shelf View, select Configuration and then IPoA Services from the menu bar to open the ATM Connections window.



2 From the ATM Connections window, select the connection set to delete and then Delete Connection Set from the Connections drop down menu.



3 Repeat step 2 for each connection to delete.

4 This procedure is complete.

—End—

Reconfigure ATM connection sets

ATTENTION
Perform this procedure at the direction of Nortel support personnel.

Step	Action
	At the CS 2000 SAM21 Manager client workstation
1	Delete the connection set and then add a new connection set with the revised data.
2	This procedure is complete.

—End—

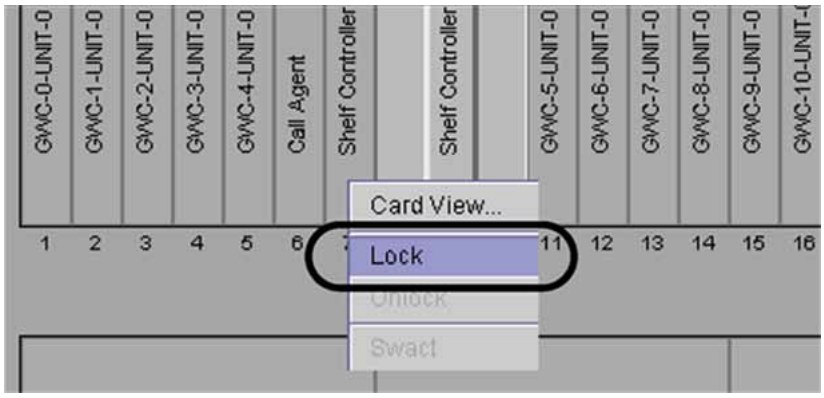
Reconfigure ATM PMC addresses

ATTENTION
Perform this procedure at the direction of Nortel support personnel.

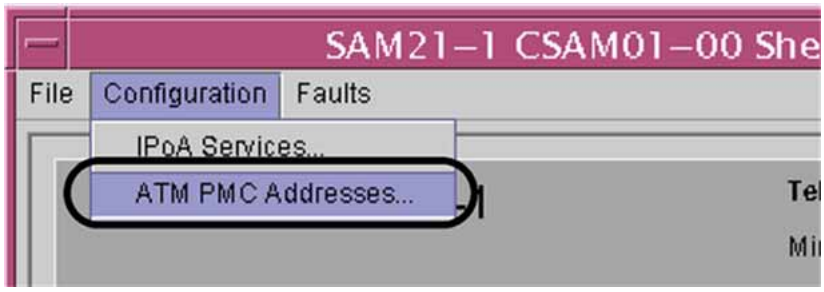
Step	Action

At the CS 2000 SAM21 Manager client workstation

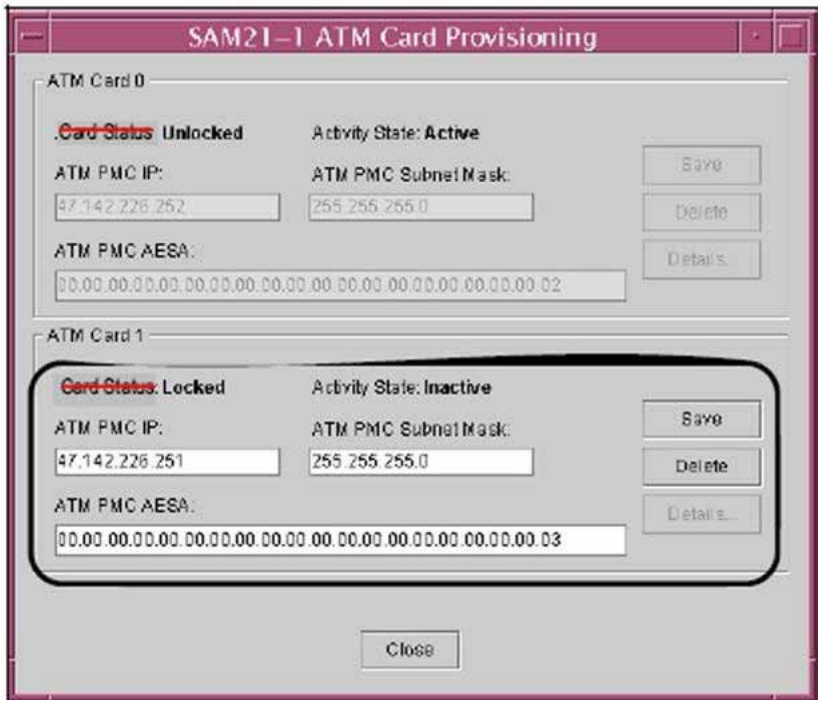
1 From the Shelf View, right click on the Shelf Controller/ATM card to edit and select Lock from the context menu.



