Upgrading the CS 2000 Core Manager

Upgrade strategy

The Succession Networks upgrade strategy is based on end-to-end upgrades that provides the following.

- an upgrade that provides a carrier grade solution and has no impact to stable calls

- a solution that does not isolate network components

- a solution that allows third party components

- a solution that introduces new functionality across many components without affecting network stability

The CS 2000 Core Manager component lies at the highest level of Succession upgrades and must be upgraded before other components.

ATTENTION
Once the CS 2000 Core Manager is upgraded to CS2E06, you cannot provision Gateway Controllers (GWC) until the CS 2000 Management (CS2M) software package is installed and configured on the CS 2000 Management Tools server.

New software is made available through the following methods:

- non-computing load (NCL), a major release of the software scheduled once or twice a year, and is delivered on tape

- maintenance non-computing load (MNCL), a maintenance release scheduled approximately every three months for the first year of a released NCL, and is delivered on tape

- CS2000 Core Manager patching, fix filesets delivered electronically as soon as they are available

Tools and utilities

The information in this section provides procedures using common upgrade tools and utilities to upgrade the following aspects:

- CS2000 Core Manager platform software upgrades: split-mode, non-split mode, and enhanced SDM upgrade procedure (ESUP)

- Client application upgrades, including ASCII Terminal Access (ATA), Enhanced Terminal Access (ETA), and Secure File Transfer (SFT)

- Hardware upgrades to the latest CPU modules

Upgrade procedures

Specific upgrade procedures are found in the modules located within this Upgrade section.

ATTENTION
For an MNCL upgrade, check the release notes.

If you have an MNCL update to install, refer to the MNCL release notes for instructions. This procedure only provides information on NCL update installation.

Upgrade guidelines

Nortel Networks offers several Network Service Solution packages to assist you with the upgrade of CS 2000 Core Manager software. The level of design, planning, configuring, and installation that Nortel Networks performs for you depends on the options that your company purchased.

Upgrade methods

There are three methods of upgrading the CS 2000 Core Manager to the CS2E06 software release:

- Non split-mode upgrade (out-of-service upgrade): This procedure busies the CS 2000 Core Manager and upgrades both domains at the same time.

- Split-mode upgrade: This procedure keeps one domain in service while upgrading the inactive domain, then switches to the upgraded domain and synchronizes the two domains.

- Enhanced SDM upgrade procedure (ESUP): This procedure breaks the root volume group (rootvg) mirror, applies new filesets to domain 1 rootvg, busies and reboots the system, then integrates rootvg disks.

  Note: You can use the ESUP only if you can have telnet access to the CS 2000 Core Manager through the LAN (local area network).

When to use each method

The following table indicates when to use the split mode, non-split mode, or ESUP method to upgrade your CS 2000 Core Manager to the CS2E06 release:

If you are upgrading...	Split mode	Non-split mode	ESUP
a rootvg-only system		x	
a rootvg/datavg system	x	x	x
the software and CPU hardware[a]	x		

a.Nortel Networks recommends that you upgrade the software and CPU hardware separately using the split-mode method.

Hardware baseline

The following table indicates the supported hardware to upgrade to the CS2E06 release.

Hardware baseline

PEC	Description
CPU	
NTRX50NB	Arthur 750 - 400MHz/512MB
Disk/DAT and LAN PM	
NTRX50ND	9G + DAT (rootvg)
NTRX50FS	LAN personality module
Disk expansion	
NTRX50NC	9G + 9G (datavg)
Core connectivity	
NTRX50GX	DS-512 controller module
NTRX50GH	DS-512 personality module
X.25 connectivity (optional)	
NTRX50FY	X.25 controller module
NTRX50FZ	X.25 personality module
NTRX50NN	X.25 personality module for UMFIO

Software baseline

You must have the latest maintenance non-CM load (MNCL) release installed on the CS 2000 Core Manager before you upgrade to the new NCL release.

As of the release of this information, the latest MNCL for each release is as follows:

- CS2E04.2
- CS2E05.2

Note: When a new MNCL is released for the CS 2000 Core Manager, a technical bulletin is issued with a Notification of Availability. Check whether any SDM technical bulletins with a Notification of availability in the title have been issued to determine if a later MNCL exists for your release. If you need to upgrade to the latest MNCL, refer to the MNCL release notes for instructions.

The Communication Server 2000 core must be at the CSP16 release or higher to upgrade the CS 2000 Core Manager to the CS2E06 release.

Filesets to solution mapping

This module provides information on the filesets included in the CS2E0006 load.

The following table lists CS2E0006 filesets and provides the following information

- the solutions that use each fileset
- the DCE requirements for each fileset

Fileset-to-solution mapping (Sheet 1 of 3)

Fileset	Description	Succession Solutions						
		IAC	IAW	PT-AAL1	PT-IP	UA-AAL1	UA-IP	DCE?
SDM_VERSION.info	CS2E0006 6.0	Y	Y	Y	Y	Y	Y	N
SDM_AFT.DMS500	SBA Automatic File Transfertime	N	N	N	N	N	N	N
SDM_ASG.accessd	Passwerks Access Daemon Runtime	Y	Y	Y	Y	Y	Y	N
SDM_ATA.client	ASCII Terminal Access Client	Y	Y	Y	Y	Y	Y	Y
SDM_BASE.client	Client Common Resources	Y	Y	Y	Y	Y	Y	Y
SDM_BASE.fts	File Transfer Service	Y	Y	Y	Y	Y	Y	N
SDM_BASE.gdd	Generic Data Delivery	Y	Y	Y	Y	Y	Y	N
SDM_BASE.logs.client	Log Delivery Service Client	Y	Y	Y	Y	Y	Y	N
SDM_BASE.logs	Log Delivery Service	Y	Y	Y	Y	Y	Y	N
SDM_BASE.mtce	Platform Maintenance	Y	Y	Y	Y	Y	Y	N
SDM_BASE.omsl	OM Access Service	Y	Y	Y	Y	Y	Y	N
SDM_BASE.tasl	Table Access Service	Y	Y	Y	Y	Y	Y	N

Note: Y= required, N=not required, O=optional

Fileset-to-solution mapping (Sheet 2 of 3)

Fileset	Description	Succession Solutions						
		IAC	IAW	PT-AAL1	PT-IP	UA-AAL1	UA-IP	DCE?
SDM_BMI.bmi	Base Maintenance Interface	Y	Y	N	Y	Y	Y	N
SDM_CONN.inst	SNM MDM Connectivity	N	N	Y	N	Y	N	N
SDM_DDMS.ossaps	OSS and Application Svcs	Y	Y	N	Y	Y	Y	N
SDM_DDMS.osscomms	OSS Comms Svcs	Y	Y	N	Y	Y	Y	N
SDM_DMA.dma	DMS Maintenance Application	Y	Y	N	Y	Y	Y	N
SDM_DNBD.dnbd	DNBD Call Data Delivery	Y	Y	Y	Y	Y	Y	N
SDM_DNBD.osidp	ONE FTAM Software	Y	Y	Y	Y	Y	Y	N
SDM_DTS_PROVIDERS.dts	DCE DTS Time providers for global servers	Y	Y	Y	Y	Y	Y	Y
SDM_ESUP.esup	ESUP Tools	Y	Y	Y	Y	Y	Y	N
SDM_ETA.eta	Enhanced Terminal Access	Y	Y	Y	Y	Y	Y	Y
SDM_ETA.client	Enhanced Terminal Access Client	Y	Y	Y	Y	Y	Y	Y
SDM_GR740PT.gr740pt	GR740 Pass Through	Y	Y	Y	Y	Y	Y	O
SDM_IMAGEDUMP.rte	Image Dump Service	Y	Y	Y	Y	Y	Y	N
SDM_INEO.ssh-sftp	Ineo SSH Secure File Transfer	Y	Y	Y	Y	Y	Y	N
SDM_INSTALL_inst	SDM Tools	Y	Y	Y	Y	Y	Y	N
SDM_LOGS.mdm	Passport Log Streamer	N	N	Y	Y	Y	N	N
SDM_OMDD.omdd	OM Delivery	Y	Y	Y	Y	Y	Y	N
Note: Y= required, N=not required, O=optional								

Fileset-to-solution mapping (Sheet 3 of 3)

		Succession Solutions						
Fileset	**Description**	**IAC**	**IAW**	**PT-AAL1**	**PT-IP**	**UA-AAL1**	**UA-IP**	**DCE?**
SDM_OpenSSH.base	Open SSH ver. 3.4p1	Y	Y	Y	Y	Y	Y	N
SDM_PRECHECK.sysaudit	System pre-check tools	Y	Y	Y	Y	Y	Y	N
SDM_REACHTHRU.rttl1	Reach Through SPM	Y	Y	Y	Y	Y	Y	N
SDM_SBA.DMS500	SDM Billing Application	Y	Y	Y	Y	Y	Y	N
SDM_SCM.scm	Succession SAM21 Manager **Note:** This fileset is only required for SN05 to SN06 upgrades.	Y	Y	N	Y	Y	Y	N
SDM_SFT.client	Secure File Transfer Client	Y	Y	Y	Y	Y	Y	O
SDM_SFT.sft	Secure File Transfer	Y	Y	Y	Y	Y	Y	O
SDM_SWLD.swld	BOOTP Loading Service	Y	Y	N	Y	Y	Y	N
SDM_UPGRADE.tools	UPGRADE Tools	Y	Y	Y	Y	Y	Y	N
Note: Y= required, N=not required, O=optional								

Preparing your system for upgrade via Electronic Software Delivery

Application

Electronic Software Delivery (ESD) incorporates standard network connectivity methods into the software distribution process for the CS 2000 Core Manager. ESD can be used for both NCL and MNCL upgrades. For more information about ESD, refer to the Electronic Software Delivery Customer Implementation Guide.

Use this procedure to prepare the CS 2000 Core Manager for an ESD upgrade, which includes the following tasks:

- Preparing the repository server for the CS 2000 Core Manager load
- Preparing the CS 2000 Core Manager for file transfer from the repository server

If the files already exist in a directory on the CS 2000 Core Manager, proceed with the split mode, non-split mode, or ESUP upgrade using the associated procedure in the Upgrades section.

Action

For the network path between the Nortel Networks software vault and a customer's CS 2000 Core Manager, the repository server is the last file transfer point prior to the CS 2000 Core Manager. The server must have enough disk space to hold, uncompress and untar the CS 2000 Core Manager load. Once all the CS 2000 Core Manager filesets are extracted, they will be transferred to the CS 2000 Core Manager from repository server by FTP.

Before you can begin preparing the repository server for the CS 2000 Core Manager load, on the repository server you will need a decompression tool to extract the contents of the CS 2000 Core Manager load. The load transferred is a compressed tar file. If the tar file compression format used is .Z format (as seen by the filename), you will need the *uncompress* tool on the repository server. If the load transferred is in .gz format, you will need either a *gzip* or a *gunzip* tool. These tools and the **tar** command should be in your UNIX PATH environment variable.

ATTENTION

Ensure you have 3000 MB of free space available on datavg. To check the free space on datavg, enter the command *sdmmtc storage* at the # command prompt.

This procedure assumes that you are using the FTP tool on the CS 2000 Core Manager to transfer the load from the external repository server to the CS 2000 Core Manager (a pull with the FTP get command). Alternate transfer methods using secure CS 2000 Core Manager applications such as Secure File Transfer (SFT) may be available depending on your site's configuration. SFT requires that both the CS 2000 Core Manager and repository server be configured as DCE clients within the same distributed computing environment (DCE) cell and that the required CS 2000 Core Manager software clients be installed on the repository server.

Preparing the repository server for the CS 2000 Core Manager load

On the client workstation

1   Chose a directory location on the repository server to where the CS 2000 Core Manager load can be transferred by FTP. Ensure that this location has sufficient space for the load and its subsequent extraction. To determine space availability on the server, use the following command:

df -k.

Note: The uncompressed tar file for a major release of an CS 2000 Core Manager software load usually ranges from 1 to 1.5 gigabytes. You will need this amount of space for the uncompressed tar file in addition to at least the same amount for the file's extracted content. It is recommended that you have a total of at least 5 gigabytes available.

2   Change to <directory_path_A> by typing

> cd <directory_path_A>

and pressing the Enter key.

where

directory_path_A = the directory location on the repository server to where the CS 2000 Core Manager load will be transferred, uncompressed and untarred before transfer to the CS 2000 Core Manager

Example command:

> cd /local

3   Create a directory for the CS 2000 Core Manager product load by typing

> mkdir CS2E0006

and pressing the Enter key.

4   Access the CS2E0006.x directory by typing

> **`> cd CS2E0006`**

and pressing the Enter key.

5   Arrange to have the CS 2000 Core Manager product load transferred to the repository server at your current location by FTP. After you have completed this step, you should have the CS 2000 Core Manager load (a compressed tar file) in your current location: <directory_path_A>/<product_name>

6   Display your directory by typing

> **`> pwd`**

and pressing the Enter key.

Example response:

`/local/CS2E0006`

7   List the files in the directory by typing

> **`> ls -al`**

and pressing the Enter key.

Example response:

```
total 2333988
drwxr-xr-x    2 root       other        512 Nov  21 01:25  .
drwxr-xr-x   16 root       root        1024 Nov  18 14:48  ..
-rw-r--r--    1 root       other  1194397577  Nov  16 14:02
CS2E0006.6.V.NCL.NAP.VAULT.2.D.tar.gz
```

8   Check the disk space availability on the server by typing

> **`> df -k.`**

and pressing the Enter key.

The system displays the free unallocated disk space.

9   Unzip the file by typing one of the following commands (depending on the tool you have available):

> **gunzip <order_name>.tar.gz**

or

> **gzip -d <order_name>.tar.gz**

and pressing the Enter key.

where

   order_name = order name for the current load of this release

Example command:

> **gunzip CS2E0006.6.V.NCL.NAP.VAULT.2.D.tar.gz**

or

> **gzip -d CS2E0006.6.V.NCL.NAP.VAULT.2.D.tar.gz**

   Note: Because the size of the load file, the decompression process can take approximately 8 to 10 minutes, but is dependent on the computing capabilities of the repository server.

10   List the files in the directory by typing

> **ls -al**

and pressing the Enter key.

Example response:

```
total 2462180
drwxr-xr-x    2 root        other         512 Nov  21 01:39  .
drwxr-xr-x   16 root        root         1024 Nov  18 14:48  ··
-rw-r--r--    1 root        other   1260001280  Nov  16 14:02
CS2E0006.6.V.NCL.NAP.VAULT.2.D.tar
```

11   Unarchive (un tar) the filesets by typing

> **tar -xvf <order_name>.tar**

and pressing the Enter key.

where

   order_name = order name for the current load of this release

Response:

The system creates a subdirectory (for example, CS2E0006.6.V.NCL.NAP.VAULT.2.D) and displays a listing of each file as it is unarchived and placed in this subdirectory.

   Note: If errors (such as insufficient disk space) occur during the untarring process, resolve the errors and repeat this step.

12   Use the following table to determine your next step.

If you	Do
want to delete the tar file to conserve disk space	step 13
do not want to delete the tar file	step 14

13

	CAUTION
⚠	Be sure that untarring the load file was successful (that is, that the disk did not run out of space during the extraction) or that the load is still available on the server from which you obtained the load.

To conserve disk space, remove the tar file by typing

```
> rm <order_name>.tar
```

and pressing the Enter key.

where

   order_name = order name for the current load of this release

Example command:

```
> rm CS2E0006.6.V.NCL.NAP.VAULT.2.D.tar
```

Continue with step 15.

14   Move the tar file to a different directory by typing

```
> mv <file_name> <directory_path>
```

and pressing the Enter key.

where

   file name = the name of the tar file
   directory path = location of the directory to which you are moving the tar file

   Note: Note the path to this directory for later use (when using FTP to transfer files to the CS 2000 Core Manager).

15 You have completed this procedure.

Preparing the CS 2000 Core Manager for file transfer from the repository server

At the client workstation

1 Log into the CS 2000 Core Manager using your root user ID and password.

2 If you want to convert an existing logical volume, go to step 3. Otherwise, go to step 5.

3 Access the logical volume directory that you want to convert by typing

`# cd <directory_path>`

and pressing the Enter key.

where

> *directory_path =* the logical volume directory that you want to convert

4

⚠	**CAUTION** The following (**`rm`**) command will remove all files and subdirectories from the current directory. Make sure that you are in the correct directory by typing **`pwd`** and pressing the Enter key. The system will display the name of the current working directory. If it is the directory that you want to convert, proceed with the **`rm`** command. Otherwise, repeat step 3 to access the directory that you want to convert.

Remove all files and subdirectories within this logical volume directory by typing

`# rm -r *`

and pressing the Enter key.

5 Access the storage level by typing

`# sdmmtc storage`

and pressing the Enter key.

6   Add a logical volume to store the ESD loads by typing

> **esdadd**

and pressing the Enter key.

The system prompts you to enter a logical volume to be converted to the /swd/sdm/esd standard.

> *Note 1:* When converting a logical volume to the /swd/sdm/esd standard, no contents are changed in the old logical volume.

> *Note 2:* The CS 2000 Core Manager will go in-service trouble (ISTb) and the status of the Backup Status alarm will be *Required* once you convert a logical volume to the /swd/sdm/esd standard. It is recommended you perform a backup using procedure "Creating system image backup tapes (S-tape)" in the Security and Administration section so you can restore your system at any time if need be. If you choose not to perform a backup, you can force-clear the alarm using procedure "Clearing a backup Required alarm" in the Fault section.

If you	Do
want to convert an existing logical volume	enter the name[a] of the logical volume to be converted, press the Enter key, and go to step 8
do not want to convert an existing logical volume	press the Enter key and go to step 7

a.Include the leading forward slash (/) symbol.

7   When prompted, enter the size (in MB) of the logical volume, or press the Enter key to accept the default value of 2000 MB.

> *Note:* It is recommended you select the default size. If you do not enter a large enough size for the logical volume, you will not be able to put the entire load on the system. If need be, you can increase the size of a logical volume using procedure "Increasing the size of a logical volume" in the Security and Administration section.

The logical volume */swd/sdm/esd* is created.

8   Exit the maintenance interface by typing

> **quit all**

and pressing the Enter key.

9   Change to the /swd/sdm/esd upgrade directory by typing

 # cd /swd/sdm/esd

and pressing the Enter key.

10   Use FTP to transfer the files from the repository server to the ESD directory.

Example file transfer commands and responses:

```
# ftp 10.102.128.2 (example IP address)
Connected to 10.102.128.2
220 TimeServer FTP server (SunOS 5.7) ready.
Name (10.102.128.2:root): root
331 Password required for root.
Password:
230 User root logged in.
ftp> cd /local/SDM_ESD
250 CWD command successful.
ftp> lcd /swd/sdm/esd
Local directory now /swd/sdm/esd
ftp> bin
200 Type set to I.
ftp> prompt off
Interactive mode off.
ftp> mget *
 (files transfer)
ftp> quit
```

11   You have completed this procedure, and can now proceed to upgrade your system from disk.

Preparing for a software upgrade

This procedure specifies the tasks you are recommended to perform prior to a CS 2000 Core Manager software upgrade. The purpose of this procedure is to ensure that the CS 2000 Core Manager is configured correctly, and that all hardware and software are in good operating condition prior to performing the software upgrade.

This section also includes the Upload the software from tape to a disk procedure. The purpose of this procedure is to avoid any potential tape problems during the upgrade.

ATTENTION

Nortel Networks strongly recommends you perform this procedure seven days prior to the start of any software upgrade to allow time for corrective action if required.

You must successfully complete each pre-check task. Call the Nortel Networks support center for assistance if you cannot successfully complete a pre-check task.

Completing each of the pre-check tasks and submitting a list of any failed pre-check tasks to Nortel Networks, minimizes potential disruption to the software upgrade, minimizes any risk to the switch, and assists Nortel Networks in providing full support on the upgrade should assistance be required. Nortel Networks will assist in recovering an CS 2000 Core Manager if a problem arises during a software upgrade that was not preceded by this pre-check procedure, but will not provide a root cause analysis of the problem.

Perform this procedure using a printed copy. A check box is provided at the beginning of each task to help you track your progress through the entire procedure. Whenever you successfully complete a task, put a check mark in the box.

Once you have completed each pre-check task in this procedure, send an email to prodsdm@nortelnetworks.com with the following information:

- Customer name
- CLLI

- Product

    Note: For Product, specify one of the following values:
    — SDMX for Mobile Telephony Exchange (MTX) applications
    — SDM for SuperNode Data Manager (SDM) base applications
    — GEM (GSM element manager) for UMTS (Universal Mobile Telecommunications System) or GSM (Global System for Mobile-communications) applications
    — CS 2000 Core Manager for Succession applications

- Current load

- Date

- List of any failed pre-check tasks, and a brief description of their solution

Capturing the pre-check session file

It is recommended that you capture the execution of the pre-check session and store the file on the CS 2000 Core Manager for ten days. Nortel Networks support engineers can use the file to investigate the pre-check step that did not pass.

To capture the upgrade pre-check session, complete the following steps before starting the pre-check procedure.

At the CS 2000 Core Manager VT100 console

1   Start the capture of the pre-check session by typing

   #script -a sdmprecheck_YYMMDD

   and pressing the Enter key.

   where

   YYMMDD
      is the current year, month, and day that the pre-check procedure is performed

   The system creates a file named sdmprecheck_YYMMDD and places it in your current directory.

2   When you complete all the pre-check tasks, press Ctrl + D to terminate the capture for the sdmprecheck_YYMMDD session file.

Pre-check list

Each pre-check task in this procedure is listed below. Complete each of the pre-check tasks and indicate whether the task passed or failed for reference purposes.

Pre-check tasks	Time (min.)	Passed /Failed
Basic pre-checks	20	
System audit pre-check	5	
Hardware baseline pre-check	5	
CPU stability pre-check	5	
DS512 fiber link pre-check	5	
Application/fileset status and configuration pre-check	2	
User configuration pre-check	2	
Ethernet configuration pre-check	5	

Basic pre-checks

20 min.

Prior to performing the software upgrade, ensure you have completed the following activities.

- Obtain root and cell_admin passwords.

- Obtain the IP address for the CS 2000 Core Manager, the Communication Server 2000 core, and the operating company gateway and LAN (local area network).

- Ensure you have the latest Maintenance Non-CM Load (MNCL) release installed on the CS 2000 Core Manager before you upgrade to the new NCL release. Refer to Upgrade guidelines for the software baseline in the Upgrades section.

  Note: If you need to upgrade to the latest MNCL, refer to the MNCL release notes for instructions.

- Ensure the modem is configured and operational in the event that Nortel Networks Field Support personnel require remote access to the CS 2000 Core Manager.

- Obtain a 3-gigabyte blank DAT tape to perform a full system backup following the upgrade.

- Notify the Network Operation Center before you perform this procedure and before you perform the software upgrade procedure as both procedures may temporarily raise alarms on the Communication Server 2000 core and CS 2000 Core Manager.

- Verify whether any SBA NA100 script files are present on your system. If they are present and you do not remove them, AMA stream configuration is lost following the upgrade to CS2E06. Refer to procedure [Removing SBA NA100 script files](#) in the Upgrades section to verify if the files are present on your system, and remove them if they are present.

- Check your VT100 terminals and cables.

- Clean tape drive 0 (slot 2) and tape drive 1 (slot 13) if you will be upgrading from tape. Refer to procedure "Cleaning the DAT drive" in the Fault Management section.

    Note: Nortel Networks recommends that you upgrade your system from tape only if you are unable to complete procedure [Upload the software from tape to a disk](#) in the [Preparing for a software upgrade](#) section.

- Execute a 'querysdm config' command on the CS 2000 Core Manager and record the output for reference purposes.

- Execute a 'sdmmtc hw' command on the CS 2000 Core Manager to check if you have X.25 device installed. Record the output for reference purposes.

- Ensure the following hardware spares are on site (check which versions of these cards do you have on your system):

    — CPU controller card

    — DS512 controller card

    — spare hard drive module

    — spare DAT/hard drive module

    Note: If the noted hardware spares are not on site, Nortel Networks strongly recommends this upgrade be re-scheduled. If the operating company chooses to waive this requirement, the operating company assumes the risk of any

possible hardware fallout. Make note of whomever waives this requirement.

- Ensure adequate backup space is available on the Communication Server 2000 core as the upgrade procedure stops the Billing Application for

  — approximately 5 minutes (split-mode procedure)

  — over 1 hour (non-split mode procedure)

  — approximately 20 minutes (ESUP)

  To determine the amount of backup space required, refer to "Disk space requirements in "Preparing for SBA installation and configuration" in the Accounting section. To reconfigure backup volumes, refer to procedure "Configuring SBA backup volumes" in the Accounting section.

System audit pre-check

5 min.

The purpose of the following pre-check is to execute sanity check on various components of the CS 2000 Core Manager. For more information on the system audit functionality, refer to the "System audit overview" in the Basics section.

Note: Once your system is upgraded to CS2E06 load, the system audit will run automatically on a daily basis at 2 am (default value). However, you are still required to run this pre-check manually before any upgrade procedure.

At the VT100 console

1   Determine if the system audit functionality exists on your CS 2000 Core Manager by typing

        `# ls -l /sdm/mtce/precheck/sysaudit`

        and pressing the Enter key.

If sysaudit script	Do
does not exist on your system	step 2
exists on your system	step 5

2   Install the system audit precheck software as follows:

If the fileset is	Do
on tape	insert the tape labeled CS2E0006 6.x (1 of 1) in slot 2, and continue with step 3 *Note:* Wait until the tape drive stabilizes (yellow LED is off) before you proceed.
in a directory	obtain the directory path where the fileset is located, and continue with step 4

3   Install the system audit precheck software by typing

 # installp -ad /dev/rmt0 SDM_PRECHECK.sysaudit

the system prompts you as follows:

```
installp:  Please mount volume 1 on /dev/rmt0.1.
```

press the Enter to key to continue.

Example response

```
+-------------------------------------------+
       Pre-installation Verification...
+-------------------------------------------+
Verifying selections...done
Verifying requisites...done
Results...

SUCCESSES
---------
Filesets listed in this section passed
pre-installation verification and will be installed.

Selected Filesets
-----------------
SDM_PRECHECK.sysaudit 1.0.0.0    # System pre-check
                                    tools

  << End of Success Section >>
FILESET STATISTICS
------------------
    1  Selected to be installed, of which:
    1  Passed pre-installation verification
    1  Total to be installed
+-------------------------------------------+
          Installing Software...
+-------------------------------------------+

installp:    APPLYING software for:
             SDM_PRECHECK.sysaudit 1.0.0.0
```

```
Finished processing all filesets.  (Total time:
                                    1 mins 44 secs).


+------------------------------------------+
                Summaries:
+------------------------------------------+
Installation Summary
-------------------
Name             Level     Part  Event      Result
--------------------------------------------------
SDM_PRECHECK.    1.0.0.0   USR   APPLY      SUCCESS
sysaudit
```

Once you have completed this step, go to step <u>5</u>.

4   Install the system audit precheck software by typing

 # installp -ad <dir> SDM_PRECHECK.sysaudit

and pressing the Enter key.

where:

<dir>
    is the directory where the fileset is located

Example response

```
+------------------------------------------+
     Pre-installation Verification...
+------------------------------------------+
Verifying selections...done
Verifying requisites...done
Results...

SUCCESSES
---------
Filesets listed in this section passed
pre-installation verification and will be installed.

Selected Filesets
  ----------------
SDM_PRECHECK.sysaudit 1.0.0.0      # System pre-check
                                     tools

  << End of Success Section >>
FILESET STATISTICS
------------------
    1  Selected to be installed, of which:
       1  Passed pre-installation verification
    1  Total to be installed
```

```
+---------------------------------------------+
                Installing Software...
+---------------------------------------------+

installp:     APPLYING software for:
              SDM_PRECHECK.sysaudit 1.0.0.0

Finished processing all filesets. (Total time:
                                    1 mins 44 secs).


+---------------------------------------------+
                Summaries:
+---------------------------------------------+

Installation Summary
--------------------
Name              Level     Part    Event    Result
---------------------------------------------------
SDM_PRECHECK.    1.0.0.0    USR     APPLY    SUCCESS
sysaudit
```

5   Access the precheck directory by typing

 # cd /sdm/mtce/precheck

and pressing the Enter key.

6   Execute the system audit check by typing

 # ./sysaudit -all

and pressing the Enter key.

Example response

```
sysaudit command is in progress, please wait a
few minutes for it to complete...
```

7   Display the system audit report by typing

 # ./sysaudit -report

and pressing the Enter key.

8   Follow procedure "Viewing the system audit report and taking corrective action" in the Fault Management section (start at step 2) to analyze the report and take corrective action, as necessary.

9   Return to the default directory by typing

 # cd

and pressing the Enter key.

10   You have completed the procedure.

Hardware baseline pre-check

5 min.

The purpose of the following pre-check is to display the hardware PEC codes and ensure compatibility with the CS2E06 hardware baseline.

At the VT100 console

1   Display the information for the hardware that is installed on the CS 2000 Core Manager by typing

`# locate`

and pressing the Enter key.

2   Refer to Upgrade guidelines for the Hardware baseline in the Upgrades section and verify that the product engineering codes (PECs) on the output meet the minimum hardware baseline.

Note: You must upgrade any hardware that does not meet the minimum hardware baseline before you proceed with the upgrade.

CPU stability pre-check
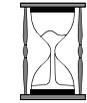
5 min.

The purpose of the following pre-check is to ensure that the master and checker CPU is operating as expected. The master CPU will be taken Offline and then returned to service therefore you must understand that the system will be in a NON-Fault tolerant mode for the duration of the pre-check.

At the VT100 console

1   Determine which CPU is currently master by typing

```
# ftctl -status
```

and pressing the Enter key.

Example response

```
CPU module CPU-0:
    Current istate        = present
                          powered on
                          significant
                          checker
                          using backplane signals
    Current condition     = online
    Online start date     = Sun Mar 17 12:52:53 CST 2002
    Online duration       = 23 days, 06:52:36
CPU module CPU-1:
    Current istate        = not present
    Current condition     = offline
CPU module CPU-2:
    Current istate        = present
                          powered on
                          significant
                          master
                          using backplane signals
    Current condition     = online
    Master start date     = Sun Mar 17 12:44:37 CST 2002
    Master duration       = 23 days, 07:00:52
    Online start date     = Sun Mar 17 12:44:37 CST 2002
    Online duration       = 23 days, 07:00:52
```

2   Access the hardware level to determine if the CPU modules are in service by typing

`# sdmmtc hw`

and pressing the Enter key.

Example response

```
   SDM    CON   512   NET   APPL  SYS    HW    CLLI: OTWAONXBEC3
    .      .    . .    .      .     .      .    Host: pcary989
    .            . .    .                       Fault Tolerant
Hw
0 Quit
2                  I   F   C   D   D   D   E   E   D   5
3                  C   A   P   S   S   S   T   T   A   1
4 Logs             M   N   U   K   K   K   H   H   T   2
5                              1   2   3   1   2
6         Domain 0  .   .    .   .   .   .   .   .   .   .
7 Bsy     Domain 1  .   .    .   .   .   .   .   .   .   .
8 RTS
9
10
11
12
13
14 QuerySDM
15 Locate
16
17 Help
18 Refresh
 root
Time 11:15 >
```

3   Busy the master CPU by typing

> **> bsy <domain> cpu**

and pressing the Enter key.

where:

<domain>
is the domain number of the master CPU identified in
step 1

Example
bsy 1 cpu

Example response

```
  SDM    CON   512  NET   APPL SYS    HW    CLLI: OTWAONXBEC3
   .      .     . .   .      .          .      .   Host: pcary989
   .            . .   .                               Fault Tolerant
Hw
 0 Quit
 2              I   F   C   D   D   D   E   E   D   5
 3              C   A   P   S   S   S   T   T   A   1
 4 Logs        M   N   U   K   K   K   H   H   T   2
 5                         1   2   3   1   2
 6        Domain 0  .   .   .   .   .   .   .   .   .
 7 Bsy    Domain 1  .   .   M   .   .   .   .   .   .   .
 8 RTS
 9
10
11
12
13
14 QuerySDM
15 Locate
16
17 Help
18 Refresh
 root
Time 11:17 >
```

4   Return the manually busy CPU to service by typing

> **rts \<domain\> cpu**

and pressing the Enter key.

where:

   \<domain\>
       is the domain number of the master CPU you busied in
       the previous step

   Example
   # rts 1 cpu

Note: If the CPU reintegration fails, determine if it failed
because the system is too busy. To determine that, examine
the eeprom on the failing CPU and look for the following
message: PRI: System too busy, PRI could not
complete.

Example:

```
# eeprom -v1 CPU-2
.
.


Event     Time - Date            Failure Category & Reason
=====     ===========            =========================
Power on 13:59 Mar 11 2002 EST

Failure  13:59 Mar 11 2002 EST Information report

   PRI: System too busy, PRI could not complete
```

This message does not indicate a faulty CPU (no matter how
many times it fails). This message informs you that the system
is presently too busy to reintegrate the CPUs, and must be
deferred until the system load has lowered. You can attempt
the reintegration as many time as necessary, until success.

To reduce the system load, you may have to busy SBA or the
SDM from the core in a maintenance window.

5   Exit the hardware level by typing

> **quit all**

and pressing the Enter key.

6   Monitor the integration status of the CPU by typing

`# ftctl -status`

and pressing the Enter key.

Example response

```
CPU module CPU-0:
    Current istate        = present
                      powered on
                      significant
                      master
                      using backplane signals
    Current condition     = online
    Master start date     = Fri Apr 26 11:37:54 EDT 2002
    Master duration       = 00:07:50
    Online start date     = Tue Apr 23 17:11:30 EDT 2002
    Online duration       = 2 days, 18:34:14
CPU module CPU-1:
    Current istate        = not present
    Current condition     = offline
CPU module CPU-2:
    Current istate        = present
                      powered on
                      not significant
                      onboard
                      not using backplane signals
    Current condition     = integrating (12% complete)
```

7   Wait until the CPU has been fully integrated, then re-enter the hardware level to ensure the CPU has returned to service by typing

 # sdmmtc hw

and pressing the Enter key.

Example response

```
 SDM    CON   512   NET   APPL  SYS    HW    CLLI: OTWAONXBEC3
   .      .    . .    .      .     .      .   Host: pcary989
   .            . .    .                      Fault Tolerant
Hw
0 Quit
2              I  F  C  D  D  D  E  E  D  5
3              C  A  P  S  S  S  T  T  A  1
4 Logs         M  N  U  K  K  K  H  H  T  2
5                       1  2  3  1  2
6      Domain 0  .  .  .  .  .  .  .  .  .  .
7 Bsy  Domain 1  .  .  .  .  .  .  .  .  .  .
8 RTS
9
10
11
12
13
14 QuerySDM
15 Locate
16
17 Help
18 Refresh
 root
Time 11:47 >
```

8   Repeat steps 3 to 7 for the second CPU. For example, if previously you have busied and returned to service CPU 1, repeat steps 3 to 7 for CPU 0.

9   You have completed the procedure.

DS512 fiber link pre-check

5 min.

The purpose of the following pre-check is to identify potential problems with the DS512 fiber links connected from the core to the DS512 controller modules on the CS 2000 Core Manager. It may also identify problems with DS512 modules.

> **CAUTION**
> **Possible loss of communication to the core**
> The DS512 fiber link pre-check results in a temporary simplex condition on CS 2000 Core Manager links to the Communication Server 2000 core. Therefore, execute the DS512 fiber link pre-check during a maintenance shift to ensure that the traffic on the DS512 links do not lead to message overload conditions, which could result in a loss of communication with the Communication Server 2000 core.

At the MAP terminal

1   Access the SDM level of the MAPCI by typing

> **mapci;mtc;appl;sdm**

and pressing the Enter key.

2   Determine the message switch (MS) chain cards that are configured with the DS512 controller modules and the associated DS512 fiber links that communicate from the core to the CS 2000 Core Manager by typing

> **trnsl**

and pressing the Enter key.

Example response

```
XAC    MS    IOD   Net   PM    CCS   Lns   Trks   Ext    APPL
 .           .     .     .     .     .     .     ...     .       .

SDM              OAMAP ATMFW  SDM  SPMCP SWMTC SDMBIL      TOPSIP
0 Quit                 .      .      .      .      .      .          .
2
3       SDM 0  InSv     Links_OOS: .
4
5 Trnsl
6            Trnsl
7 Bsy        SDM 0 DOMAIN 0 PORT 0 (MS 0:05:0) OK      MsgCnd:Open
8 RTS        SDM 0 DOMAIN 0 PORT 1 (MS 1:05:0) OK      MsgCnd:Open
9 OffL       SDM 0 DOMAIN 1 PORT 0 (MS 0:05:1) OK      MsgCnd:Open
10           SDM 0 DOMAIN 1 PORT 1 (MS 1:05:1) OK      MsgCnd:Open
11
12
13
14 QuerySDM
15 Locate
16
17
18 Platform
 ADMIN
Time  11:28 >
```

3   Post the chain card that corresponds to one of the four associated DS512 fiber links that communicate with the CS 2000 Core Manager.

```
# mapci;mtc; ms;shelf;chain <chain number>
```

and pressing the Enter key.

where:

<chain number>
     is the number of the MS chain card

Example
mapci;mtc;ms;shelf;chain 5

Example response

```
XAC    MS    IOD    Net    PM    CCS    Lns    Trks    Ext    APPL
  .      .      .      .      .      .      .      .      .      .


CHAIN          I     Message Switch  Clock  Shelf 0     Inter-MS Link 0 1
0 Quit        MS 0          .              Master         .              . .
2             MS 1          .              Slave          .              . .
3
4             Shelf 0                       1 1  1  1
5             Card  1 2 3 4 5 6 7 8 9 0 1 2 3
6 Tst_        Chain            < >     |
7 Bsy_        MS 0 . . . . . . . . . . . . .
8 RTS_        MS 1 . . . . . . . . . . . . .
9 Offl_
10            Chain   05     Range     Link    0 1
11            MS 0     .     05-06     DS512  . .
12 Chain_     MS 1     .     05-06     DS512  . .
13 Card_
14 QueryMS  6
15 Trnsl_
16
17
18
 OPERATOR
Time 11:53 >
```

4   Busy the DS512 fiber links that correspond to the DS512 card to be busied by typing

> bsy 0 link <link_number>

and pressing the Enter key.

> bsy 1 link <link_number>

and pressing the Enter key.

where:

> **<link_number>**
> is the number of the DS512 link (0 to 4)
>
> **Example**
> > bsy 0 link 0

and

> **Example**
> > bsy 1 link 0

The examples above will busy MS 0 link 0 and MS 1 link 0 for the DS512 card on domain 0.

At the VT100 console

5   Access the hardware level by typing

 # sdmmtc hw

and pressing the Enter key.

6   Busy the DS512 controller module by typing

> bsy <domain_number> 512

and pressing the Enter key.

where:

> **<domain_number>**
> is the domain number of the DS512 link

7   Return the DS512 controller module to service by typing

> `> rts <domain_number> 512`

and pressing the Enter key.

where:

> **<domain_number>**
> is the domain number of the DS512 link

If the DS512 controller module	Do
returns to service	step 8
does not return to service	contact your next level of support

At the MAP terminal

8   Return the DS512 fiber links that correspond to the DS512 card to service by typing

> `> rts 0 link <link_number>`

and pressing the Enter key.

> `> rts 1 link <link_number>`

and pressing the Enter key.

where:

> **<link_number>**
> is the number of the DS512 link (0 to 4)
>
> **Example**
> > rts 0 link 0

and

> **Example**
> > rts 1 link 0

The examples above will return MS 0 link 0 and MS 1 link 0 for the DS512 card on domain 0 to service.

If the links	Do
return to service	step 9
do not return to service	contact your next level of support

9　　Repeat the previous steps until each of the DS512 Controller Modules have been busied and returned-to-service successfully.

10　　You have completed the procedure.

Application/fileset status and configuration pre-check

2 min.

The purpose of the following pre-check is to verify that the applications on the CS 2000 Core Manager are in-service and configured. Any applications not in service or not configured, must be understood.

At the VT100 console

1　　Access the application level by typing

 # sdmmtc appl

and pressing the Enter key.

Example response

```
SDM    CON   512   NET   APPL  SYS    HW    CLLI: OTWAONXBEC3
 .      .    . .    .      .     .      .    Host: pcary989
 .            . .   .                        Fault Tolerant
Appl
0 Quit
2                # Application                      State
3                1 SDM Billing Application            .
4 Logs           2 Generic Data Delivery             .
5                3 Log Delivery Service              .
6                4 Image Dump Service                .
7 Bsy            5 Secure File Transfer              .
8 RTS            6 Enhanced Terminal Access          .
9 OffL           7 Table Access Service              .
10               8 OM Access Service                 .
11                    Applications showing: 1 to 8 of 8
12 Up
13 Down
14 QuerySDM
15 Locate
16
17 Help
18 Refresh
 root
Time  06:30 >
```

2 Verify all applications used are in service (represented by a dot [.] under the "State" header).

> *Note:* Use the up/down commands to scroll through the list of applications if necessary.

If	Do
all applications are in service	step 3
one or more applications are not in service	understand why, and return to service if required before you proceed

3 Access the configuration level by typing

 # config

and pressing the Enter key.

Example response

```
    SDM    CON   512   NET   APPL  SYS   HW   CLLI: OTWAONXBEC3
     .      .     . .    .      .   ISTb   .     Host: pcary989
     .            . .                 M           Fault Tolerant
Config
0 Quit         Filter: OFF
2              # Fileset Description            Status
3              1 Enhanced Terminal Access       Configured
4              2 OM Delivery                     Configured
5              3 Remote Registration System      Configured
6              4 SDM Billing Application          Configured
7 Select       5 Secure File Transfer            Secure and Normal FTP Access
8 Config             Configuration programs: 1 to 5 of 5
9
10
11
12 Up
13 Down
14 Search
15 Filter
16 View
17 Help
18 Refresh
 root
Time 18:55 >
```

4   Verify all applications previously determined as in service are configured.

      Note: Use the up/down commands to scroll through the list of applications if necessary.

If	Do
all applications are configured	proceed to the next task User configuration pre-check
one or more applications are not configured	understand why, and configure them if required before you proceed

User configuration pre-check

The purpose of the following pre-check is to ensure that the CS 2000 Core Manager users are configured.

2 min.

At the VT100 console

1   Display the user attributes for the root user by typing

      # lsuser root

      and pressing the Enter key.

2   Display the user attributes for the maint user by typing

      # lsuser maint

      and pressing the Enter key.

      Example response

      3004-687 User "root" does not exist.

3   Use the following table to determine your next step.

If the user	Do
does not exist	contact your next level of support
exists	proceed to the next task Ethernet configuration pre-check

Ethernet configuration pre-check

5 min.

The purpose of the following pre-check is to display the status and configuration of the Ethernet interfaces. Then using the required command toggle between the active to backup to ensure that each interface can handle the traffic.

At the VT100 console

1   Display the configuration and status of the Ethernet interfaces by typing

   # dbgent

   and pressing the Enter key.

   Example response

```
ent0:
    member0 pent0 active (08:00:3e:26:0f:90)   PM: online
    member1 pent2 backup (08:00:3e:26:0f:94)   PM: online
```

2   Switch the active and backup Ethernet interfaces by typing

   # dbgent -sl ent0

   and pressing the Enter key.

3   Verify the switch occurred by typing

   # dbgent

   and pressing the Enter key.

   Example response

```
ent0:
    member0 pent0 backup (08:00:3e:26:0f:94)   PM: online
    member1 pent2 active (08:00:3e:26:0f:90)   PM: online
```

4   Switch the active and backup Ethernet interfaces by typing

   # dbgent -sl ent0

   and pressing the Enter key.

5   You have completed the procedure.

Upload the software from tape to a disk

ATTENTION

If you are planning to upgrade your system from tape, complete this procedure to avoid any potential tape problems during the upgrade.

Nortel Networks strongly recommends that you complete this procedure, and then upgrade your system from the directory created during this procedure.

Install the UPGRADE Tools fileset

At the VT100 console

1   Log on to the CS 2000 Core Manager using the root user ID and password.

2   Verify that tape drive 0 (slot 2) and tape drive 1 (slot 13) have been cleaned during the <u>Basic pre-checks</u> procedure. If not, clean both tape drives now. Refer to procedure "Cleaning the DAT drive" in the Fault Management section.

3   Insert the tape labeled "CS2E0006 NCL 6.x (1 of 1)" into the tape drive in slot 2 (DAT0) or slot 13 (DAT1).

4   Install the software that will be later used to copy the content of the tape to a disk. Enter one of the following commands:

* If the tape is inserted in slot 2, type

  ```
  # bffcreate -d /dev/rmt0.1 -t /home/swd -q
  SDM_UPGRADE
  ```

  and press the Enter key.

* If the tape is inserted in slot 13, type

  ```
  # bffcreate -d /dev/rmt1.1 -t /home/swd -q
  SDM_UPGRADE
  ```

  and press the Enter key.

  Note: Ignore the warning message that the system displays. Wait until the command is complete and continue with the procedure.

5   Access the maintenance interface by typing

  ```
  # sdmmtc
  ```

  and pressing the Enter key.

6   List the filesets in directory /home/swd by typing

     `> apply /home/swd`

     and pressing the Enter key.

7   Select the UPGRADE Tools fileset by typing

     `> select <x>`

     and pressing the Enter key.

     where

        `<X>`
           is the number next to the UPGRADE Tools fileset

8   Install the UPGRADE Tools fileset by typing

     `> apply`

     and pressing the Enter key.

9   If prompted, confirm the command by typing

     `> y`

     and pressing the Enter key.

10   Exit the sdmmtc interface by typing

     `> quit all`

     and pressing the Enter key.

Upload the software from tape to a disk

At the VT100 console

1   Start the process of transferring the software load from tape to a disk by typing

     `# unpacktape`

     and pressing the Enter key.

2   When prompted, select automatic or interactive method for creating the logical volume where the tape content will be transferred. Enter one of the following values:

- `1` - if you want the system to create the logical volume
- `2` - if you want to create the logical volume or select an existing logical volume

     and press the Enter key.

> *Note:* If there is not enough disk space on your system, the procedure will automatically abort. Contact your next level of support for further instructions.

3 When prompted, enter the location of the tape. Type

- **0** - if the tape is inserted in slot 2

- **1** - if the tape is inserted in slot 13

and press the Enter key.