2 From the Shelf View, select Configuration and then ATM PMC Addresses from the menu bar to open the ATM Card Provisioning window.



3 Enter the new provisioning data on the ATM Card Provisioning window and then select Save and Close.



4 From the Shelf View window, right click on the locked Shelf Controller/ATM card and select Unlock from the context menu.

5 This procedure is complete.

—End—

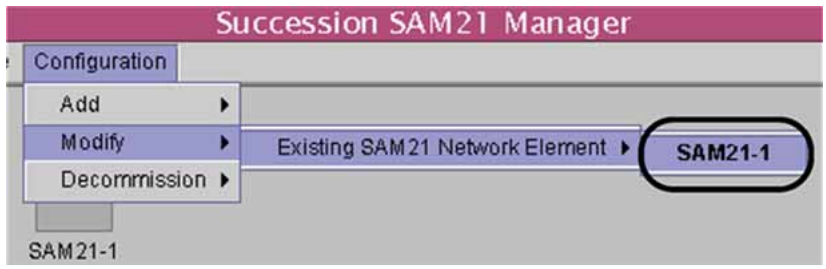
Edit a SAM21 network element

This procedure explains how to change the CSAM number and shelf position.

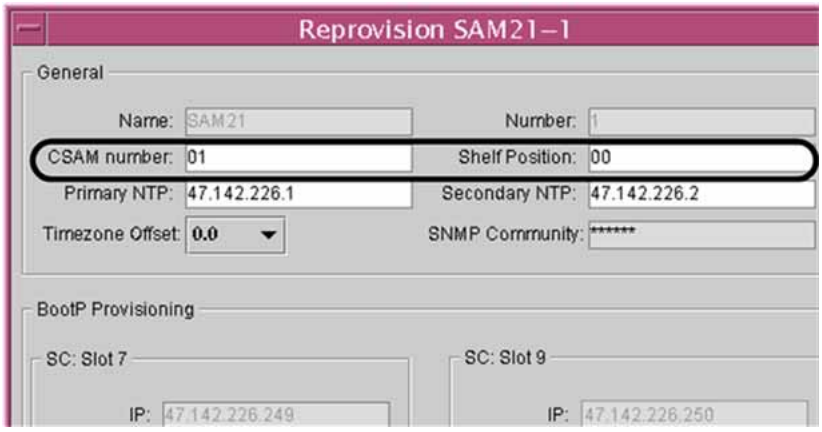
Step	Action

At the CS 2000 SAM21 Manager client workstation

1 From the Subnet View window, select Configuration, Modify, and Existing SAM21 Network Element from the menu bar to open the Reprovisioning window.



2 From the SAM21 Reprovisioning window, enter the provisioning data and select Save.



3 This procedure is complete.

—End—

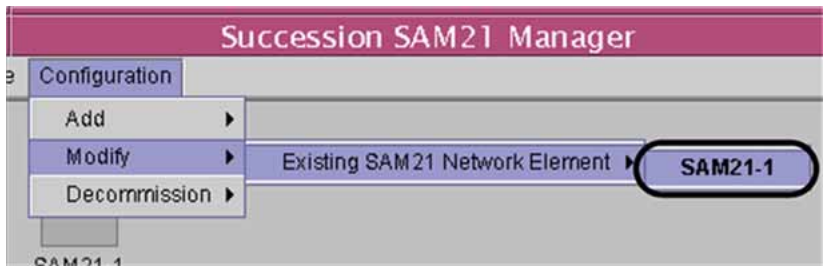
Re-provision a shelf controller MAC address

ATTENTION
Perform this procedure at the direction of Nortel support personnel.