4 Use the following table to determine your next step.
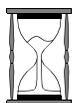
If in step 2 you have selected option	Do
1	the system continues the procedure and provides the location of the directory where the tape load is being transferred. Record the directory path for reference. Go to step 8.
2	continue with step 5

45 min.

5 When prompted, specify whether you want to transfer the tape load to an existing logical volume. Type one of the following values and press the Enter key:

- **yes** - if you want to transfer the load to an existing logical volume

    Note: Make sure that you have at least 1400 Mbytes of free space in the existing logical volume.

- **no** - if you want to create a new logical volume

If you entered	Do
yes	enter the directory path where you want to transfer the load, and press the Enter key. Go to step 8.
no	go to step 6

6 To continue the procedure, type

 # yes

and press the Enter key.

7 When prompted, enter the full path to the new directory where the new logical volume will be mounted.

Note: If there is no sufficient free space on datavg and rootvg, the system aborts the procedure. Contact your next level of support for further instructions.

8   Use the following table to determine your next step.

If the system	Do

completes the transfer and displays the following message:
 `Successfully deposited all`
 `filesets to <directory name>`
	go to step 11

displays a failure message	go to step 9
Note: If this is your second attempt to complete the procedure, contact your next level of support	

9   Clean the DAT drive where the tape is inserted. Refer to procedure "Cleaning the DAT drive" in the Fault Management section.

10   Repeat steps 1 to 8.

11   You have completed the procedure.

Upgrading CS 2000 Core Manager software using non-split mode

This procedure provides information about upgrading your CS 2000 Core Manager software from the latest CS2E04 or CS2E05 release to the CS2E06 release using a non-split mode process.

Note: This procedure references other procedures in the CS 2000 Core Manager Upgrades, Fault, Configuration, Accounting, and Security sections. Therefore, ensure you have access to those sections while performing this procedure.

During the non-split mode upgrade, the system is busied and both domains are upgraded at the same time.

Pre-upgrade requirements

Before starting this procedure, complete the following activities:

- Ensure the latest MNCL release is installed on your system.

  Refer to Upgrade guidelines for the software baseline.

  Note: If you need to upgrade to the latest MNCL, refer to the MNCL release notes for instructions.

- Verify that the pre-check tasks described in the Preparing for a software upgrade procedure were successfully completed seven days before starting this upgrade.

- Perform a system image backup.

  ATTENTION
  Nortel Networks recommends that you perform a system image backup before you upgrade the base software. Use procedure "Creating system image backup tapes (S-tapes)" in the Security and Administration section. Performing a system image backup does not back up billing data. Ensure that billing is operating properly before starting.

- Obtain the password for the root user.
  You must log on to the CS 2000 Core Manager using the root user ID and password to perform the upgrade, therefore, obtain the password for the root user before you begin. Failure to log on as the root user may cause your upgrade to fail. Furthermore, ensure no other users are logged on during the upgrade. Only the user at the VT100 consoles should be logged on.

- Obtain the following information from your network administrator:
  - whether DNS is supported on SAM21 EM client workstations
  - the host name of the CS 2000 Management Tools server that is configured to run the Login Application
  - the CommonName from the certificate on the CS 2000 Management Tools server that is configured to run the Login Application
  - the IP address of the CS 2000 Management Tools server

    Note: Record the information for reference purposes.

- Obtain the right tape if upgrading from tape.
  If upgrading from tape, ensure you have the tape labeled "CS2E0006 NCL 6.x (1 of 1)".

    Note: Nortel Networks recommends that you upgrade your system directly from tape only if you are unable to complete procedure Upload the software from tape to a disk in the Preparing for a software upgrade section.

- Ensure the required files are in a directory if upgrading via ESD.
  If upgrading via Electronic Software Delivery (ESD), ensure the required files are in the directories you will be upgrading from, which may be the "/swd/sdm/esd" directory.

    Note 1: If necessary, contact your next level of support, or refer to procedures Preparing your system for upgrade via Electronic Software Delivery in the Upgrades Section and "Transferring and retrieving files using SFT" in the Security and Administration section.

    Note 2: If you need to determine the list of required filesets for your Succession solution, refer to Filesets to solution mapping in the Upgrades section.

- Install and configure the pserver application on the Preside MDM.
  Ensure the pserver application is installed and configured on the Preside MDM server prior to upgrading the CS 2000 Core Manager. This applies to Succession offices where the CS 2000 Core Manager needs to communicate with the Preside MDM for fault data, using the Passport log streamer application. Refer to the Preside MDM Upgrade Guide, NN10185-461, for instructions on how to install and configure the pserver application.

- Check the root logical volume file - potential disk space error. Make sure the root logical volume "/" file does not exceed 70% of its total size. If the "/" file system exceeds the 70% mark, you must make more room on the "/" file system for the upgrade to be successful. For more details, contact your next level of support.

- Check for the presence of a datavg if required.
  If upgrading a rootvg-datavg, ensure datavg is present. You can check the presence of a datavg through the maintenance interface under the storage level (sdmmtc storage).

- Make sure the CS 2000 Core Manager is alarm free.
  If any alarms are present, refer to the Fault section of this document for alarm-clearing procedures.

- Have VT100 terminal emulation.
  Before you perform this procedure, make sure that your terminal is capable of VT100 terminal emulation and that you can establish a VT100 connection to SP0.

- Nortel Networks recommends that you deliver unprocessed billing files to a downstream destination. Ensure that no more than one unprocessed billing file remains on the system. The following table lists each task and the procedure in the Accounting section to complete the task.

Task	File transfer mode	Accounting procedure
Close billing files	All	"Closing billing files"
Send billing files downstream	Outbound file transfer (OFT)	"Sending billing files from disk"
	Inbound file transfer (IFT)	"Retrieving billing files for a stream set to inbound file transfer"
	Real-time billing (RTB)	"Sending billing files from disk"
(Sheet 1 of 2)		

Task	File transfer mode	Accounting procedure
	Automatic file transfer (AFT)	No manual action is required. Wait for SBA to deliver pending billing files to the downstream destination. There should be no pending files (at least, no more then one) for each AFT session.
		Use the following commands to query AFT sessions: `billmtc, appl, aft, aftconfg, list`.
		Note: Press the Enter key after each command.
		To verify which billing files for each session are still pending, enter the following commands: `billmtc, appl, aft, query <session_name>`.
		Note: Press the Enter key after each command.
(Sheet 2 of 2)		

Note: To display the details about a stream, refer to procedure "Listing billing streams" in the Accounting section. To list all files currently stored in a stream, refer to procedure "Listing billing files" in the Accounting section.

If you are unable to send billing files to a downstream destination and you want to proceed with the upgrade, Nortel Networks recommends that you backup the billing files to a DAT tape. If required, refer to procedure "Copying billing files to tape (backup)" in the Accounting section.

Note: If you need to restore the billing files from tape and you have AFT or IFT configuration, contact your next level of support for instructions. For any other configuration, you can send the billing files from tape following procedure "Sending billing files from tape" in the Accounting section.

Upgrade notices

<div style="border:1px solid black; padding:10px;">

ATTENTION

Some applications are automatically removed.

If the Exception Reporting, Alarm Conduit, SDM Corba Framework, and Remote Registration System filesets are present, they are automatically removed when upgrading to CS2E06.

</div>

Flowchart procedure

The following flowchart summarizes the software upgrade. To complete the procedure, use the instructions in the step-action procedure that follow the flowchart.

Summary of upgrading CS 2000 Core Manager software using non-split mode

Complete all the necessary pre-installation requirements**.**

↓

Verify that you have completed procedure Upload the software from tape to a disk (not for ESD)

↓

Offline the CS 2000 Core Manager

↓

Prepare the system

↓

Upgrade the software

↓

Return the system to service

↓

Complete the "Post-upgrade procedures" in the Upgrades section

↓

End

This flowchart summarizes the procedure.

To complete the procedure, use the step-action procedure that follows the flowchart.
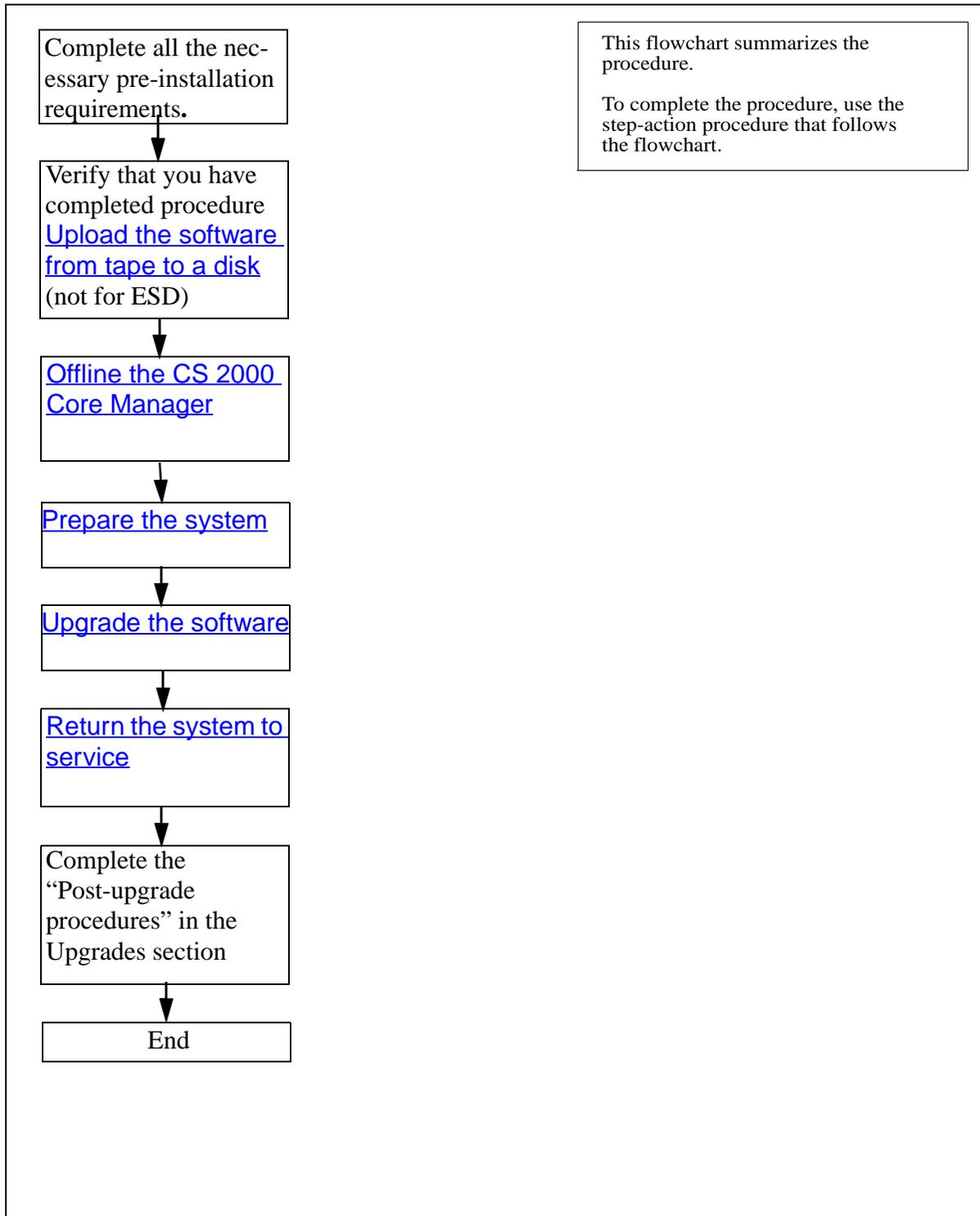
Offline the CS 2000 Core Manager

> **ATTENTION**
> Read the <u>Pre-upgrade requirements</u> and <u>Upgrade notices</u> sections, and complete any necessary activities before you proceed with the upgrade.

At the MAP display

1   Verify that procedure <u>Upload the software from tape to a disk</u> in the <u>Preparing for a software upgrade</u> section has been completed. If not, perform the procedure now.

2   Access the SDM level of the MAP display by typing

    `> mapci;mtc;appl;sdm`

    and pressing the **Enter** key.

3   Check that the CS 2000 Core Manager is in a fault-free state. If the CS 2000 Core Manager is not in a fault-free state, correct all faults and alarms before continuing this procedure. Refer to the Fault Management section for alarm-clearing procedures. If you have alarms or faults that you cannot clear, stop and contact your next level of support.

4   Busy the CS 2000 Core Manager by typing

    `> bsy`

    and pressing the **Enter** key.

5   Confirm the busy request by typing

    `> y`

    and pressing the **Enter** key.

6   Offline the CS 2000 Core Manager by typing

    `> offl`

    and pressing the **Enter** key.

7   Verify that each billing stream has entered the active backup mode by posting and querying each of your billing streams.

    `> sdmbil;post<stream>;query`

    and pressing the **Enter** key.

8   You have completed the procedure.

Prepare the system

At the local VT100 console

1   Log on to the CS 2000 Core Manager using the root user ID and password

2   Use the following table to determine your next step.

If you are ugrading from	Do
a directory **Note:** A directory created during ESD or during procedure Upload the software from tape to a disk in the Preparing for a software upgrade section	step 3
directly from tape (not recommended; use this option only if you are unable to upload the software from tape to a disk)	insert the tape labeled "CS2E0006 NCL 6.x (1 of 1)" into the tape drive in slot 2 as shown in the following figure, and continue with step 3. **Note:** Wait until the tape drive stabilizes (yellow LED is off) before you proceed.

Inserting a tape into the tape drive
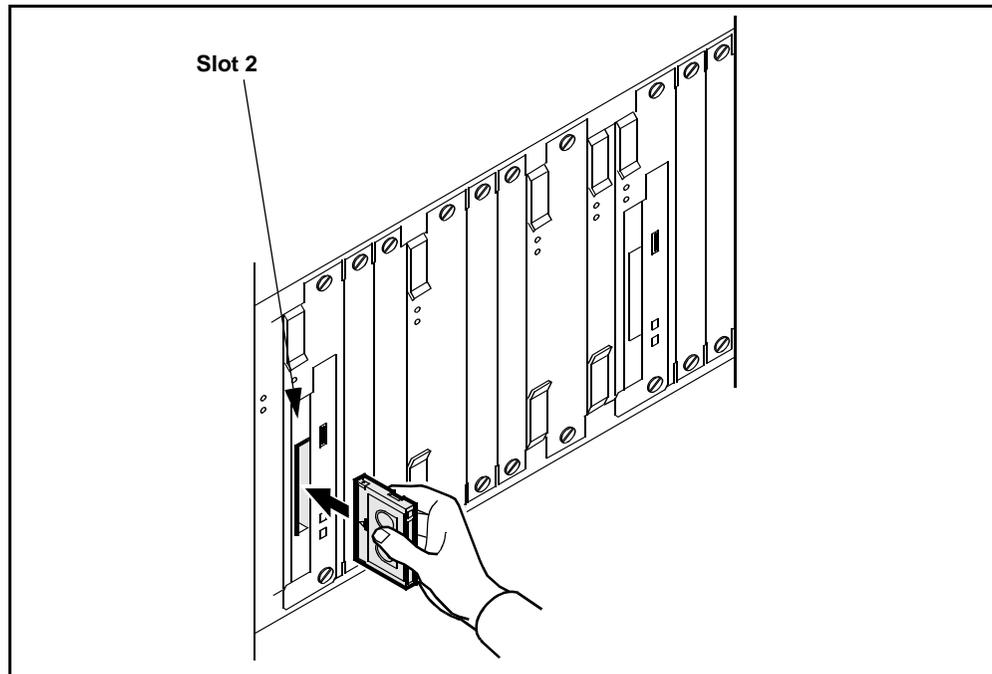
3   Perform the following substeps to remove all archived filesets from the system, which will free up disk space:

   a   Access the Details level by typing

   # sdmmtc details

   and pressing the Enter key.

   b   Show all software by typing

   > filter off

   and pressing the Enter key.

   c   Select all archived filesets by typing

   > select all

   and pressing the Enter key.

   d   Remove all archived filesets by typing

   > remove all

   and pressing the Enter key.

   Note: System will automatically select appropriate files to remove.

    e Confirm the command by typing

       `> y`

      and pressing the Enter key.

4   You have completed the procedure.

Upgrade the software

At the local VT100 console

1   Execute substep <u>b</u> or <u>a</u> according to whether you are upgrading from tape or a directory, and proceed to step <u>2</u>.

    Note: If you have completed procedure <u>Upload the software from tape to a disk</u>, continue with step <u>a</u>.

    a If you are upgrading from a directory, list the filesets by typing

       `> apply <directory path>`

      and pressing the Enter key.

      Note: <directory path> is the directory where your filesets are located. The directory depends on whether you are upgrading after ESD or after tape pre-loading.

    b If you are upgrading directly from tape, list the filesets by typing

       `> apply 0`

      and pressing the Enter key.

2   Select all the new application filesets by typing.

    `> select new`

    and pressing the **Enter** key.

3   Apply all the new software by typing

    `> apply`

    and pressing the **Enter** key.

4   Confirm the apply command by typing

    `> y`

    and pressing the **Enter** key.

Up to 2.5 hours

    Note: The upgrade can take up to 2.5 hours, depending on which release you are upgrading from, and how many filesets

require upgrading. Wait until the upgrade is complete before you proceed.

If the command response	Do
indicates any errors	contact your next level of support before you proceed with this procedure
does not indicate any errors	step 5

5   Use the following table to determine your next step.

If you are	Do
prompted to configure "OSS Comms Svcs"	step 6
not prompted to configure "OSS Comms Svcs"	step 8

6   Press the space bar to display the DDMS Clients Configuration menu.

7   Follow sub-steps a through c to configure the DDMS clients.

Note: The DDMS clients are the CS 2000 Management tools servers with the SESM load.

a   Add a new client by typing

> 1

and pressing the Enter key.

b   When prompted, enter the IP address for each of the CS 2000 Management tools servers. Press the Enter key after each entry and type "done" once you have entered all the IP addresses.

c   Exit the DDMS clients configuration screen by typing

> 0

and pressing the Enter key.

Note: You can reconfigure the OSS Comms Svcs at any time through the sdmmtc config level.

8   Use the following table to determine your next step.

If you are	Do
prompted to configure the SAM21 EM	step 9
not prompted to configure the SAM21 EM	step 10

9   Configure SAM21 EM application by completing the following substeps.

Note: Before you begin, have your records from the Pre-upgrade requirements section ready for reference.

a   When prompted whether DNS is supported on SAM21 EM workstations, enter **Y** (yes) or **N** (no), and press the Enter key.

If you enter	Do
Y (yes)	substep b
N (no)	substep c

b   When prompted, enter the CommonName from the certificate on the CS 2000 Management Tools server that is configured to run the Login Application, and press the Enter key.

c   When prompted, enter the host name of the CS 2000 Management Tools server that is configured to run the Login Application, and press the Enter key.

10   Use the following table to determine your next step.

If the system	Do
prompts you to reboot	step 11
does not prompt you to reboot	press Enter, and continue with step 16

11   When prompted, confirm the system reboot by typing

> **y**

and pressing the **Enter** key.

12   Once the system has finished rebooting, log into the CS 2000 Core Manager using the root user ID and password.

13   Wait until all cards at the hardware level are in service before you proceed. Monitor the status of the cards as described in steps 14 to 15.

14   Access the hardware level of the maintenance interface by typing

       `# sdmmtc hw`

       and pressing the **Enter** key.

15   Check that no faults exist on the CS 2000 Core Manager by typing

       `> querysdm flt`

       and pressing the **Enter** key.

       Note: An SDM300 report, which indicates "Connection has been lost to core via DS512 CM link down. Heartbeat stopped on SDM", will be present since the CS 2000 Core Manager is out of service. When you bring the CS 2000 Core Manager back in to service, the link and heartbeat are re-established.

If	Do
faults are present (with the exception of the SDM300 report)	correct the faults using the procedures in the Fault section, and return to this procedure
no faults are present	step 16

16   Use the following table to determine your next step.

       Note: To verify if you have X.25, refer to your notes from the "Basic pre-checks" list in the "Preparing for a software upgrade" section.

If you	Do
have X.25	step 17
do not have X.25	proceed to section Return the system to service

17   Execute substep b or a according to whether you are upgrading from tape or a directory, and proceed to step 18.

    a   If you are upgrading from a directory (ESD or pre-loaded from tape), list the filesets by typing

```
> apply <directory path>
```

and pressing the Enter key.

       Note: <directory path> may be the /swd/sdm/esd directory.

    b   If you are upgrading directly from tape, list the filesets by typing

```
> apply 0
```

and pressing the Enter key.

18   Install the X.25 software by typing

```
> apply bundle x25
```

and pressing the **Enter** key.

If you are upgrading directly from tape, the system prompts you to confirm the apply command.

If you are	Do
prompted to confirm the apply command	step 19
not prompted to confirm the apply command	step 25

19   Confirm the apply command by typing

```
> y
```

and pressing the Enter key

Response

```
Command completed with no errors
```

If you are	Do
prompted to reboot the system	step 20
not prompted to reboot the system	press Enter and continue with step 25

20   Confirm the system reboot by typing

> **`> y`**

and pressing the **Enter** key.

21   Once the system has finished rebooting, log into the CS 2000 Core Manager using the root user ID and password.

22   Wait until all cards at the hardware level are in service before you proceed. Monitor the status of the cards as described in steps 23 and 24.

23   Access the hardware level of the maintenance interface by typing

> **`# sdmmtc hw`**

and pressing the **Enter** key.

24   Check that no faults exist on the CS 2000 Core Manager by typing

> **`> querysdm flt`**

and pressing the **Enter** key.

Note: An SDM300 report, which indicates "Connection has been lost to core via DS512 CM link down. Heartbeat stopped on SDM", will be present since the CS 2000 Core Manager is out of service. When you bring the CS 2000 Core Manager back in to service, the link and heartbeat are re-established.

If	Do
faults are present (with the exception of the SDM300 report)	correct the faults using the procedures in the Fault section, and return to this procedure
no faults are present	step 25

25   Exit the maintenance interface and return to the AIX command line prompt by typing

> **`> quit all`**

and pressing the Enter key.

Return the system to service

At the MAP display

1   Access the SDM level of the MAP display by typing.

> ```
> > mapci;mtc;appl;sdm
> ```

and pressing the Enter key.

2   Change the state of the CS 2000 Core Manager from offline to busy by typing

> ```
> > bsy
> ```

and pressing the **Enter** key.

3   Return the CS 2000 Core Manager to service by typing

> ```
> > rts
> ```

and pressing the **Enter** key.

> *Note:* It will take at least 5 minutes for the CS 2000 Core Manager to return to service on the Communication Server 2000 core side. Check to ensure that all billing streams are either in-service or in recovery on the CS 2000 Core Manager side before continuing.

5 min.+

4   Use the following table to determine your next step.

If you	Do
need to install new CS2E06 applications and services	step 5
do not need to install new CS2E06 applications and services	step 6

5   Install new CS2E06 applications and services using the procedures in the CS 2000 Core Manager suite of information modules that correspond to the applications or services you want to install. When complete, return to this procedure and proceed to step 6.

> *Note 1:* Only install the required Succession applications. For a list of applications required for each Succession solution, refer to Filesets to solution mapping in the Upgrades section.

> *Note 2:* Install new applications and services from the VT100 console connected to SP0 (active).

6 Complete the [Post-upgrade procedures](#) described in the Upgrades section.

7 You have completed the procedure.

Upgrading CS 2000 Core Manager software using split-mode

This procedure provides information about upgrading your CS 2000 Core Manager software from the latest CS2E04 or CS2E05 release to the CS2E06 release using a split-mode process.

Note: This procedure references other procedures in the CS 2000 Core Manager Upgrades, Fault, Configuration, Accounting, and Security sections. Therefore, ensure you have access to those sections while performing this procedure.

The split mode procedure keeps one domain in service while the other domain is being upgraded, then switches to the upgraded domain and synchronizes the two domains.

Pre-upgrade requirements

Before starting this procedure, complete the following activities:

- Ensure the latest MNCL release is installed on your system.

  Refer to Upgrade guidelines for the software baseline.

  Note: If you need to upgrade to the latest MNCL, refer to the MNCL release notes for instructions.

- Verify that the pre-check tasks described in the Preparing for a software upgrade procedure were successfully completed seven days before starting this upgrade.

- Perform a system image backup.

ATTENTION
Nortel Networks recommends that you perform a system image backup before you perform the upgrade. Use procedure "Creating system image backup tapes (S-tapes)" in the Security and Administration section. Performing a system image backup does not back up billing data. Ensure that billing is operating properly before starting.

- Obtain the password for the root user.
  You must log on to the CS 2000 Core Manager using the root user ID and password to perform the upgrade, therefore, obtain the password for the root user before you begin. Failure to log on as the root user may cause your upgrade to fail. Furthermore, ensure no other users are logged on during the upgrade. Only the user at the VT100 consoles should be logged on.

- Obtain the following information from your network administrator:
  - whether DNS is supported on SAM21 EM client workstations
  - the host name of the CS 2000 Management Tools server that is configured to run the Login Application
  - the CommonName from the certificate on the CS 2000 Management Tools server that is configured to run the Login Application
  - the IP address of the CS 2000 Management Tools server

    Note: Record the information for reference purposes.

- Obtain the right tape if upgrading from tape.
  If upgrading from tape, ensure you have the tape labeled "CS2E0006 NCL 6.x (1 of 1)".

    Note: Nortel Networks recommends that you upgrade your system directly from tape only if you are unable to complete procedure <u>Upload the software from tape to a disk</u> in the <u>Preparing for a software upgrade</u> section.

- Ensure the required files are in a directory if upgrading via ESD.
  If upgrading via Electronic Software Delivery (ESD), ensure the required files are in the directories you will be upgrading from, which may be the "/swd/sdm/esd" directory.

    Note 1: If necessary, contact your next level of support, or refer to procedures <u>Preparing your system for upgrade via Electronic Software Delivery</u> in the Upgrades section and "Transferring and retrieving files using SFT" in the Security and Administration section.

    Note 2: If you need to determine the list of required filesets for your Succession solution, refer to <u>Filesets to solution mapping</u> in the Upgrades section.

- Install and configure the pserver application on the Preside MDM.
  This applies to Succession offices where the CS 2000 Core Manager needs to communicate with the Preside MDM for fault data using the Passport log streamer application. Refer to the Preside MDM Upgrade Guide, NN10185-461, for instructions on how to install and configure the pserver application.

- Ensure the system is equipped with a datavg.
  The CS 2000 Core Manager must be equipped with a data volume

group (datavg). You can check the presence of a datavg through the maintenance interface under the storage level (sdmmtc storage).

- Check the root logical volume file - potential disk space error. Make sure the root logical volume "/" file does not exceed 70% of its total size. If the "/" file system exceeds the 70% mark, you must make more room on the "/" file system for the upgrade to be successful. For more details, contact your next level of support.

- Ensure the DCE servers are operational if using DCE.
  If the DCE servers are not operational, the upgrade procedure can fail to complete (fallback may be necessary), and a service interruption can occur.

- Know how to recover from an upgrade failure.
  Before you begin the split-mode upgrade, please read and familiarize yourself with the procedure <u>Recovering the system from a split-mode upgrade failure</u> in the Upgrades section. In the event of a split-mode upgrade failure, perform the procedure.

- Ensure the CS 2000 Core Manager is alarm free.
  If any alarms are present, refer to the Fault section of this document for alarm-clearing procedures.

- Have VT100 terminal emulation.
  Before you perform this procedure, establish two VT100 connections, one to SP0 (active domain) and one to SP1 (inactive domain). Unless otherwise stated, enter commands on the same console as the previous step until directed to change.

- Nortel Networks recommends that you deliver unprocessed billing files to a downstream destination. Ensure that no more than one unprocessed billing file remains on the system. The following table lists each task and the procedure in the Accounting section to complete the task.

Task	File transfer mode	Accounting procedure
Close billing files	All	"Closing billing files"
Send billing files downstream	Outbound file transfer (OFT)	"Sending billing files from disk"
(Sheet 1 of 2)		

Task	File transfer mode	Accounting procedure
	Inbound file transfer (IFT)	"Retrieving billing files for a stream set to inbound file transfer"
	Real-time billing (RTB)	"Sending billing files from disk"
	Automatic file transfer (AFT)	No manual action is required. Wait for SBA to deliver pending billing files to the downstream destination. There should be no pending files (at least, no more then one) for each AFT session.
		Use the following commands to query AFT sessions: `billmtc, appl, aft, aftconfg, list`.
		Note: Press the Enter key after each command.
		To verify which billing files for each session are still pending, enter the following commands: `billmtc, appl, aft, query <session_name>`.
		Note: Press the Enter key after each command.
(Sheet 2 of 2)		

Note: To display the details about a stream, refer to procedure "Listing billing streams" in the Accounting section. To list all files currently stored in a stream, refer to procedure "Listing billing files" in the Accounting section.

If you are unable to send billing files to a downstream destination and you want to proceed with the upgrade, Nortel Networks recommends that you backup the billing files to a DAT tape. If required, refer to procedure "Copying billing files to tape (backup)" in the Accounting section.

Note: If you need to restore the billing files from tape and you have AFT or IFT configuration, contact your next level of support

for instructions. For any other configuration, you can send the billing files from tape following procedure "Sending billing files from tape" in the Accounting section.

Upgrade notices

> **ATTENTION**
> Some applications are automatically removed.
>
> If the Exception Reporting, Alarm Conduit, SDM Corba Framework, and Remote Registration System filesets are present, they are automatically removed when upgrading to CS2E06.
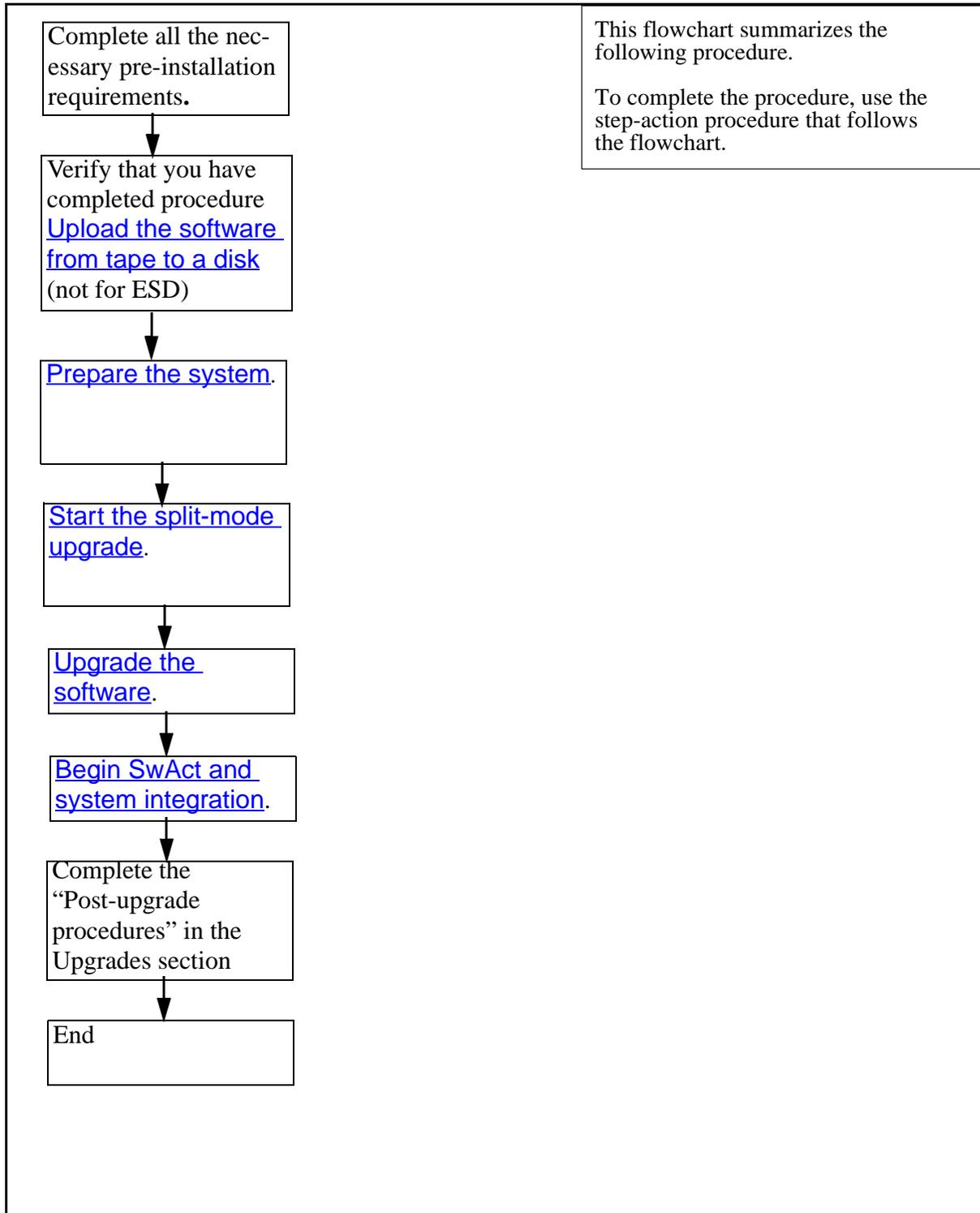
> **ATTENTION**
> In case of automatic fallback...
>
> If the CS 2000 Core Manager system initiates an automatic fallback during this procedure, allow the fallback to complete, then contact your next level of support. If any portion of this upgrade fails, contact your next level of support.

Flowchart procedure

The following flowchart summarizes the steps in the split-mode upgrade procedure. Use the instructions in the procedures that follow the flowchart to complete the upgrade.

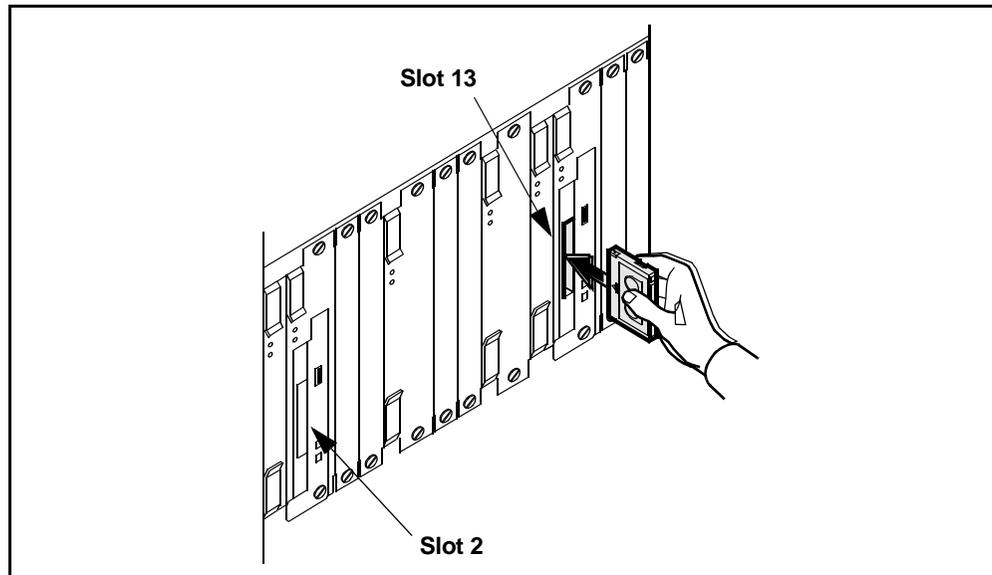## Summary of upgrading CS 2000 Core Manager software using split-mode

Complete all the necessary pre-installation requirements**.**

Verify that you have completed procedure Upload the software from tape to a disk (not for ESD)

Prepare the system.

Start the split-mode upgrade.

Upgrade the software.

Begin SwAct and system integration.

Complete the "Post-upgrade procedures" in the Upgrades section

End

This flowchart summarizes the following procedure.

To complete the procedure, use the step-action procedure that follows the flowchart.

Prepare the system

ATTENTION

Read the <u>Pre-upgrade requirements</u> and <u>Upgrade notices</u> sections, and complete any necessary activities before you proceed with the upgrade.

At the VT100 console SP0

1   Log on to the CS 2000 Core Manager using the root user ID and password

2   Verify that procedure <u>Upload the software from tape to a disk</u> in the <u>Preparing for a software upgrade</u> section has been completed. If not, perform the procedure now.

3   Use the following table to determine your next step.

If you are upgrading from	Do
a directory ***Note:*** A directory created during ESD or during procedure <u>Upload the software from tape to a disk</u> in the <u>Preparing for a software upgrade</u> section	step <u>4</u>
directly from tape (not recommended; use this option only if you are unable to upload the software from tape to a disk)	insert the tape labeled "CS2E0006 NCL 6.x (1 of 1)" into the tape drive in slot 13 as shown in the following figure, and continue with step <u>4</u>. ***Note:*** Wait until the tape drive stabilizes (yellow LED is off) before you proceed.

Main chassis tape drive

4   Perform the following substeps to remove all archived filesets from the system, which will free up disk space:

a   Access the Details level by typing

 # sdmmtc details

and pressing the Enter key.

b   Show all software by typing

> filter off

and pressing the Enter key.

c   Select all archived filesets by typing

> select all

and pressing the Enter key.

d   Remove all archived filesets by typing

> remove all

and pressing the Enter key.

> *Note:* System will automatically select appropriate files to remove.

e   Confirm the command by typing

> y

and pressing the Enter key.

> ***Note:*** Once you remove the archived filesets, the state of the CS 2000 Core Manager changes to in-service trouble (ISTb), and the status of the Backup Status alarm indicates *Required*. Perform a backup of your new system image using procedure "Creating system image backup tapes (S-tape)" in the Security and Administration section. If you choose not to perform a backup, you can force-clear the alarm using procedure "Clearing a backup Required alarm" in the Fault section.

5   You have completed the procedure.

Start the split-mode upgrade

At the VT100 console SP0

1   Access the split-mode screen by typing

> `> split`

and pressing the **Enter** key.

2   Begin the split-mode upgrade by typing

> `> start`

and pressing the **Enter** key.

3   When prompted, confirm that you want to perform the upgrade by typing

> `> y`

and pressing the **Enter** key.

The system performs some checks.

4   Use the following table to determine your next step.

If the system	Do
detects errors	go to the appropriate procedure to correct the errors, and restart this procedure
does not detect errors	step 5

5   When prompted, specify the type of upgrade you want to perform. For this procedure, select option **1** (Software Upgrade).

Note: Nortel Networks recommends that you use this procedure only to upgrade your software. If you need to upgrade CPU hardware, do it separately using one of the following procedures in the Upgrades section:

- Upgrading the CPU controller modules (in split mode)
- Upgrading the CPU controller modules (in non-split mode)

6   When prompted, confirm that you want to proceed by typing

> **y**

and pressing the **Enter** key.

Note 1: During the upgrade the Communication Server 2000 core displays the state of the CS 2000 Core Manager as in-service trouble (ISTb).

Note 2: All node state commands are disabled during the upgrade. You can only use the RebootSDM command on the inactive side.

7   Wait until the system split is 100% complete (minimum of 20 minutes), as indicated by the following message on the SP0 console, before you proceed.

```
Split: [100%] Completed
Configure: [User] Waiting for user input
```

20 min.+

Note: You will not have a connection available to the inactive console until the system is 100% split. Once the system is 100% split, each VT100 console display reports in the upper-right corner which domain it is connected to. For example, SP0 will report `Active Domain 0`.

At the VT100 console SP1 (inactive)

8   Wait until the FX-Bug prompt appears on the SP1 (inactive) console before you proceed to the next step.

9   At the FX-Bug prompt, manually reboot domain 1 by typing

FX-Bug> pboot 6 0

and pressing the **Enter** key.

10   Log into the inactive side (SP1) of the CS 2000 Core Manager using the root user ID and password.

The system automatically displays the split-mode screen.

11

> **CAUTION**
> **Possible loss of service**
> If the CS 2000 Core Manager begins the system stabilization process, do not attempt to perform any activities on the system until stabilization is complete as this may cause the upgrade to fail.

7 min.

Wait until system stabilization is complete (approximately 7 minutes) before proceeding to the next step.

Note: When the stabilization process begins, the system displays a time estimate for its completion.

12   Execute the following commands to ensure datavg is "varyon":

a   Exit the split mode screen by typing

```
> quit all
```

and pressing the Enter key.

b   Display the logical volumes by typing

```
# lsvg -l datavg
```

and pressing the Enter key.

If the system response is:	Do
datavg:, followed by the logical volumes information	substep e
Volume group must be varied on; use varyonvg command	substep c

c   Enter the following commands:

```
# varyonvg datavg
```

and press the Enter key.

```
# mount all
```

and press the Enter key.

d Enter the following command to ensure datavg is" varyon":

 # lsvg -l datavg

and press the Enter key.

If the system response is:	Do
datavg:, followed by the logical volumes information	substep e
anything else	contact your next level of support

e Access the split mode screen by typing

 # sdmmtc split

and pressing the Enter key.

Upgrade the software

> **ATTENTION**
> The following message: "Software should be upgraded now using SWIM Apply Level. Type 'Continue' once the upgrades are complete. 'Fallback' is only available on the active console.", may appear on the screen at different steps for reference purposes. Continue to follow the steps in this procedure until all the software is upgraded and you are requested to enter the "continue" command, which occurs at step 24.

At the VT100 console connected to SP1 (inactive)

1   Execute substep b or a according to whether you are upgrading from tape or a directory, and proceed to step 2.

   Note: If you have completed procedure Upload the software from tape to a disk, continue with step a.

   a   If you are upgrading from a directory, list the filesets by typing

   > `> apply <directory path>`

   and pressing the Enter key.

   Note: <directory path> is the directory where your filesets are located. The directory depends on whether you are upgrading after ESD or after tape pre-loading.

   b   If you are upgrading directly from tape, list the filesets by typing

   > `> apply 1`

   and pressing the Enter key.

   Note: The last character in the command string is the number 1.

2   Select the filesets to upgrade by typing

   > **`> select new`**

   and pressing the **Enter** key.

   Note: The system selects (highlights) all the filesets that have a newer version than those already on your system.

3

ATTENTION

All application filesets are upgraded during this procedure, except the SDM Billing Application (SBA), the SBA Automatic File Transfer (AFT) application, the DNBD Call Data Delivery (LI) application, and the ONE FTAM Software (LI) application filesets.
If required, upgrade all these application filesets after the split-mode portion of the upgrade.

Verify whether any versions of the following filesets are present and selected (highlighted) on the screen:

- SDM Billing Application

- SBA Automatic File Transfer

- DNBD Call Data Delivery

- ONE FTAM Software

    Note: Use the up/down commands to scroll through the list of filesets if necessary.

When a fileset has more than one version, it is displayed as a blank under the named fileset. The figure below shows an example display where two versions of the SDM Billing Application fileset (fileset # 59 and # 60) exist.

Example display of the Apply level

```
    SDM      CON     512     NET     APPL    SYS     HW     CLLI: SNM1_1
    ManB     SysB    F M     SysB    ManB    .       .      Host: wcary2p1
    M        M       . M                                          Inactive Domain 1
Apply
 0 Quit        Source: the tape drive in the main chassis slot 13 (DAT1),
 2             Filter: OFF                                      # Selected: 40
 3 Source         # Fileset Description          Current          Available
 4 Reload        56 OM Delivery                  16.31.1.0         18.37.0.0      i
 5 Eject         57 Reach Through SPM            16.31.0.0         18.37.0.0      i
 6               58 Remote Registration System   16.45.1.0         18.37.0.0      i
 7 Select        59 SDM Billing Application      16.55.0.0         18.37.0.4
 8 Apply         60                                          >> 18.37.0.0       i
 9 Upgrade       61 Succession SAM21 Manager     NA                8.0.24.2       i
10               62                                          >> 8.0.24.0        i
11               63 Secure File Transfer Client  16.31.0.0         18.37.0.1
12 Up            64                                          >> 18.37.0.0       i
13 Down          65 Secure File Transfer         16.31.0.0         18.37.0.0      i
14 Search        66 BOOTP Loading Service        NA                18.37.0.2
15 Filter                     Filesets on the source: 56 to 66 of 181
16 View
17 Help
18 Refresh
  root
Time  13:38  >
```

If any versions of the billing, DNBD or ONE FTAM filesets are	Do
present and selected (highlighted)	step 4
not present or not selected	step 5

4

ATTENTION

All versions of the "SDM Billing Application" fileset, the "SBA Automatic File Transfer" fileset, the "DNBD Call Data Delivery" fileset, and the "ONE FTAM Software" fileset must be deselected.

Toggle the selection of all the billing, DNBD, and ONE FTAM filesets to deselect them by typing

> **select <x>**

and pressing the **Enter** key.

Where:

> **<X>**
> is the number next to each of the billing, DNBD, and ONE FTAM filesets highlighted on the screen (i.e. the "SDM Billing Application" fileset and any of its versions, the "SBA Automatic File Transfer" fileset and any of its versions, the "DNBD Call Data Delivery" fileset and any of its versions, and the "ONE FTAM Software" fileset and any of its versions)

Example command

> **select 59 60**

and pressing the Enter key.

5   Apply all the new filesets (those that are highlighted) by typing

> **apply**

and pressing the **Enter** key.

6   Confirm the apply command by typing

> `> y`

and pressing the **Enter** key.

Up to 2.5 hours

> *Note 1:* The upgrade can take up to 2.5 hours, depending on which release you are upgrading from, and how many filesets require upgrading. Wait until the upgrade is complete before you proceed.
>
> *Note 2:* The percentage complete can go over 100% as the filesets added may be more than those specified if any filesets have prerequisite filesets.

If the command response	Do
indicates any errors	contact your next level of support before you proceed with this procedure or attempt a fallback
does not indicate any errors	step 7

7   Use the following table to determine your next step.

If you are	Do
prompted to configure "OSS Comms Svcs"	step 8
not prompted to configure "OSS Comms Svcs"	step 12

8   Press the space bar to display the DDMS Clients Configuration menu.

9   Follow sub-steps a through c to configure the DDMS clients.

> *Note:* The DDMS clients are the CS 2000 Management tools servers with the SESM load.

     a   Add a new client by typing

> > `> 1`

            and pressing the Enter key.

     b   When prompted, enter the IP address for each of the CS 2000 Management tools servers. Press the Enter key after each entry and type "done" once you have entered all the IP addresses.

   c Exit the DDMS clients configuration screen by typing

     > 0

   and pressing the Enter key.