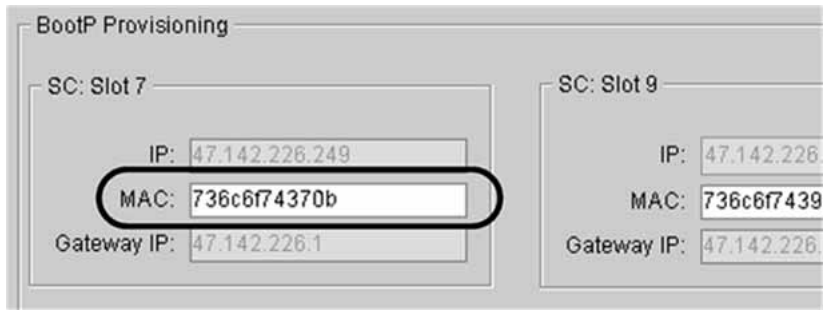
Step	Action

At the CS 2000 SAM21 Manager client workstation

1 Select Configuration, Modify, and then the SAM21 to reconfigure from the menu bar of the subnet view.



2 From the Reprovisioning window, enter the new MAC address for the replacement SC.



3 Select the Save button on the Reprovisioning window.

4 This procedure is complete.

—End—

Reconfigure NTP service

Use this procedure to change the network time protocol (NTP) source for all the cards in the SAM21 shelf to a new NTP server. Reconfiguring the NTP server does not affect timing for call processing or signaling, the intent is to synchronize the timestamps on log reports.

CAUTION
Possible service interruption
Reconfiguring the NTP service requires locking and unlocking the cards in the shelf. Locking and unlocking the Shelf Controllers does not affect service, but locking and unlocking non-system slot (NSS) cards can disrupt service.

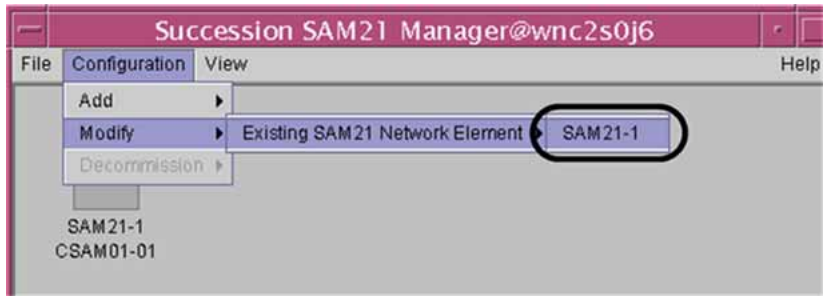
Gateway Controllers (GWC) do not require locking and unlocking to update the NTP server information. GWCs require a Warm Swact. Refer to "Invoking a manual protection switch (warm swact)" in *Gateway Controller Security and Administration*, NN10213-611.

For information about updating the NTP service on the Call Agents, refer to "Reconfigure NTP service" in *Call Agent Configuration Management*, NN10111-511.

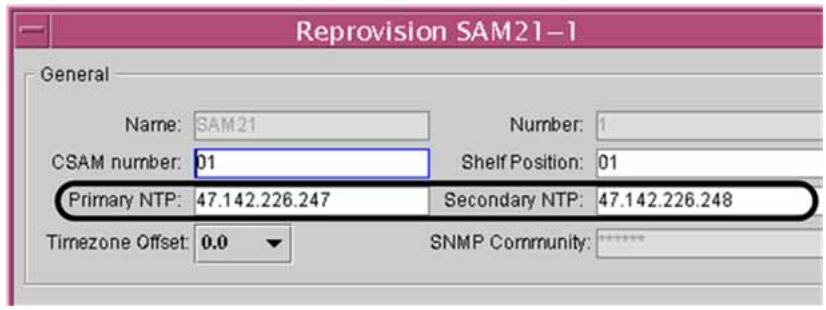
Step	Action

At the CS 2000 SAM21 Manager client

1 Select the shelf to modify from the Subnet View.



2 Replace the value in the Primary and Secondary NTP fields with the new NTP server addresses.

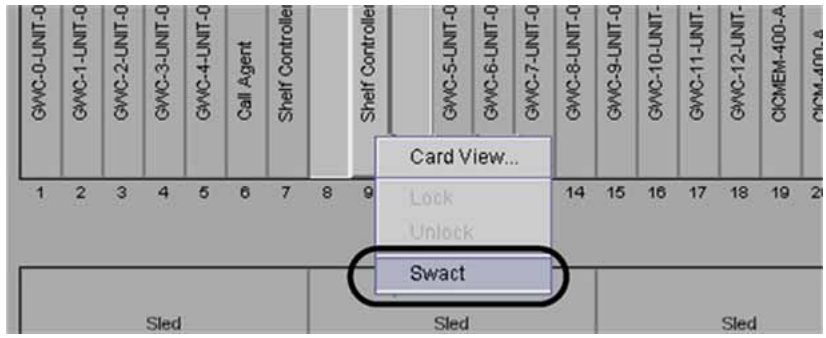


3 Lock and unlock the inactive Shelf Controller.

Note 1: Two critical alarms are raised after the lock and clear after the unlock.

Note 2: If the Shelf Controllers are provisioned with ATM interfaces, verify that the inactive Shelf Controller does not carry the active ATM link. If necessary, switch link activity at the far end node.

4 Switch activity by selecting Swact from the card context menu. If the Shelf Controllers are provisioned with ATM interfaces, perform the Swact during a low traffic period.



5 Lock and unlock the newly inactive Shelf Controller.

6 Lock and unlock each of the cards in the SAM21 shelf. For GWCs, open the GWC Manager. Refer to "Additional information" (page 18)

Before locking any card, refer to the documentation for the card type and determine any precautions to take before locking the card.