> *Note:* You can reconfigure the OSS Comms Svcs at any time through the sdmmtc config level.

10 Use the following table to determine your next step.

If you are	Do
prompted to configure the SAM21 EM with a secure password	step 11
not prompted to configure the SAM21 EM with a secure password	press Enter and continue with step 12

11 Configure SAM21 EM application by completing the following substeps.

> *Note:* Before you begin, have your records from the Pre-upgrade requirements section ready for reference.

   a When prompted whether DNS is supported on SAM21 EM workstations, enter **Y** (yes) or **N** (no), and press the Enter key.

If you enter	Do
Y (yes)	substep b
N (no)	substep c

   b When prompted, enter the CommonName from the certificate on the CS 2000 Management Tools server that is configured to run the Login Application, and press the Enter key.

   c When prompted, enter the host name of the CS 2000 Management Tools server that is configured to run the Login Application, and press the Enter key.

12 Use the following table to determine your next step.

If you are	Do
prompted to reboot the system	step 13
not prompted to reboot the system	press Enter and continue with step 16

13   Confirm the system reboot by typing

```
> y
```

and pressing the **Enter** key.

14   At the FX-Bug prompt, reboot the system by typing

```
FX-Bug> pboot 6 0
```

and pressing the **Enter** key.

15   Log into the CS 2000 Core Manager using the root user ID and password.

The system automatically displays the split-mode screen.

16   Use the following table to determine your next step.

If you	Do
have X.25	step 17
do not have X.25	step 24

17   Execute substep b or a according to whether you are upgrading directly from tape or a directory, and proceed to step 18.

    a   If you are upgrading from a directory (ESD or pre-loaded from tape), list the filesets by typing

```
> apply <directory path>
```

    and pressing the Enter key.

      Note: <directory path> may be the /swd/sdm/esd directory.

    b   If you are upgrading directly from tape, list the filesets by typing

```
> apply 1
```

    and pressing the Enter key.

      Note: The last character in the command string is the number 1.

18   Install the X.25 software by typing

```
> apply bundle x25
```

and pressing the **Enter** key.

If you are upgrading directly from tape, the system prompts you to confirm the apply command.

If you are	Do
prompted to confirm the apply command	step 19
not prompted to confirm the apply command	enter split to go to the split-mode screen, then continue with step 24

19 Confirm the apply command by typing

> **y**

and pressing the Enter key

Note 1: Applying the x25 bundle takes approximately 7 minutes to complete.

Note 2: If the command response indicates any errors, contact your next level of support before you proceed with the upgrade or attempt a fallback.

7 min.

20 Use the following table to determine your next step.

If you are	Do
prompted to reboot the system	step 21
not prompted to reboot the system	enter split to go to the split-mode screen, then continue with step 24

21 Confirm the system reboot by typing

> **y**

and pressing the **Enter** key.

22 At the FX-Bug prompt, reboot the system by typing

FX-Bug> pboot 6 0

and pressing the **Enter** key.

23 Log into the CS 2000 Core Manager using the root user ID and password.

The system automatically displays the split-mode screen.

24   Continue the upgrade by typing

     > continue

     and pressing the **Enter** key.

25   Use the following table to determine your next step.

If you	Do
want to transfer your billing files downstream before the SwAct *Note:* Nortel Networks recommends the transfer.	step 26
do not want to transfer your billing files downstream before the SwAct	step 28

     Note: Transferring the files will increase your upgrade time. The increase depends on the number of files that need to be transferred.

At the VT100 console connected to SP0 (Active)

26   Manually close all billing files for each active billing stream. Refer to procedure "Closing billing files" in the Accounting section.

27   Transfer all closed files to a downstream destination. Depending on your stream configuration, follow one of the procedures in the Accounting section listed in the table below.

Type of stream configuration	Accounting procedure
Outbound file transfer (OFT)	"Sending billing files from disk"
Inbound file transfer (IFT)	"Retrieving billing files for a stream set to inbound file transfer"
(Sheet 1 of 2)	

Type of stream configuration	Accounting procedure
Real-time billing (RTB)	"Sending billing files from disk"
Automatic file transfer (AFT)	No manual action required. Wait for SBA to deliver pending billing files to the downstream destination. There should be no pending files (at least, no more then one) for each AFT session.
	Use the following commands to query AFT sessions: `billmtc, appl, aft, aftconfg, list`.
	Note: Press the Enter key after each command.
	To verify that all pending files for each session have been delivered downstream, enter the following commands: `billmtc, appl, aft, query <session_name>`.
	Note: Press the Enter key after each command.
(Sheet 2 of 2)	

Note: To display the details about a stream, refer to procedure "Listing billing streams" in the Accounting section. To list all files currently stored in a stream, refer to procedure "Listing billing files" in the Accounting section.

If you are unable to send billing files to a downstream destination and you want to proceed with the upgrade, Nortel Networks recommends that you backup the billing files to a DAT tape. If required, refer to procedure "Copying billing files to tape (backup)" in the Accounting section.

Note: If need to restore the billing files from tape and you have AFT or IFT configuration, contact your next level of support for instructions. For any other configuration, you can send the billing files from tape following procedure "Sending billing files from tape" in the Accounting section.

28   Query the status of RTB for each billing stream for which RTB is configured. Record all RTB streams that are InSv for reference purposes. If no RTB streams exist, continue with step 29.

> *Note:* If required, refer to procedure "Querying the status of RTB for a billing stream" in the Accounting section.

29   Access the split level of the CS 2000 Core Manager maintenance interface by typing

> **# sdmmtc split**

> and pressing the **Enter** key.

Begin SwAct and system integration

> ⚠️ **CAUTION**
> **Possible loss of service**
> Before you begin the SwAct, ensure that the root directory is the current directory on both the active and inactive sides of the CS 2000 Core Manager. Type "cd /home/root" at the AIX prompt (#) on the VT100 console connected to SP0 (active) and the VT100 console connected to SP1 (inactive).

At the VT100 console connected to SP0 (Active)

1   Begin the SwAct by typing

> **> continue**

> and pressing the **Enter** key.

10 min.

> *Note 1:* It takes the system approximately 10 minutes to complete the SwAct. When the SwAct completes, a message appears on the console connected to SP0 indicating that the CS 2000 Core Manager is ready to be unsplit. Also, SP0 displays "Active Domain 1" and SP1 displays "Inactive Domain 0".

> *Note 2:* If the CS 2000 Core Manager is not stable, you have the option of aborting the upgrade using the **fallback** command.

2   The system prompts you to begin integration, but before you begin, access the application level to make sure the CS 2000 Core Manager is operating, and that the applications are in service by typing

> **appl**

and pressing the Enter key.

3   Determine if all applications are either InSv or ISTb.

Note: The Enhanced Terminal Access (ETA) application may take up to 30 min. to come into service after the system SWACT. If this occurs, you can wait until ETA returns to service, or you can proceed with the upgrade and monitoring of the system integration using the console port. Once ETA comes into service, you can revert to the use of an ETA or ATA client to monitor system conditions.

If	Do
all applications are InSv or ISTb	step 4
any applications are in a state other than InSv or ISTb	contact your next level of support to determine if these applications can be returned to service or taken offline to continue with the reintegration, then continue with step 4

4   Use the following table to determine your next step.

If you	Do
have the SDM Billing Application (SBA) on your system	step 5
do not have SDM Billing Application (SBA) on your system	step 9

5   Exit the maintenance interface by typing

> **quit all**

and pressing the Enter key.

6   Verify that billing is collecting records by typing

      `# query <stream_name>`

      and pressing the Enter key.

      where

        <stream_name>
          is the name of the billing stream, for example, ama.

      Note the number of records, wait approximately 10 seconds, and repeat the query command.

If the number of records	Do
increased from the first query command (meaning billing is working)	step 7
did not increase from the first query command (meaning billing is not working)	contact your next level of support

7   Query the status of each RTB stream that was InSv before SwAct (refer to your records from step 28). If none recorded, continue with step 9.

      Note: If required, refer to procedure "Querying the status of RTB for a billing stream" in the Accounting section.

8   If the status of RTB for any stream changed from InSv to ManB, manually return each of these RTB stream instances to service. Refer to procedure "Returning RTB stream instance to service" in the Accounting section.

9   Access the split level of the maintenance interface by typing

      `# sdmmtc split`

      and pressing the **Enter** key.

10

> ⚠️ **CAUTION**
> **Possible loss of service**
> Once you begin the reintegration process, you cannot use the fallback command to return to the previous version of the CS 2000 Core Manager software. If you decide to return to the previous version of the CS 2000 Core Manager software after the reintegration process, you must take the CS 2000 Core Manager offline and restore the previous version of the CS 2000 Core Manager software from an S-tape. There is a loss of service for several hours when you restore the previous software.

Begin the integration process by typing

> **> continue**

and pressing the **Enter** key.

At the VT100 console connected to SP0 (Active)

11 The integration process continues. When the CPU completes integration, the rootvg starts integration.

If the X.25 interface is	Do
configured on the system	step 12
not configured on the system	step 20

12 When the rootvg starts integration, access the hardware level to verify the status of the X25 hardware by typing

> **> hw**

and pressing the Enter key.

Wait until the status of the X25 hardware changes to either *in service* (*.*), or *integrating* (*I*) before continuing to the next step.

13 Exit the maintenance interface by typing

> **> quit all**

and pressing the Enter key.

14   At the UNIX prompt, execute the "x25reint" command by typing

`# /usr/lpp/psx25/tmp/x25reint`

and pressing the Enter key.

15   Access the X.25 CON level of the maintenance interface by typing

`# sdmmtc x25`

and pressing the Enter key.

16   Check the state of the X.25 connectivity (indicated by a sign next to the "X25 State:" heading).

If the X25 State is	Do
in service (represented by a dot [.])	step 20
anything else (not a dot [.])	step 17

17   Stop the X.25 daemon by typing

`> 6 stop`

and pressing the Enter key.

18   Confirm the command by typing

`> y`

and pressing the Enter key.

19   Wait for the daemon stop action to complete, then start the daemon by typing

`> 6 start`

and pressing the Enter key.

Once the daemon start action is completed, continue with step 20.

20   When the rootvg completes integration, the datavg starts integration.

> *Note:* You can monitor the progress of the datavg integration at the storage level of the CS 2000 Core Manager maintenance interface.

The system becomes unsplit and the inactive side (SP1) shuts down.

21   Use the following table to determine your next step.

If you	Do
have the SDM billing application (with or without the SBA Automatic File Transfer application) on your system	step 22
do not have SDM billing application on your system	step 30

At the CS 2000 Core Manager

22

> **ATTENTION**
> The following steps stop the Billing application for approximately 30 minutes. Ensure that adequate backup space is available on the Communication Server 2000 core before continuing with these steps. To determine the amount of backup space required, refer to "Disk space requirements in "Preparing for SBA installation and configuration" in the Accounting section. To set up the backup space, refer to procedure "Configuring the SBA on the Communication Server 2000 core" in the Accounting section.

Access the maintenance interface by typing

 # sdmmtc

and pressing the Enter key.

23   Execute substep b or a according to whether you are upgrading from tape or a directory, and proceed to step 24.

a   If you are upgrading from a directory (ESD or pre-loaded from tape), list the filesets by typing

> apply <directory path>

and pressing the Enter key.

Note: <directory path> may be the /swd/sdm/esd directory.

b If you are upgrading directly from tape, list the filesets by typing

> `> apply 1`

and pressing the Enter key.

> ***Note:*** The last character in the command string is the number 1.

24 Select the SDM Billing Application fileset and, if required, the SBA Automatic File Transfer fileset by typing

> select <x> <y>

and pressing the Enter key.

where

> **<x>**
>   is the number next to the SDM Billing Application fileset
>
> **<y>**
>   is the number next to the SBA Automatic File Transfer fileset

Note: If you do not have the SBA Automatic File Transfer application on your system, do not select the AFT fileset. Enter select <x>.

25 Apply the SDM Billing Application fileset and, if required, the SBA Automatic File Transfer fileset by typing

> apply

and pressing the Enter key.

26 When prompted, confirm the apply command by typing

> y

and pressing the Enter key.

27 If applicable, restart the Automatic File Transfer (AFT) application as follows:

a Access the billing maintenance interface by typing

 # billmtc

and pressing the Enter key.

    b Restart the AFT application by typing

       `> start <session_name>`

    and pressing the Enter key.

    Where:

        <session_name>
           is the name of the AFT session

    c Exit the billing maintenance interface by typing

       `> quit all`

    and pressing the Enter key.

28   Use the following table to determine your next step.

If you	Do
have DNBD Call Monitoring Application on your system	step 29
do not have DNBD Call Monitoring Application on your system	step 30

29   Upgrade the DNBD Call Monitoring application by following the International Lawful Intercept ISN06/MMP19, NN10194 document.

30   Use the following table to determine your next step.

If you	Do
need to install new CS2E06 applications and services	step 31
do not need to install new CS2E06 applications and services	step 32

31   Install new CS2E06 applications and services using the procedures in the CS 2000 Core Manager suite of information modules that correspond to the applications or services you want to install. When complete, return to this procedure and proceed to step 32.

    Note 1: Only install the required Succession applications. For a list of applications required for each Succession solution, refer to Filesets to solution mapping in the Upgrades section.

    Note 2: Install new applications and services from the VT100 console connected to SP0 (active).

32   Complete the [Post-upgrade procedures](#) described in the Upgrades section.

33   You have completed the procedure.

Upgrading CS 2000 Core Manager software using ESUP

This procedure provides information about upgrading your CS 2000 Core Manager software from the latest CS2E04 or CS2E05 release to the CS2E06 release using an enhanced SDM upgrade procedure (ESUP).

Note 1: This procedure references other procedures in the CS 2000 Core Manager Upgrades, Fault, Configuration, Accounting, and Security sections. Therefore, ensure you have access to those sections while performing this procedure.

Note 2: This procedure is an alternative to the "Upgrading CS 2000 Core Manager software using split-mode" procedure. It does not apply to rootvg-only systems.

Note 3: You can use this procedure only if you are able to telnet to the CS 2000 Core Manager through the LAN (local area network).

During the ESUP upgrade, the rootvg mirror is broken, the system is busied for a short time, then rootvg disks are re-integrated. The procedure takes approximately 2.5 hours. Datavg does not break mirror during this procedure, therefore it does not undergo re-integration.

Note: This procedure provides on-screen information and instructions. Please read all displayed messages carefully and use them together with this document to successfully complete the upgrade.

Pre-upgrade requirements

Before starting this procedure, complete the following activities:

- Ensure the latest MNCL release is installed on your system.

  Refer to Upgrade guidelines for the software baseline.

  Note: If you need to upgrade to the latest MNCL, refer to the MNCL release notes for instructions.

- Verify that the pre-check tasks described in the Preparing for a software upgrade procedure were successfully completed seven days before starting this upgrade.

- Perform a system image backup.

> **ATTENTION**
> Nortel Networks recommends that you perform a system image backup before you perform the upgrade. Use procedure "Creating system image backup tapes (S-tapes)" in the Security and Administration section. Performing a system image backup does not back up billing data. Ensure that billing is operating properly before starting.

- Obtain the password for the root user.
  You must log on to the CS 2000 Core Manager using the root user ID and password to perform the upgrade, therefore, obtain the password for the root user before you begin. Failure to log on as the root user may cause your upgrade to fail. Furthermore, ensure no other users are logged on during the upgrade. Only the user at the VT100 console should be logged on.

- Obtain the IP address for the CS 2000 Core Manager.
  Execute a 'querysdm config' command and record the output.

- Obtain the following information from your network administrator:

  — whether DNS is supported on SAM21 EM client workstations

  — the host name of the CS 2000 Management Tools server that is configured to run the Login Application

  — the CommonName from the certificate on the CS 2000 Management Tools server that is configured to run the Login Application

  — the IP address of the CS 2000 Management Tools server

  Note: Record the information for reference purposes.

- Obtain the right tape if upgrading from tape.
  If upgrading from tape, ensure you have the tape labeled "CS2E0006 NCL 6.x (1 of 1)".

  Note: Nortel Networks recommends that you upgrade your system directly from tape only if you are unable to complete procedure Upload the software from tape to a disk in the Preparing for a software upgrade section.

- Ensure the required files are in a directory if upgrading via ESD.
  If upgrading via Electronic Software Delivery (ESD), ensure the required files are in the directories you will be upgrading from, which may be the "/swd/sdm/esd" directory.

  Note 1: If necessary, contact your next level of support, or refer to procedures Preparing your system for upgrade via Electronic Software Delivery in the Upgrades section and "Transferring and retrieving files using SFT" in the Security and Administration section.

  Note 2: If you need to determine the list of required filesets for your Succession solution, refer to Filesets to solution mapping in the Upgrades section.

- Install and configure the pserver application on the Preside MDM.
  This applies to Succession offices where the CS 2000 Core Manager needs to communicate with the Preside MDM for fault data using the Passport log streamer application. Refer to the Preside MDM Upgrade Guide, NN10185-461, for instructions on how to install and configure the pserver application.

- Ensure the system is equipped with a datavg.
  The CS 2000 Core Manager must be equipped with a data volume group (datavg). You can check the presence of a datavg through the maintenance interface under the storage level (sdmmtc storage).

- Check the root logical volume file system - potential disk space error. Make sure the root logical volume "/" file system does not exceed 70% of its total size. If the "/" file system exceeds the 70% mark, you must make more room on the "/" file system for the upgrade to be successful. For more details, contact your next level of support.

- Ensure the CS 2000 Core Manager is alarm free.
  If any alarms are present, refer to the Fault section of this document for alarm-clearing procedures.

- Have VT100 terminal emulation.
  Before you perform this procedure, make sure that your terminal is capable of VT100 terminal emulation and that you can establish a VT100 connection to SP0.

- Have a PC or UNIX workstation connected to the LAN.
  Make sure that you have access to a PC or UNIX workstation from which you are able to telnet to the CS 2000 Core Manager through the LAN. Also, verify that telnet is enabled on the CS 2000 Core Manager.

- If you have SBA on your system, query the status of RTB for each billing stream for which RTB is configured.
  Record all RTB streams that are InSv for reference purposes.

  Note: If required, refer to procedure "Querying the status of RTB for a billing stream" in the Accounting section.

- Nortel Networks recommends that you deliver unprocessed billing files to a downstream destination. Ensure that no more than one unprocessed billing file remains on the system. The following table lists each task and the procedure in the Accounting section to complete the task.

Task	File transfer mode	Accounting procedure
Close billing files	All	"Closing billing files"
Send billing files downstream	Outbound file transfer (OFT)	"Sending billing files from disk"
	Inbound file transfer (IFT)	"Retrieving billing files for a stream set to inbound file transfer"
	Real time billing (RTB)	"Sending billing files from disk"
(Sheet 1 of 2)		

Task	File transfer mode	Accounting procedure
	Automatic file transfer (AFT)	No manual action is required. Wait for SBA to deliver pending billing files to the downstream destination. There should be no pending files (at least, no more then one) for each AFT session.
		Use the following commands to query AFT sessions: `billmtc, appl, aft, aftconfg, list`.
		Note: Press the Enter key after each command.
		To verify which billing files for each session are still pending, enter the following commands: `billmtc, appl, aft, query <session_name>`.
		Note: Press the Enter key after each command.
(Sheet 2 of 2)		

Note: To display the details about a stream, refer to procedure "Listing billing streams" in the Accounting section. To list all files currently stored in a stream, refer to procedure "Listing billing files" in the Accounting section.

If you are unable to send billing files to a downstream destination and you want to proceed with the upgrade, Nortel Networks recommends that you backup the billing files to a DAT tape. If required, refer to procedure "Copying billing files to tape (backup)" in the Accounting section.

Note: If you need to restore the billing files from tape and you have AFT or IFT configuration, contact your next level of support for instructions. For any other configuration, you can send the billing files from tape following procedure "Sending billing files from tape" in the Accounting section.

Upgrade notices

> **CAUTION**
> **Possible upgrade failure**
> Do not login into any of the /alt_inst file systems at any stage of the upgrade. This may cause the upgrade to fail and start an automatic recovery.

> **ATTENTION**
> Some applications are automatically removed.
>
> If the Exception Reporting, Alarm Conduit, SDM Corba Framework, and Remote Registration System filesets are present, they are automatically removed when upgrading to CS2E06.

> **ATTENTION**
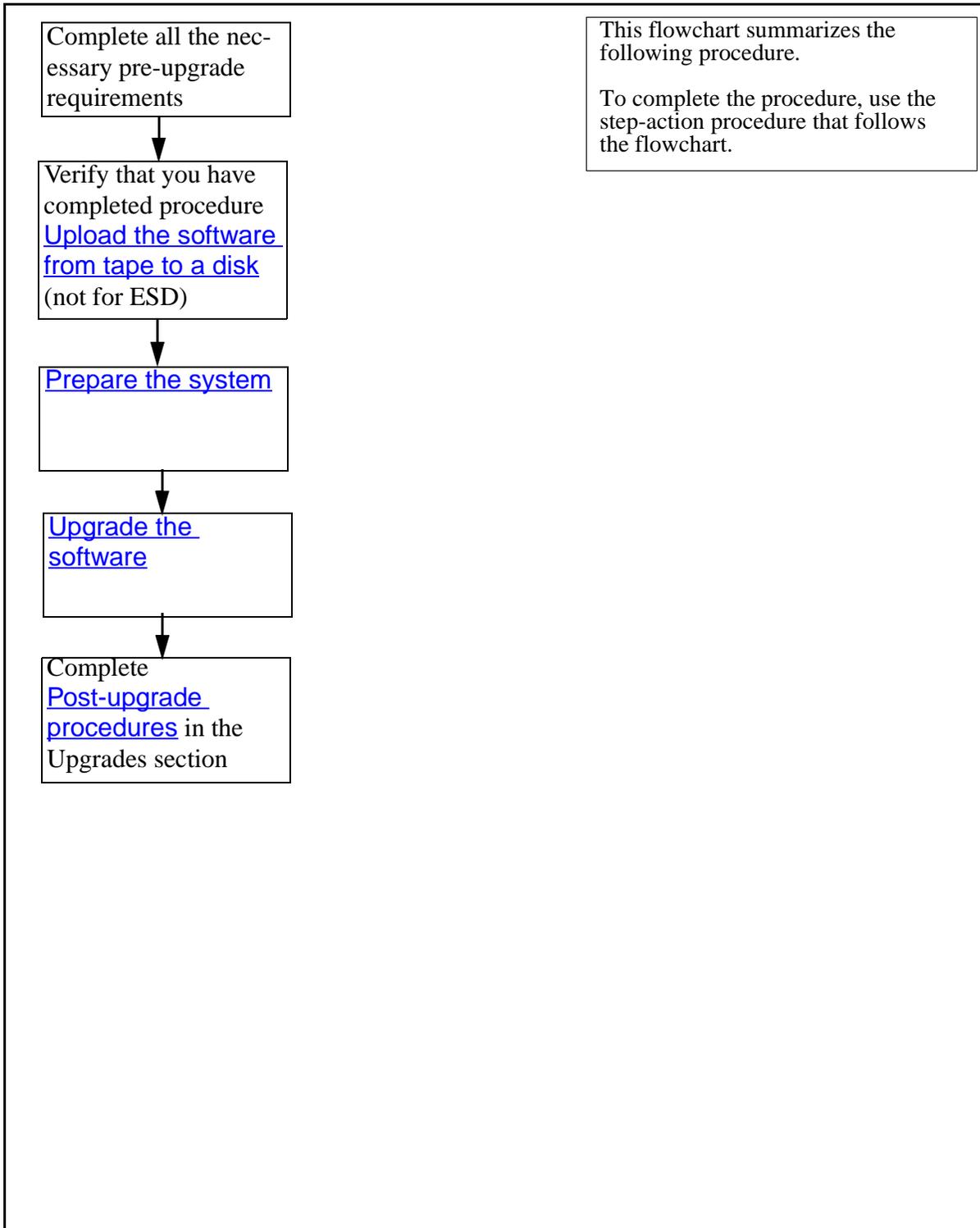> In case of fallback...
>
> You can abort this procedure at every prompt. If you choose to abort before the system reboots, follow the on-screen instructions to recover the system. If you choose to abort after the system reboots, complete procedure Recovering the system from an ESUP failure in the Upgrades section.
>
> If the CS 2000 Core Manager system initiates an automatic fallback during this procedure, contact your next level of support before attempting the recovery procedure.

Flowchart procedure

The following flowchart summarizes the steps in the ESUP upgrade procedure. Use the instructions in the procedures that follow the flowchart to complete the upgrade.

Summary of upgrading CS 2000 Core Manager software using ESUP

Complete all the necessary pre-upgrade requirements

↓

Verify that you have completed procedure Upload the software from tape to a disk (not for ESD)

↓

Prepare the system

↓

Upgrade the software

↓

Complete Post-upgrade procedures in the Upgrades section

This flowchart summarizes the following procedure.

To complete the procedure, use the step-action procedure that follows the flowchart.
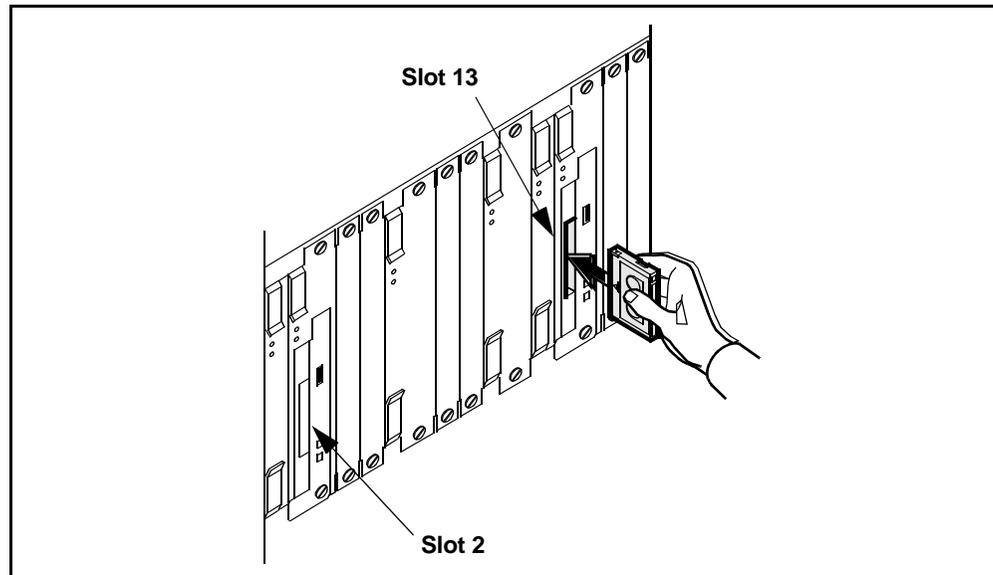
Prepare the system

ATTENTION
Read the <u>Pre-upgrade requirements</u> and <u>Upgrade notices</u> sections, and complete any necessary activities before you proceed with the upgrade.

At the VT100 console

1   Log on to the CS 2000 Core Manager using the root user ID and password

2   Verify that procedure <u>Upload the software from tape to a disk</u> in the <u>Preparing for a software upgrade</u> section has been completed. If not, perform the procedure now.

3   Use the following table to determine your next step.

If you are upgrading from	Do
a directory ***Note:*** A directory created during ESD or during procedure <u>Upload the software from tape to a disk</u> in the <u>Preparing for a software upgrade</u> section	step <u>4</u>
directly from tape (not recommended; use this option only if you are unable to upload the software from tape to a disk)	insert the tape labeled "CS2E0006 NCL 6.x (1 of 1)" into the tape drive in slot 13 (DAT1) as shown in the following figure, and continue with step <u>4</u>. ***Note:*** Wait until the tape drive stabilizes (yellow LED is off) before you proceed.

Main chassis tape drive

4   Perform the following substeps to remove all archived filesets
         from the system, which will free up disk space:

a   Access the Details level by typing

        # sdmmtc details

        and pressing the Enter key.

b   Show all software by typing

        > filter off

        and pressing the Enter key.

c   Select all archived filesets by typing

        > select all

        and pressing the Enter key.

        Note: If there are no archived filesets to remove, go to
        step 5.

d   Remove all archived filesets by typing

        > remove all

        and pressing the Enter key.

        Note: System will automatically select appropriate files to
        remove.

    e Confirm the command by typing

    > y

    and pressing the Enter key.

> *Note:* Once you remove the archived filesets, the state of the CS 2000 Core Manager changes to in-service trouble (ISTb), and the status of the Backup Status alarm indicates *Required*. Perform a backup of your new system image using procedure "Creating system image backup tapes (S-tape)" in the Security and Administration section. If you choose not to perform a backup, you can force-clear the alarm using procedure "Clearing a backup Required alarm" in the Fault section.

5   Exit the maintenance interface by typing

    > quit all

    and pressing the Enter key.

6   Use the following table to determine your next step.

If you	Do
have pre-loaded the software from tape, as described in procedure Upload the software from tape to a disk in the Preparing for a software upgrade section	go to step 9
are upgrading your system from an ESD directory (not after tape pre-loading)	go to step 8
are upgrading your system directly from tape inserted in slot 13	go to step 7

7   Install the Upgrade Tools fileset by typing

    # installp -ad /dev/rmt1 SDM_UPGRADE.tools

    and press the Enter key.

> *Note:* When prompted, press the Enter key again.

Continue with step 9.

8   Install the Upgrade Tools fileset by typing

`# installp -ad <directory> SDM_UPGRADE.tools`

and press the Enter key.

where

> **<directory>**
> is the directory where the software is located

Note: When prompted, press the Enter key again.

9   Install the ESUP software by completing the following substeps.

a   Begin the installation by typing

`# esupinstall`

and pressing the Enter key.

b   When prompted, select the location of the software load by typing one of the following values:

- **`0`** - if you are upgrading directly from tape inserted in slot 2

    Note: Nortel Networks recommends that you do not use slot 2. Use slot 13 instead.

- **`1`** - if you are upgrading directly from tape inserted in slot 13

- **`D`** - if you are upgrading from a directory (ESD or pre-loaded from tape)

- **`ABORT`** - if you wish to abort the procedure

and pressing the Enter key.

If you entered	Do
`D`	step <u>c</u>
anything else	step <u>d</u>

c   When prompted, enter the directory path where the software load is located.

d   Wait until the system completes the installation (up to 10 min). When completed, the following message is displayed:

`SUCCESSFULLY INSTALLED SOFTWARE FOR ESUP`

10   You have completed the procedure.

Upgrade the software

> **ATTENTION**
> All application filesets are upgraded during this procedure, except the SDM Billing Application (SBA), the SBA Automatic File Transfer (AFT) application, the DNBD Call Data Delivery (LI) application, and the ONE FTAM Software (LI) application filesets. If required, upgrade these application filesets after the ESUP portion of this procedure.

At the VT100 console

1   Begin the upgrade by typing

   `# esup_start`

   and pressing the Enter key.

   The system lists all stages of the upgrade and gives you the choice to continue the upgrade or to abort (go/abort).

2   If you wish to continue, type

   `> go`

   and press the Enter key.

3   When prompted to select the media type, use the following table to determine your next step.

   Note: If you were able to complete procedure <u>Upload the software from tape to a disk</u>, enter 2.

If you are upgrading from	Do
a directory (ESD or pre-loaded from tape)	type 2 and press the Enter key, then go to step <u>7</u>
directly from tape	type 1 and press the Enter key, then go to step <u>4</u>

   Note: If you wish to abort, enter 0.

4   The system displays the following response:

```
The following device has been selected to
perform the upgrade:

Media Type: TAPE /dev/rmt1

Continue (yes or no)>
```

   Note: /dev/rmt1 is the device name for the tape drive in slot 13 (DAT1).

Verify that the displayed media type is correct and continue the upgrade by typing

> **yes**

and pressing the Enter key.

The system reports all automatic sub-processes that are taking place during this stage, as well as the start time for each process. Also displayed is an estimated duration for each process.

approx. 1/2 h

> *Note:* The estimated time may not be exact. Allow some additional time. However, if the process continues much longer than the estimate, contact your next level of support.

5   When prompted to insert the tape, use the following table to determine your next step.

If at this point the tape	Do
is not inserted	insert the tape labeled "CS2E0006 NCL 6.x (1 of 1)" into the tape drive in slot 13, enter **go** and press the Enter key
is inserted	make sure that the tape is in the correct drive, enter **go** and press the Enter key

6   The system verifies the content of the tape and informs you if the wrong tape is inserted.

If the inserted tape is	Do
correct	step 11
not correct	replace it with the tape labeled "CS2E0006 NCL 6.x (1 of 1)", enter **go** and press the Enter key, then go to step 11

7   The system confirms that you have selected Media Type: DISK. Continue the upgrade by typing:

> **yes**

and pressing the Enter key.

> *Note:* If you wish to abort the procedure, enter no.

The system reports all automatic sub-processes that are taking place during this stage, as well as the start time for each

process. Also displayed is an estimated duration for each process.

> *Note:* The estimated time may not be exact. Allow some additional time. However, if the process continues much longer than the estimate, contact your next level of support.

8 When prompted to enter the directory location for the new NCL load, use the following table to determine your next step.

If the CS2E06 load files	Do
are located in the default ESD directory /swd/sdm/esd	enter **go** and press the Enter key
are not located in the default directory, or are located in the directory created during the Upload the software from tape to a disk procedure	enter the directory path where the files are located, then press the Enter key

9 The system verifies the content of the directory and informs you if you entered the wrong path.

If the directory is	Do
correct	step 10
not correct	re-type the directory path, press the Enter key, then go to step 10

10 When prompted to enter directory location for additional OS filesets, use the following table to determine your next step.

If the additional OS filesets	Do
are located in the default ESD directory /swd/sdm/esd	enter **go** and press the Enter key
are not located in the default ESD directory, or are located in the directory created during the Upload the software from tape to a disk procedure	enter the directory path where the files are located, then press the Enter key.

11 The system continues the upgrade procedure until it prompts you to busy the SDM.

At the PC or UNIX workstation

12   Establish a telnet connection to the CS 2000 Core Manager by completing the following substeps.

    a   Open a terminal window that is VT100 compatible.

    b   Log onto the CS 2000 Core Manager from the terminal window prompt by typing

       `telnet <ip_address>`

       and pressing the Enter key.

       where:

          `<ip_address>`
            is the IP address of the CS 2000 Core Manager

    c   When prompted, enter the login ID and password for the root user.

13   If your office is equipped with a third-party Call Agent, continue with step 14. Otherwise, go to step 15.

14   Busy the CS 2000 Core Manager by completing the following substeps.

    a   Access the SDM maintenance level by typing

       `# sdmmtc;mtc`

       and pressing the Enter key.

    b   Busy the CS 2000 Core Manager by typing

       `> bsy`

       and pressing the Enter key.

    c   Confirm the busy request by typing

       `> y`

       and pressing the Enter key.

    d   Continue with step 16.

At the MAP display

15 Busy the CS 2000 Core Manager by completing the following substeps.

    a Access the SDM level of the MAP display by typing

        > mapci;mtc;appl;sdm

    and pressing the Enter key.

    b Busy the CS 2000 Core Manager by typing

        > bsy

    and pressing the Enter key.

    c Confirm the busy request by typing

        > y

    and pressing the Enter key.

At the MAP display

16 Verify that each billing stream has entered the active backup mode by posting and querying each of your billing streams.

    > sdmbil;post<stream>;query

and pressing the Enter key.

At the VT100 console

17 Continue the procedure by typing **go** and pressing the Enter key.

    Note: Until the CS 2000 Core Manager is fully busy, the system displays the following message: `Waiting for SDM BSY`.

9 min.

    The system automatically reboots.

5 - 10 min.

18 Once the system has finished rebooting, log into the CS 2000 Core Manager using the root user ID and password.

    The upgrade automatically continues.

At the PC or UNIX workstation

19   The reboot process closed the previous telnet session. Re-establish a new telnet connection by completing the following substeps.

a   Log onto the CS 2000 Core Manager from the terminal window prompt by typing

telnet <ip_address>

and pressing the Enter key.

where:

<ip_address>
is the IP address of the CS 2000 Core Manager

b   When prompted, enter the login ID and password for the root user.

At the VT100 console

20   Use the following table to determine your next step.

If you are	Do
prompted to configure DDMS clients	step 21
not prompted to configure DDMS clients	step 27

21   Follow sub-steps a through c to configure the DDMS clients.

Note: The DDMS clients are the CS 2000 Management tools servers with the SESM load.

a   Add a new client by typing

> **1**

and pressing the Enter key.

b   When prompted, enter the IP address for each of the CS 2000 Management tools servers. Press the Enter key after each entry and type "done" once you have entered all the IP addresses.

c   Exit the DDMS clients configuration screen by typing

> **0**

and pressing the Enter key.

Note: You can reconfigure the OSS Comms Svcs at any time through the sdmmtc config level.

22   Use the following table to determine your next step.

If your office	Do
is equipped with a third-party Call Agent	step 23
is not equipped with a third-party Call Agent	step 28

At the PC or UNIX workstation

23   Access the Application level of the CS 2000 Core Manager maintenance interface by typing

 # sdmmtc appl

and pressing the Enter key.

24   Locate and busy the OSS Comms Svcs application by typing

> bsy <x>

and pressing the Enter key.

where:

>   **<X>**
>   is the number next to the OSS Comms Svcs fileset

25   Return the OSS Comms Svcs application to service by typing

> rts <x>

and pressing the Enter key.

where:

>   **<X>**
>   is the number next to the OSS Comms Svcs fileset

26   Continue with step 29 (the system automatically returns to service).

At the VT100 console

27   Use the following table to determine you next step.

If your office	Do
is equipped with a third-party Call Agent	continue with step 29 (the system automatically returns to service)
is not equipped with a third-party Call Agent	when prompted to return the SDM to service, go to step 28

At the MAP display

28 When prompted, return the CS 2000 Core Manager to service by completing the following substeps.

a Access the SDM level of the MAP display by typing.

> **`> mapci;mtc;appl;sdm`**

and pressing the Enter key.

b Return the CS 2000 Core Manager to service by typing

> **`> rts`**

and pressing the Enter key.

2 - 10 min.

At the VT100 console

29 Continue the procedure by typing `go` and pressing the Enter key.

Note: "Waiting for SDM RTS" message will appear until the system is fully in service. It will take 2 to 10 minutes for the CS 2000 Core Manager to return to service on the Communication Server 2000 core side.

At the MAP display

30 Verify that all billing streams are either in-service or in recovery on the CS 2000 Core Manager side by typing

> **`> sdmbil;post<stream>;query`**

and pressing the Enter key.

31 Use the following table to determine your next step.

If your system	Do
has SAM21 EM application, and you are upgrading from CS2E04 to CS2E06 load	step 32
does not have SAM21 EM application	step 33

At the PC or UNIX workstation

32 Configure SAM21 EM application by completing the following substeps.

> *Note:* Before you begin, have your records from the Pre-upgrade requirements section ready for reference.

a Access the Config level by typing

 # sdmmtc config

and pressing the Enter key.

b Start the configuration process by typing

> config <x>

and pressing the Enter key.

where:

> **<x>**
>   is the number next to the SAM21 Manager application

c When prompted whether DNS is supported on SAM21 EM workstations, enter **Y** (yes) or **N** (no), and press the Enter key.

If you enter	Do
Y (yes)	substep d
N (no)	substep e

d When prompted, enter the CommonName from the certificate on the CS 2000 Management Tools server that is configured to run the Login Application, and press the Enter key.

e When prompted, enter the host name of the CS 2000 Management Tools server that is configured to run the Login Application, and press the Enter key.

f Exit the maintenance interface by typing

> quit all

and pressing the Enter key.

At the VT100 console

33   The system displays a message confirming that the CS 2000 Core Manager has been upgraded successfully. Read the message and follow the on-screen instructions. Use the following table to determine your next step.

If you wish to	Do
complete the upgrade	step 34
abort the upgrade	type abort and press the Enter key. Complete procedure Recovering the system from an ESUP failure in the Upgrades section.

34   Use the following table to determine your next step.

If you	Do
have SBA on your system	step 35
do not have SBA on your system	step 37

At the PC or UNIX workstation

35   Query the status of each RTB stream that was InSv before the upgrade (refer to your records from the Pre-upgrade requirements section). If none recorded, continue with step 37.

   Note: If required, refer to procedure "Querying the status of RTB for a billing stream" in the Accounting section.

36   If the status of RTB for any stream changed from InSv to ManB, manually return each of these RTB stream instances to service. Refer to procedure "Returning RTB stream instance to service" in the Accounting section.

At the VT100 console

37

> ⚠ **CAUTION**
> **Possible loss of service**
> Once you begin the re-integration process, you cannot use the abort command to return to the previous version of the CS 2000 Core Manager software. If you decide to return to the previous version of the CS 2000 Core Manager software after the reintegration process, you must take the CS 2000 Core Manager off-line and restore the previous version of the CS 2000 Core Manager software from an S-tape. There is a loss of service for several hours when you restore the previous software.

Begin the integration process by typing

> go

and pressing the Enter key.

When the system confirms that the upgrade is complete, go to step 38.

50 - 60 min.

38   Complete any post-upgrade commissioning by typing

 # sdmconfig auto

and pressing the Enter key.

up to 2 min.

39   Complete the following procedures, as required, then continue with step 40.

- If you have the SDM Billing Application (with or without the SBA Automatic File Transfer application), proceed to section Upgrade the SBA and AFT applications.

- If you have the DNBD Call Monitoring Application on your system, upgrade it by following the appropriate procedure in the International Lawful Intercept ISN06/MMP, NN10194. When complete, return to this procedure.

40 Use the following table to determine your next step.

If you	Do
need to install new CS2E06 applications and services	step 41
do not need to install new CS2E06 applications and services	step 42

41 Install new CS2E06 applications and services using the procedures in the CS 2000 Core Manager suite of information modules that correspond to the applications or services you want to install. When complete, return to this procedure and proceed to step 42.

> *Note 1:* Only install the required Succession applications. For a list of applications required for each Succession solution, refer to Filesets to solution mapping in the Upgrades section.

> *Note 2:* Install new applications and services from the VT100 console.

42 Complete the Post-upgrade procedures described in the Upgrades section.

43 You have completed the procedure.

Upgrade the SBA and AFT applications

Complete this procedure only if you have the SDM Billing Application (with or without the SBA Automatic File Transfer application) on your system.

> *Note:* If you do not have the SBA Automatic File Transfer (AFT) application, disregard any references to AFT.

At the VT100 console

1

> **ATTENTION**
>
> The following steps stop the SBA for approximately
> 20 minutes. Ensure that adequate backup space is
> available on the Communication Server 2000 core before
> continuing with these steps. To determine the amount of
> backup space required, refer to "Disk space requirements
> in "Preparing for SBA installation and configuration" in the
> Accounting section. To set up the backup space, refer to
> procedure "Configuring the SBA on the Communication
> Server 2000 core" in the Accounting section.

Access the maintenance interface by typing

 # sdmmtc

and pressing the Enter key.

2   Execute substep b or a according to whether you are upgrading from tape or a directory, and proceed to step 3.

   a If you are upgrading from a directory (ESD or pre-loaded from tape), list the filesets by typing

   > apply <directory path>

   and pressing the Enter key.

   where:

      <directory_path>
        is the directory where the filesets are located

   Note: <directory path> may be the /swd/sdm/esd directory.

   b If you are upgrading directly from tape, list the filesets by typing

   > apply <domain_number)

   and pressing the Enter key.

   where:

      <domain_number>
        indicates the domain where you inserted the tape. Type
        1.

3   Select the SDM Billing Application fileset and the SBA Automatic File Transfer fileset by typing

     `> select <x> <y>`

     and pressing the Enter key.

     where

       `<x>`
         is the number next to the SDM Billing Application fileset

       `<y>`
         is the number next to the SBA Automatic File Transfer fileset

     Note: If you do not have the SBA Automatic File Transfer application on your system, do not select the AFT fileset. Enter select <x>.

4   Apply the SDM Billing Application fileset and the SBA Automatic File Transfer fileset by typing

     `> apply`

     and pressing the Enter key.

5   When prompted, confirm the apply command by typing

     `> y`

     and pressing the Enter key.

6   If applicable, restart the AFT application as follows:

     a   Access the billing maintenance interface by typing

        `# billmtc`

        and pressing the Enter key.

     b   Restart the AFT application by typing

        `> start <session_name>`

        and pressing the Enter key.

        where:

          `<session_name>`
           is the name of the AFT session

     c   Exit the billing maintenance interface by typing

        `> quit all`

        and pressing the Enter key.

7   You have completed the procedure.

122

Recovering the system from an ESUP failure

If an upgrade fails, you must recover the CS 2000 Core Manager from the failure. Follow this procedure to recover the CS 2000 Core Manager from a software failure during an enhanced SDM upgrade procedure (ESUP).

Application

During ESUP, you can choose to abort the procedure at different stages of the upgrade or the system can initiate an automatic fallback.
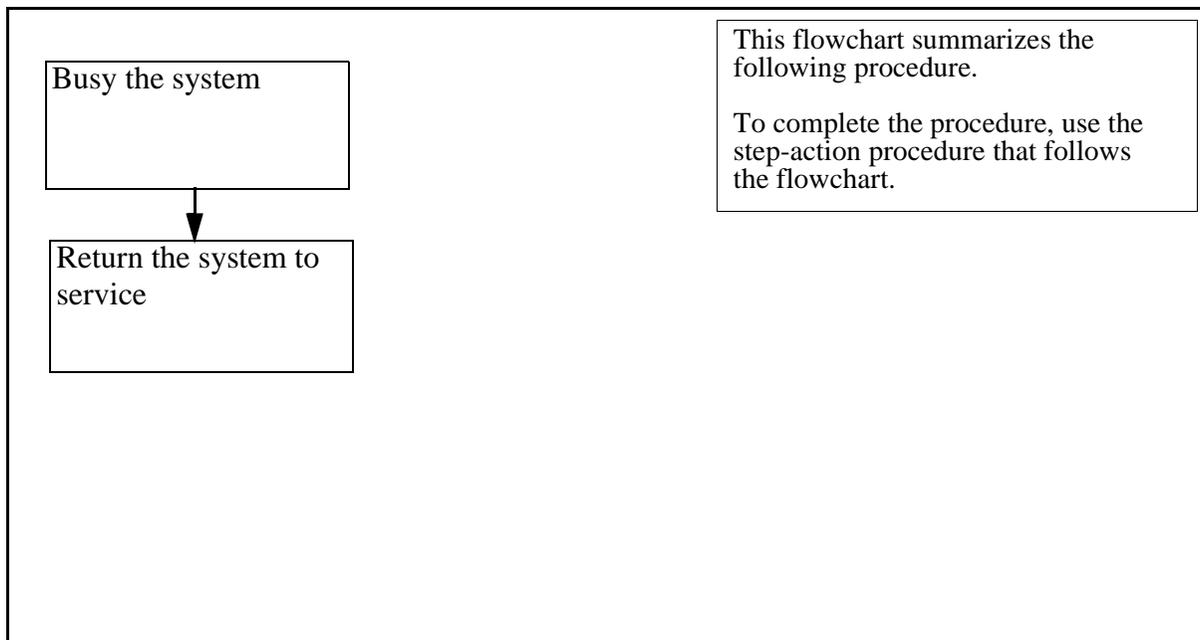
Use this procedure only under the following conditions:

- You have chosen to abort the upgrade after the system rebooted.
- After an automatic fallback occurred, your next level of support instructed you to complete this procedure.

Action

The following flowchart summarizes this procedure. To recover the CS 2000 Core Manager, use the instructions in the step-action procedure that follows the flowchart.

Summary of Recovering the system from an ESUP failure

```
┌─────────────────────┐          ┌──────────────────────────────┐
│ Busy the system     │          │ This flowchart summarizes the │
│                     │          │ following procedure.          │
│                     │          │                              │
│                     │          │ To complete the procedure, use│
└─────────────────────┘          │ the step-action procedure that│
          │                      │ follows the flowchart.        │
          ▼                      └──────────────────────────────┘
┌─────────────────────┐
│ Return the system to│
│ service             │
│                     │
└─────────────────────┘
```

Recovering the system from an ESUP failure

> **ATTENTION**
> This recovery procedure applies only to ESUP upgrades. This procedure is only applicable if you aborted the upgrade after the system rebooted or if you were instructed to complete this procedure by your next level of support.

At the VT100 console

1   The system displays the following message:

```
Please BUSY the SDM now!

Enter 'go' once the SDM BSY command has been
executed (go):
```

If your office is equipped with a third-party Call Agent, continue with step 2. Otherwise, go to step 4.

At the PC or UNIX workstation

2   Establish a telnet connection to the CS 2000 Core Manager by completing the following substeps.

    a   Open a terminal window that is VT100 compatible.

    b   Log onto the CS 2000 Core Manager from the terminal window prompt by typing

       telnet <ip_address>

    and pressing the Enter key.

    where:

       <ip_address>
         is the IP address of the CS 2000 Core Manager

    c   When prompted, enter the login ID and password for the root user.

3   Busy the CS 2000 Core Manager by completing the following substeps.

    a   Access the SDM maintenance level by typing

       > sdmmtc;mtc

    and pressing the Enter key.

b Busy the CS 2000 Core Manager by typing

> **bsy**

and pressing the **Enter** key.

c Confirm the busy request by typing

> **y**

and pressing the **Enter** key.

3 min.

d Continue with step 5.

At the MAP display

4 Busy the CS 2000 Core Manager by completing the following substeps.

a Access the SDM level of the MAP display by typing

> **mapci;mtc;appl;sdm**

and pressing the **Enter** key.

b Busy the CS 2000 Core Manager by typing

> **bsy**

and pressing the **Enter** key.

c Confirm the busy request by typing

> **y**

3 min. and pressing the **Enter** key.

At the MAP display

5 Verify that each billing stream has entered the active backup mode by posting and querying each of your billing streams.

> **sdmbil;post<stream>;query**

and pressing the **Enter** key.

At the VT100 console

6 When the CS 2000 Core Manager is fully busy, continue the procedure by typing **go** and pressing the Enter key.

9 min.

Note: Until the CS 2000 Core Manager is fully busy, the system displays the following message: Waiting for SDM BSY.

The system automatically reboots.

7 Once the system has finished rebooting, log into the CS 2000 Core Manager using the root user ID and password.

The abort procedure automatically continues.

8 The system displays the following message:

```
Please RTS the SDM now!

Enter 'go' once the SDM RTS command has been
executed (go):
```

If your office is equipped with a third-party Call Agent, go to step 10 (the CS 2000 Core Manager automatically returns to service). Otherwise, continue with step 9.

At the MAP display

9 Return the CS 2000 Core Manager to service by completing the following substeps.

    a Access the SDM level of the MAP display by typing.

        > mapci;mtc;appl;sdm

    and pressing the Enter key.

    b Return the CS 2000 Core Manager to service by typing

        > rts

    and pressing the **Enter** key.

**2 - 10
min.**

At the VT100 console

10 When the system is back in service, type **go** and press the Enter key.

    Note: "Waiting for SDM RTS" message will appear until the system is fully in service. It will take 2 to 10 minutes for the CS 2000 Core Manager to return to service on the Communication Server 2000 core side.

At the MAP display

11 Verify that all billing streams are either in-service or in recovery on the CS 2000 Core Manager side by typing

    > sdmbil;post<stream>;query

and pressing the **Enter** key.

At the PC or UNIX workstation

12 The reboot process closed the previous telnet session. Establish a new telnet connection by completing the following substeps.

a Log onto the CS 2000 Core Manager from the terminal window prompt by typing

```
telnet <ip_address>
```

and pressing the Enter key.

where:

<ip_address>
is the IP address of the CS 2000 Core Manager

b When prompted, enter the login ID and password for the root user.

13 If SBA is configured on your system, query the status of any real time billing (RTB) stream that exists on your system. If the status changed from InSv to ManB after busying the CS 2000 Core Manager, manually return each affected RTB stream to service.

Note: To verify the initial status of each RTB stream, refer to your records from the Pre-upgrade requirements tasks described in procedure Upgrading CS 2000 Core Manager software using ESUP.

If required, refer to the following procedures in the Accounting section:

- "Querying the status of RTB for a billing stream"
- "Returning RTB stream instance to service"

At the VT100 console

approx. 1/2 h

14 The recovery procedure continues until the Abort complete prompt is displayed.

15 You have completed the procedure.

Recovering the system from a split-mode upgrade failure

If an upgrade fails, you must recover the CS 2000 Core Manager from the failure. Then, you must reset the CPU firmware.

Application

Use this procedure to recover the CS 2000 Core Manager from a software or hardware failure during a split mode upgrade. During split mode, the CS 2000 Core Manager operates in a simplex mode, instead of a fault-tolerant mode. The main reason for recovering a system during these failures, is to return to a fault-tolerant mode as quickly as possible. The fault-tolerant mode allows the use of standard CS 2000 Core Manager diagnostic techniques while providing application and user services. Rapid system recovery minimizes the amount of system downtime needed to return to fault-tolerant mode. Rapid system recovery lets you recover as much current data as possible.

Use this procedure when the upgrade process cannot handle recovery on its own for the following reasons:

- the split mode upgrade halted unexpectedly
- the active console is not responding
- the FX-Bug prompt appears unexpectedly on the active console
- the system is not operating correctly, for example, rootvg is off-line

The CS 2000 Core Manager displays a message indicating that the upgrade process cannot recover and that you must perform the system recovery procedure. This procedure allows you to continue to use application and user services available on the CS 2000 Core Manager.

Note: The active console is always the physical terminal connected to SP0.

Recovering the CS 2000 Core Manager connectivity from the CM

If all the CS 2000 Core Manager links are down, use the abortupg command from the SDM level of the CM MAPCI to reestablish connectivity. The abortupg command is a hidden command. Use the command when all the links are closed on both the CM and the CS 2000 Core Manager. The abortupg command is only available when the CS 2000 Core Manager is not responding and there is no connectivity. The CS 2000 Core Manager MAPCI is not used during the upgrade procedure.

Note: The CM aligns to the upgrade mode during an upgrade when connectivity is reestablished and the CS 2000 Core Manager is InSv.

Use the BSY (force) and RTS (force) option to bring the CS 2000 Core Manager in service. For more information about the force option, refer to your DMS-100 documentation.

Action

The following flowchart summarizes the procedure. To recover the CS 2000 Core Manager, use the instructions in the step-action procedure that follows the flowchart.

Summary of Recovering the system from an upgrade failure

```
┌──────────────────────┐
│ Reboot the system    │
└──────────────────────┘
            │
            ▼
┌──────────────────────┐
│ Display the          │
│ current master       │
│ CPU module           │
└──────────────────────┘
            │
            ▼
┌──────────────────────┐
│ Unsplit the          │
│ system               │
└──────────────────────┘
            │
            ▼
┌──────────────────────┐
│ Reboot the           │
│ system               │
│ from domain 0        │
└──────────────────────┘
            │
            ▼
┌──────────────────────┐
│ Log in as the        │
│ root user            │
└──────────────────────┘
            │
            ▼
┌──────────────────────┐
│ Return the           │
│ system to            │
│ fault-tolerant mode  │
└──────────────────────┘
            │
            ▼
┌──────────────────────┐
│ End                  │
└──────────────────────┘
```

This flowchart summarizes the procedure.

Use the instructions in the procedure that follows this flowchart to perform the procedure.
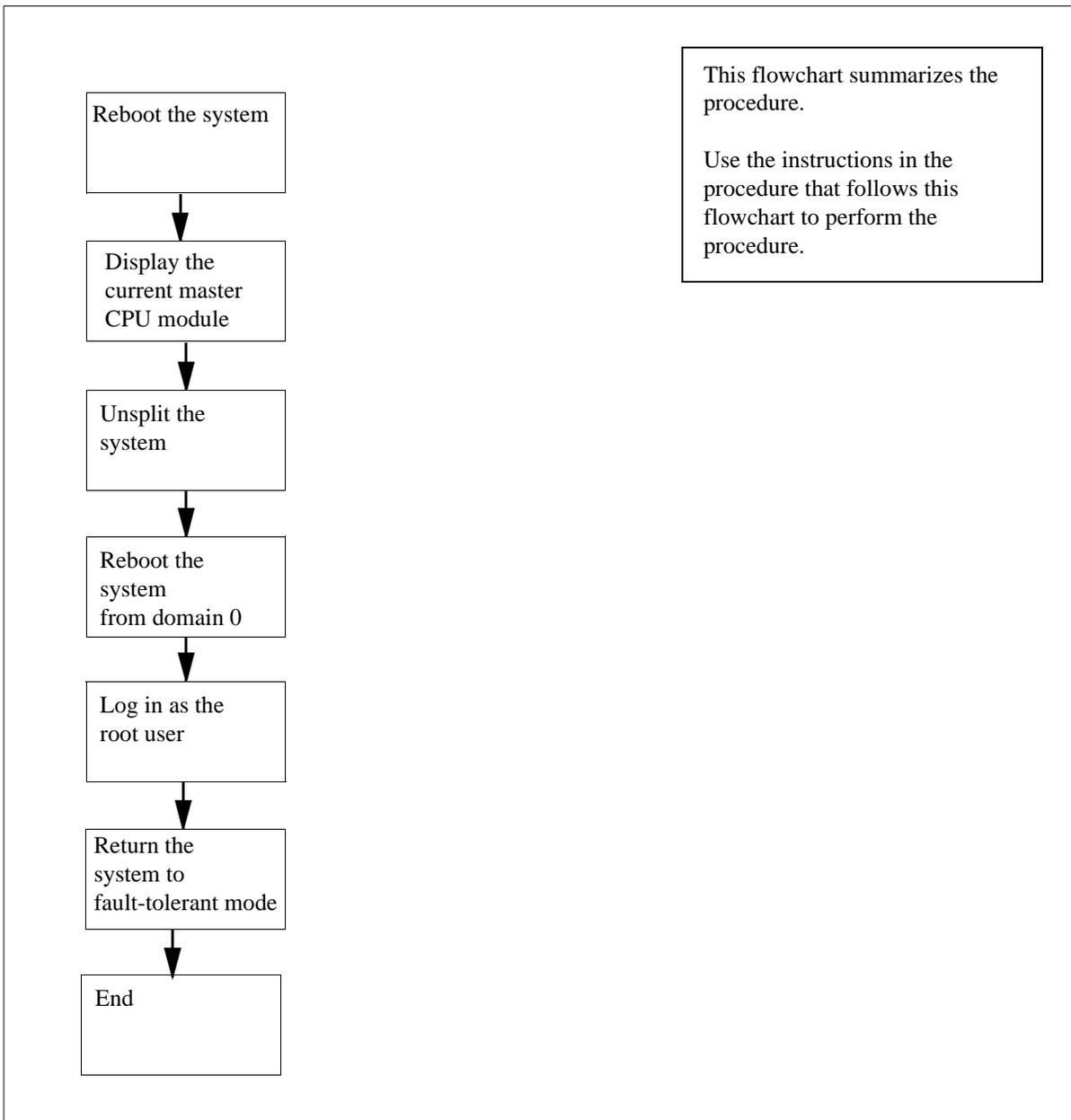
Recovering the system from an upgrade failure

ATTENTION

This recovery procedure applies only to split mode upgrades. This procedure is only applicable for SuperNode Data Managers installed with SDM010 or higher.

At the VT100 terminal connected to domain 0

1   Reboot the system to display the FX-Bug prompt by powering each side off and then on at the same time.

```
Booting from:  IO, Controller 1, Drive 0Device
Name:
/Bissau/mosh@82000000/harddisk@0,0Loading:  :
Operating SystemIPL Loaded at :
$07BF5000Residual-Date Located at:  $07F71000
```

If the FX-Bug prompt appears, proceed to step 2.

If a CPU module attempts to autoboot during the system recovery procedure, do not allow the autoboot. Autoboot is occurring when a series of messages appears. Press the Break key to interrupt the autoboot sequence.

2   At the FX-Bug prompt, display the current master CPU module by typing

FX-Bug> master

and pressing the Enter key.

Note the value displayed, which represents the current master CPU module. The number 0 represents the CPU in domain 0 and 2 represents the CPU in domain 1.

```
Fx-Bug>masterCPU-0 is the current master
```

3   At the FX-Bug prompt, type

FX-Bug> unsplit;c

and press the Enter key.

```
Fx-Bug>unsplit;ccritical_pri(UNSPLIT) returned 0 (status =
00000000 = 0)CPU-0: Master     CPU-1: Unknown   CPU-2:
E-State
```

4   Reboot the system from domain 0 rootvg, by typing

`FX-Bug> pboot 1 0`

and pressing the Enter key.

> *Note:* If this step fails, repeat it. If the second attempt to reboot the system fails, reboot the system from domain 1, by typing

`FX-Bug> pboot 6 0`

and pressing the Enter key.

> *Note:* If the reboot is still unsuccessful, power down the system and remove the master CPU module. Determine this from the value you noted in step 2.

If no master CPU module can reboot the system and the domain's CPU module was replaced as part of the Split Mode procedure:

- place the old domain 1 CPU module into the system
- remove all other CPU modules
- restart the procedure at step 2

5   Log in as the root user.

6   Return the system to fault-tolerant mode by typing

`# abortupg`

and pressing the Enter key.

The following response appears if the recovery was successful:

`Successfully exited split mode Catastrophic recovery successful.`

The following response appears if the recovery was unsuccessful:

`Catastrophic recovery unsuccessful.`

If this message appears, you must recover the system from the system backup tape. Refer to the procedure "Performing a full restore of the software load from S-tape" in the Fault section.

7   You have completed this procedure.

Post-upgrade procedures

This section provides information about procedures and tasks that you must complete after the successful software upgrade.

Ensure all applications are in-service

> **ATTENTION**
> If you upgraded your system using the split-mode method, perform this procedure at the VT100 console connected to SP0 (active).

At the VT100 console

1   Access the application level of the CS 2000 Core Manager maintenance interface by typing

> **> appl**

and pressing the **Enter** key.

2   Determine whether all applications are in-service (indicated by a dot under the "state" heading next to each application that is in-service).

> *Note:* The Passport Log Streamer application will be in an offline state and unconfigured if you had the Succession log delivery application installed and configured with parameter "Passport 15000 present in the network" set to "No" prior to this upgrade. Refer to "Installing and configuring the log delivery application" in the Configuration section to configure it and return it to service. When complete, return to this procedure and continue where you left off.

If	Do
all applications are in service	go to section <u>Verify the upgrade was successful</u>
not all applications are in service	step <u>3</u>

3   Manually busy (ManB) each application that is not in service by typing

> `> bsy <x>`

and pressing the Enter key.

where:

>   **<X>**
>   is the number next to one of the applications that is not in service

Response

`Application Busied - Command complete.`

4   Repeat step 3 for each application that is not in service.

5   Return each application to service (RTS) by typing

> `> rts <x>`

and pressing the Enter key.

where:

>   **<X>**
>   is the number next to each application you busied in the previous step.

Response

`Application RTS - Command complete.`

6   Repeat step 5 to return each application to service.

Verify the upgrade was successful

At the CS 2000 Core Manager console

1   Exit the maintenance interface by typing

> `> quit all`

and pressing the Enter key.

2 Verify that the product code, located at the top left-hand corner of the screen, is CS2E0006 by typing

`# querysdm loads`

and pressing the Enter key.

If the product code	Do
is CS2E0006	proceed to section Complete post-upgrade tasks
is *not* CS2E0006	contact your next level of support

Note: Dashes (----) displayed next to the platform maintenance are part of a normal output.

Complete post-upgrade tasks

At the CS 2000 Core Manager

1 Remove DDMS filesets and logical volumes if present on your system but not required. Refer to Removing DDMS filesets in the Upgrades section. Succession PT-AAL1 offices MUST perform this procedure.

2 Upgrade and configure client-side application software on the required workstations in your network. Refer to the procedure in the CS 2000 Core Manager suite of information modules that corresponds to the client application. For the CS 2000 SAM21 manager client application, refer to the Upgrading the CS 2000 SAM21 manager GUI client application procedure.

Note: You may need to contact your system administrator as client upgrades require root access to the workstations.

3 After your CS 2000 Core Manager is upgraded from the CS2E04 to the CS2E06 load, but the CS 2000 Management Tools server is not upgraded yet, a communication outage between the server and the core may occur. To re-establish the communication, complete the following substeps.

a Stop and start the DDMS proxy on the CS 2000 Management Tools server. Refer to the Stopping and starting the DDMS proxy procedure in the Upgrades section.

b Stop and start the Tomcat Servlet Container component on the CS 2000 Management Tools server. Refer to the Stopping and starting the Apache Web Server and Tomcat Servlet Container procedure in the Upgrades section.

    c Configure the SESM server application. Refer to the [Configuring the SESM server application](#) procedure in the Upgrades section.

4   If you upgraded from tape, eject the CS2E0006 NCL 6.x (1 of 1) from the tape drive and store it in a safe place.

5   If the software was delivered via Electronic Software Delivery (ESD), you will have an ESD logical volume on your system. You can remove the ESD logical volume and its contents from the CS 2000 Core Manager as follows:

> *Note:* If you choose to remove the ESD logical volume, the removal is *permanent*.

    a Access the storage level by typing

      `# sdmmtc storage`

    and pressing the **Enter** key.

    b Remove the ESD logical volume and its contents by typing

      `> esddel`

    and pressing the **Enter** key.

    c When prompted, confirm you want to remove the ESD logical volume and its contents by typing

      `> y`

    and pressing the **Enter** key.

    d Exit the maintenance interface by typing

      `> quit all`

    and pressing the Enter key.

6   The SAM21 EM application on the SDM is temporary. Please see the CS2K Management Tool, NN10062-461 for migrating SAM21 EM from SDM to SSPFS platform. Once the migration is completed successfully, remove the SAM21 EM fileset from the SDM using procedure "Removing CS 2000 Core Manager application filesets" in the Upgrade section.

7   Perform a backup of your new system image using procedure "Creating system image backup tapes (S-tape)" in the Security and Administration section.

> *Note:* If you choose not to perform a backup of your new system image, the CS 2000 Core Manager will be in-service trouble (ISTb) and the status of the Backup Status alarm will be *Required*. You can force-clear the alarm using procedure "Clearing a backup Required alarm" in the Fault section.

Upgrading the CS 2000 Core Manager with software fixes

The information that follows indicates how to upgrade your CS 2000 Core Manager with software fixes, and includes the following procedures:

- Setting the schedule to apply fixes automatically
- Applying fix filesets manually
- Changing the default fixes directory

Upgrading your CS 2000 Core Manager with software fixes involves replacing entire filesets. Fix filesets are delivered to you electronically from the Regional Patch Selector (RPS).

The Regional Patch Selector is an automated patch management and delivery system. RPS maintains information about patches and offices, calculates which patches are required in each office, and uploads the patches to the required sites.

Note: Patches for the CS 2000 Core Manager are referred herein as fix filesets.

Once your office information is entered in RPS, you will receive any fix filesets that apply to the CS 2000 Core Manager configuration for that office. The fix filesets you receive replace installed versions of the same filesets on your CS 2000 Core Manager.

Note: If you have multiple CS 2000 Core Manager locations, you can choose to either have each location set up in RPS or have only one location set up in RPS. When you choose to have a single location set up in RPS, you are responsible for propagating any fix filesets to the other CS 2000 Core Manager locations if and when required.

Fix filesets are sent to the location specified in RPS, which can be the CS 2000 Core Manager itself or an intermediate server that has a connection to the CS 2000 Core Manager. When the fix filesets are sent directly to the CS 2000 Core Manager, they are placed in a configured directory (refer to Location of fix filesets for more details on the configured directory). When the fix filesets are sent to an intermediate server, they are placed in a dropbox.

A release notes file is sent with each fix fileset. This file is in ASCII format and contains information about the fix.

RPS collects the "<clli>.informfile" from the CS 2000 Core Manager itself or from the dropbox on the server at configurable intervals, and delivers any fix filesets to your office as soon as they are available in RPS.

If your office is set up with an intermediate server connected to the CS 2000 Core Manager, you need to move or copy the fix filesets from the dropbox on the server to the configured directory on the CS 2000 Core Manager. You also need to ensure that your latest "<clli>.informfile", located in "/swd/sdm", is available in the dropbox on the server when RPS is scheduled to collect it.

> *Note:* You can transfer the fix filesets from the dropbox to the CS 2000 Core Manager, and the "<clli>.informfile" (ASCII file) from the CS 2000 Core Manager to the dropbox using file transfer protocol (FTP), Secure file transfer (SFT), or SFT2. To use SFT, refer to procedure "Transferring and retrieving files using SFT" in the Security and Administration section.

You are notified through e-mail when fix filesets have been successfully delivered to your site.

Once the fix filesets are accessible in the configured directory on the CS 2000 Core Manager, they need to be applied. Fix filesets that do not require user intervention can be applied automatically according to a set schedule. Refer to section Automatic installation of fix filesets. Fix filesets that require user intervention, need to be applied manually. Refer to section Manual installation of fix filesets.

Once the fix filesets have been successfully applied, either automatically or manually, they are deleted from the configured directory. The associated release notes, if present, are also deleted.

At any time, you can remove a fix fileset and restore a previous version of the fileset using the remove command at the Details level of the maintenance interface.

Automatic installation of fix filesets

You set the scheduled time for when you want fix filesets to be automatically applied from the Fixes level. The fix filesets that can be auto applied have "Y" under header "AA" (auto apply), and the fix filesets that are scheduled to be auto applied have a status of "SCHED" under header "Status" as shown in the following figure.

Fixes level - sched

```
    SDM      CON    512    NET    APPL   SYS    HW      CLLI: MSH10
     •        •     • •     •      •      •      •       Host: msh10sdm
                   • •                                       Fault Tolerant
Fixes
 0 Quit         Source: the directory /swd/sdm/fixes.
 2 Source       Filter: OFF
 3 Reload          # Fileset Description            Version        Status    AA
 4 Sched           1 Generic Data Delivery          18.17.1.1      SCHED     Y
 5                 2 Platform Maintenance           18.17.1.1      SCHED     Y
 6                 3 Passport Log Streamer          18.14.0.0      SCHED     Y
 7 Select          4 umfioFX Run Time Environment  1.3.0.6        SCHED     Y
 8 Apply                                Available Fixes:1 to 4 of 4
 9
10
11
12 Up
13 Down
14 Search
15 Filter
16 View
17 Help
18 Refresh
   root
Time  16:54  >█
```

> *Note:* If any fix filesets have a status of "INCOMP" (incomplete), meaning the fix fileset has dependencies that have not been installed and are not available, contact your Nortel representative.

Fix filesets that are scheduled to be applied automatically can only be applied from the configured directory on the CS 2000 Core Manager. Refer to section Location of fix filesets for more details on the configured directory.

You can apply fix filesets manually outside of the specified schedule. Refer to section Manual installation of fix filesets.

The system generates log SDM610 when a fix fileset scheduled to apply automatically, applies successfully or fails to apply. If you receive this log because a fix fileset failed to apply, contact your Nortel Networks representative.

Setting the schedule to apply fixes automatically

At the CS 2000 Core Manager

1   Log into the CS 2000 Core Manager as the root user.

2   Access the swim level by typing

        # sdmmtc swim

        and pressing the Enter key.

3   Access the Fixes level by typing

> `fixes`

and pressing the Enter key.

> *Note:* If you are accessing the Fixes level for the first time, you are prompted to enter the size of the fixes source directory, and the path of a new logical volume to be created for fixes. The minimum size is 200 MB and the maximum size is 1000 MB. The recommended size is 400 MB, which is the default.

4   Set the time interval as follows:

a   Enter the schedule level by typing

> `sched`

and pressing the Enter key.

Example response

```
Choose the interval desired:

1. Monthly
2. Weekly
3. Daily
4. None

Enter a number from 1 to 4 to make your choice
or type abort:
```

b   Enter the number that is next to the interval you want, press the Enter key, and complete the prompts for the specified interval.

c   When prompted, confirm your entry by typing

> `y`

and pressing the Enter key.

Response

```
Auto fix schedule has been updated.

Press Enter...
```

d   Press Enter to return to the Fixes level.

5   You have completed this procedure.

Manual installation of fix filesets

You need to manually apply fix filesets that require a reboot or have prerequisite filesets that need to be installed and require a reboot. The

fix filesets that you need to apply manually have "N" under header "AA" (auto apply), and "AVAIL" under header "Status".

Applying fix filesets manually

At the CS 2000 Core Manager

1   Log into the CS 2000 Core Manager as the root user.

2   Access the swim level by typing

      # sdmmtc swim

      and pressing the Enter key.

3   Access the Fixes level by typing

      > fixes

      and pressing the Enter key.

> ***Note:*** Ensure the fix filesets are accessible in the configured directory on the CS 2000 Core Manager (refer to Location of fix filesets for more details on the configured directory).

4   Select the fix fileset you want to apply by typing

      > select <n>

      and pressing the Enter key.

      Where

         <n>
            is the number next to the fix fileset you want to apply

5   Apply the fix fileset by typing

      > apply

      and pressing the Enter key.

6   You have completed this procedure.

Location of fix filesets

The directory path to the fixes default directory on your CS 2000 Core Manager, is "/swd/sdm/fixes". You can change the default fixes directory using the procedure that follows.

> ***Note:*** The directory must have a minimum of 200 MB available space. The recommended amount of available space is 400 MB, which is the default.

Changing the default fixes directory

At the CS 2000 Core Manager

1   Log into the CS 2000 Core Manager as the root user.

2   Access the swim level by typing

`# sdmmtc swim`

and pressing the Enter key.

3   Access the Options level by typing

`> options`

and pressing the Enter key.

4   Change the value of the default fix directory by typing

`> change 2`

and pressing the Enter key.

5   Enter the new value for the fix default directory, and press the Enter key.

>   ***Note:*** Enter the directory path when specifying a directory.

Response

`Change 2 – Command complete`

6   Access the Fixes level by typing

`> fixes`

and pressing the Enter key.

7   Press Enter to confirm the changed default fix directory.

8   You have completed this procedure.

Upgrading the CPU controller modules (in non-split mode)

Use this procedure when you want to upgrade the CPU controller modules independently from the CS 2000 Core Manager software using the non-split mode method.

> *Note:* If you want to upgrade the CPU controller modules using the split mode method, refer to procedure Upgrading the CPU controller modules (in split mode) in the Upgrades section.

ATTENTION

This procedure requires the complete shutdown of the CS 2000 Core Manager and all its applications. Upgrading a pair of CPUs can require two to four hours of a maintenance window to complete.

Refer to Hardware baseline in Upgrade guidelines for a list the CPU modules that are supported.

Summary of Upgrading the CPU controller module (in non-split mode)

Ensure the CS 2000 Core Manager is fault free.

↓

Busy the CS 2000 Core Manager.

↓

Close each active billing file.

↓

Verify the SBA successfully went into backup mode

↓

Delete the CPU database information

↓

Reboot the CS 2000 Core Manager.

↓

Determine the GMT for CPUs

↓

Replace CPU controller modules

↓

Restore power to the CS 2000 Core Manager.

↓

(1)

This flowchart summarizes the procedure.

(1)

↓

GMT correct? — N → Correct the time setting → (1)

↓ Y

Boot the CS 2000 Core Manager from disk.

↓

Restore the bootlist

↓

Allow the CPUs to complete integration

↓

Force CPUs to synchronize clocks

↓

Upgrading CPU? — N → (3)

↓ Y

Extend paging space (upgrades only)

↓

(2)

---

(2)

↓

Upgrading firmware? — N →

↓ Y

Go to procedure "Upgrading CPU firmware"

↓

(3)

RTS the CS 2000 Core Manager.

↓

Ensure the h/w and s/w have been restored to previous state

↓

VerifySBA billing stream is actively recording

↓

End

Upgrading the CPU controller module (in non-split mode)

At the MAP display

1

> **CAUTION**
> **Risk of service disruption**
> This upgrade stops the CS 2000 Core Manager billing Application. Ensure adequate backup space is available on the core before continuing with this procedure. To determine the amount of backup space required, refer to "Disk space requirements in "Preparing for SBA installation and configuration" in the Accounting section. To set up the backup space, refer to "Configuring the SBA on the Communication Server 2000 core" in the Accounting section.

> **ATTENTION**
> Nortel Networks recommends that you perform a system image backup before you upgrade the CPUs. Refer to procedure "Creating system image backup tapes (S-tapes)" in the Security and Administration section.

Ensure the CS 2000 Core Manager hardware and software applications are fault-free or faults are understood and acceptable.

Note: Subsequent to a CPU upgrade, any reoccurring alarms should be understood and any new alarms should be recognized and resolved without delay. If this does not occur, contact your next level of support.

2   Access the CS 2000 Core Manager level of the MAP display by typing

> **mapci;mtc;appl;sdm**

and pressing the Enter key.

Example response:

```
SDM InSv
```

3   Busy the CS 2000 Core Manager by typing

> **bsy**

and pressing the Enter key.

Response:

```
SDM is in service
This command will cause a service interruption.
Do you wish to proceed?
Please confirm ('YES', 'Y', 'N', or 'NO')
```

4   Confirm the busy command by typing

> **y**

and pressing the Enter key.

Response:

```
SDM Bsy initiated.
SD Bsy completed.
```

At the local or remote VT100 console

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

6   Display information for the root volume group (rootvg) by typing

lsvg -p rootvg

and pressing the Enter key.

Example response:

```
root vg:
PV NAME  PV STATE   TOTAL PPs   FREE PPs   FREE
DISTRIBUTION
hdisk0   active     1013        499
     175..31..00..125
                                           ..168
hdisk7   active     1013        499
     170..137..00..00
                                           ..192
```

7   Record which hard disks (physical volumes) provide rootvg
        storage on the CS 2000 Core Manager. (In the example shown
        in step 6, the hard disks are hdisk0 and hdisk7.)

8   Delete the CS 2000 Core Manager configuration database information for the CPU controller modules currently installed on the system by typing

     # ftcpuclean

     and pressing the Enter key.

9

ATTENTION
Before continuing, verify what keystrokes are required to perform a "Break" on your VT100 console.

     Shut down the CS 2000 Core Manager and initiate a reboot by typing

     # shutdown -Fr

     and pressing the Enter key.

10   Interrupt the boot process when the "COLD start" message appears by pressing the Break key.

     Example response:

```
FX-Bug>
```

     Note: The "COLD start" message appears within approximately 2 min.

11   Determine the current Greenwich Mean Time (GMT) setting on the existing CPU controller modules by typing

     FX-Bug> time

     and pressing the Enter key.

     Example response:

```
FRI NOV 16 18:41:49:00
```

     Note: The time setting is the correct GMT setting. It does not necessarily reflect the local date and time.

12   Record the date and time response.

     Note: If you are using a clock set to your local time to set the GMT on the new CPU controller modules, use the response in step 11 to calculate the number of hours that your local time differs from GMT.

At the modular supervisory panel (MSP)

13   Interrupt power to the CS 2000 Core Manager by turning off the MSP breakers. The MSP breakers, located at the front of the MSP, supply power to the CS 2000 Core Manager. Proceed according to the chassis structure of your system.

If your system contains	Do
a main chassis only	turn top two breakers off
a main chassis and I/O expansion chassis	turn all four breakers off

At the front of the CS 2000 Core Manager

14   Replace the CPU controller modules using procedure Replacing a CPU controller module during an upgrade in the Upgrades section. When complete, return here, and continue with step 15.

At the MSP

15   Restore power to the CS 2000 Core Manager by turning on the MSP breakers. Proceed according the chassis structure of your system.

If your system contains	Do
a main chassis only	turn top two breakers on
a main chassis and I/O expansion chassis	turn all four breakers on

Note: When you restore power, both LEDs on the CPU controller modules turn on briefly, then off. This action indicates that the module is seated correctly, is receiving power, and has passed its self tests.

At the local or remote VT100 console

16

ATTENTION

Before continuing, verify what keystrokes are required to perform a "Break" on your VT100 console.

Interrupt the boot process when the "COLD start" message appears by pressing the Break key.

Note: The "COLD start" message appears within approximately 5 min.

If after you pressed the Break key, the following message appears, press the Break key again after the prompt to stop the self/boots process.

```
Break detected; Self test/boots about to begin;
press <Break> anytime to abort all
```

Example response:

```
FX-Bug>
```

17 Determine the current Greenwich Mean Time (GMT) setting on the new CPU controller modules by typing

FX-Bug> time

and pressing the Enter key.

Example response:

```
FRI NOV 16 18:41:49:00
```

18 Determine if the GMT setting for the new CPU controller modules is correct.

If the GMT setting is	Do
incorrect	step 19
correct	step 20

19

> ⚠️ **CAUTION**
> **Potential loss of service**
> Ensure the GMT setting on the new CPU controller modules is later than the setting on the previous modules (recorded in step 12). Do not reboot the system if the GMT setting is earlier than the time of the shut down. This action can corrupt the system configuration and status information.

Correct the time setting to the current GMT by typing

`FX-bug> set <mmddyyhhmm>`

> **where**
> mm is the numeric month of the year (01 to 12)
>
> dd is the numeric day of the month (01 to 31)
>
> yy is the last two digits of the current year (00 to 99)
>
> mm is the current minute (00 to 59)

20   Boot the CS 2000 Core Manager from disk by typing

`FX-bug> pboot 1 0`

and pressing the Enter key.

> *Note:* During this time, the CPU firmware is automatically upgraded.

If you	Do
return to the FX-bug prompt again	step 21
do not return to the FX-bug prompt again	step 27

21   Boot the CS 2000 Core Manager again by typing

`FX-bug> pboot 1 0`

and pressing the Enter key.

22   At the login prompt, log in to the CS 2000 Core Manager as the root user.

23   Restore the bootlist by typing

`# bootlist -m normal <hdiskx> <hdisky>`

and pressing the Enter key.

> **where**
> hdiskx and hdisky are the two physical disks that provide rootvg storage, as recorded in step 7.

24   Check the CPU firmware for the CPU in domain 0 by typing

`# ftbugver -l CPU-0`

and pressing the Enter key.

> *Note:* The "-l" is a lower-case L.

25   Check the CPU firmware for the CPU in domain 1 by typing

`# ftbugver -l CPU-2`

and pressing the Enter key.

> *Note:* The "-l" is a lower-case L.

The next three steps allow for the CPU controller modules to complete integration.

26   Access the maintenance interface by typing

`# sdmmtc`

and pressing the Enter key.

27   Access the hardware level by typing

`> hw`

and pressing the Enter key.

28   Check the CPU integration status by typing

`> querysdm flt`

and pressing the Enter key.

29   Once the CPU controller modules have integrated, exit the maintenance level by typing

`> quit all`

and pressing the Enter key.

30   Force each CPU controller module to assume mastership to synchronize their clocks by typing

`# ftctl -switch`

and pressing the Enter key.

Repeat the command for the other CPU controller module.

31   Proceed according to whether you have upgraded or downgraded a module.

If you have	Do
upgraded a module	step 32
downgraded a module	step 35

32   View the current paging space to ensure it is twice the memory size of the CPU by typing

 # lsps -a

and pressing the Enter key.

Example response:

Page Space	Physical Volume	Volume Group	Size	%Used	Active	Auto	Type
hd6	hdisk0	rootvg	512MB	1	yes	yes	lv

This is an example response of the paging space for a 256-MByte CPU controller module. In the example, the Size column, which represents the memory size, indicates 512MB. This is twice the size of the CPU, which is what it must be.

If the paging space is	Do
twice the size of the CPU	step 35
not twice the size of the CPU	step 33

33   Increase the paging space by typing

 # sdmconfig cpu

and pressing the Enter key.

The paging space is now reset at twice the memory size of the CPU.

34   Verify the paging space has been increased by typing

 # lsps -a

and pressing the Enter key.

Example response:

Page Space	Physical Volume	Volume Group	Size	% Used	Active	Auto	Type
hd6	hdisk0	rootvg	1024MB	1	yes	yes	lv

This is an example response of the paging space for a 512-MByte CPU controller module. In the example, the Size column, which represents the memory size, indicates 1024MB. This is twice the size of the CPU, which is what it must be.

Note: If the paging space did not increase, repeat steps 33 and 34. If after repeating these steps the paging space still does not increase, contact your next level of support.

At the MAP display

35   Access the SDM level of the MAP display by typing

> mapci;mtc;appl;sdm

and pressing the Enter key.

Example response:

```
SDM ManB
```

36   Return the CS 2000 Core Manager to service by typing

> rts

and pressing the Enter key.

Response:

```
SDM RTS initiated.
SDM RTS completed.
```

The system automatically returns all modules to service

37   Ensure the CS 2000 Core Manager hardware and software applications have been restored to the previous inservice state (before the upgrade).

38   Investigate any CS 2000 Core Manager or CM alarms not recorded in pre-checks. For any alarms that cannot be resolved, contact your next level of support.

39   You have completed this procedure.

Upgrading the CPU controller modules (in split mode)

Use this procedure when you want to upgrade the CPU controller modules independently from the CS 2000 Core Manager software using the split mode method.

Note: If you want to upgrade the CPU controller modules using the non-split mode method, refer to procedure Upgrading the CPU controller modules (in non-split mode) in the Upgrades section.

ATTENTION
Perform this procedure when the activity on the CS 2000 Core Manager, and the switch is low.

Split-mode lets you upgrade the CPU controller module with minimal downtime. During the upgrade, split mode divides the CS 2000 Core Manager into two simplex systems. CPU 0 is associated with domain 0, and CPU 1 is associated with domain 1. While one side of the system upgrades, the other side continues to provide application service. You must upgrade domain 1 first.

The split mode process of upgrading the CPU is made up of the following phases:

- Split - domain 1 shuts down. The CS 2000 Core Manager splits into two simplex systems. The CPU in domain 0 is the active processor and cannot access the domain 1 hardware.

- Configure - CPU 1 boots and validates the hardware in domain 1.

- SwAct - switches active systems from domain 0 to domain 1 and transfers data from domain 0 to domain 1 (switch of activity). Console port SP0 is connected to the active CPU while SP1 is only operational when the SDM is split and is connected to the inactive CPU.

- Integrate - reintegrates the two systems and their volume groups into a fault-tolerant system.

Pre-installation requirements

Before starting this procedure, make sure the following activities have been completed.

- Perform a system image backup.

> **ATTENTION**
> Nortel Networks recommends that you perform a system image backup before you perform this procedure. Use procedure "Creating system image backup tapes (S-tapes)" in the Security and Administration section. Performing a system image backup does not back up billing data. Ensure that billing is operating properly before starting.

- Notify users of the upgrade.
  It is recommended that you notify any users who may be affected by the upgrade before you begin the upgrade

- Obtain the replacement CPU controller modules.
  Refer to Hardware baseline in Upgrade guidelines for a list the CPU modules that are supported.

- Have VT100 terminal emulation.
  Before you perform this procedure, establish two VT100 connections; one to SP0 (active domain) and one to SP1 (inactive domain). Unless otherwise stated, enter commands on the same console as the previous step until directed to change.

  Note: SP0 is the regular active console port. The terminal connected to SP0 is always connected to the active domain of the CS 2000 Core Manager. SP1 connects to the inactive domain of the CS 2000 Core Manager when in split mode. SP1 does not respond until the system splits.

- Make sure the CS 2000 Core Manager is alarm free.
  If any alarms are present, refer to the Fault section of this document for alarm-clearing procedures.

Exiting the split mode upgrade

ATTENTION

In case of automatic fallback...

If the CS 2000 Core Manager system initiates an automatic fallback during this procedure, allow the fallback to complete, then contact your next level of support.

Each phase of the upgrade procedure includes a series of interactive steps. If you fail to respond to a step or if a step fails, an error message appears at the Split level of the SDM maintenance interface. At any time during the upgrade, you have the option of exiting the upgrade and reverting the SDM to an unsplit state. For example, if you incorrectly perform one of the steps or an automatic upgrade fails, the upgrade temporarily ceases. The system prompts you to either continue with the upgrade or fall back. When you choose to fall back, the upgrade stops and the SDM reverts to its pre-upgraded, unsplit state. Once reintegration starts, you cannot use the Fallback command.

The SDM displays a message indicating that the upgrade process cannot recover and that you must perform the system recovery procedure. This procedure will allow you to continue to use application and user services available on the SDM.

Note: Use the Fallback command during the upgrade to revert to a fault-tolerant state. No service interruption occurs if you use the Fallback command before the SwAct. If you use the Fallback command after the SwAct, a service interruption has already occurred and an additional interruption occur.

An unrecoverable error generates an automatic fallback. If the recovery fails, refer to the procedure "System recovery from a software failure during a split-mode upgrade" in this chapter which describes how to handle the following types of failures:

- the split mode upgrade halted unexpectedly
- the active console is not responding
- the FX-Bug prompt appears unexpectedly on the active console
- the system is not operating correctly, for example, rootvg is offline

Note: If continuing does not cause a service interruption, use the Force option with the Continue command. The Force option override checks and forces the upgrade process to continue. For example, you can force the upgrade to continue with one CPU working.

Summary of Upgrading the CPU controller module (in split mode)

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

↓

Access the split level

↓

Begin the upgrade.

↓

Replace the CPU in domain 1.

↓

Manually reboot domain 1.

↓

Access the split level in domain 1.

↓

Continue the upgrade on domain 1.

↓

Execute a SwAct.

↓

1

This flowchart summarizes the procedure.

1

↓

Begin the integration phase.

↓

Replace the CPU in domain 0.

↓

End
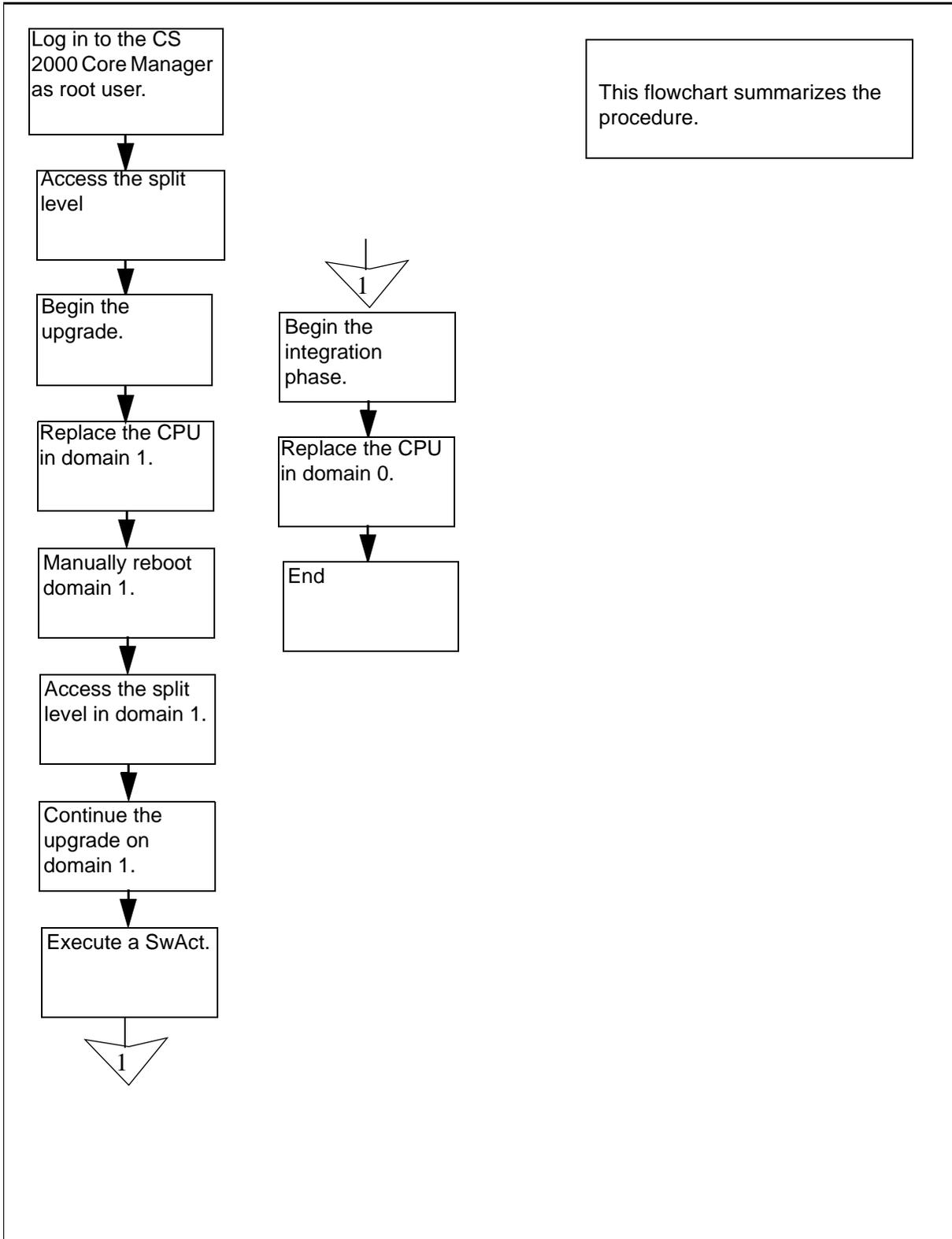
Upgrading the CPU controller module (in split mode)

> **CAUTION**
> **Service interruption**
> Applications will experience a service interruption during the SwAct.