7 This procedure is complete.

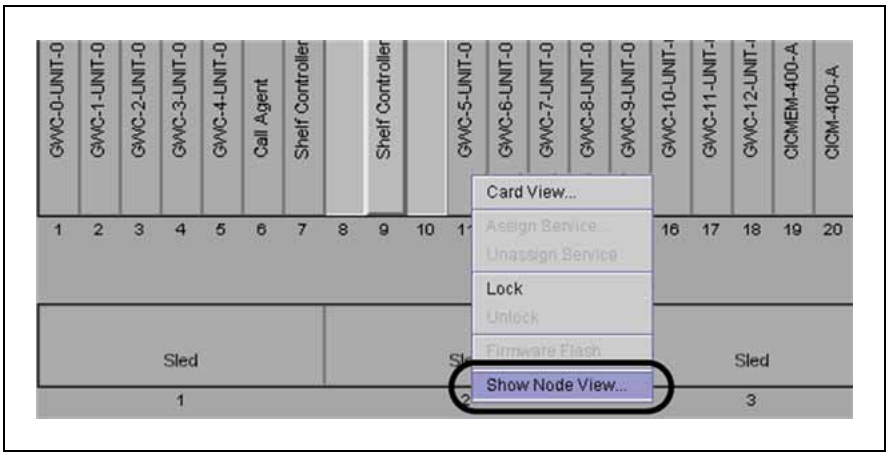
—End—

Additional information

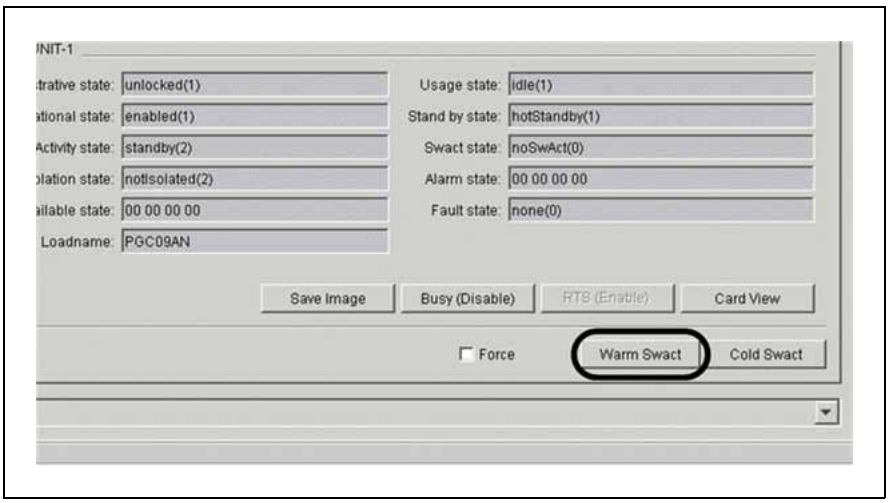
Some network components require different maintenance activities to update the NTP server information.

Gateway Controller

To update the NTP server information in a GWC, warm swact one unit of the GWC node and then warm swact again to update the second unit in the node. Open the GWC Manager by selecting Show Node View from the Shelf View.



Once the GWC Manager opens, use the WarmSwact button on the maintenance tab to update the NTP information. Warm Swact the GWC node twice so that both GWC units are updated. Perform these Warm Swacts for all GWC nodes in the SAM21 shelf.



After any unlock, RTS, or Swact to a Gateway Controller (GWC), the GWC makes its first NTP requests to the primary NTP server. If the service is unavailable, the GWC makes a final NTP service request to the CS 2000 Management Tools server. For the SN06 release, the secondary NTP server is ignored.

STORage Management

For offices with a CS 2000 - Compact, this procedure does not change the NTP source for STORage Management (STORM) units that are on the SAM-XTS hardware platform (STORM-IA).

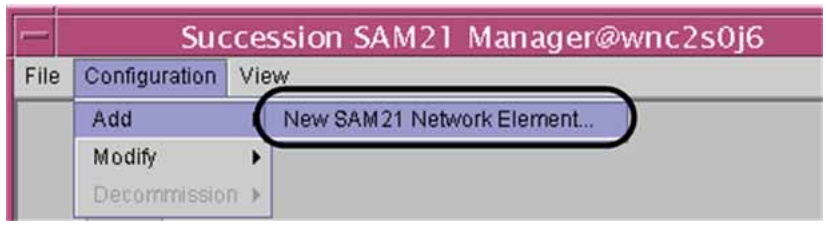
Provision an unconfigured shelf

Use this procedure to provision an installed but unconfigured shelf.

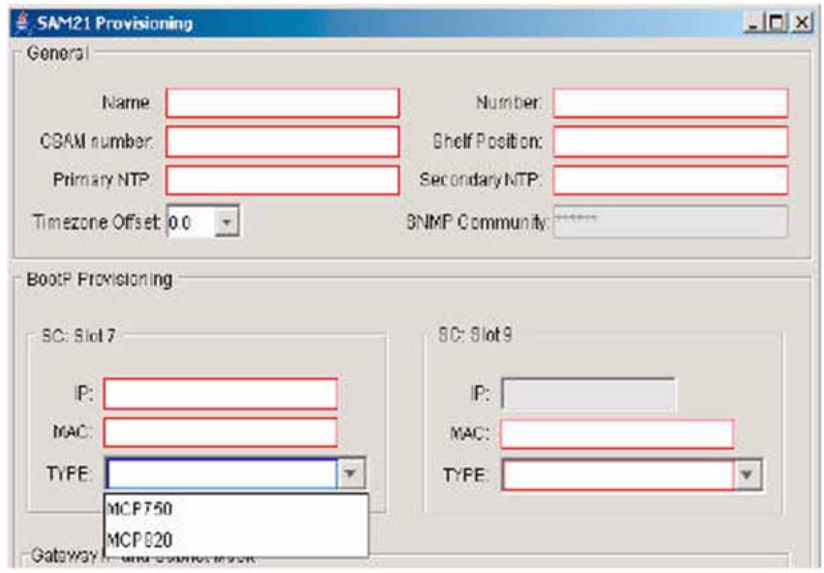
Step	Action

At the CS 2000 SAM21 Manager client

1 Use the Subnet View window to add the SAM21 shelf.



2 Provision the shelf data on the SAM21 Provisioning window.



Note: Enter the provisioning data carefully. Once entered, some data cannot be changed without powering down the shelf.

Name

Enter the name of the SAM21 shelf. A recommended value is SAM21.

Number
Enter the number of this SAM21shelf. The name and number values are concatenated to produce the identity of the shelf such as SAM21-1.

CSAM number
Enter the number of the CSAM shelf or PTE frame in which the SAM21 shelf is deployed.

Shelf Position
CSAM cabinets have bottom (00) and top (01) positions. PTE frames have bottom (00), middle (01), and top (02) positions.

Primary NTP and Secondary NTP
Enter the IP addresses of the office network time protocol (NTP) servers.

Timezone Offset
Use the pulldown menu to select the timezone offset from Greenwich Mean Time (GMT).

Slot 7 and Slot 9 IP and MAC addresses
Enter the MAC and IP addresses for each Shelf Controller. The IP address of the Shelf Controller in slot 9 is the IP address of the slot 7 Shelf Controller plus one.

Slot 7 and Slot 9 Type
From the drop-down list, select the required shelf controller type (MCP750 or MCP 820). This causes the CS 2000 SAM21 Manager to use the correct SC load image file (see "Additional information" (page 22)).

Gateway IP and Subnet Mask
Enter the IP address of the default router or gateway machine and the subnet mask for that IP address.

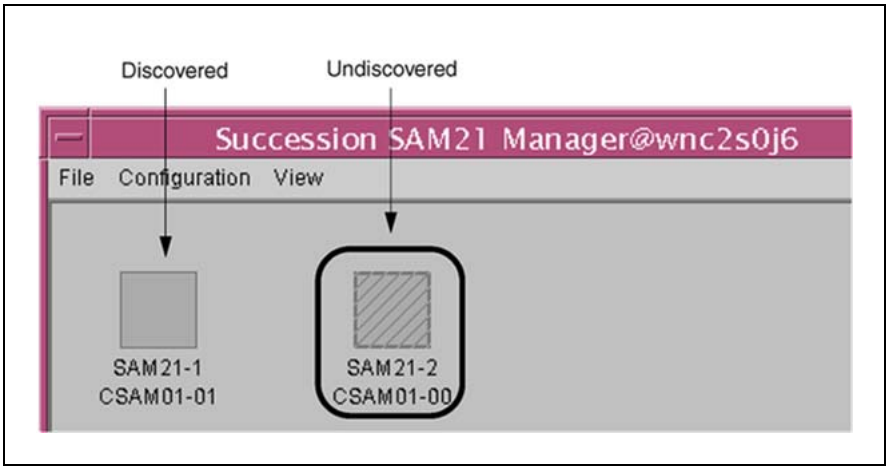
SAM21EM server IP
Enter the IP address of the CS 2000 Management Tools server that hosts the CS 2000 SAM21 Manager server application.

Server IP, Path, and Load
Enter the IP address of the CS 2000 Core Manager, the path to the Shelf Controller software load, and the name of the Shelf Controller software load. The expected value for the path is `/swd/sam21`. Determine the load name from the SWIM level of the CS 2000 Core Manager. The expected value for the SN06 release resembles `13.0.x.0`.