> **CAUTION**
> **Check that no one is logged on to the SDM.**
> To ensure that access to the CS 2000 Core Manager is restricted during the upgrade, turn telnet access off.

> **CAUTION**
> **Autoboot is disabled**
> Autoboot is disabled during the upgrade procedure. Use the pboot command to manually reboot the CS 2000 Core Manager at the FX-Bug prompt.

> **ATTENTION**
> If a datavg is present when the upgrade is complete, the CS 2000 Core Manager remains ISTb while the datavg integrates.

> **ATTENTION**
> The split phase on the Split level of the maintenance interface indicates the progress of the upgrade as a percentage. It also provides information about what is occurring throughout the upgrade.

At the VT100 connected to domain 0

1   Log in to the CS 2000 Core Manager using the root user ID and password.

2   Access the split-mode screen of the maintenance interface by typing

   `# sdmmtc split`

   and pressing the Enter key.

3   Begin the split-mode upgrade by typing

> **start**

and pressing the **Enter** key.

4   When prompted, confirm that you want to perform the upgrade by typing

> **y**

and pressing the **Enter** key.

The system performs checks.

5   Use the following table to determine your next step.

If the system	Do
detects errors	go to the appropriate procedure to correct the errors, and return to step 1 in this procedure
does not detect errors	step 6

6   When prompted, specify you want to perform a CPU HW Upgrade by typing

> **3**

and pressing the Enter key.

7   When prompted, confirm you want to start the upgrade by typing

> **y**

and pressing the **Enter** key.

Note 1: During the upgrade the CM displays the state of the CS 2000 Core Manager as in-service trouble (ISTb).

Note 2: All node state commands are disabled during the upgrade. You can only use the RebootSDM command on the inactive side.

Note 3: The system displays the progress of the system split as a percentage. Wait until the system split is 100% complete (minimum of 20 minutes) before continuing this procedure.

20 min.+

At the VT100 console connected to domain 1 (inactive console)

8   At the FX-Bug prompt, reboot domain 1 by typing

`FX-Bug> pboot 6 0`

and pressing the Enter key.

> *Note:* If the CS 2000 Core Manager includes datavg, after you reboot domain 1, the CS 2000 Core Manager requires approximately 6 min. to stabilize. The Configure phase on the Split screen indicates the amount of time required before the CS 2000 Core Manager is stable and you can continue.

9   Log in to the CS 2000 Core Manager using the root user ID and password.

10   After the state indicator in the maintenance interface specifies that the system state is stable, continue the upgrade by typing

`> continue`

> *Note:* The inactive side of the CS 2000 Core Manager is always in the ManB state.

At the VT100 console connected to domain 0 (active console)

11   The system prompts you to replace the CPU in domain 1. Refer to procedure Replacing a CPU controller module during an upgrade in the Upgrades section. When complete, return here, and continue with step 12.

12   Continue the upgrade by typing

`> continue`

and pressing the Enter key.

At the VT100 console connected to domain 1 (inactive console)

13   At the FX-Bug prompt, reboot domain 1 by typing

`FX-Bug> pboot 6 0`

and pressing the Enter key.

> *Note:* The active console is domain 0. After the SwAct, the screen shows domain 1 as the active side. If the CS 2000 Core Manager is not stable, you have the option of falling back using the 'fallback' command

At the VT100 console connected to domain 0 (active console)

14 The system prompts you to perform a SwAct. Continue the upgrade and SwAct by typing

> **continue**

and pressing the Enter key.

> *Note:* The active console is domain 0. After the SwAct, the screen shows domain 1 as the active side. If the CS 2000 Core Manager is not stable, you have the option of falling back using the 'fallback' command

15

ATTENTION

The Fallback option is not available once you begin the integration phase.

The system prompts you to begin the integration phase. Check that the CS 2000 Core Manager is operating and the applications are providing service before you begin the integration phase.

16 Continue the integration by typing

> **continue**

and pressing the Enter key.

17 The system prompts you to replace the CPU in domain 0. Refer to procedure Replacing a CPU controller module during an upgrade in the Upgrades section. When complete, return here, and continue with step 18.

18 Continue the integration by typing

> **continue**

and pressing the Enter key.

19 You have completed this procedure.

Replacing a CPU controller module during an upgrade

> **ATTENTION**
> Use this procedure only if you have been directed here from an upgrade procedure to replace a CPU controller module. If you are replacing a CPU controller module outside of an upgrade procedure, refer to procedure "Replacing CPU controller modules" in the Fault section.

Replacing the CPU controller module

At the front of the CS 2000 Core Manager

1

> **WARNING**
> **Static electricity damage**
> Wear an electrostatic discharge (ESD) grounding wrist strap connected to the C28B cabinet when handling a module. This protects the module against damage caused by static electricity.

If you are upgrading the CPU controller module in domain 0, remove the CPU controller module from slots 6 and 7. If you are upgrading the CPU controller module in domain 1, remove the CPU controller module from slots 10 and 11.

Undo the thumbscrews located on the top and bottom of the CPU controller module.

Note: The thumbscrews are the captive type, and cannot be removed from the module.

2 Depress the tips of the locking levers on the face of the CPU controller module.
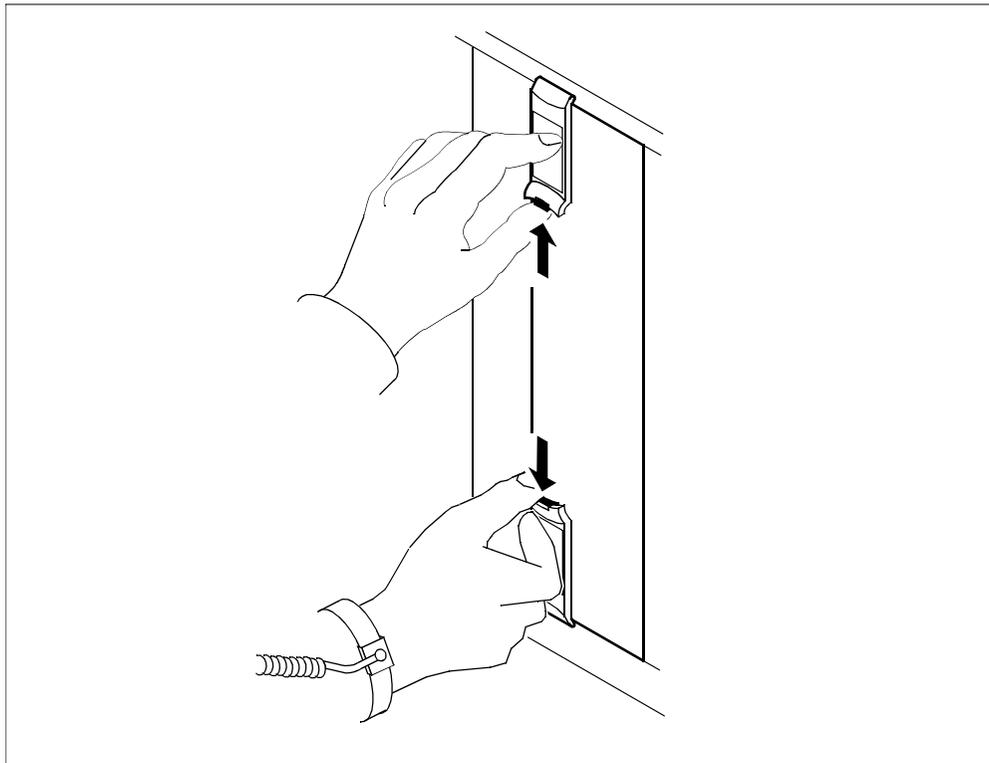
3 Open the locking levels on the face of the module by moving the levers outwards.
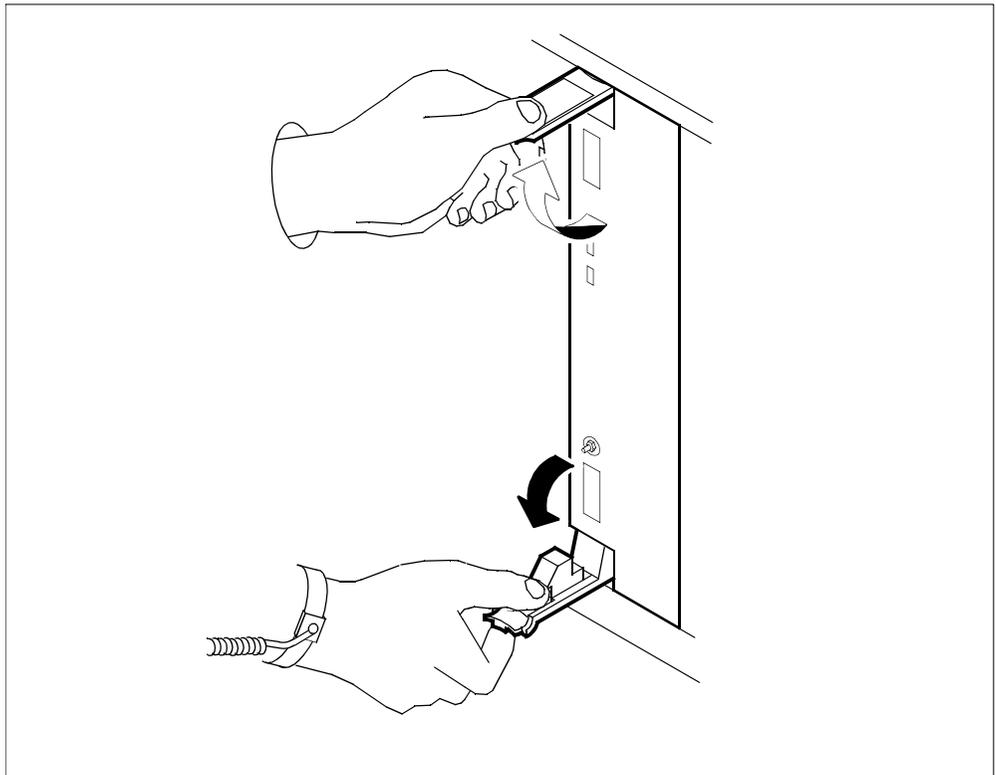
4 While grasping the locking levers, gently pull the module towards you until it protrudes about 2 in. (5.1 cm) from the shelf.
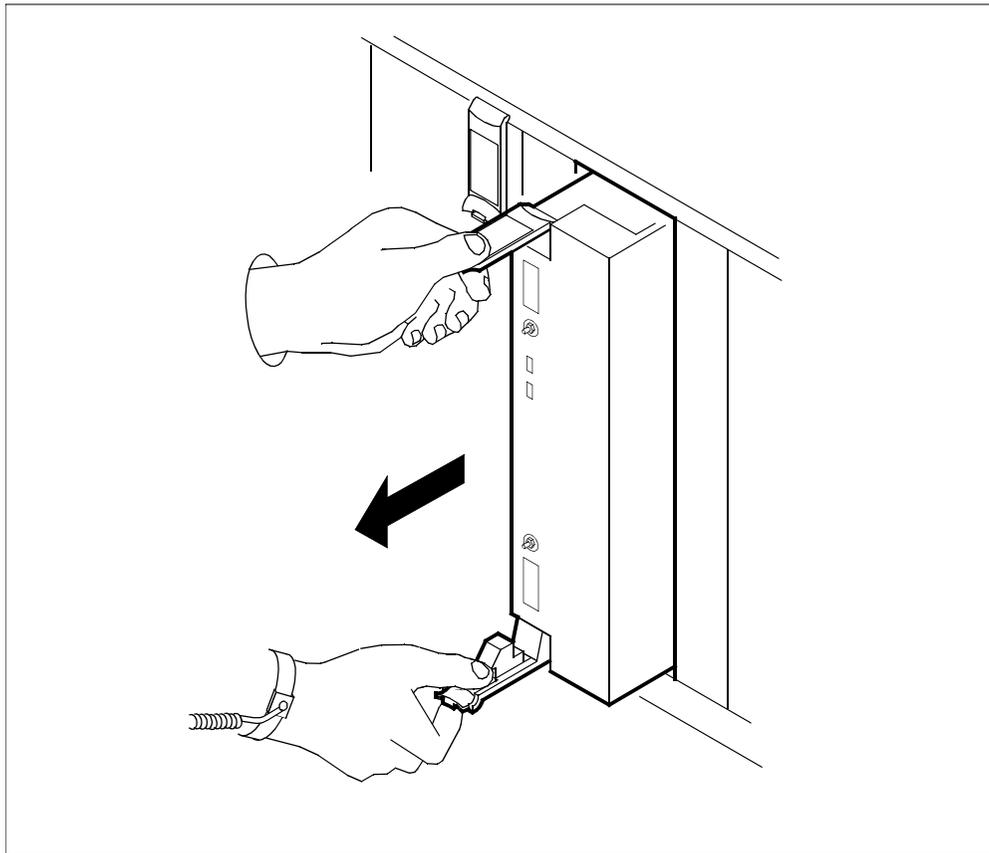
5 Hold the module by the face plate with one hand while supporting the bottom edge with the other. Gently pull the module toward you until it clears the shelf.
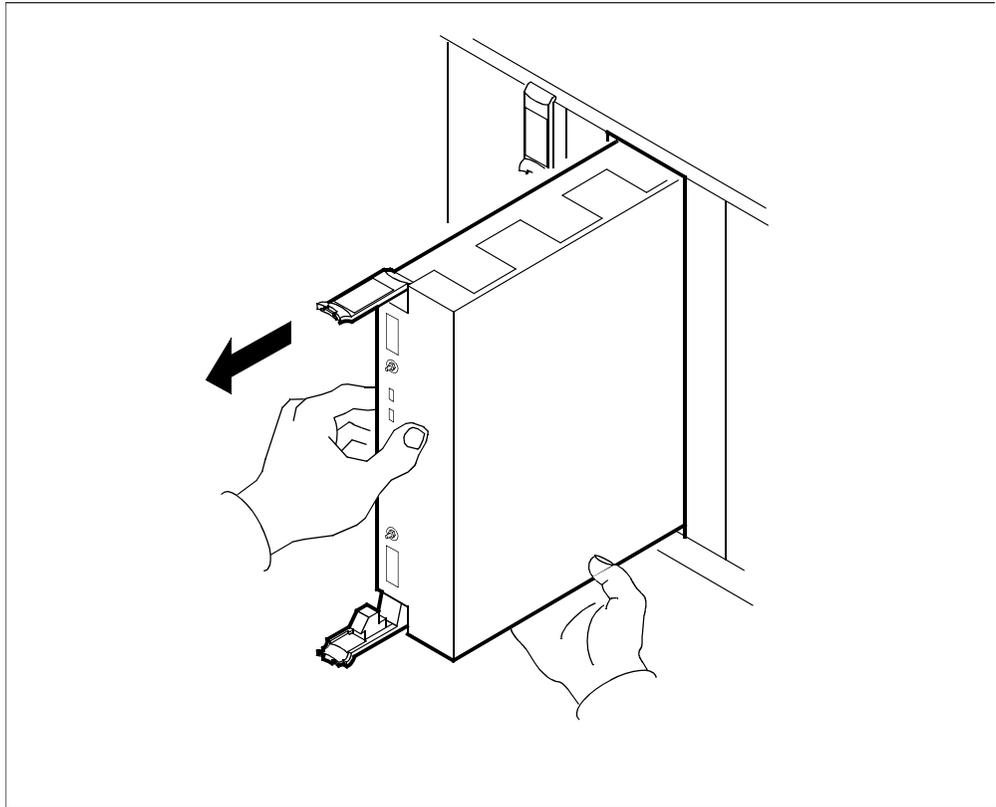
6 Place the module you have removed in an ESD protective container.

7 Insert the replacement module into the shelf.

8   Gently slide the module into the shelf until it is fully inserted.
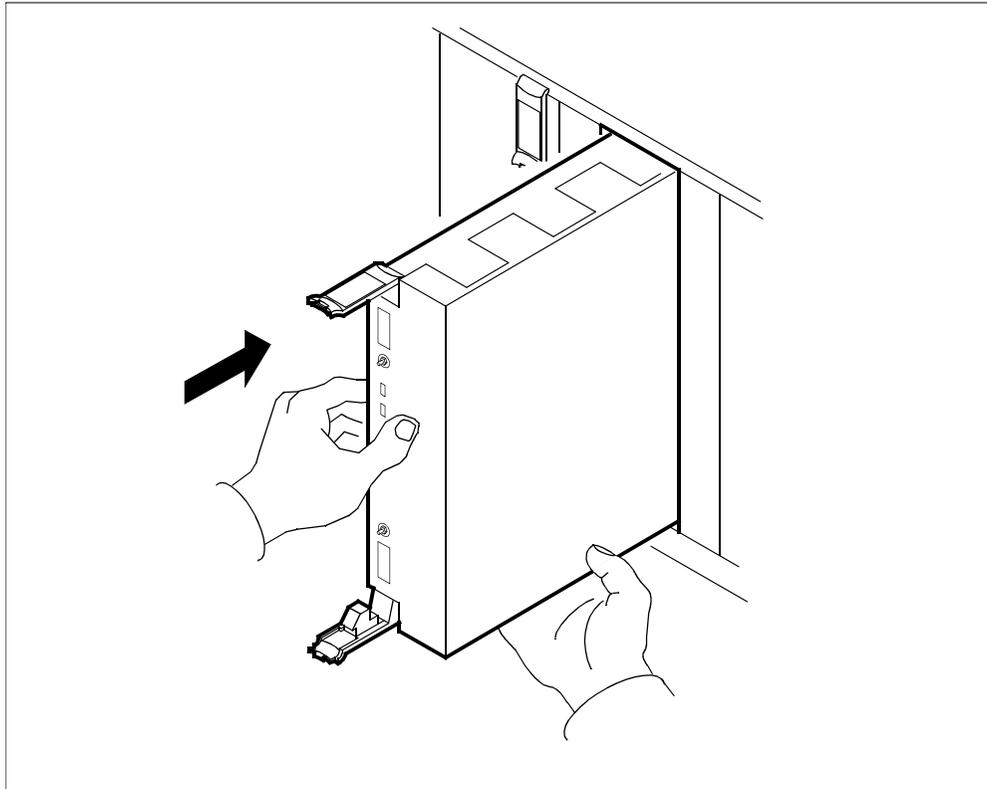
9 Close the locking levers to secure the module. Ensure that both the top and bottom micro switches are lined up with the locking levers to properly seat the module.

Micro switch
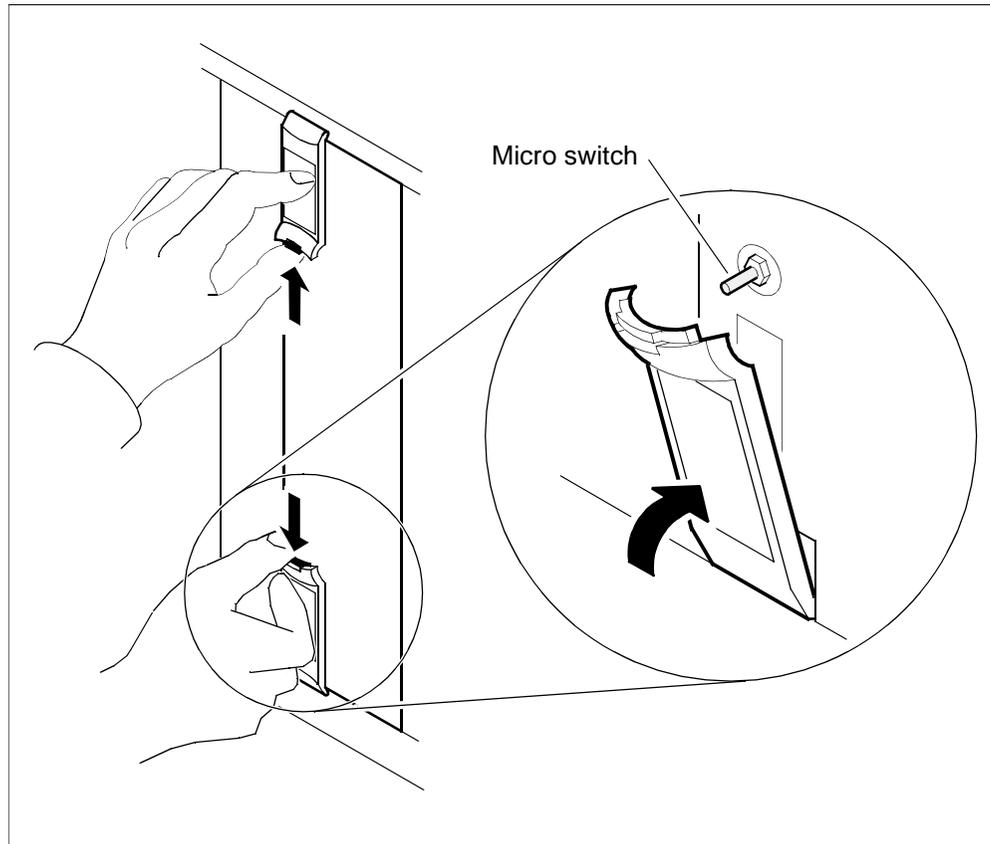
10 Tighten the thumbscrews on the module.

11 You have completed this procedure. Return to the procedure that sent you to this procedure.

Upgrading the CPU firmware

Application

Use this procedure to upgrade the CPU firmware after you have upgraded the CPU controller module. You must check the version of the firmware. If the CPUs do not have the current firmware version, you must perform a firmware upgrade.

The firmware upgrade only applies when you upgrade the CPU without using split-mode upgrade.

Interval

Perform this procedure anytime in order to check the CPU firmware, or after you have upgraded the CPU controller module.

Action

The flowchart that follows provides a summary of this procedure. Use the instructions in the step action procedure that follows the flowchart to perform the routine maintenance procedure.

Summary of upgrading the CPU firmware

```
Log in to the CS
2000 Core Man-
ager.
        │
        ▼
Check the f/w ver-
sion on the CS 2000
Core Manager.
        │
        ▼
   Is the version        Y
   correct?    ──────────▶ ( 1 )
        │ N
        ▼
Busy and offline
the CS 2000 Core
Manager.
        │
        ▼
   Is firmware           N
   version 17RM01  ──────▶ ( 3 )
   or 17IR06?
        │ Y
        ▼
Halt the CS 2000
Core Manager after
1st CPU upgrade.
        │
        ▼
      ( 2 )
```

```
      ( 2 )
        │
        ▼
Interrupt power to the
CS 2000 Core Man-
ager.
        │
        ▼
Unseat the
CPU module
        │
        ▼
Restore power to the
CS 2000 Core Man-
ager.
        │
        ▼
Reinsert the
CPU module
        │
        ▼
Log in to the CS
2000 Core Man-
ager.
        │
        ▼
Check the f/w version
on the CS 2000 Core
Manager.
        │
        ▼
Busy and RTS the CS
2000 Core Manager.
        │
        ▼
( 1 )  End
```

This flowchart summarizes the procedure.

```
      ( 3 )
        │
        ▼
Reboot the
system
        │
        ▼
Log in to the CS
2000 Core Man-
ager.
        │
        ▼
Wait for CPUs
to integrate
        │
        ▼
Busy and RTS the CS
2000 Core Manager.
        │
        ▼
      ( 1 )
```

Upgrading the CPU firmware

At the CS 2000 Core Manager local VT100 console

1 Log into the CS 2000 Core Manager as the root user.

2 Run the firmware process by typing

`# sdmfirmware`

and pressing the Enter key.

The system runs through the process and indicates whether a firmware upgrade is required. Note the current firmware version.

3 Use the following table to determine your next step.

If the firmware	Do
needs to be upgraded	step 4
does not need to be upgraded	step 29

At the MAP

4 Access the SDM level by typing

`> mapci;mtc;appl;sdm`

5 Busy the CS 2000 Core Manager by typing

`> bsy`

and pressing the Enter key.

6 Confirm the busy command by typing

`> y`

and pressing the Enter key

7 Take the CS 2000 Core Manager offline by typing

`> offl`

and pressing the Enter key

At the CS 2000 Core Manager local VT100 console

8 Proceed with the firmware upgrade by pressing the Enter key.

9   Use the following table to determine your next step.

If the firmware version noted in step 2	Do
is 17RM01	step 18
is not 17RM01	step 10

10   Print the instructions displayed on the system, which you will execute after the system has rebooted.

11   Press the Enter key to reboot the system and wait for the FX-Bug prompt

12   At the FX-Bug prompt, type

`FX-Bug> switch <cpu> ;h`

where <cpu> is the CPU number (0 or 2) from step 10.

13   Boot the system by typing

`FX-Bug> gevboot`

and pressing the Enter key.

14   Log into the CS 2000 Core Manager as the root user.

At the CS 2000 Core Manager VT100 console

15   Run the firmware process by typing

`# sdmfirmware`

and pressing the Enter key.

16   Wait for the CPU modules to integrate.

17   Press the Enter key to continue and go to step 31.

At the CS 2000 Core Manager VT100 console

18   The system prompts you to halt the CS 2000 Core Manager after the firmware upgrade on one CPU is complete. The system also indicates that you must pull the CPU after the halt is complete. Before you halt the CS 2000 Core Manager, note which CPU the system has directed you to pull.

To halt the CS 2000 Core Manager, press the Enter key. Wait for the halt to complete before continuing the procedure.

Note: Under some circumstances, the CS 2000 Core Manager reboots and does not halt. If this happens, wait for the reboot to complete, and then log into the CS 2000 Core Manager. Halt the CS 2000 Core Manager again. Interrupt the reboot process to access the FX-Bug prompt by pressing the

Break, or Esc key several times. When the CS 2000 Core Manager is at the FX-Bug prompt, you can interrupt the power to the CS 2000 Core Manager safely.

At the MSP

19 Interrupt power to the CS 2000 Core Manager by turning off both of the MSP breakers. The MSP breakers, located at the front of the MSP, supply power to the CS 2000 Core Manager.

20 Use the following table to determine your next step.

If your system contains	Do
a main chassis only	turn the top two breakers off
a main chassis and I/O expansion chassis	turn all four breakers off

At the front of the CS 2000 Core Manager

21 Unscrew the thumbscrews located on the top and the bottom of the CPU module noted in step 18.

Note: The thumbscrews are the captive type and you cannot remove them from the module.

22 Depress the tips of the locking levers on the face of the CPU module.

Micro switch
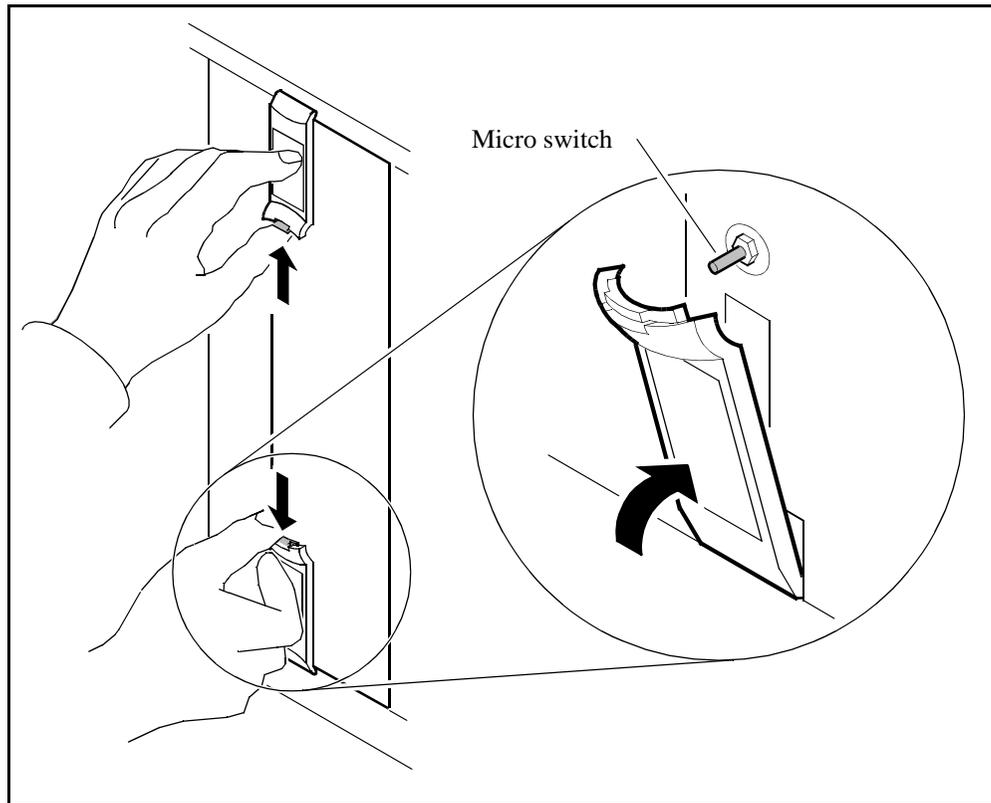
23 Open the locking levers on the face of the module by moving the levers outwards.
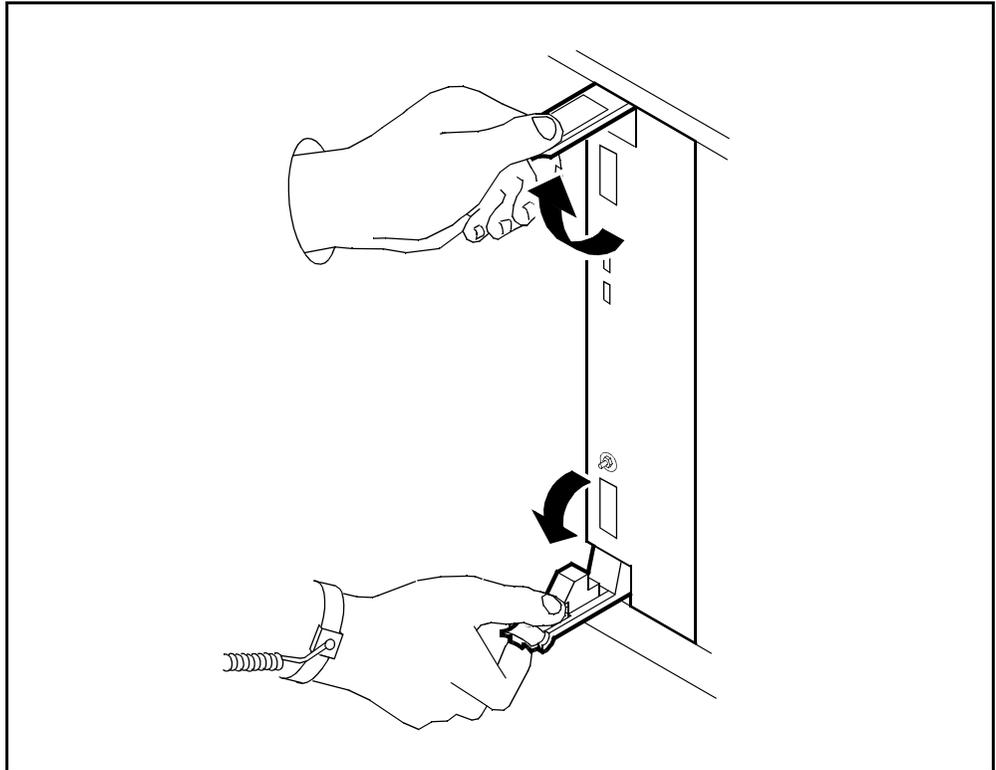
24   While grasping the locking levers, gently pull the module towards you until it protrudes about 2 in. (5.1 cm) from the CS 2000 Core Manager shelf.
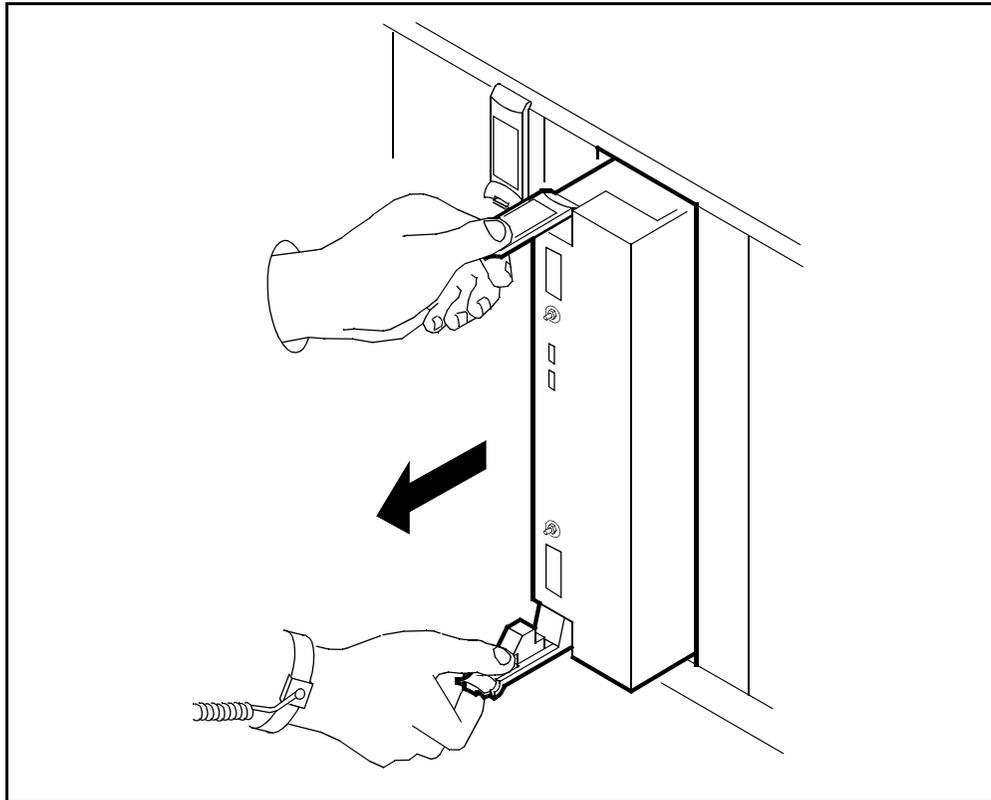
At the MSP

25   Restore the power to the CS 2000 Core Manager by turning on the MSP breakers, according to the chassis structure of your system.

If your system contains	Do
a main chassis only	turn the top two breakers on
a main chassis and I/O expansion chassis	turn all four breakers on

Note: Wait at least 15 seconds before re-inserting the pulled CPU.

At the front of the CS 2000 Core Manager

26 Gently push the CPU module that you pulled out in step 24 back into the slot.
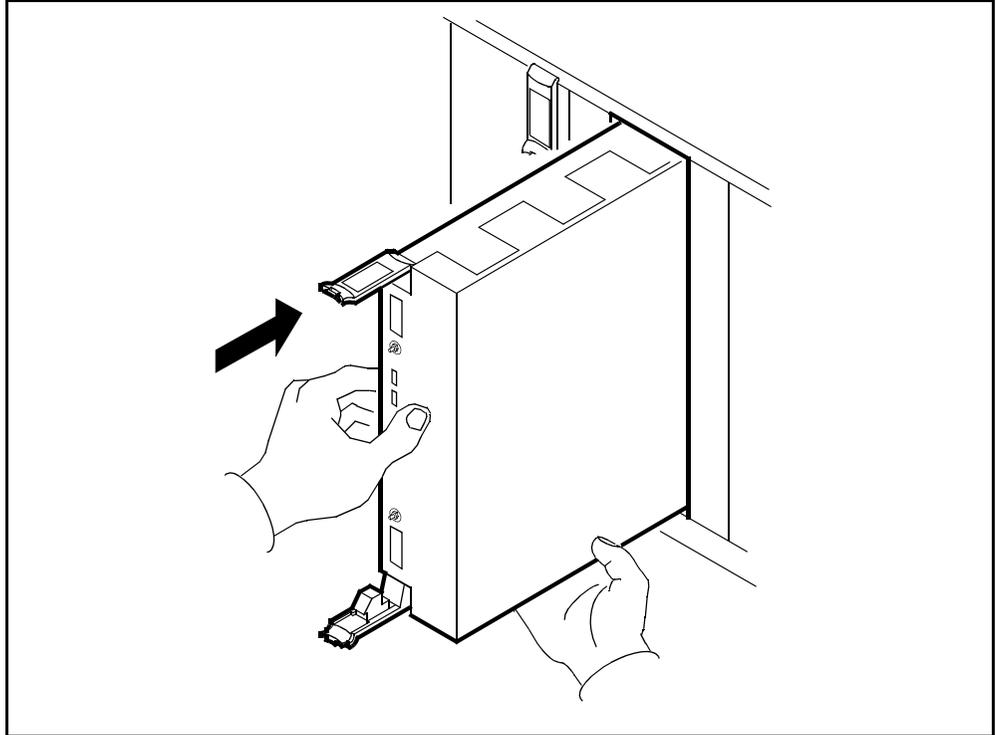
27   Close the locking lever to secure the module. Ensure that both
the top and bottom micro switches are lined up with the locking
levers to properly seat the module.
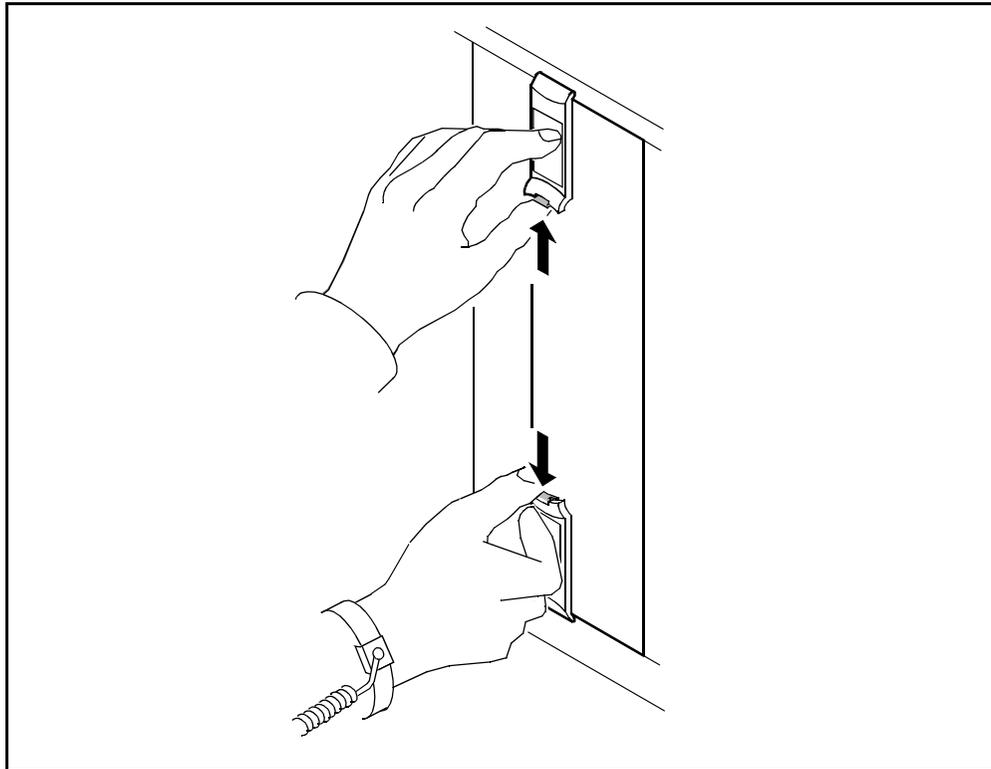
28   Tighten the thumbscrews on the module.

When you put the CPU controller module back into the slot, both
LEDs on the module turn on briefly and then off. This action
indicates that

- you have seated the module correctly
- the module is receiving power
- the module has passed all self tests

At the local VT100 console

29   Log into the CS 2000 Core Manager as the root user.

Note: The firmware on the other CPU upgrades
automatically when you log into the CS 2000 Core Manager.
The automatic upgrade of the firmware on the other CPU is
dependent on the successful completion of step 8, followed by
steps 18 to 28.

30   The system indicates that the CPU modules have fully integrated with the CS 2000 Core Manager, and have the correct firmware. Press the Enter key to continue the procedure.

31   Return the CS 2000 Core Manager to service by typing

```
> rts
```

and pressing the Enter key

32   You have completed this procedure.

Resetting the CPU firmware

Application

Use this procedure to reset the CPU firmware after a split mode on-line upgrade failure:

The on-line upgrade adjusts the CPU firmware settings adjusted for split mode. If you remove a CPU module from the system during an upgrade, it keeps the values that are valid for split mode. These values are invalid in a fault-tolerant system. If you try to integrate a previously removed module into a fault-tolerant system, the CPU module fails to go into service.

Action

The following flowchart summarizes the procedure. To reset the CPU firmware, use the instructions in the step-action procedure that follows the flowchart.

Summary of Resetting the CPU firmware

```
Log in to the CS
2000 Core Manager.
        |
        v
Determine the
CPU autoboot
settings
        |
        v
Correct the
CPU autoboot
settings, if
necessary
        |
        v
Determine the
CPU restart
settings
        |
        v
Correct the
CPU restart
settings, if
necessary
        |
        v
End
```

This flowchart summarizes the procedure.

Use the instructions in the procedure that follows this flowchart to perform the procedure.
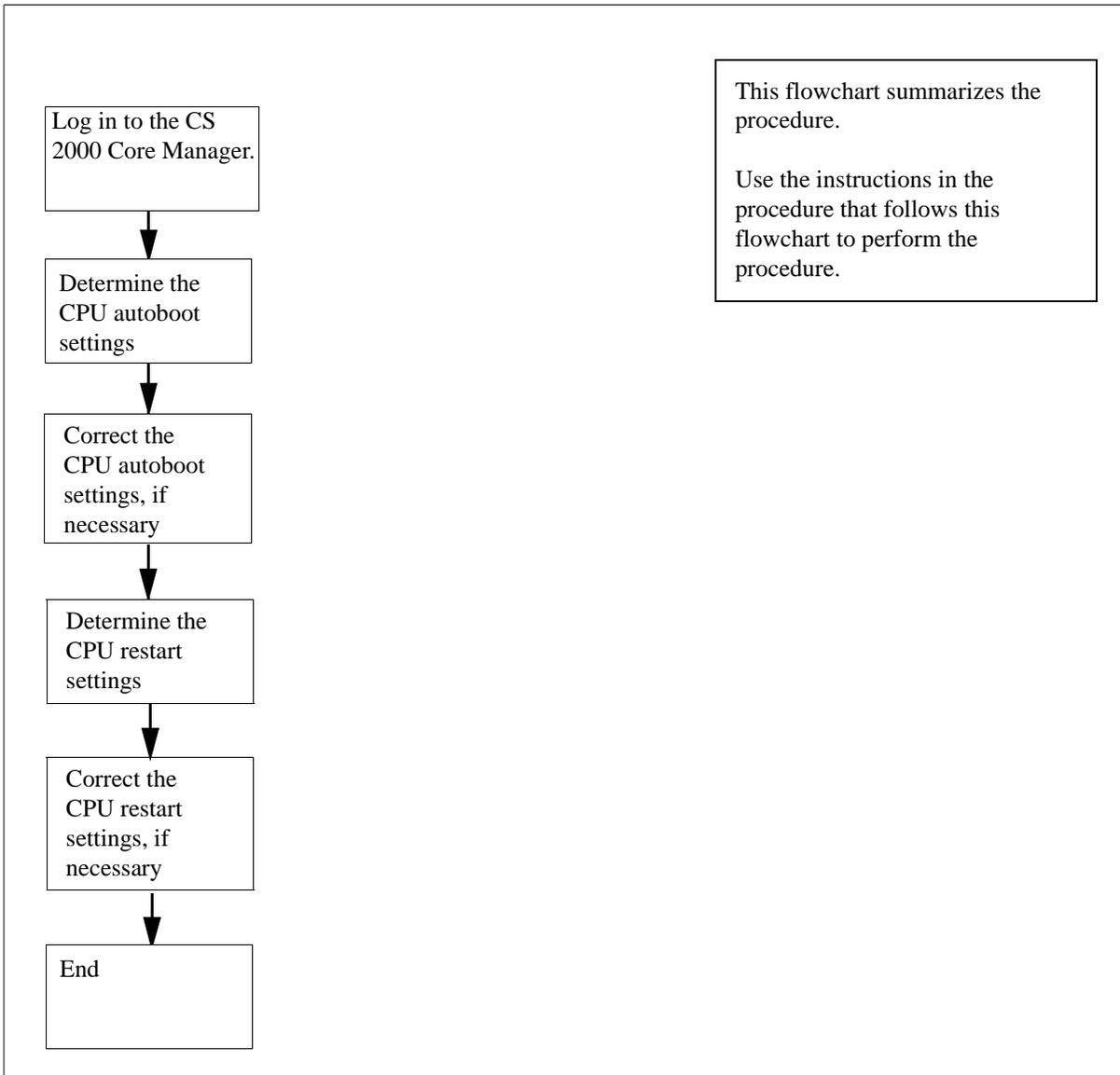
Resetting the CPU firmware

At the local or remote VT100 console

1

<table>
<tr>
<td>⚠️</td>
<td>**CAUTION**
Changing autoboot settings
Do not perform this procedure while an upgrade is in progress because the upgrade process modifies these settings and will fail if manually changed and an upgrade is not in progress.</td>
</tr>
</table>

Log into the CS 2000 Core Manager as the root user.

2   Determine the current autoboot settings for CPU 0 in domain 0 by typing:

 # autoboot -c 0

and pressing the Enter key.

Example response for a CPU 0 configured for fault-tolerant operation:

```
ab=N rb=N nb=N vb=Y
```

3   Check your settings and proceed to the appropriate step.

If the setting is	Do
ab=N rb=N nb=N vb=y	step 7
anything else	step 4

4   To change the Boolean autoboot values, issue the autoboot command accompanied by the -c flag along with the -o flag. For example, if the response for step 2 is
ab=N rb=N nb=N vb=N

you need to correct the value for "vb".