3 Review the provisioning data. If any fields are surrounded in red, click the Details button for information about provisioning that field.

4 Click the Save button to commit the provisioning data.

An undiscovered node icon appears in the Subnet View window.



5 Wait for the newly provisioned shelf to be discovered by the CS 2000 SAM21 Manager server software. Discovery can require up to 15 minutes.

6 This procedure is complete.

—End—

Additional information

The /etc/bootptab file contains two different bootp entries, one for each of the two types of SC card. An SC finds the correct entry when it boots from the network. In releases up to and including SN08, the boot file name 'bf' is the same for both the bootp entries. In SN09, the two boot file names are different.

The following table shows examples of the bootp values:

	MCP750	MCP820 (and future card types)
bf	13.0.0.0602130336:\(format: <SC load version>)	13.0.0.0602130336.MCP820:\ (format: <SC load version> .<card type>)
gw	47.142.114.1:\	47.142.114.1:\
hd	/swd/sam21:\	/swd/sam21:\
ht	ether:\	ether:\

	MCP750	MCP820 (and future card types)
ha	0001AF0177CB:\	0001AF02D722:\
ip	47.142.114.238:\	47.142.114.239:\
sa	47.142.114.248:\	47.142.114.248:\
sm	255.255.255.0:\	255.255.255.0:\
vm	rfc1048:\	rfc1048:\
T42	0x2f8ca06f:\	0x2f8ca06f:\
T134	2f8e72d92558:	2f8e72d92558:

Troubleshooting

If the shelf is not discovered within 15 minutes, review the following items:

1. IP address, path, and load are provisioned correctly
2. BOOTP service is in-service on the CS 2000 Core Manager
3. MAC addresses for the Shelf Controllers are provisioned correctly
4. any routers between the CS 2000 Core Manager and the Shelf Controllers are configured to permit BOOTP traffic

If these items are reviewed and the shelf is still not discovered, refer to procedure "Shelf Controller does not unlock" in *Upgrading the SAM21 Shelf Controller*, NN10067-461.

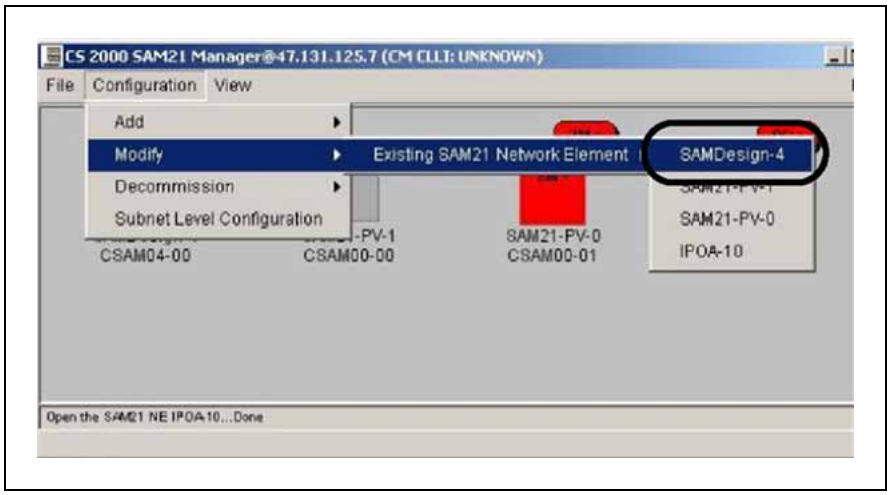
Reprovision a CS 2000 SAM21 network element

Use this procedure to modify provisioning data for a discovered SAM21 network element.