5   For example, change the value of "vb" on CPU 0 by typing

 # autoboot -c 0 -o vb=Y

and pressing the Enter key.

6   Make sure your changes have been made by typing

```
# autoboot -c 0
```

and pressing the Enter key.

Example response:

```
ab=N rb=N nb=N vb=Y
```

7   Determine the current autoboot settings for CPU 1 in domain 1 by typing

```
# autoboot -c 2
```

and press the Enter key.

8   Check your settings and proceed to the appropriate step.

If the setting is	Do
ab=N rb=N nb=N vb=y	step 12
anything else	step 9

9   To change the Boolean autoboot values, issue the autoboot command accompanied by the -c flag along with the -o flag. For example, if the response for step 2 is

```
# ab=N rb=N nb=N vb=N
```

you need to correct the value for "vb".

10   For example, change the value of "vb" on CPU 1 by typing

```
# autoboot -c 2 -0 vb=Y
```

and pressing the Enter key.

11   Verify that the change has been made by typing

```
# autoboot -c 2
```

and pressing the Enter key.

Example response:

```
ab=N rb=N nb=N vb=Y
```

12   You have just re-configured the CPUs for fault-tolerant operation.

Determining and clearing restart values

13

> ⚠️ **CAUTION**
> **Clearing restart values**
> Do not perform this procedure while an upgrade is in progress because the upgrade can fail.

Determine the restart settings for the CPU 0 in domain 0 by typing

 # restart -c 0

and pressing the Enter key.

> *Note 1:* These values are for a CPU configured for fault-tolerant operation.
>
> *Note 2:* If any restart setting has a numerical value it must be cleared. Clearing the value configures the particular module for fault-tolerant operation.

14 Check the restart settings and proceed to the appropriate step.

If the restart settings	Do
contain numbers	step 15
do not contain any numbers	step 17

15 Clear the values and reconfigure CPU 0 by typing

 # restart -c 0 -z

and press the Enter key.

16 Make sure your changes have been made for CPU 0 by typing

 # restart -c 0

and pressing the Enter key.

17 Determine the restart settings for the CPU 1 in domain 1 by typing

 # restart -c 2

and pressing the Enter key.

18   Check the restart settings and proceed to the appropriate step.

If the restart settings	Do
contain numbers	step 19
do not contain numbers	step 21

19   Clear the values and reconfigure CPU 1, by typing

 # restart -c 2 -z

and press the Enter key.

20   Make sure the changes have been made for CPU 1 by typing

 # restart -c 2

and press the Enter key.

21   You have completed this procedure.

Performing a backup and restore

<div style="border:1px solid">

ATTENTION
The following procedure is only used to correct an inadequacy of CS 2000 Core Managers that were, at one time, upgraded from SDM10 or SDM11 and are now attempting to upgrade to a 36GB or higher rootvg ultra-multifunction input/output (UMFIO). The system prompts you to perform this procedure if and when required. Under other circumstances, perform a restore from the system image backup tapes using procedure "Performing a full restore of the software from S-tape" in the Security and Administration section.

</div>

<div style="border:1px solid">

ATTENTION
Due to the specific nature of this procedure, software upgrades during this procedure are not supported.

</div>

Pre-upgrade requirements

Before you begin this procedure, complete the following activities:

- Obtain the password for the root user.
  You must log on to the CS 2000 Core Manager using the root user ID and password to perform the upgrade, therefore, obtain the password for the root user before you begin. Failure to log on as the root user may cause your upgrade to fail. Furthermore, ensure no other users are logged on during the upgrade. Only the user at the VT100 consoles should be logged on.

- Have VT100 terminal emulation.
  Before you perform this procedure, connect a separate VT100 terminal (or equivalent I.E. Terminal Server) to each of the SP0 (active) and SP1 (inactive) console ports of the CS 2000 Core Manager. Unless otherwise stated, enter commands on the same console as the previous step until directed to change.

- Ensure the CS 2000 Core Manager is in service (InSv).

- Ensure a 4mm DAT tape (blank) is inserted in slot 13.

- Ensure the DCE servers are operational.
  If the DCE servers are not operational or you perform DCE maintenance action, the upgrade procedure can fail to complete (fallback may be necessary), and a service interruption can occur.

- Know how to recover from an upgrade failure.
Before you begin the split-mode upgrade, please read and familiarize yourself with the procedure Recovering the system from a split-mode upgrade failure in the Upgrades section. In the event of a split-mode upgrade failure, perform the procedure.

- Verify the applications state.
If an application on the CS 2000 Core Manager is in the ManB, SysB, or ISTb state before the procedure, the CS 2000 Core Manager tries to return the application to the InSv state when the procedure is complete. If the application is in the Offl state, then the application remains in the Offl state after the procedure.

Upgrade notices

ATTENTION
In case of automatic fallback...

If the CS 2000 Core Manager system initiates an automatic fallback during this procedure, allow the fallback to complete, then contact your next level of support. If any portion of this upgrade fails, contact your next level of support.

ATTENTION
You will not have a connection available to the inactive console until the system is 100% split.

Flowchart procedure
The following flowchart summarizes the steps in the split-mode Backup and Restore procedure. Use the instructions in the procedures that follow the flowchart to complete the procedure.

Summary of performing a backup and restore

Start the split-mode backup and restore procedure

Perform a backup of domain 1

Perform a restore of domain 1

Begin SwAct and system integration

Ensure that all applications are in-service

End

This flowchart summarizes the following procedure.

To complete the procedure, use the step-action procedure that follows the flowchart.
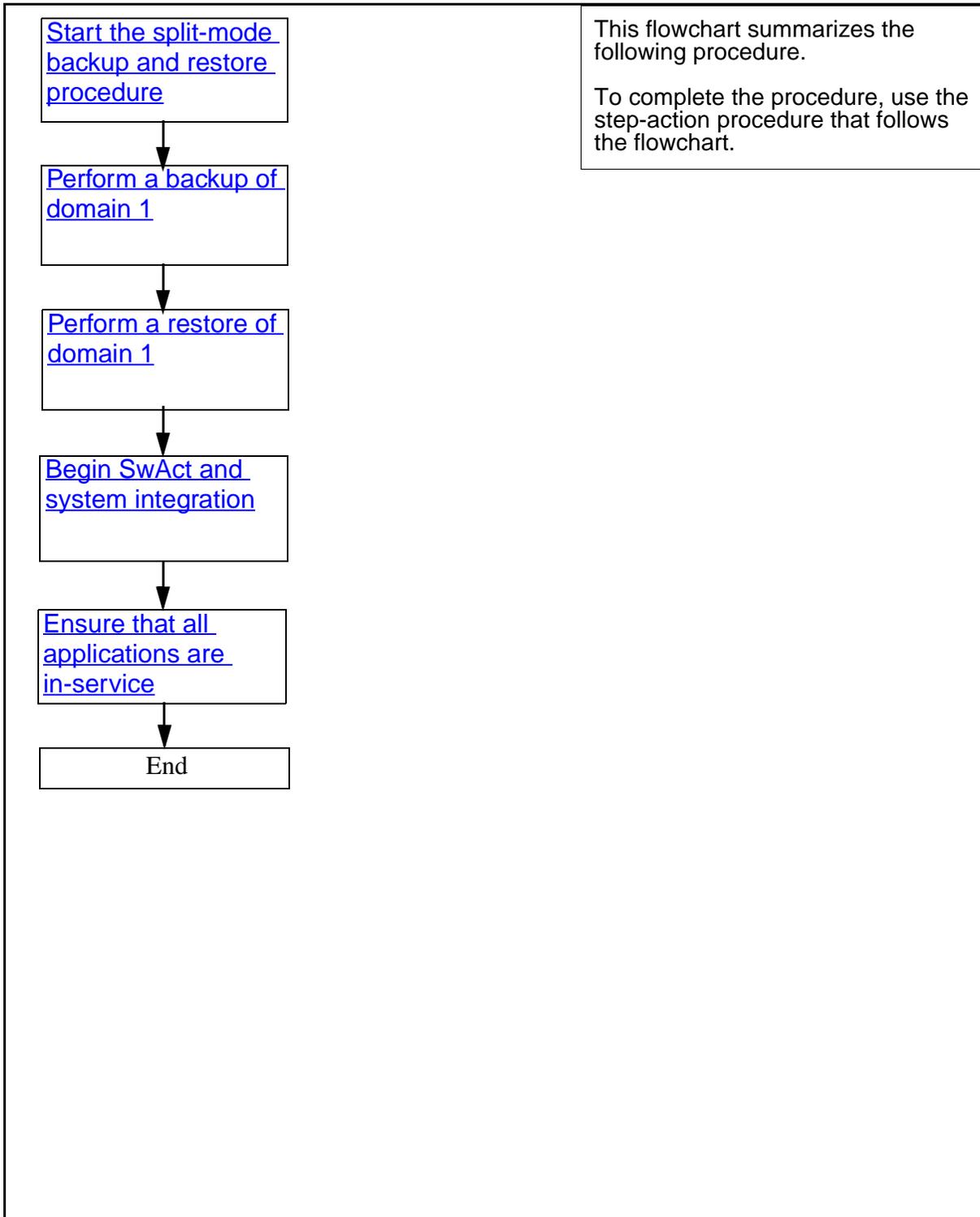
Start the split-mode backup and restore procedure

At the VT100 Console SP0

1   Log into the CS 2000 Core Manager using the root user ID and password.

2   Insert a blank tape into slot 13 as shown in the following figure and continue with step 3.

   Note: Wait until the tape drive stabilizes (yellow LED is off) before you proceed.

Inserting a tape into tape drive (slot 13)
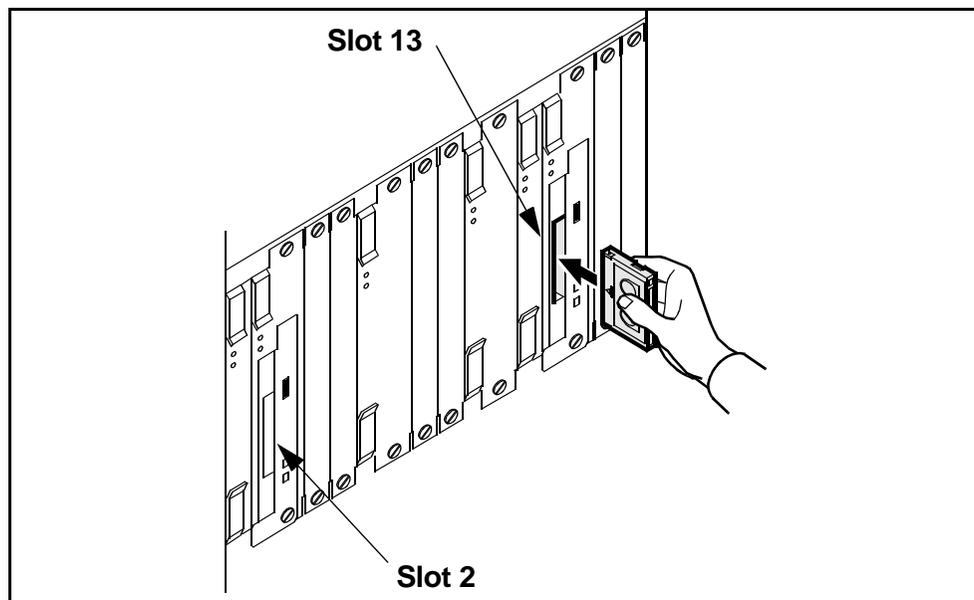
3   Access the split-mode screen by typing

   # sdmmtc split

   and pressing the **Enter** key.

4   Begin the split-mode upgrade by typing

   > start

   and pressing the **Enter** key.

5   When prompted, confirm you want to perform the upgrade by typing

   > y

   The system performs some checks.

6 Use the following table to determine your next step.

If the system	Do
detects errors	go to the appropriate procedure to correct the errors, and restart this procedure
does not detect errors	step 7

7 When prompted, specify you want to perform a Splitmode Backup and Restore by typing

 > 4

and pressing the Enter key.

8 When prompted, confirm you want to start the upgrade by typing

 > y

and pressing the **Enter** key.

9 Wait until the system split is 100% complete (minimum of 20 minutes), as indicated by the following message on the SP0 console, before you proceed.

```
Split: [----] Performing Backup and Restore
Procedure
```

20 min.+

Perform a backup of domain 1

At the VT100 console connected to SP1 (inactive domain)

1 At the FX-Bug prompt manually reboot domain 1 by typing

 FX-Bug> pboot 6 0

and pressing the **Enter** key.

There is no need to log into the inactive side (SP1) of the CS 2000 Core Manager at this step. The system will perform a stabilization process and then perform a reboot.

2

> **CAUTION**
> **Possible loss of service**
> The CS 2000 Core Manager begins the system stabilization process, do not attempt to perform any activities on the system until stabilization is complete.

Wait until system stabilization is complete (approximately 7 minutes) before proceeding to the next step.

> *Note:* If the stabilization process is to take place, the system will display a time estimate for its completion. If no time estimate is displayed within approximately 20 seconds, proceed to the next step.

3   Manually reboot domain 1 by typing

    `FX-Bug> pboot 6 0`

    and pressing the Enter key.

4   Log into the inactive side (SP1) of the CS 2000 Core Manager using the root user ID and password.

    The system prompts you to insert a backup tape into domain 1 (slot 13). This should have been done in step 2 of the previous task, Start the split-mode backup and restore procedure.

5   Confirm that a tape has been inserted and that the backup can begin by typing

    `> continue`

    and pressing the **Enter** key.

> *Note:* The backup takes approximately 35 minutes, depending on the size of the rootvg and the speed of the CPU.

Perform a restore of domain 1

At the VT100 console connected to SP1 (inactive domain)

1   After the backup is complete, the system will shut down automatically. Restore the backup by typing

    `FX-bug> pboot 6 50`

    and pressing the **Enter** key.

2   Define the System console by typing

`> 1`

and pressing the **Enter** key.

3   Select English as the language for the install by typing

`> 1`

and pressing the **Enter** key.

4   Start the restore with the default settings by typing

`> 1`

and pressing the **Enter** key.

> *Note:* The actual menu text will indicate "Start Install". This is the same as starting a restore.

5   Continue the restore at the "Installation Warning" menu by typing

`> 1`

and pressing the **Enter** key.

> *Note:* The restore will take approximately 40 minutes. After the restore is complete, a shutdown will occur.

6   Reboot the system by typing

`FX-bug> pboot 6 0`

and pressing the **Enter** key.

> *Note:* The system will stabilize for 15 seconds, after which a shutdown will occur. There is no need to log into the console.

7   Reboot the system by typing

`FX-bug> pboot 6 0`

and pressing the **Enter** key.

> *Note:* The Backup and Restore procedure is now complete. No software upgrades are supported during this procedure.

8   Log into the CS 2000 Core Manager as the root user

Begin SwAct and system integration

> **CAUTION**
> **Possible loss of service**
> Before you begin the SwAct, ensure that the root directory is the current directory on both the active and inactive sides of the CS 2000 Core Manager.

At the VT100 console connected to SP0 (Inactive)

1 Begin the SwAct by typing

> **> continue**

and pressing the Enter key.

> *Note 1:* It takes the system approximately 10 minutes to complete the SwAct. When the SwAct completes, a message appears on the console connected to SP0 indicating that the CS 2000 Core Manager is ready to be unsplit. The inactive console becomes domain 0. The active console SP1 shows domain 1 as the active side.

> *Note 2:* If the CS 2000 Core Manager is not stable, you have the option of aborting the upgrade using the **fallback** command.

2

> **CAUTION**
> **Possible loss of service**
> Once you begin the reintegration process, you cannot use the fallback command to return to the previous version of the CS 2000 Core Manager software. If you decide to return to the previous version of software after the reintegration process, you must take the CS 2000 Core Manager offline and restore the previous version of software from an S-tape. There is a loss of service for several hours when you restore the previous software.

The system prompts you to begin the integration process. Access the Appl level to make sure that the CS 2000 Core

Manager is operating, and that the applications are in service before you begin the reintegration phase by typing

> **appl**

and pressing the Enter key.

3 Determine if all applications are either InSv or ISTb.

If	Do
all applications are either InSv or ISTb	step 4
any applications are in a state other than InSv or ISTb	contact your next level of support to determine if these applications can be returned to service or taken offline to continue with the integration, then continue with step 4

4 Begin the integration process by typing

> **continue**

and pressing the Enter key.

Ensure that all applications are in-service

At the VT100 console connected to SP0 (Active)

1 Access the application level of the CS 2000 Core Manager maintenance interface by typing

> **appl**

and pressing the Enter key.

2 Determine whether all applications are in-service (indicated by a dot under the "state" heading next to each application that is in-service).

3 Use the following table to determine your next step.

If	Do
there are applications not in-service	step 4
all applications are in-service	step 8

4   Busy (ManB) each application that is not in service by typing

`> bsy <n>`

and pressing the Enter key.

where

   <n>
      is the number next to each application fileset.

Response:

`Application Busied - Command complete.`

5   Repeat step 4 to busy each application that is not in service.

6   Return each application to service (RTS) by typing

`> rts <n>`

and press the Enter key.

where

   <n>
      is the number next to each application.

Response:

`Application RTS - Command complete.`

7   Repeat step 6 to return each application to service.

8   Exit the CS 2000 Core Manager maintenance interface by typing

`> quit all`

and pressing the Enter key.

9   You have completed this procedure.

Commissioning or recommissioning X.25 connectivity

Application

Use this procedure to commission or recommission X.25 on the CS 2000 Core Manager from the configuration level (sdmconfig).

Note: You can also commission or recommission X.25 from the X25 level of the maintenance interface (sdmmtc x25). The same commands are used at both levels to set the X.25 base and controller licenses, and the Data Terminal Equipment (DTE) addresses for both X.25 ports.

Summary of commissioning or recommissioning X25 connectivity

Log in to the CS 2000 Core Manager.

↓

Access the sdmconfig level.

↓

Access the X25 step level.

↓

Set the base and controller licenses.

↓

Set the DTE addresses for both ports on domain 0.

↓

Set the DTE addresses for both ports on domain 1 if required.

↓

End

This flowchart summarizes the procedure.

Use the instructions in the procedure that follows this flowchart to perform the procedure.
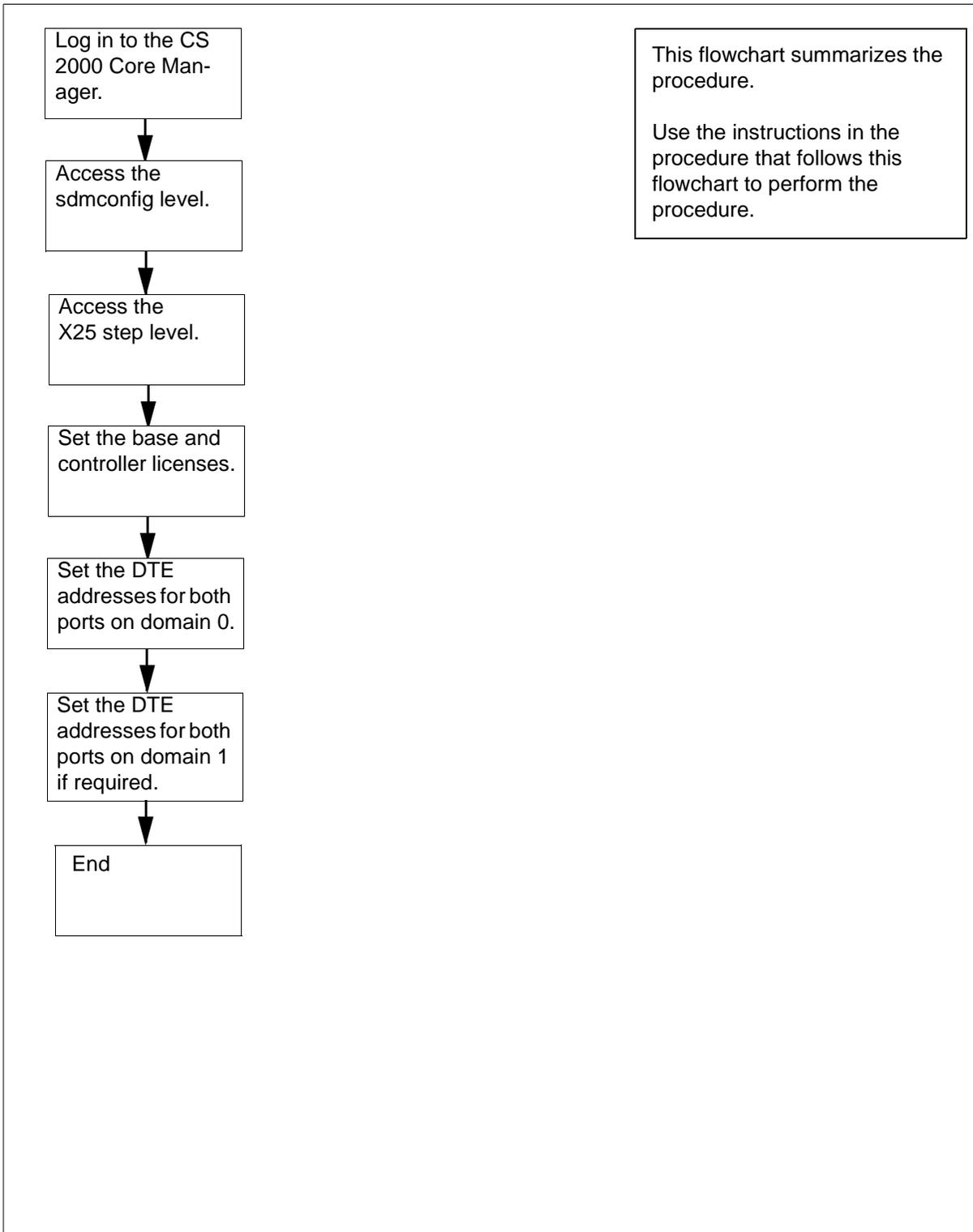
Commissioning or recommissioning X.25 connectivity

At the CS 2000 Core Manager

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

2   Access the configuration level by typing

 # sdmconfig

and pressing the Enter key.

3   Access the X.25 commissioning step level by typing

> step <#>

and pressing the Enter key.

where

#
    is the number next to the X.25 commissioning step.

If you are	Do
commissioning X25 for the first time	step 4
recommissioning X25 on domain 0	step 5
recommissioning X25 on domain 1	step 7

4   Configure the X.25 licenses as follows:

a   Initiate the process by typing

> change

and pressing the Enter key.

b   When prompted, enter the new Base license key, and press the Enter key.

The Base license key is the 28 alphanumeric character string for the X.25 hardware that you are commissioning.

c   When prompted, enter the new Controller license key, and press the Enter key.

The Controller license key is the 28 alphanumeric character string for the X.25 hardware that you are commissioning.

Example response:

```
X25 Connectivity values to be changes:

Base license key:
3xcmwj6p4wmnxhyknmnbwvqzr2aa
Controller license key:
5me5q7itsuba5hyknmnbwvqzr2aa

Proceed with these values?
Enter Y to confirm, N to reject, or E to edit:
```

d When prompted, confirm the values by typing

> y

and pressing the Enter key.

Response:

```
Change - Command submitted.
```

5 Configure the DTE addresses of the X25 ports on domain 0 as follows:

a Initiate the process by typing

> change 0 <port>

and pressing the Enter key.

where

> **port**
>   is 0 or 1

b Enter the DTE address (5 to 15 digits) that corresponds to the port, and press the Enter key.

Example response:

```
X25 Connectivity values to be changes:

DTE address for domain 0 port 0: 123456

This action will affect service on the
specified port.

Proceed with these values?
Enter Y to confirm, N to reject, or E to edit:
```

    c Confirm the values by typing

      `> y`

      and pressing the Enter key.

      Example response:

      `Change 00 - Command submitted.`

    d Repeat steps <u>5a</u> to <u>5c</u> for the other port.

6   Use the following table to determine your next step

If the system	Do
has an X25 card in domain 1	step <u>7</u>
does not have an X25 card in domain 1	you have completed this procedure

7   Configure the DTE addresses of the X25 ports on domain 1.

    a Initiate the process by typing

      `> change 1 <port>`

      and pressing the Enter key.

      where

        port
          is 0 or 1

    b Enter the DTE address (5 to 15 digits) that corresponds to the port, and press the Enter key.

      Example response:

      `X25 Connectivity values to be changes:`

      `DTE address for domain 1 port 0: 123456`

      `This action will affect service on the`
      `specified port.`

      `Proceed with these values?`
      `Enter Y to confirm, N to reject, or E to edit:`

    c Confirm the values by typing

      `> y`

      and pressing the Enter key.

      Example response:

      `Change 10 - Command submitted.`

d Repeat steps 7a to 7c for the other port.

8   You have completed this procedure.

Installing an X.25 controller module and personality module

Application

Use this procedure if you have an MFIO hardware module and want to upgrade the CS 2000 Core Manager to incorporate an X.25 controller module (NTRX50FY) and an X.25 personality module (NTRX50FZ).

Action

The flowchart that follows provides a summary of this procedure. Use the instructions in the step action procedure that follows the flowchart to perform the routine maintenance procedure.

Summary of Installing an X.25 controller module and personality module

```
Log into the CS
2000 Core Man-
ager.
     │
     ▼
Install the X.25
PM.
     │
     ▼
Install the X.25
controller module.
     │
     ▼
Ensure the cor-
rect version of the
X.25 software.
     │
     ▼
Provision the
X.25 hardware.
     │
     ▼
End
```
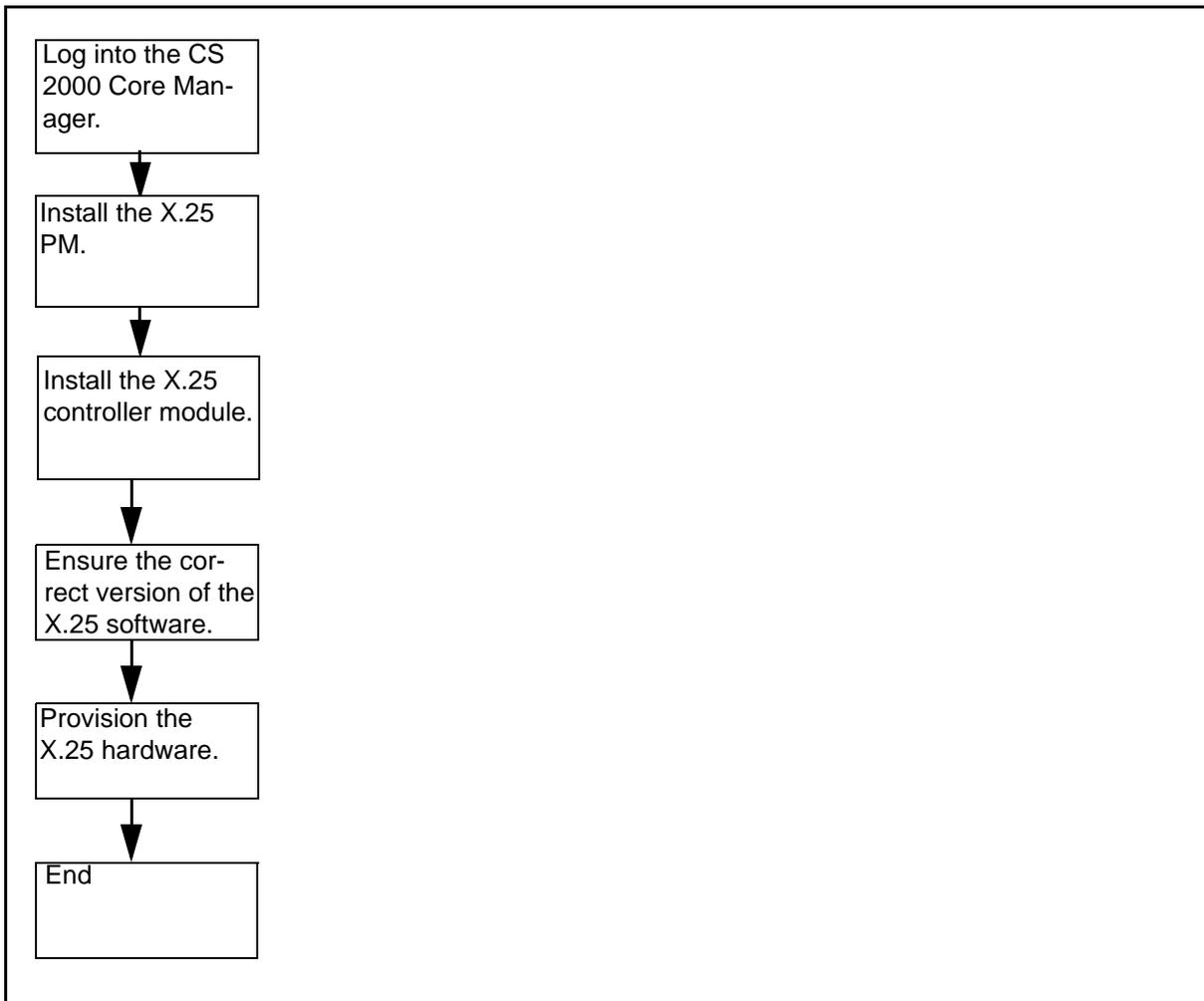
Installing an X.25 controller module and personality module

At the back of the CS 2000 Core Manager

1 Insert the new X.25 personality module into the CS 2000 Core Manager shelf.

2 Gently slide the X.25 personality module into the shelf until it is fully inserted.
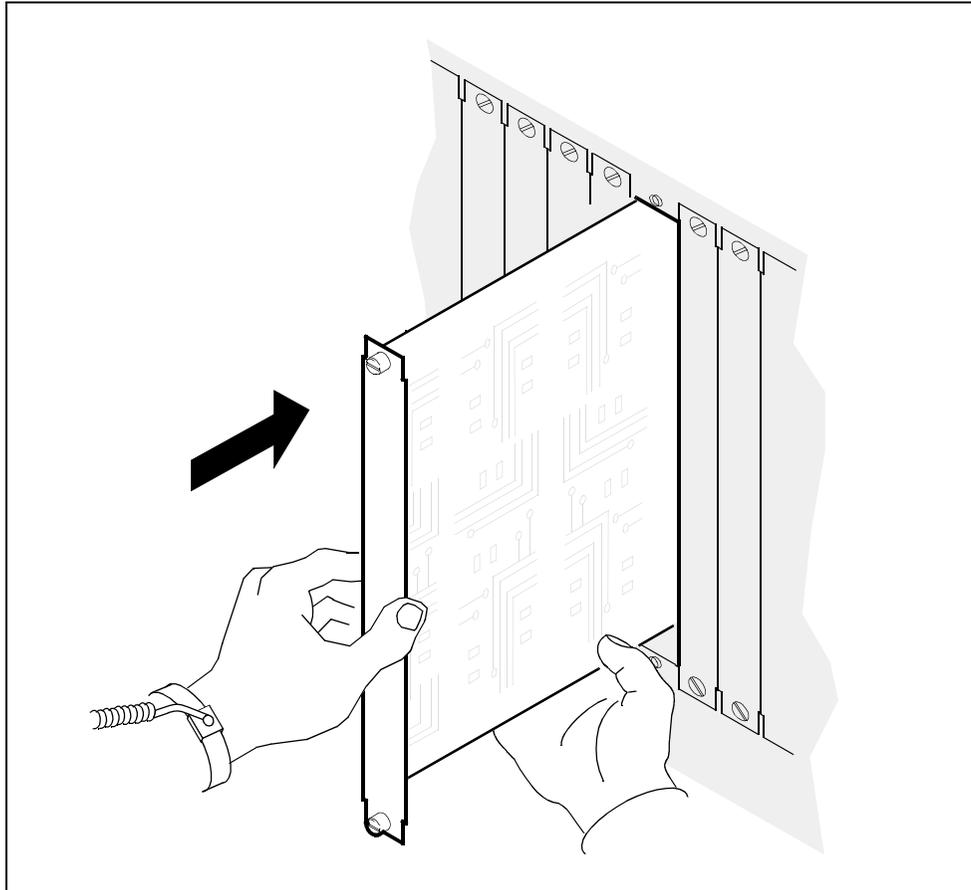
3 Tighten the thumbscrews at the top and the bottom of the X.25 personality module.

At the front of the CS 2000 Core Manager

4

> ⚠️ **WARNING**
> **Static electricity damage**
> Wear an electrostatic discharge (ESD) grounding wrist strap connected to the C28B cabinet when handling a module. This protects the module against damage caused by static electricity.

Put on an electrostatic discharge grounding wrist strap.

5   Remove the filler plates covering the slots where you will install the new modules.

6   Insert the X.25 controller module into the CS 2000 Core Manager shelf.

> *Note:* If you are installing a single X.25 module, you must install it on domain 0. All available slots in either the main or expansion chassis can be used to install two X.25 controller modules as a logical pair. However, the two slots must be exactly 8 slot positions apart. For example, slots 1 and 9, or 2 and 10. Both modules in a logical pair must have the same PEC.

7 Gently slide the module into the shelf until it is fully inserted.
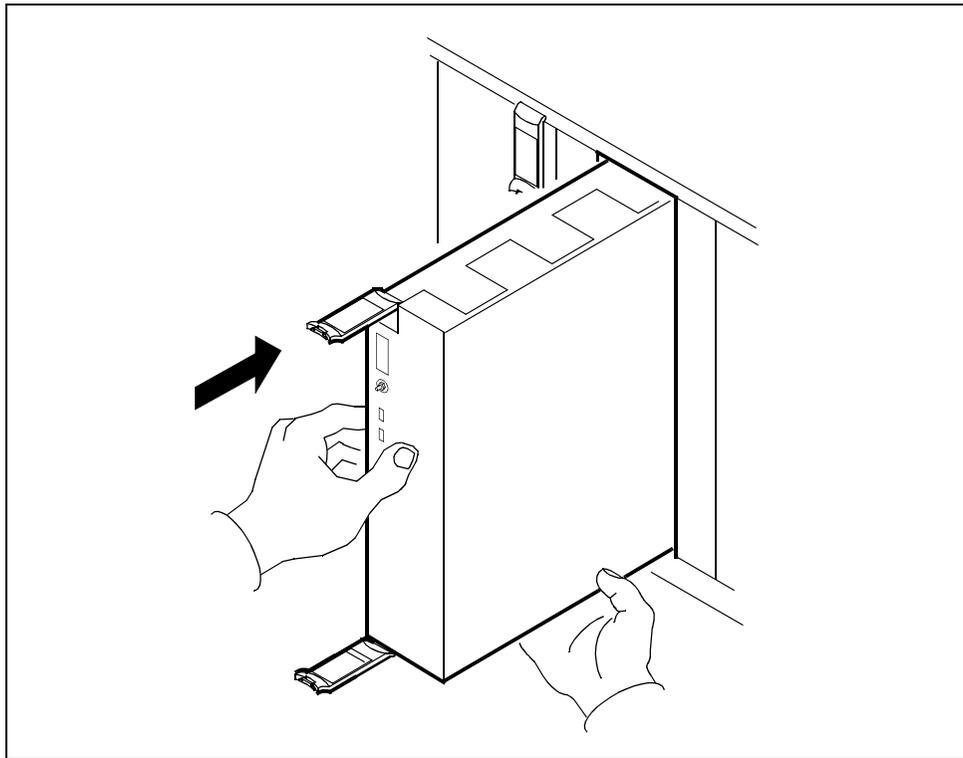
8   Close the locking lever to secure the module. Ensure that the top micro switch is lined up with the locking lever to properly seat the module.

Micro switch
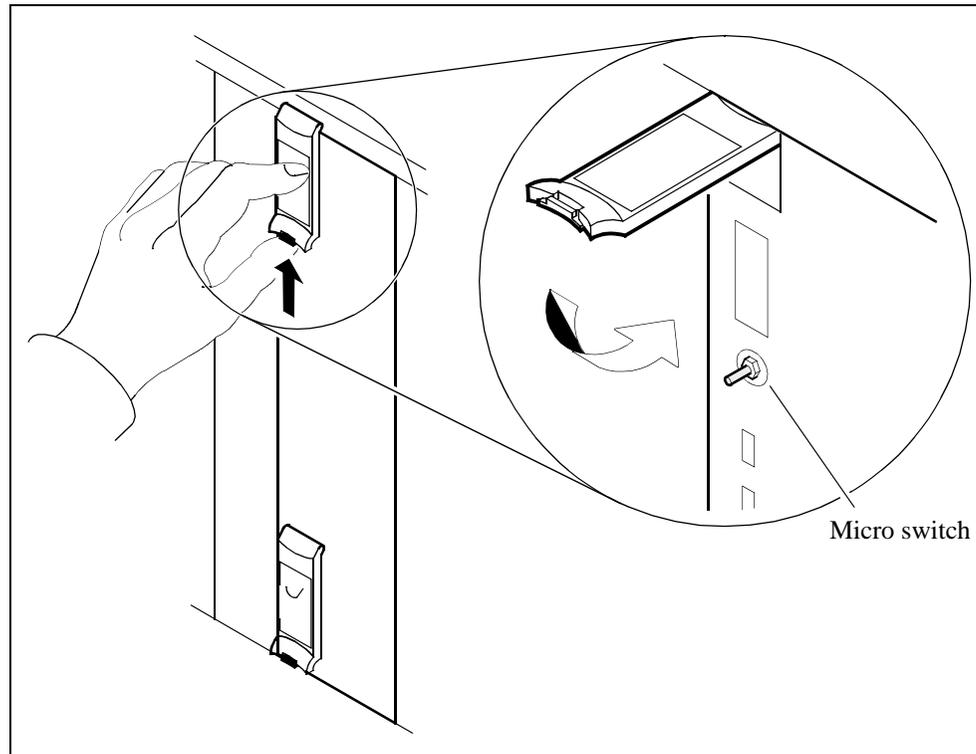
Provisioning the X.25 hardware

At the local or remote VT100 console

1   Log in to the CS 2000 Core Manager as root.

2   Ensure that the latest version of the X.25 software is available on the system by completing steps 3 to 7 described here.

3   Insert the tape labeled *CS2E0006 6.x (1 of 1)* into slot 2.

   Note: Wait until the tape drive stabilizes (yellow LED is off) before you proceed.

4   Access the maintenance interface by typing

   # sdmmtc

   and pressing the Enter key.

5   Display the contents of the tape by typing

   > apply 0

   and pressing the Enter key.

6   Install the X.25 software by typing

> **> apply bundle x25**

and pressing the Enter key.

7   Confirm the command by typing

> **> y**

and pressing the Enter key.

Response:

`Command completed with no errors`

8   Access the Hw level of the Maintenance Interface by typing

> **> hw**

and pressing the Enter key.

9   Add the X.25 hardware by typing

> **> add *<chassis> <slot> <pec>* [SIMPLEX]**

and pressing the Enter key.

where

> **chassis**
>> is *sdmm* for the main chassis, and *sdme* for the expansion chassis

> **slot**
>> is the slot number of the X.25 card in domain 0

> **pec**
>> is the PEC code of the X.25 controller module (NTRX50FY)

> **SIMPLEX**
>> is an optional parameter. Enter this parameter if you are installing only one X.25 module on the system.

Upon completion of the X.25 hardware installation, the system responds with a message similar to the following

Add sdme 5 ntrx50fy - Command complete.

10   You have completed this procedure.

Removing a standalone X.25 interface

Application

Use this procedure to delete the following hardware modules from the CS 2000 Core Manager:

- NTRX50FY - X.25 controller module
- NTRX50FZ - X.25 personality module

> ⚠️ **CAUTION**
> **Deleting an X.25 controller module**
> If you delete only one X.25 controller module, it must be the X.25 controller module in domain 1.

To perform this procedure, you must obtain the following information:

- the chassis (SDMM for main chassis; SDME for expansion chassis)
- the X.25 controller module's slot number

Action

The following flowchart provides an overview of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the task.

Summary of Removing the standalone X.25 interface

Log into system
as the root user.

Access the
hardware level
of the RMI

Manually busy the
X.25 controller
module(s)

Delete the X.25
controller
module(s)

Remove the
X.25 controller
module(s)

Remove the
X.25 personality
module

Reinstall the
filler face
plates

End

This flowchart summarizes the procedure.

Use the instructions in the procedure that follows this flowchart to perform the procedure.
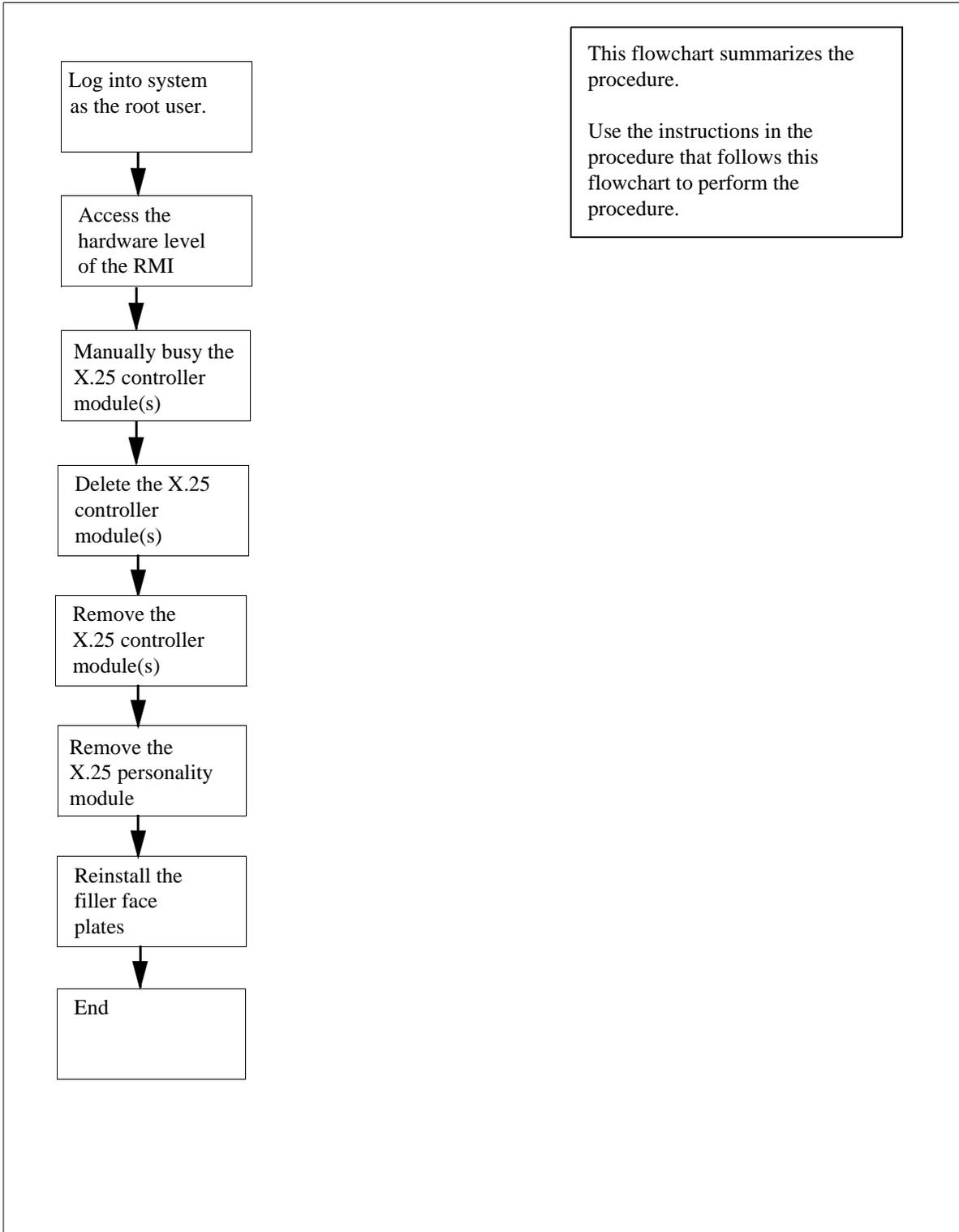
Removing a standalone X.25 interface

At the local or remote VT100 console

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

2   Access the top menu level of the remote maintenance interface
         (RMI) by typing

         # sdmmtc

         and pressing the Enter key.

3   Access the hardware (Hw) menu level by typing

         > hw

         and pressing the Enter key.

4

> ⚠ **CAUTION**
> **Deleting an X.25 controller module**
> Deleting an X.25 controller module requires
> you to put the module in ManB state. These
> modules will not be in service. If you are
> deleting only one X.25 module, you do not
> need to put both modules in ManB state. Only
> put the module in domain 1 in the ManB state.

Manually busy the module in each domain by typing

> bsy *domain* X25

and pressing the Enter key.

where

   domain
      is the domain (0 or 1) of the X.25 controller module that you
      are removing

Example

> bsy 1 X25

Example response:

```
Hardware Bsy - Domain 1 Device X25
This action will bring service down for all X.25
Ports in I/O domain 1.

Do you wish to proceed?
Please confirm ("YES", "Y", "NO", "N"):
```

5   Confirm the Bsy command by typing

> y

and pressing the Enter key.

6   After you confirm the Bsy command, the following is displayed:

Example Response:

```
Hardware Bsy : Command submitted. Hardware Bsy
: Domain 1 Device X25.
```

When the Bsy command is finished, the "Please wait..." message, and the command confirmation disappear. The word "initiated" also changes to "submitted", then change to "complete".

Example Response:

```
Hardware Bsy : Domain 1 Device X25 - Command
complete.
```

If you have not yet manually busied the module(s) you wish to delete, go to step 4. Otherwise, continue this procedure.

> *Note:* After you see the response to the Bsy command, the X.25 controller module's state changes to "M" at the hardware menu level of the RMI.

7 Use the Locate command to determine the chassis and slot number of the module you wish to delete by typing

> **> locate**

and pressing the Enter key.

Example response:

```
Site Flr RPos Bay_id Shf    Description Slot Eq
PEC
HOST 00  00    CSDM              SDME X25(0)  05
NTRX50FY FRNT HOST 00  00   CSDM          SDME
X25    05 NTRX50FZ BACK HOST 00   00   CSDM
   SDME X25(1) 13 NTRX50FY FRNT HOST 00   00
CSDM           SDME X25    13 NTRX50FZ BACK
```

> *Note:* The example shown only displays part of the information generated from the Locate command. Press the Enter key to scroll through the display.

8 Delete the module by typing

> **> delete *chassis slot [SIMPLEX]***

and pressing the Enter key.

where

> **chassis**
>> is the chassis where the module is located (SDMM for the main chassis or SDME for the I/O expansion chassis)
>
> **slot**
>> is the slot number (from 1 to 16) where the module is located
>
> **SIMPLEX**
>> is an optional parameter. Enter this parameter if you are deleting only one X.25 module from the system.

> *Note:* If you do not specify SIMPLEX, the module in the corresponding slot of the other domain will also be deleted.

Example 1: Deleting only one module

> delete sdme 13 SIMPLEX

Example 1 response:

```
Module in slot 13 of SDME will be deleted.
X.25(1) will be deleted.
Do you wish to proceed?
Please confirm ("YES", "Y", "NO", "N"):
```

Example 2: Deleting both modules

> delete sdme 5

Example 2 response:

```
Module in slot 5 of SDME will be deleted.
X.25(0) will be deleted. Module in slot 13 of
SDME will also be deleted. X.25(1) will be
deleted.
Do you wish to proceed?
Please confirm ("YES", "Y", "NO", "N"):
```

9   If you are sure this is the module you wish to delete, type

> Y

and press the Enter key.

10   The DEL command may take several minutes to complete. When the command is finished, the following message is displayed:

Example 1 Response:

Delete sdme 13 SIMPLEX - `Command complete.`

Example 2 Response:

`Delete sdme 5 - Command complete.`

11   If you are deleting both modules, after a few seconds the module disappears from the listing shown at the hardware menu level of the RMI. If you are deleting one module, domain 1will show a 'dash' at the hardware menu level of the RMI.

At the front of the CS 2000 Core Manager

12

> **WARNING**
> **Static electricity damage**
> Wear an electrostatic discharge (ESD) grounding wrist strap connected to the C28B cabinet when handling a module. This protects the module against damage caused by static electricity.

Put on an electrostatic discharge grounding wrist strap.

13   Depress the tips of the locking levers on the face of the X.25 controller module.
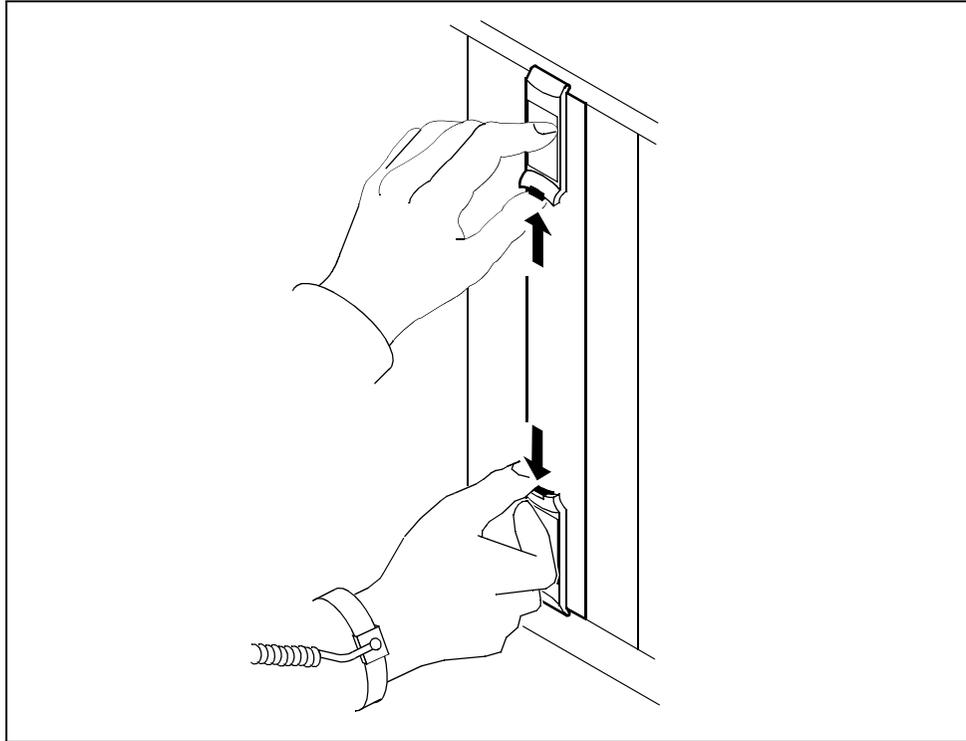
14 Open the locking levers on the face of the module by moving the levers outwards.
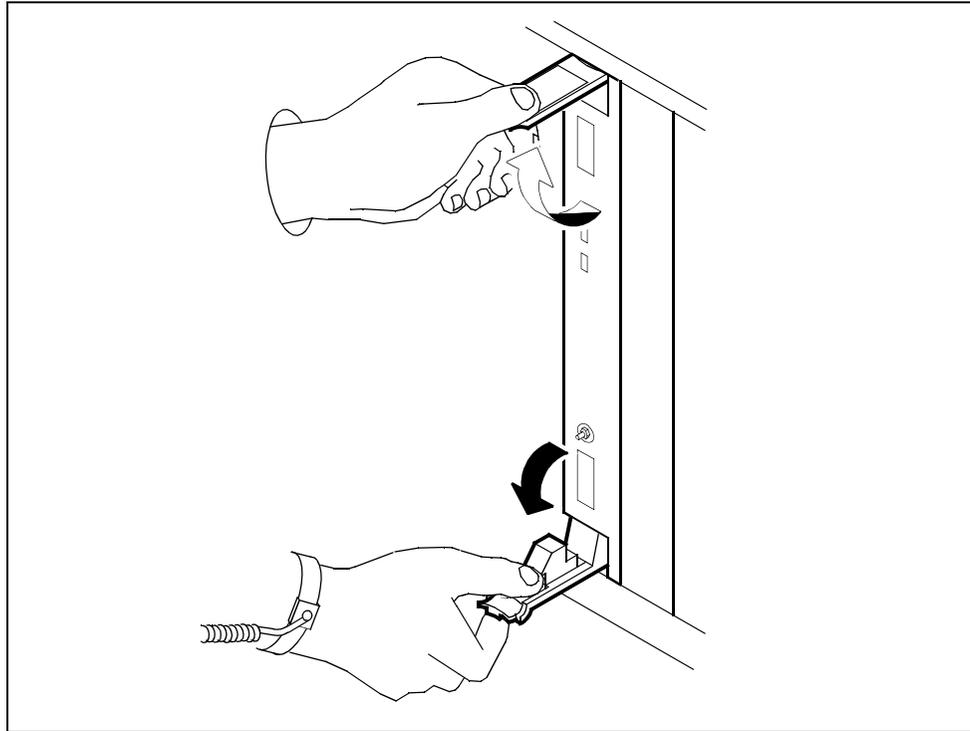
15 While grasping the locking levers, gently pull the module towards you until it protrudes about 2 in. (5.1 cm) from the shelf.
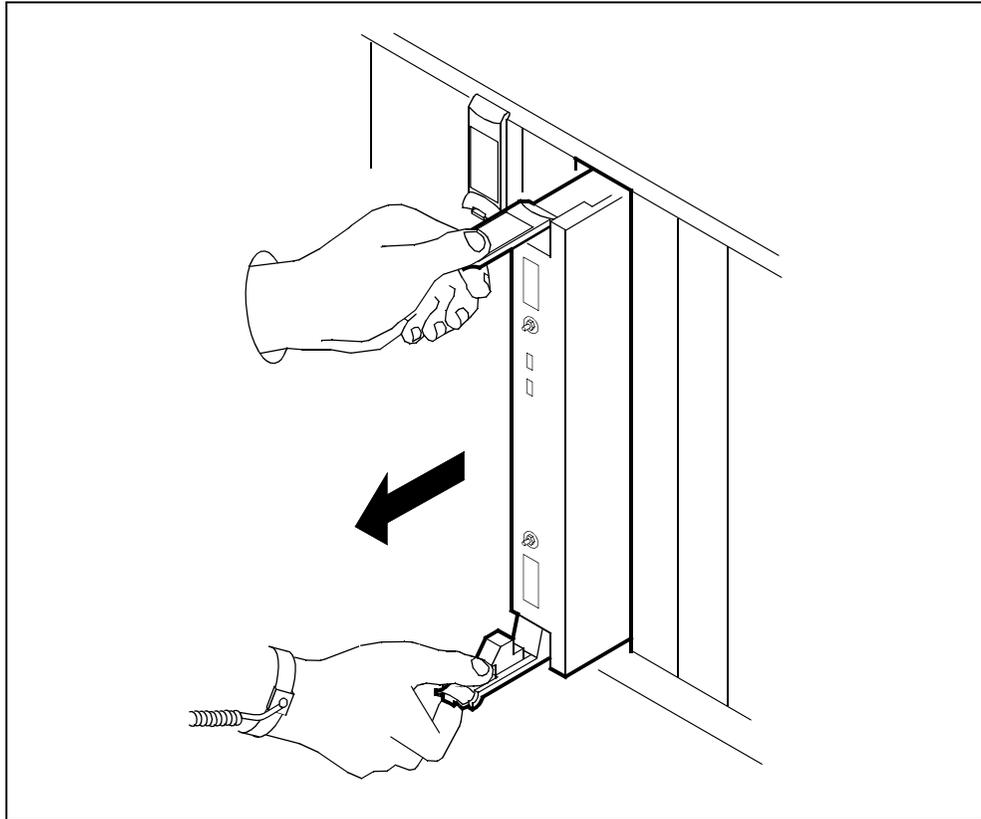
16   Hold the module by the face plate with one hand while supporting the bottom edge with the other hand. Gently pull the module toward you until it clears the shelf.
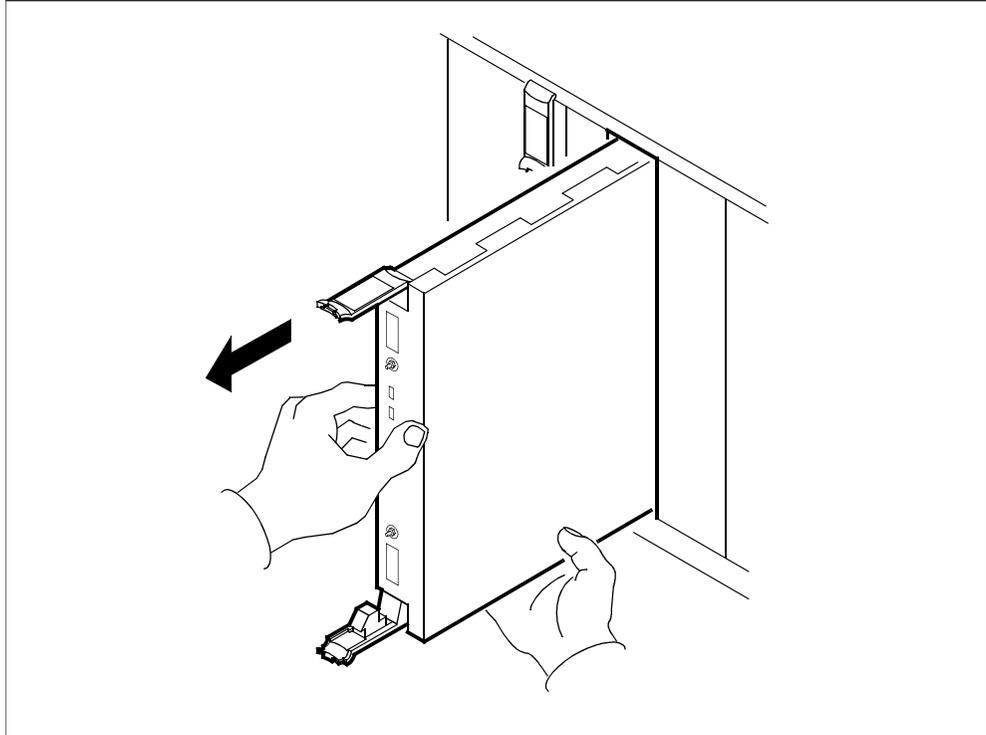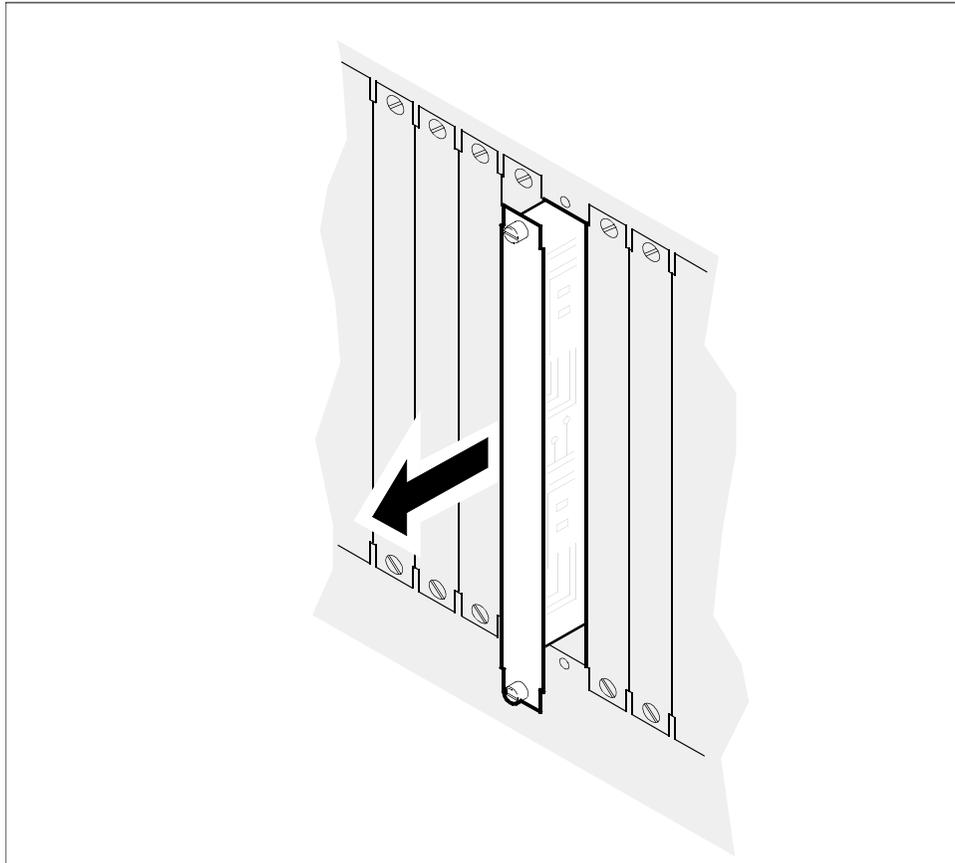

17   Place the module you have removed in an ESD protective container.

At the back of the CS 2000 Core Manager

18   Disconnect the X.25 modem connection cables from the X.25 personality module.

> *Note:* You need to disconnect either one or two modem cables, depending on whether the X.25 module is commissioned to use one or both of its X.25 ports.

19 Loosen the two thumbscrews located at the top and the bottom of the X.25 personality module.

> *Note:* The thumbscrews are the captive type, and cannot be removed from the module.

20 While grasping the thumbscrews, gently pull the X.25 personality module towards you until it protrudes about 2 in (5.1 cm) from the shelf.

21   Hold the X.25 personality module by the face plate with one hand while supporting the bottom edge with the other hand. Gently pull the module toward you until it clears the shelf.
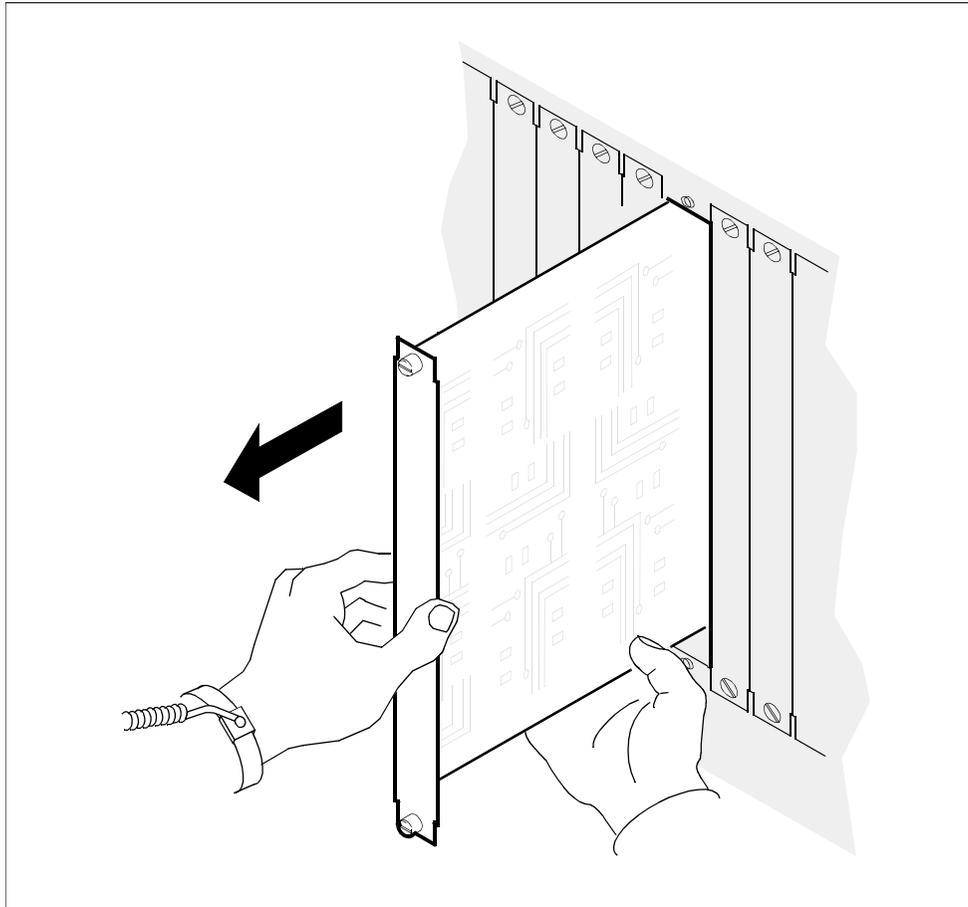
22   Place the X.25 personality module you have removed in an ESD protective container.

23   Reinstall the filler plates covering the slots in which you removed the modules.

24   You have completed this procedure.

Removing X.25 from your system

This procedure only applies to SYNC X25 modules (standalone), and does not apply to X25 as part of the UMFIOs. The process to remove X.25 from the system has three phases:

- Delete the X.25 hardware modules

- Delete the X.25 software

- Remove the X.25 hardware modules from the CS 2000 Core Manager

The following procedure is referenced in this procedure. Ensure you have access to this procedure if required.

- [Removing a standalone X.25 interface](#) in the Upgrades section

At the CS 2000 Core Manager

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

2   Stop the X.25 daemon by typing

   # **/etc/rc.psx25 stop**

   and pressing the Enter key.

3   Offline the X.25 controller module by typing

   # **modchange -ol SYNC-<domain_num> -y**

   and pressing the Enter key.

   where

   <domain_num>
       is the domain number (0 or 1) of the X.25 controller module
       that you are offlining.

   Use the following list to determine the domain number. The
   domain number is

   - 0 if the module is located in one of the slots from 1 to 6 on the
     main chassis or in one of the slots from 1 to 8 on the
     expansion chassis.

   - 1 if the module is located in one of the slots from 10 to 16 on
     the main chassis or in one of the slots from 9 to 16 on the
     expansion chassis.

Example of command

```
# modchange -ol SYNC-0 -y
```

The system responds with warnings about the items that are about to go offline:

```
Warning: This request will not allow SYNC-0 to stay
online.
```

```
Warning: This request will not allow pgen-0 to stay
online.
```

```
Warning: This request will not allow SYNC-PM to
stay online.
```

4   Offline the X.25 personality module by typing

modchange -ol SYNCPM-<domain_num>

and pressing the Enter key.

where

<domain_num>
is the domain number (0 or 1) of the X.25 personality module that you are offlining.

Use the following list to determine the domain number. The domain number is

- 0 if the module is located in one of the slots from 1 to 6 on the main chassis or in one of the slots from 1 to 8 on the expansion chassis.

- 1 if the module is located in one of the slots from 10 to 16 on the main chassis or in one of the slots from 9 to 16 on the expansion chassis.

Example of command

```
#modchange -ol SYNCPM-0
```

5   Offline the logical device by typing

modchange -ol pgen<domain_num>

and pressing the Enter key.

where

<domain_num>
is the domain number (0 or 1) of the logical device that you are offlining.

Use the following list to determine the domain number. The domain number is

- 0 if the device is located in one of the slots from 1 to 6 on the main chassis or in one of the slots from 1 to 8 on the expansion chassis.

- 1 if the device is located in one of the slots from 10 to 16 on the main chassis or in one of the slots from 9 to 16 on the expansion chassis.

Example of command

```
# modchange -ol pgen0
```

6   Delete the logical device by typing

```
# rmdev -dRl pgen<domain_num>
```

and pressing the Enter key.

where

<domain_num>
   is the domain number (0 or 1) of the logical device that you are deleting.

Use the following list to determine the domain number. The domain number is

- 0 if the device is located in one of the slots from 1 to 6 on the main chassis or in one of the slots from 1 to 8 on the expansion chassis.

- 1 if the device is located in one of the slots from 10 to 16 on the main chassis or in one of the slots from 9 to 16 on the expansion chassis.

Example of command

```
# rmdev -dRl pgen0
```

Examples of a system response:

```
pcomm0 deleted
pgen0 deleted
```

7   Delete the X.25 controller module by typing

```
# rmdev -dRl SYNC-<domain_num>
```

and pressing the Enter key.

where

<domain_num>
   is the domain number (0 or 1) of the controller module that you are deleting.

Use the following list to determine the domain number. The domain number is

- 0 if the module is located in one of the slots from 1 to 6 on the main chassis or in one of the slots from 1 to 8 on the expansion chassis.

- 1 if the module is located in one of the slots from 10 to 16 on the main chassis or in one of the slots from 9 to 16 on the expansion chassis.

Example of command

```
# rmdev -dRl SYNC-0
```

Examples of a system response

```
SYNCPM-0 deleted
SYNC-0 deleted
```

8   Repeat steps 3 to 7 for each X.25 module installed in the system.

9

⚠️ **CAUTION**
Loss of service
Do not continue to delete the X.25 software until you remove all X.25 modules. You must perform steps 3 to 7 in this procedure.

Delete the X.25 software by typing

```
# /usr/lpp/psx25/tmp/psx25_remove
```

and pressing the Enter key.

Note: The system may take several minutes to remove X.25 software. during this time the screen may display messages that indicate filesets are being removed from the system. The command prompt appears when all X.25 software is removed.

10   Remove all X.25 hardware installed on the system. Refer to procedure Removing a standalone X.25 interface in the Upgrades section.

You have completed this procedure.

Adding an I/O expansion chassis (NTRX50EC)

Application

> **ATTENTION**
> Do not perform this procedure if there are any hardware faults on the CS 2000 Core Manager.

Use this procedure to add an I/O expansion chassis (NTRX50EC) to an existing system. You can perform this procedure when the hardware modules are available or not available. If the hardware modules are available when you are adding the I/O expansion chassis, **do not plug in the modules.**
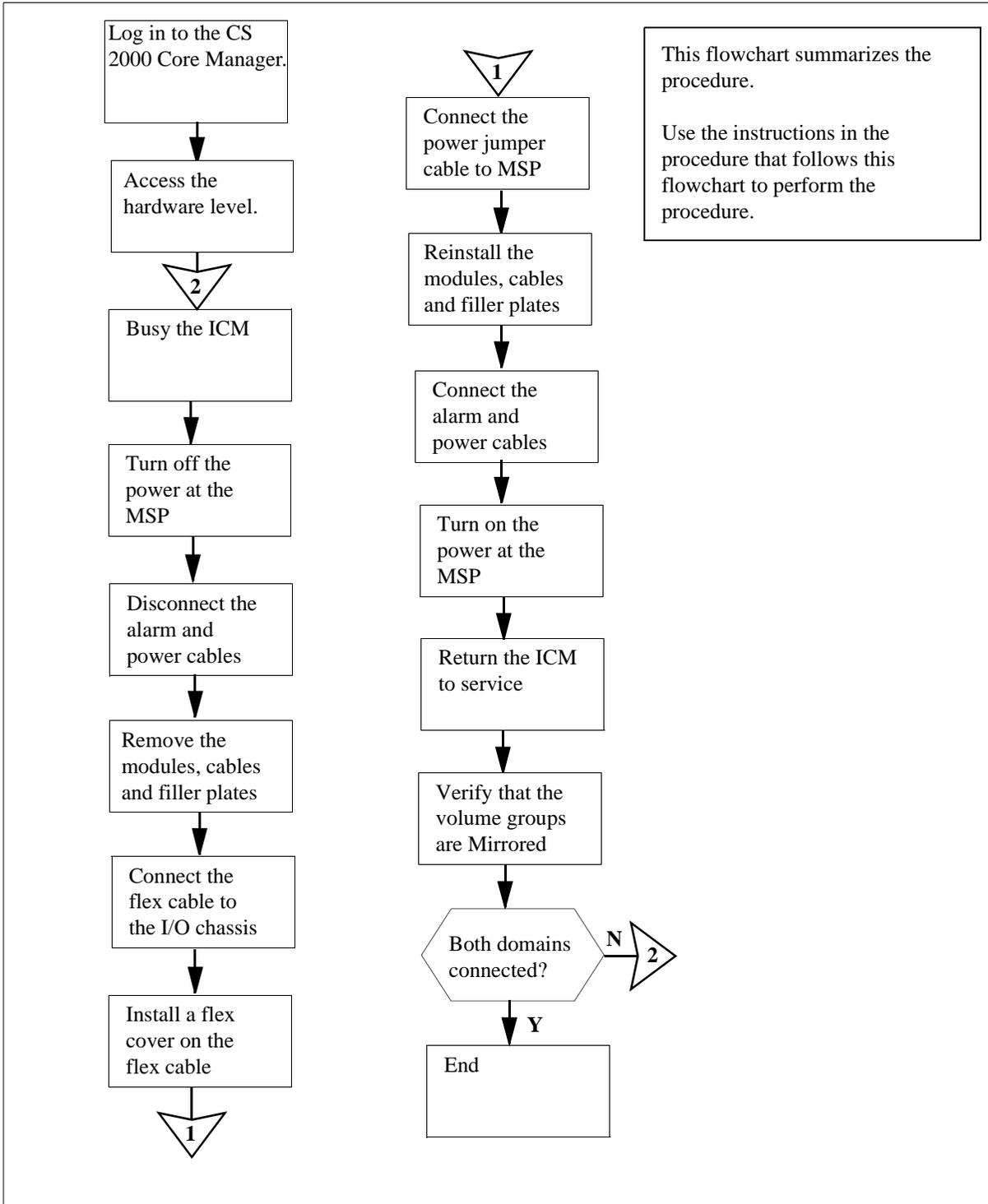
Before you perform this procedure, mount the I/O expansion chassis in position 28 of the CS 2000 Core Manager cabinet.

Before you perform this procedure, perform the procedure "Creating system image backup tapes (S-tapes)" in the Security and Administration section.

Action

The following flowchart provides an overview of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the task.

Summary of adding an I/O expansion chassis (NTR50EC)

Log in to the CS 2000 Core Manager.

↓

Access the hardware level.

▽ 2

Busy the ICM

↓

Turn off the power at the MSP

↓

Disconnect the alarm and power cables

↓

Remove the modules, cables and filler plates

↓

Connect the flex cable to the I/O chassis

↓

Install a flex cover on the flex cable

▽ 1

▽ 1

Connect the power jumper cable to MSP

↓

Reinstall the modules, cables and filler plates

↓

Connect the alarm and power cables

↓

Turn on the power at the MSP

↓

Return the ICM to service

↓

Verify that the volume groups are Mirrored

↓

Both domains connected? ──N──▷ 2

Y
↓

End

This flowchart summarizes the procedure.

Use the instructions in the procedure that follows this flowchart to perform the procedure.

Adding an I/O expansion chassis (NTRX50EC)

At the local or remote VT100 console

1   Log into the CS 2000 Core Manager as the root or maint user.

2   Access maintenance interface by typing

   # **sdmmtc**

   and pressing the Enter key.

3   Access the hardware (Hw) level by typing

   > **hw**

   and pressing the Enter key.

   Example response:

```
          I F C E D D D D 5 X
          C A P T S S S A 1 2
          M N U H K K K T 2 5
                  1 2 3

Domain 0 . . . . . . . . . .
Domain 1 . . . . . . . . . .
```

4   Check the status of hardware on the CS 2000 Core Manager. The component "Hw" in the alarm banner must show a dot (.), indicating that all hardware components are in service. In the example shown, there are no hardware faults on the CS 2000 Core Manager. If your system has any hardware faults, clear the faults before you continue this procedure.

5   Manually busy the interconnect module (ICM) in domain 0 by typing

   > **bsy 0 icm**

   and pressing the Enter key.

   Response:

```
Hardware Bsy – Domain 0 Device ICM
This action will affect all devices in I/O
domain 0.

Do you wish to proceed?
Please confirm ("YES", "Y", "NO", "N")
```

6   Confirm the Bsy command by typing

`> y`

and pressing the Enter key.

> *Note:* When you manually busy ICM 0, all subtending
> devices in domain 0 are also put in the C-side Bsy state.

7   After you confirm the Bsy command, the following is displayed:

Response:

```
Hardware Bsy : Domain 0 Device ICM - Command
initiated.
Please wait...
```

Several warnings are displayed. The "Please wait..." message,
and the command confirmation disappear. The word "initiated"
also changes to "submitted", then "changes" to "complete".

Response:

```
Hardware Bsy : Domain 0 Device ICM - Command
completed.
```

> *Note:* At the hardware level, the state of the interconnect
> module changes to manually busy (ManB) and all subtending
> devices changes to "C". The out-of-service LED on the
> module is on (red).

Example response

```
        I F C E D D D D 5 X
        C A P T S S S A 1 2
        M N U H K K K T 2 5
                1 2 3

Domain 0 M C . C C C C C C C
Domain 1 . . . . . . . . . .
```

8   Access the storage level by typing

        > **storage**

    and pressing the Enter key.

    Example response

```
Volume Group               Status              Free
(MB)      rootvg               mirrored
608
   datavg                   mirrored           7760

Logical Volume    Location
 1 /              rootvg      20              25/ 80
 2 /usr           rootvg      192             85/ 90
 3 /var           rootvg                      11/ 80
 4 /tmp           rootvg      24               6/ 90
 5 /home          rootvg      300              4/ 70
 6 /sdm           rootvg      300             44/ 90
 7 /data          datavg      208              6/ 80
Logical volumes showing: 1 to 7 of 7
```

9   Wait until the status of the root volume group (rootvg) and the data volume group (datavg), if applicable, is not mirrored.

At the front of the MSP

10   Turn off the power to CS 2000 Core Manager domain 0 by turning off both breakers in slot 10 of the modular supervisory panel (MSP).

At the back of the CS 2000 Core Manager

11

<table>
<tr>
<td>⚠</td>
<td>WARNING
Static electricity damage
Wear an electrostatic discharge (ESD) grounding wrist strap connected to the C28B cabinet when handling a module. This protects the module against damage caused by static electricity.</td>
</tr>
</table>

Put on an electrostatic discharge grounding wrist strap.

12   Put on an electrostatic discharge grounding wrist strap to disconnect the alarm cable from ICM 0.
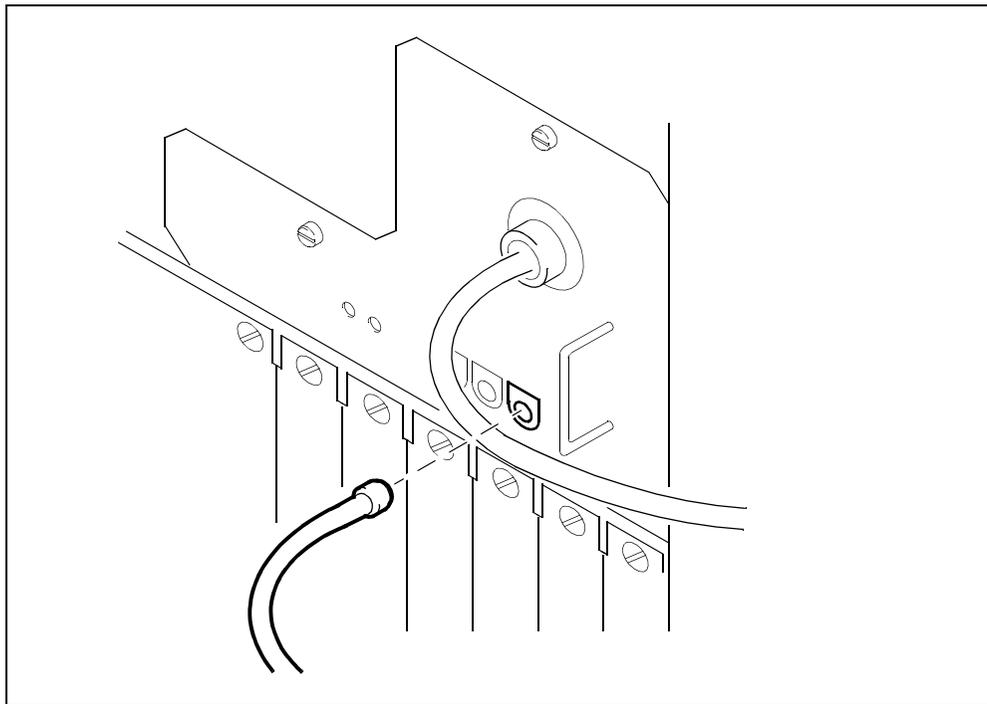
Note: The alarm cable is only present on systems with a main chassis only. This cable is not required when you add the I/O expansion chassis to your system.

13

> ⚠️ **CAUTION**
> **Potential service interruption**
> Ensure that you disconnect the power cable from ICM 0. If you disconnect the power cable to the remaining in-service ICM (ICM 1), the entire CS 2000 Core Manager shuts down.

Disconnect the power cable from ICM 0.
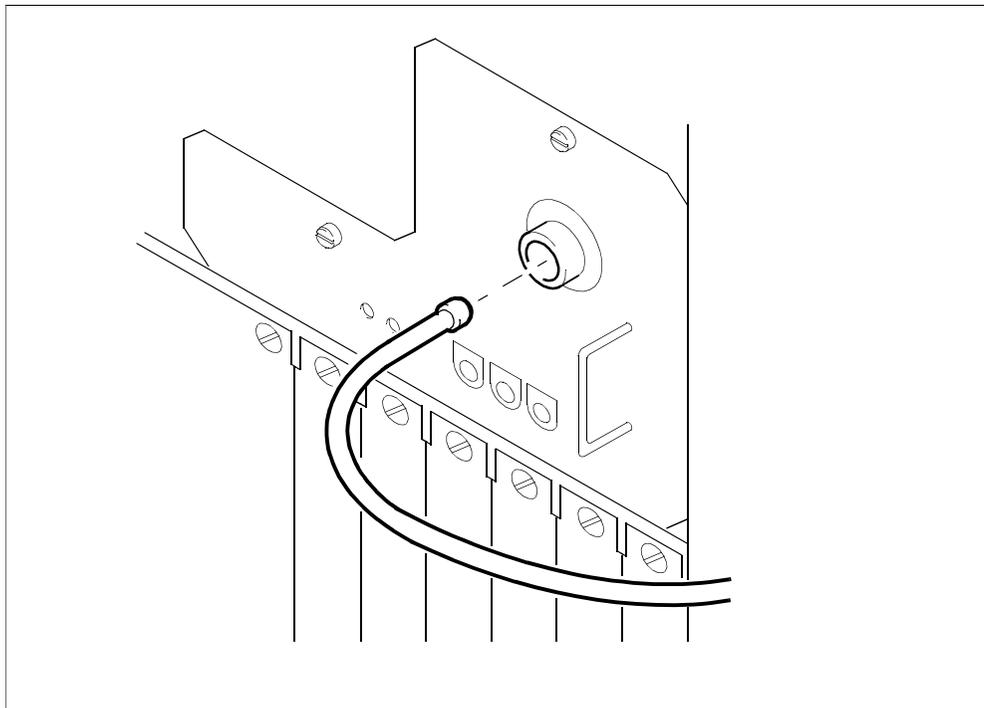
At the back of the CS 2000 Core Manager

14

> ⚠ **CAUTION**
> **Disconnecting transmit and receive cables**
> Do not mix the transmit and receive cables for
> each domain. If you have not already done so,
> label these cables to ensure that you
> reconnect the cables to the correct slots. Link
> 0 transmit and link 0 receive connect to MS0.
> Link 1 transmit and link 1 receive connect to
> MS1.

Disconnect the four DS512 fiber cables on the DS512
personality module by pressing the fiber cable in, and turning it
a 1/4 turn to the left.

15   Loosen the two thumbscrews located at the top and the bottom of the DS512 personality module (located in slot 1).

　　　Note: The thumbscrews are the captive type, and cannot be removed from the module.

16   While grasping the thumbscrews, carefully pull the DS512 personality module out of the CS 2000 Core Manager shelf.
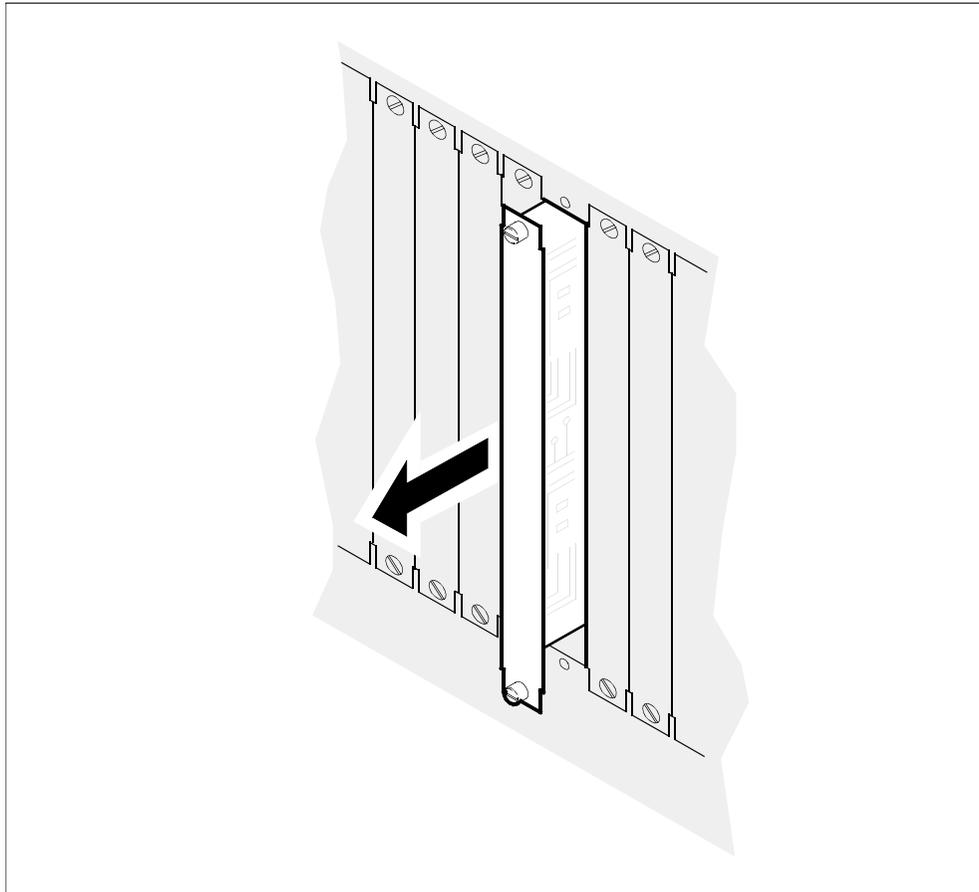
17   Place the DS512 personality module you have removed in an ESD protective container.

18 Disconnect the 10BASE-T cable from the LAN personality module (located in slot 2), as shown in the following diagram.
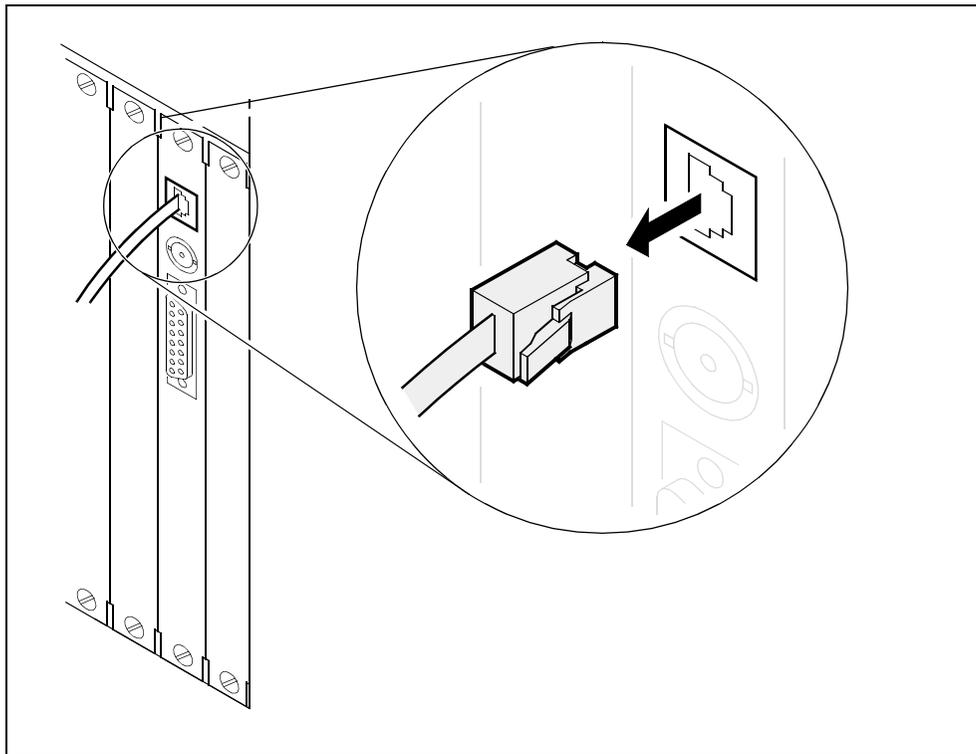
19 Loosen the two thumbscrews located at the top and the bottom of the LAN personality module.

20 While grasping the thumbscrews, carefully pull the LAN personality module out of the CS 2000 Core Manager shelf.
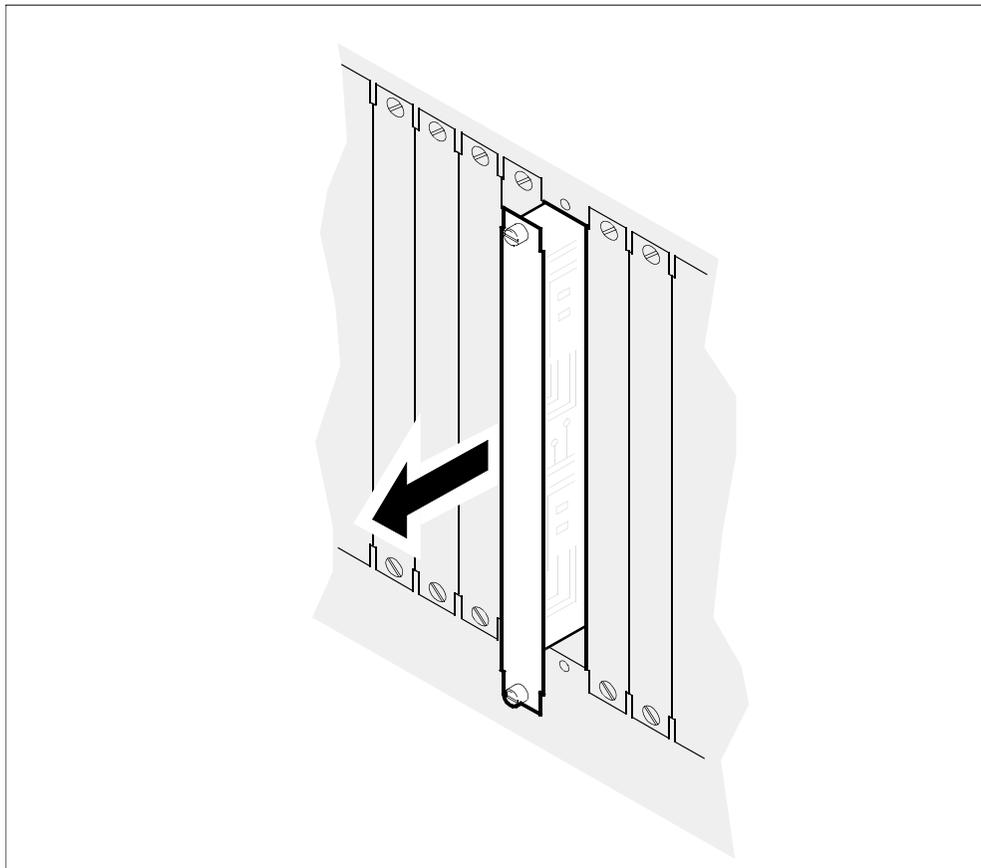
21 Place the LAN personality module you have removed in an ESD protective container.

22 Remove the filler plate in slot 3.

23 Remove the domain 0 flex cover that runs from the outside of the main and I/O expansion chassis.

24 Connect the domain 0 flex cable (NTRX5088) to the I/O expansion chassis back plane side 0. Route the cable correctly and plug it into the connector on the main chassis of the domain 0 backplane.

> *Note:* Be careful when you are connecting the cable to the I/O expansion chassis. If you try and force the connector into the socket, the pin on the connector can bend.