Step	Action

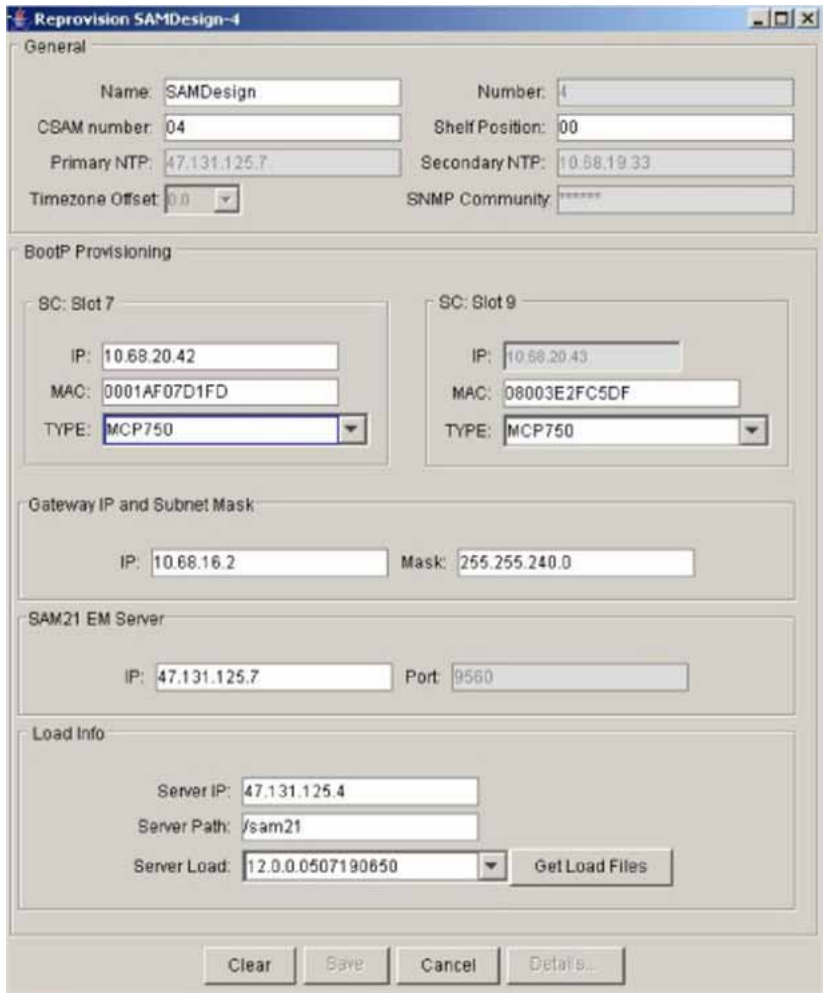
At the CS 2000 SAM21 manager client

1 Click the Configuration menu and select the Modify option, followed by the Existing SAM21 Network Element option. Then select the name of the Network Element.



The Reprovisioning window appears.

2 Modify the data you wish to change, and click the "Save" button.



The following table describes the fields.

Field	Meaning
Timezone Offset	Number of hours the client subnet is offset from Greenwich mean time (GMT). Range: -12 to 12. The Timezone Offset list applies to KDC and GWC cards.
SNMP Community	Simple network management protocol area. The SNMP Community box applies only to GWC cards.
CSAM number	Number of the CSAM unit.

Field	Meaning
Shelf position	Position of the SAM21 shelf in the cabinet. • in a C28 cabinet, 00 (bottom) or 01 (top) • in a PTE2000 frame, 00 (bottom), 01 (middle), or 02 (top)
Primary NTP	IP address of the primary NTP server.
Secondary NTP	IP address of the secondary NTP server.
MAC (Slot 7)	MAC address of the SC in slot 7.
MAC (Slot 9)	MAC address of the SC in slot 9.
IP (CS 2000 SAM21 Manager server)	IP address of the host that is running the CS 2000 SAM21 Manager.
Port (CS 2000 SAM21 Manager server)	Port on which the CS SAM21 Manager server is available.
Server Load	Name of the Shelf Controller software load.

Note: When a field cannot be changed, the field is greyed out. Some fields can only be changed when the node is undiscovered, such as when the shelf is powered down.

The SAM21 is reprovisioned and appears on the SAM21 Manager window.

3 This procedure is complete.

—End—

Carrier VoIP

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