Domain 0 of I/O expansion chassis backplane

Domain 0 flex cable

Domain 0 of main chassis backplane
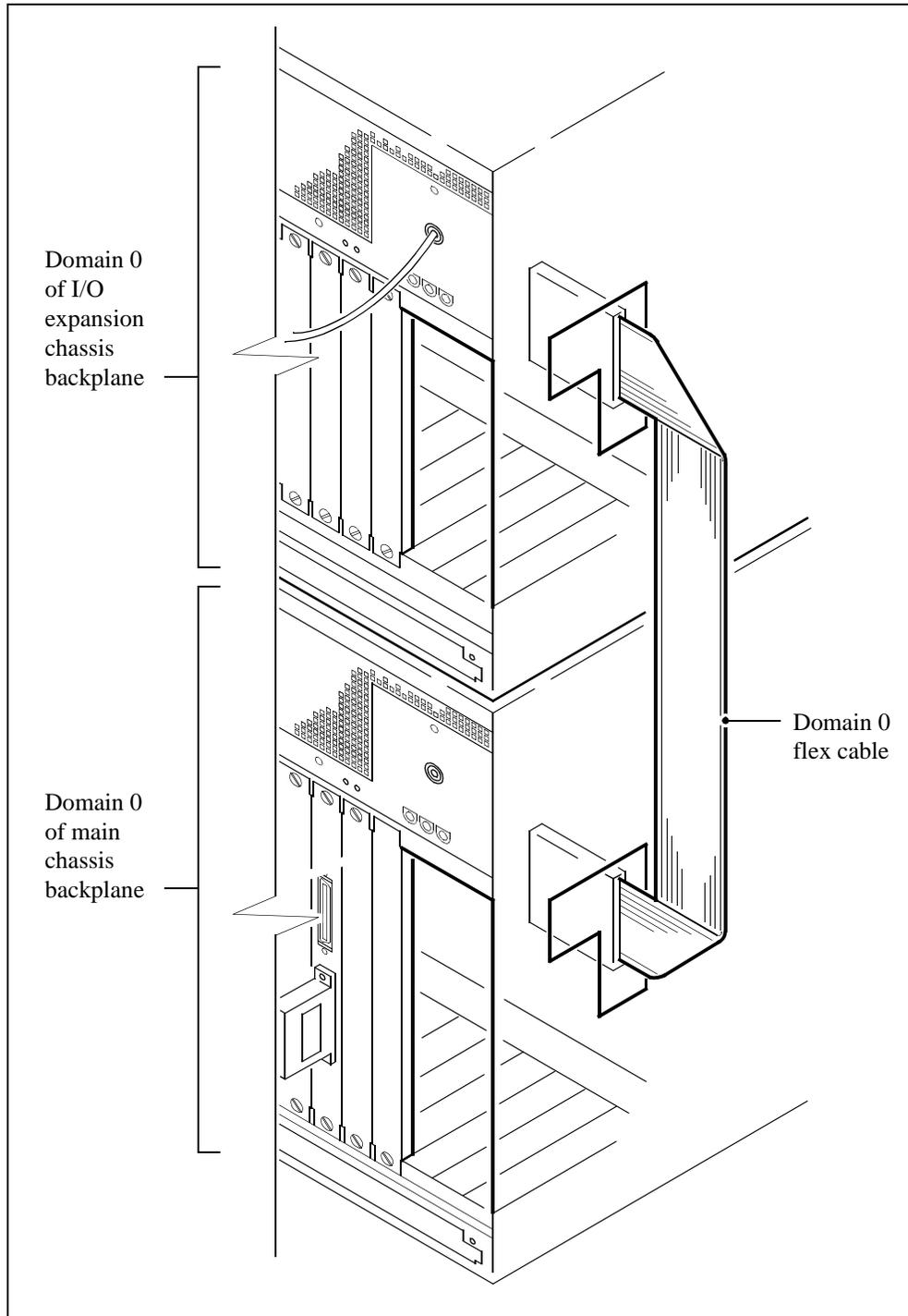
25 Install flex cable covers on the flex cable to protect the cable from damage.

At the back of the MSP

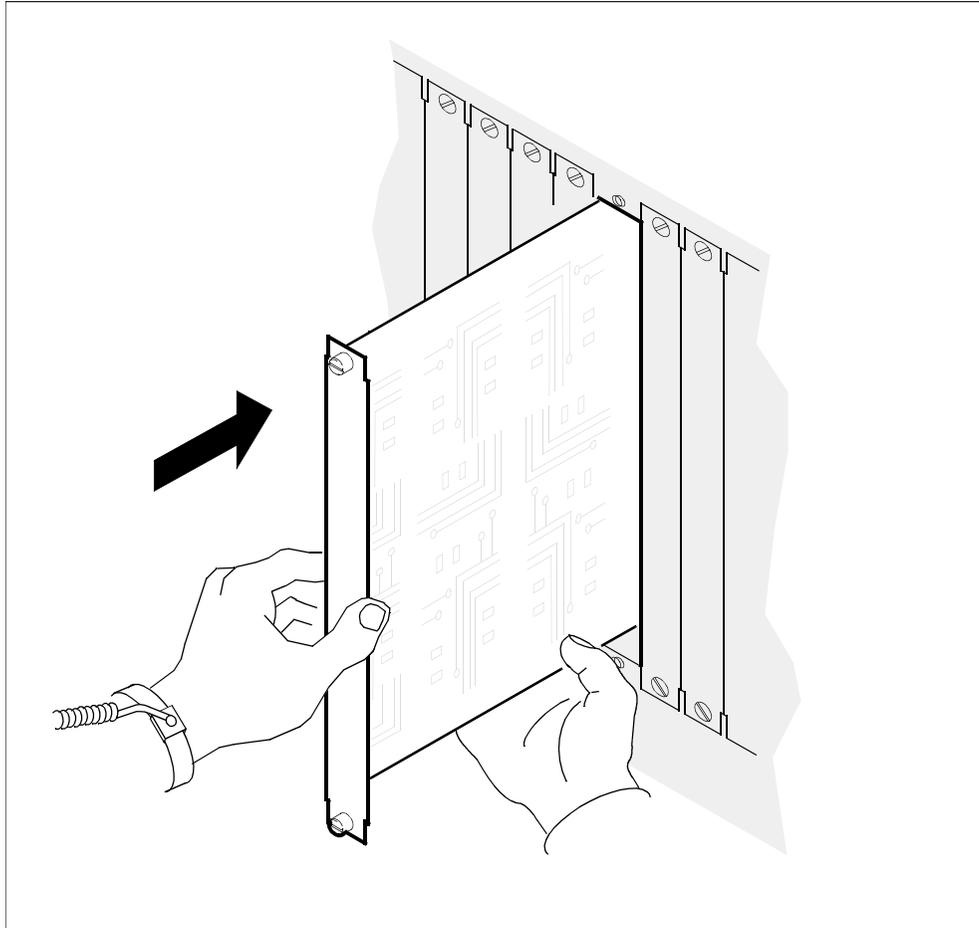**26** Connect the power jumper cable (NTRX5054) to slot 10 of the MSP in the following order:

- P1-D to P2-C

- P1-B to P2-A

Note: The power jumper cable is already connected to P1 connector. The other end is tied.
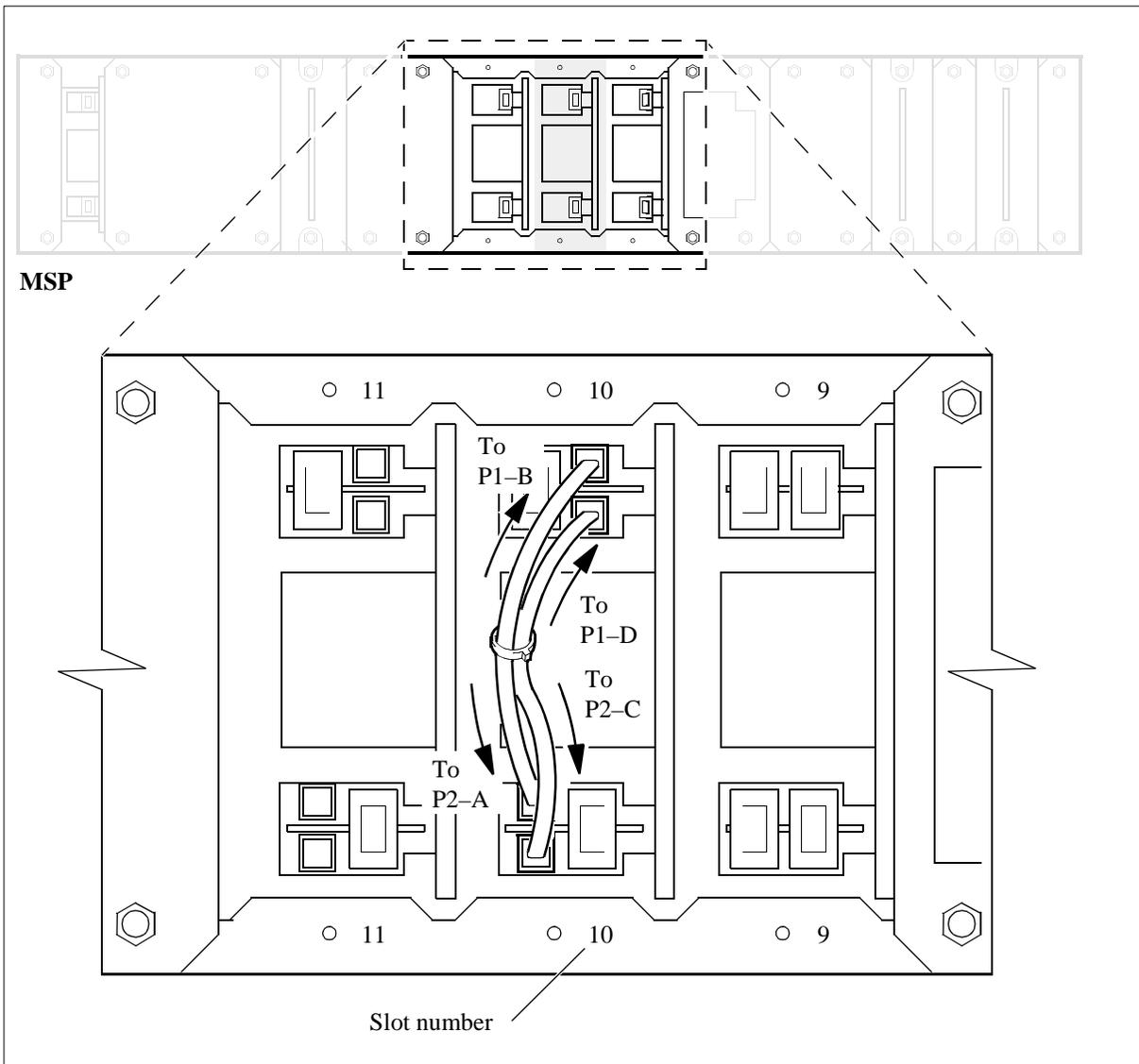
At the back of the CS 2000 Core Manager

27 Carefully slide the DS512 personality module into slot 1 of the shelf until it is fully inserted.

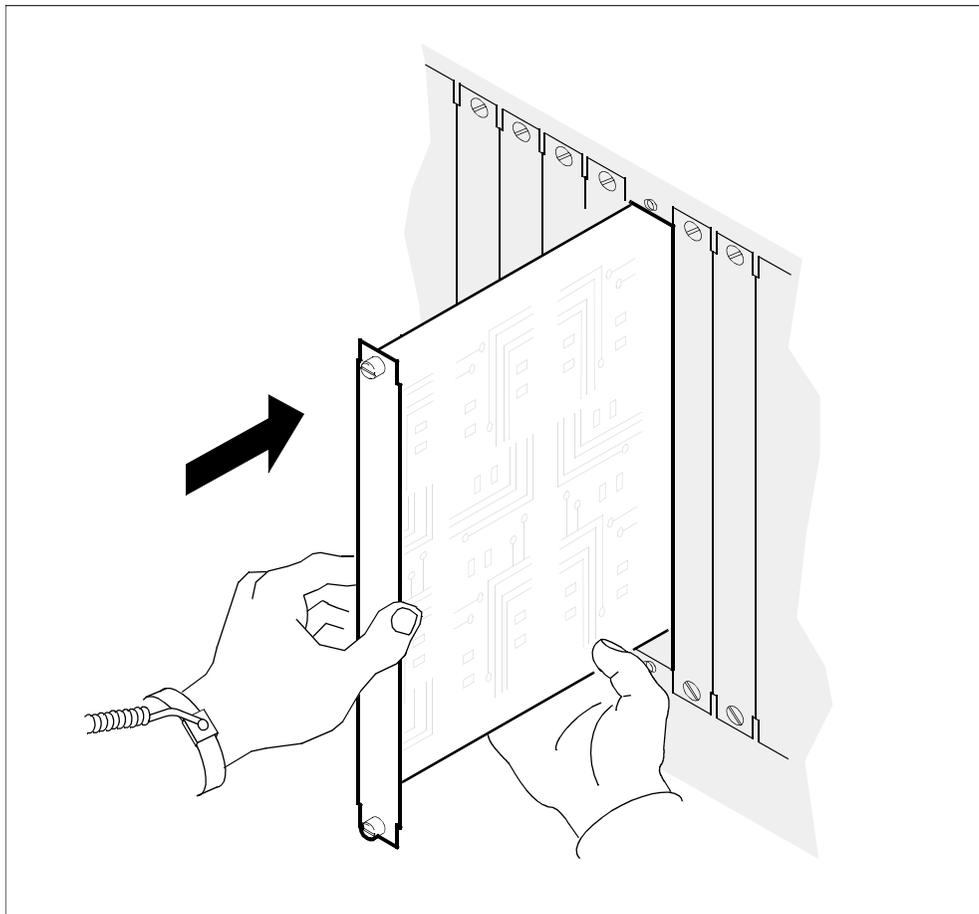**28** Tighten the thumbscrews at the top and the bottom of the DS512 personality module.

29

> ⚠ **CAUTION**
> **Reconnecting transmit and receive cables**
> Do not mix the transmit and receive cables for each domain. Ensure that you reconnect the cables to the correct slots. Link 0 transmit and link 0 receive connect to MS0. Link 1 transmit and link 1 receive connect to MS1.

Reconnect the four DS512 fiber cables on the DS512 personality module by pressing the fiber cable in, and turning it a 1/4 turn to the right.

30   Carefully slide the LAN personality module into the slot 2 until it is fully inserted.

31   Tighten the thumbscrews at the top and the bottom of the LAN personality module.

32 Reconnect the 10BASE-T cable to the LAN personality module.
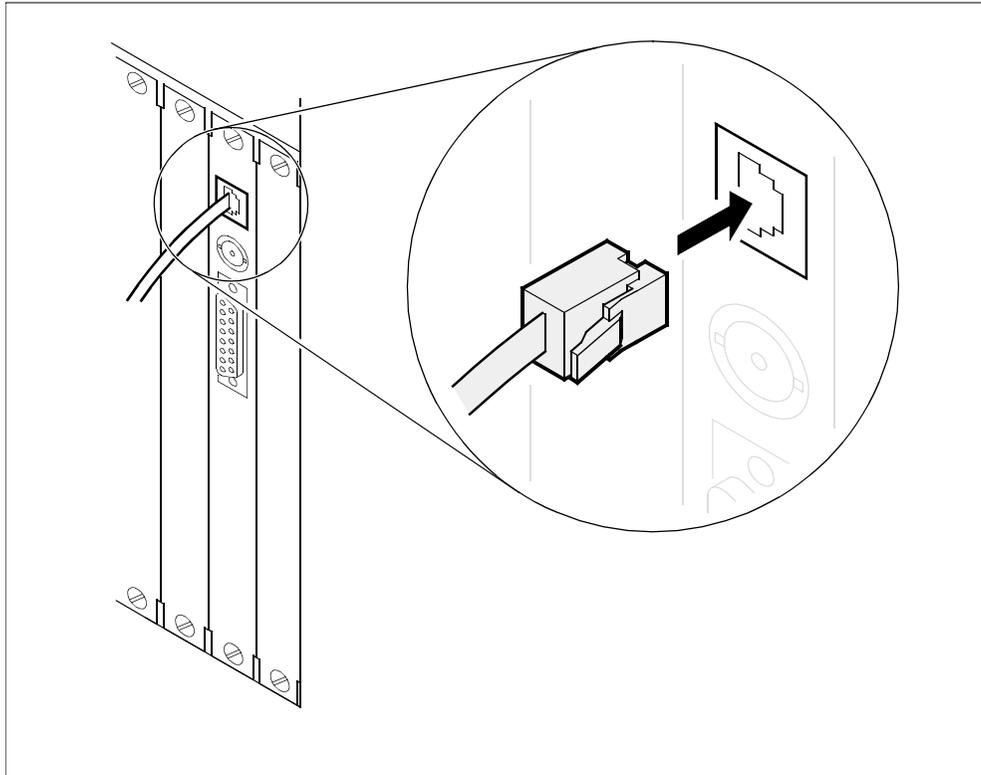
33 Reconnect the power cable to ICM 0 in the main chassis, and to ICM 0 in the I/O expansion chassis.

34 Reconnect the alarm cable to the main chassis.

At the front of the MSP

35 Turn on power to CS 2000 Core Manager domain 0 by turning on both breakers in slot 10 of the MSP.

At the local or remote VT100 console

36 At the hardware level, return the ICM 0 to service, by typing

> **rts 0 icm**

and pressing the Enter key

Response:

```
Hardware RTS : Domain 0 Device ICM - Command
initiated.
Please wait...
```

When the RTS command is finished, the "Please wait..." message and the command confirmation disappear. The word "initiated" also changes to "submitted", then "changes" to "complete".

Response:

```
Hardware RTS : Domain 0 Device ICM - Command
complete.
```

37 Allow about 2 min. for the interconnect module to reintegrate. The system adds a new column for the ICM in the I/O expansion chassis. The display changes to a dot (.), indicating that the modules in the main chassis are in service. The ICM 2 shows a status of ManB.

Example response:

```
          I I F C E D D D D 5 X
          C C A P T S S S A 1 2
          M M N U H K K K T 2 5
          1 2       1 2 3
Domain 0 . M . . . . . . . . .
Domain 1 . - . . . . . . . . .
```

38   Return ICM 2 to service by typing

```
> rts 0 icm2
```

and pressing the Enter key.

Response:

```
Hardware RTS : Domain 0 Device ICM2 - Command
initiated.
Please wait...
```

When the RTS command is finished, the "Please wait..." message and the command confirmation disappear. The word "initiated" also changes to "submitted", then "changes" to "complete".

Response:

```
Hardware RTS : Domain 0 Device ICM2 - Command
complete.
```

39   Allow about 2 min. for the interconnect module to reintegrate. The system adds a new column for the fans in the I/O expansion chassis. The display changes to a dot (.), indicating that the interconnect module is in service.

Example response:

```
         I  I  F  F  C  E  D  D  D  D  5  X
         C  C  A  A  P  T  S  S  S  A  1  2
         M  M  N  N  U  H  K  K  K  T  2  5
         1  2  1  2        1  2  3
Domain 0 .  .  .  M  .  .  .  .  .  .  .  .
Domain 1 .  -  .  -  .  .  .  .  .  .  .  .
```

40   Return FAN 2 to service by typing

> `rts 0 fan2`

and pressing the Enter key.

Response:

```
Hardware RTS : Domain 0 Device FAN2 - Command
initiated.Please wait...
```

When the RTS command is finished, the "Please wait..." message and the command confirmation disappear. The word "initiated" also changes to "submitted", then "changes" to "complete".

Response:

```
Hardware RTS : Domain 0 Device FAN2 - Command
complete.
```

> **Note:** At the hardware level, FAN 2 changes to in service, indicated by a dot (.).

41   Access the system (Sys) level by typing

> `sys`

and pressing the Enter key.

42   Access the storage level by typing

> `storage`

and pressing the Enter key.

Example response:

```
Volume Group              Status              Free
(MB)   rootvg              mirrored
608
datavg                   mirrored              7760

Logical Volume    Location
 1 /              rootvg     20          25/ 80
 2 /usr           rootvg     192         85/ 90
 3 /var           rootvg                 11/ 80
 4 /tmp           rootvg     24           6/ 90
 5 /home          rootvg     300          4/ 70
 6 /sdm           rootvg     300         44/ 90
 7 /data          datavg     208          6/ 80
Logical volumes showing: 1 to 7 of 7
```

43   Wait until rootvg and datavg, if applicable, are Mirrored. This may take up to 2 hours.   If this problem persists, contact your next level of support.

44   Access the hardware level by typing

> **hw**

and pressing the Enter key.

45   Manually busy the ICM in domain 1 by typing

> **bsy 1 icm1**

and pressing the Enter key.

Response:

```
Hardware Bsy - Domain 1 Device ICM1
This action will affect all devices in I/O
domain 1.

Do you wish to proceed?
Please confirm ("YES", "Y", "NO", "N")
```

46   Confirm the Bsy command by typing

> **Y**

and pressing the Enter key.

   Note: When you manually busy ICM 1, all subtending devices in domain 1 are also put in the C-side Bsy state.

47   After you confirm the Bsy command, the following is displayed:

Response:

```
Hardware Bsy : Domain 1 Device ICM - Command
initiated.Please wait...
```

Several warnings are displayed. The "Please wait..." message and the command confirmation disappear. The word "initiated" also changes to "submitted", then "changes" to "complete".

Response:

```
Hardware Bsy : Domain 1 Device ICM - Command
complete.
```

> *Note:* At the hardware level, the state of the interconnect module changes and all subtending devices changes to "C". The out-of-service LED on the module is on (red).

Example response:

```
         I  I  F  F  C  E  D  D  D  D  5  X
         C  C  A  A  P  T  S  S  S  A  1  2
         M  M  N  N  U  H  K  K  K  T  2  5
         1  2  1  2        1  2  3
Domain 0 .  .  .  .  .  .  .  .  .  .  .  .
Domain 1 M  -  C  -  .  C  C  C  C  C  C     C
```

48   Access the system (Sys) level by typing

> **sys**

and pressing the Enter key.

49 Access the storage level by typing

> **storage**

and pressing the Enter key.

Example response:

```
Volume Group              Status              Free
(MB)
rootvg                    Not mirrored        1932
datavg                    Not mirrored        7760

Logical Volume   Location    Size(MB)    %full/
threshold 1 /           rootvg      88
11/ 80
2 /usr           rootvg      600             28/ 90
3 /var           rootvg      200              7/ 70
4 /tmp           rootvg      24               5/ 90
5 /home          rootvg      304             11/ 90
6 /sdm           rootvg      504             23/ 90
7 /data          datavg      208              6/ 80
                    Logical volumes showing: 1
to 7 of 7
```

50 Wait until the status of rootvg and datavg, if applicable, is Not Mirrored.

At the front of the MSP

51 Turn off power to CS 2000 Core Manager domain 1 by turning off both breakers in slot 11 of the MSP.

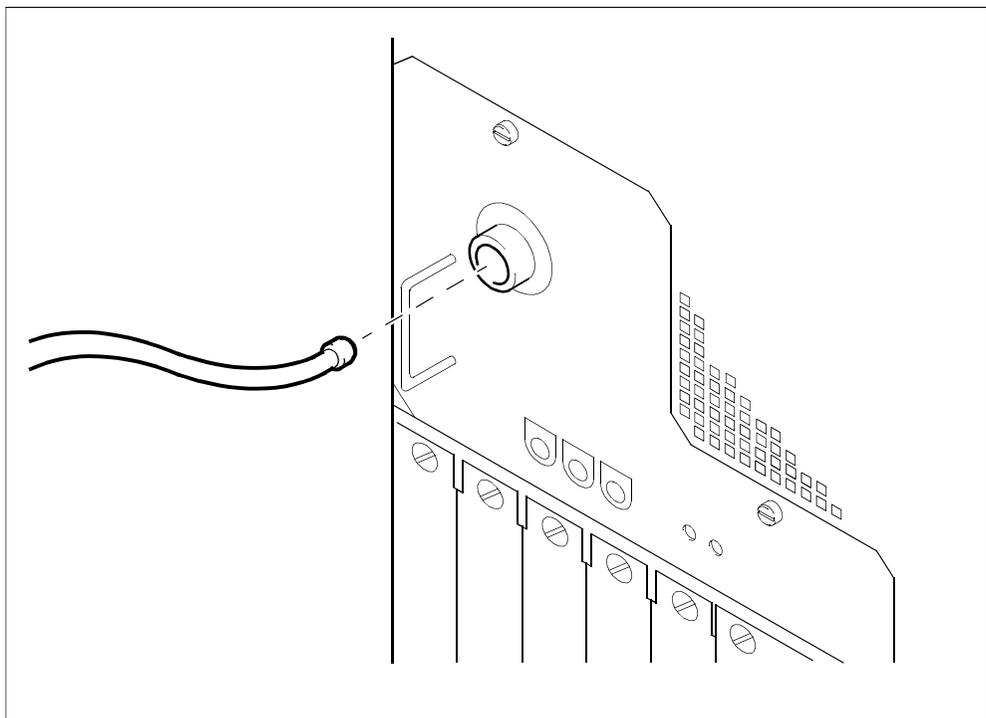**52** Disconnect the alarm cable from ICM 1.
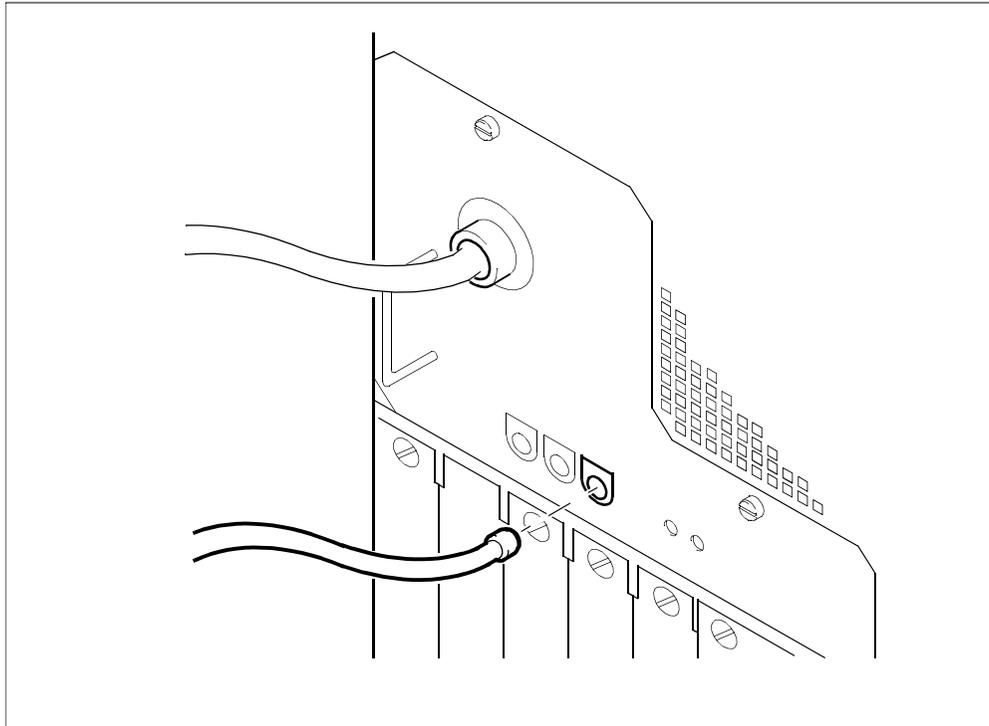
53

> ⚠ **CAUTION**
> **Potential service interruption**
> Ensure that you disconnect the power cable from ICM 1. If you disconnect the power cable to the remaining in-service ICM (ICM 0), the entire CS 2000 Core Manager shuts down.

Disconnect the power cable from ICM 1.

54   Proceed depending on whether your system has a LAN personality module mounted in slot 15 at the back of the main chassis.

If your system	Do
has a LAN personality module in slot 15	step 55
does not have a LAN personality module in slot 15	step 58

55 Loosen the two thumbscrews located at the top and the bottom of the LAN personality module (located in slot 15).

56 While grasping the thumbscrews, carefully pull the LAN personality module out of the CS 2000 Core Manager shelf.
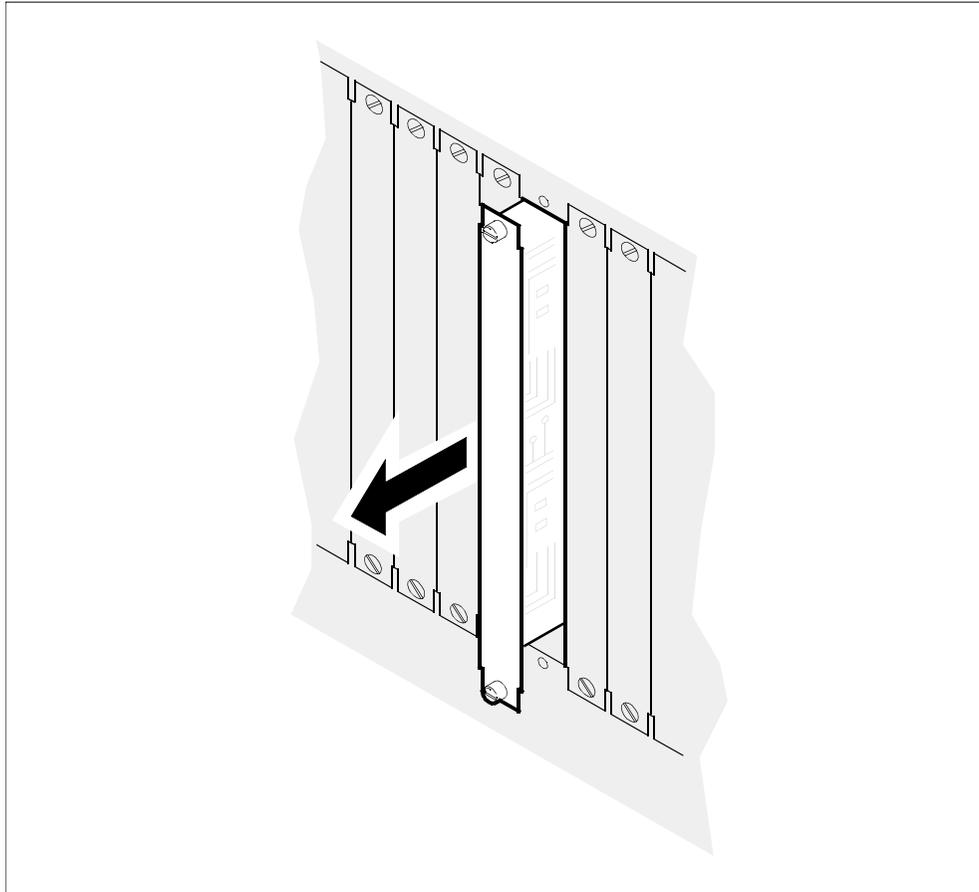
57 Place the LAN personality module you have removed in an ESD protective container.

58 Remove the filler plates in slots 14, 15 (if applicable) and 16.

59 Remove the domain 1 flex cover that runs from the outside of the main and I/O expansion chassis.

60 Connect the domain 1 flex cable (NTRX5089) to the I/O expansion chassis backplane side 1. Route the cable correctly and plug it into the connector on the main chassis of the domain 1 backplane.

Domain 1 of I/O expansion chassis backplane

Domain 1 flex cable

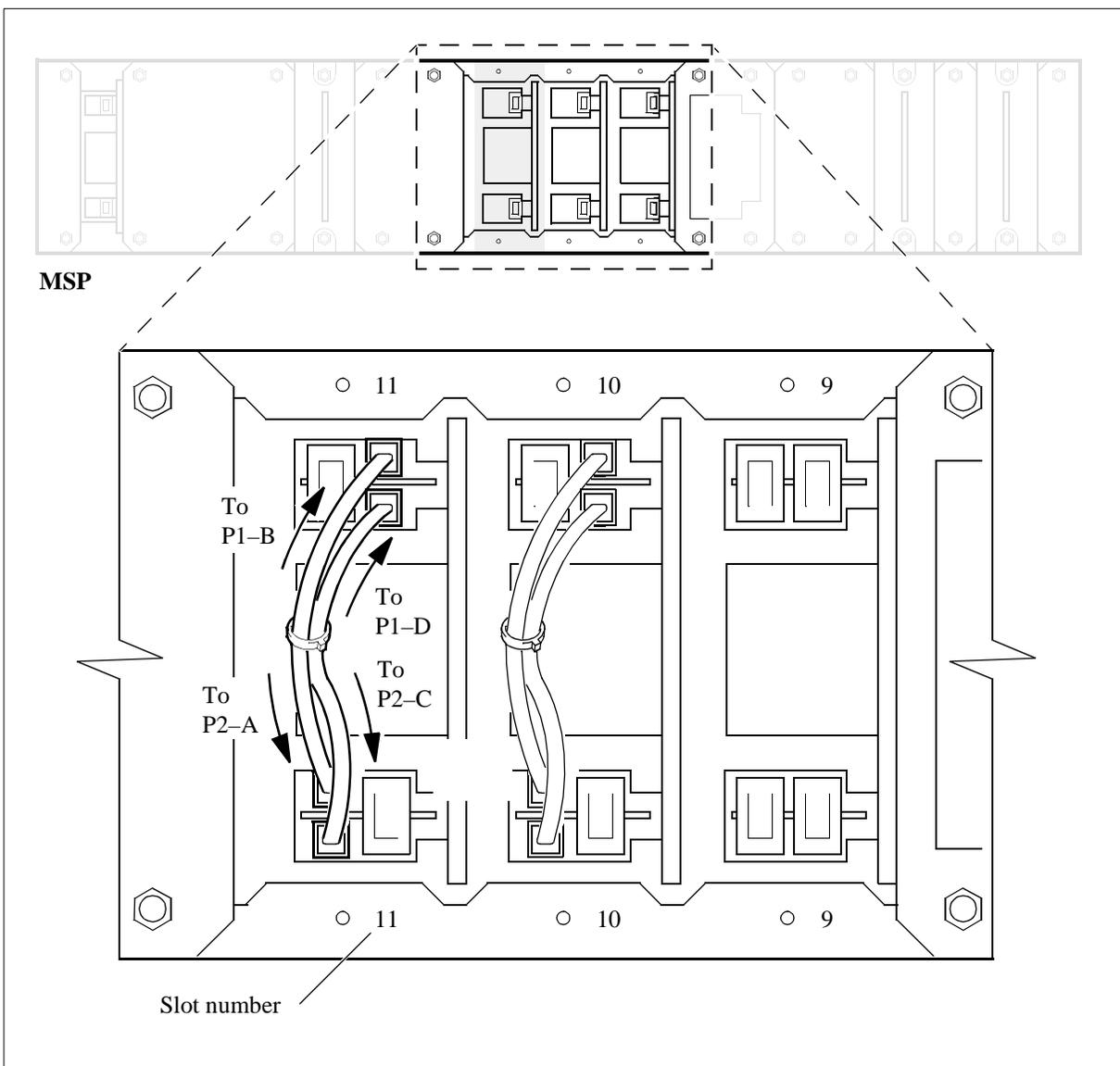Domain 1 of main chassis backplane
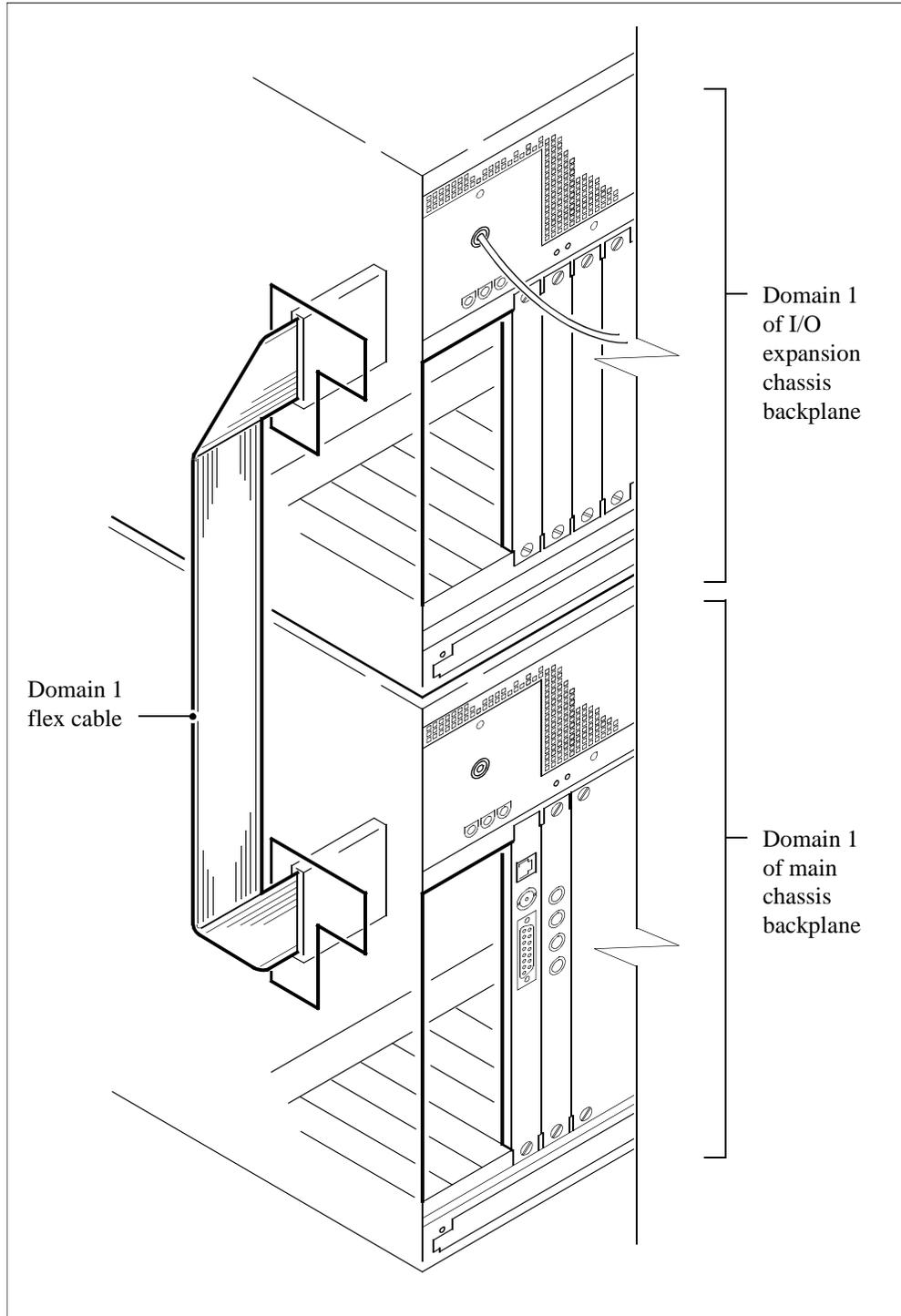
61   Install flex cable covers on the flex cable to protect the cable from damage.

At the back of the MSP

62   Connect the power jumper cable (NTRX5054) to slot 11 of the MSP in the following order:

- P1-D to P2-C

- P1-B to P2-A

    Note: The power jumper cable is already connected to P1 connector. The other end is tied.

63   Proceed depending on whether you removed a LAN personality module mounted from slot 15 at the back of the main chassis.

If you	Do
removed a LAN personality module from slot 15	step 64
did not remove a LAN personality module from slot 15	step 66

At the back of the CS 2000 Core Manager

64   Carefully slide the LAN personality module into the shelf until it is fully inserted.
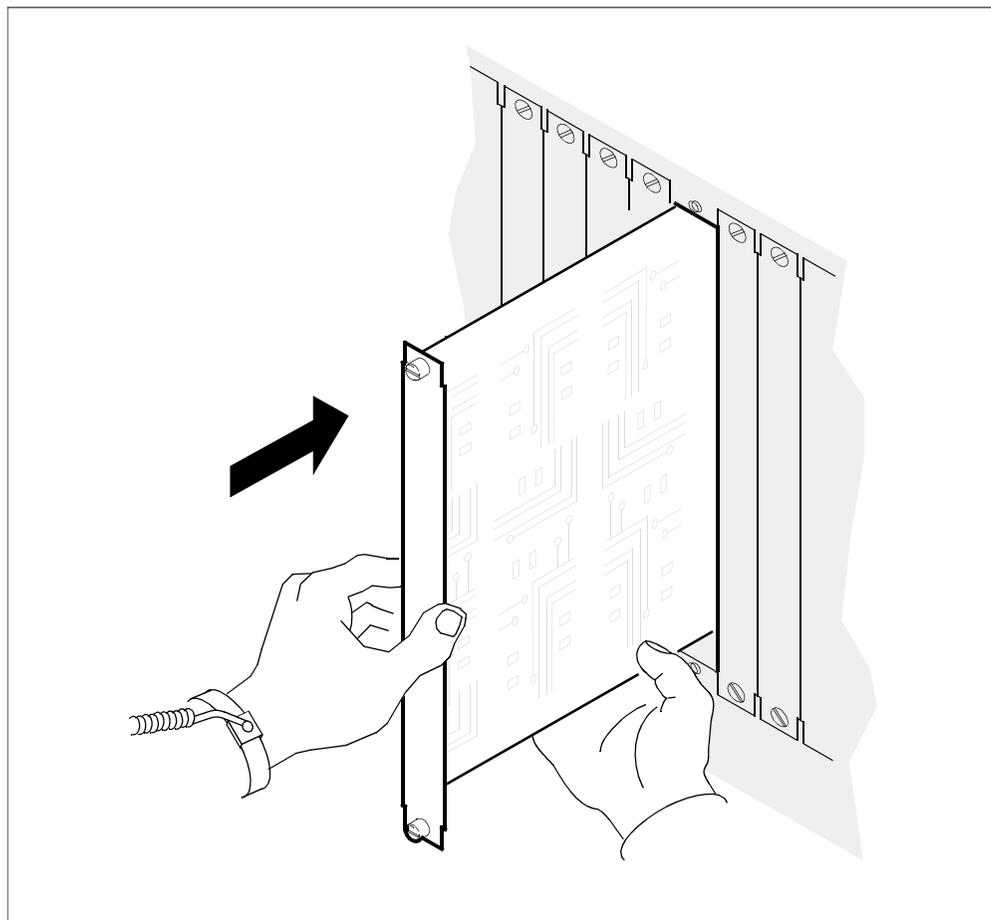
65   Tighten the thumbscrews at the top and the bottom of the LAN personality module.

66   Reinstall the filler plates in slots 14, 15 (if applicable) and 16.

67   Reconnect the power cable to ICM 1 in the main chassis, and to ICM 1 in the I/O expansion chassis.

68   Reconnect the alarm cable to the main chassis.

At the front of the MSP

69   Turn on the power to CS 2000 Core Manager domain 1 by turning on both breakers in slot 11 of the MSP.

At the local or remote VT100 console

70   Access the hardware (Hw) level by typing

> **hw**

and pressing the Enter key.

71   Return the ICM1 to service, by typing

> **rts 1 icm1**

and pressing the Enter key.

Response:

```
Hardware RTS : Domain 1 Device ICM1 - Command
initiated.Please wait...
```

When the RTS command is finished, the "Please wait..." message, and the command confirmation disappear. The word "initiated" also changes to "submitted", then "changes" to "complete".

Response:

```
Hardware RTS : Domain 1 Device ICM1 - Command
complete.
```

72   Allow about 2 min. for the interconnect module to reintegrate. The display changes to a dot (.), indicating that the modules in the main chassis are in service. The system changes the status of ICM 2 on domain 1 to ManB.

Example response:

```
         I I F F C E D D D D 5 X
         C C A A P T S S S A 1 2
         M M N N U H K K K T 2 5
         1 2 1 2     1 2 3
Domain 0 . . . . . . . . . . . .
Domain 1 . M . - . . . . . . . .
```

73 Return ICM 2 to service by typing

> **rts 1 icm2**

and pressing the Enter key.

Response:

```
Hardware RTS : Domain 1 Device ICM2 - Command
initiated.
Please wait...
```

When the RTS command is finished, the "Please wait..." message and the command confirmation disappear. The word "initiated" also changes to "submitted", then "changes" to "complete".

Response:

```
Hardware RTS : Domain 1 Device ICM2 - Command
complete.
```

74 Allow about 2 min. for the interconnect module to reintegrate. The display changes to a dot (.), indicating that the ICM 2 on domain 1 is in service. The system changes the status of Fan 2 on domain 1 to ManB.

Example response:

```
         I  I  F  F  C  E  D  D  D  D  5  X
         C  C  A  A  P  T  S  S  S  A  1  2
         M  M  N  N  U  H  K  K  K  T  2  5
         1  2  1  2        1  2  3
Domain 0 .  .  .  .  .  .  .  .  .  .  .  .
Domain 1 .  .  .  M  .  .  .  .  .  .  .  .
```

75   Return FAN 2 to service by typing

> `rts 1 fan2`

and pressing the Enter key.

Response:

```
Hardware RTS : Domain 1 Device FAN2 - Command
initiated.
Please wait...
```

When the RTS command is finished, the "Please wait..." message and the command confirmation disappear. The word "initiated" also changes to "submitted", then "changes" to "complete".

Response:

```
Hardware RTS : Domain 1 Device FAN2 - Command
complete.
```

> **Note:** At the hardware level, FAN 2 changes to in service, indicated by a dot (.).

76   Access the system (Sys) level by typing

> `sys`

and pressing the Enter key.

77 Access the storage level by typing

> **storage**

and pressing the Enter key.

Example response:

```
Volume Group      Status                Free
(MB)
rootvg            Mirrored              1932
datavg            Mirrored              7760

Logical Volume    Location    Size(MB)   % full/
threshold 1
/                 rootvg      88          11/ 80
2 /usr            rootvg      606         28/
90
3 /var            rootvg      200         11/
80
4 /tmp            rootvg      24           7/
90
5 /home           rootvg      304          5/
70
6 /sdm            rootvg      504         11/
90
7 /data           datavg      208          6/
80
                  Logical volumes showing: 1 to
7 of 7
```

78 Wait until rootvg and datavg, if applicable, are Mirrored. This may take up to 2 hours.   If this problem persists, contact your next level of support.

79 You have completed this procedure.

>   *Note:* If you want to add I/O modules to the expansion chassis, refer to procedure Adding I/O controller modules.

Adding I/O controller modules

Application

Use this procedure to add one of the following hardware modules to the CS 2000 Core Manager:

- NTRX50FU - I/O controller module with two 2-Gbyte disk drives and Ethernet
- NTRX50GP - I/O controller module with two 4-Gbyte disk drives and Ethernet
- NTRX50NL - I/O controller module with two 36-Gbyte disk drives and Ethernet
- NTRX50NY - X.25 controller module

I/O controller modules do not require LAN personality modules (NTRX50FS) installed at the back of the CS 2000 Core Manager except for the mandatory NTRX50GN I/O controller modules located in slots 2 and 3, and slots 13 and 14.

I/O controller modules can be added to slots 4 and 5, and 15 and 16, of the CS 2000 Core Manager main chassis, and to unoccupied slots in the I/O expansion chassis.

To perform this procedure, you must know the following information:

- the chassis type (SDMM for a main chassis; SDME for an I/O expansion chassis)
- the I/O controller module's slot number (from 1 to 16)
- the I/O controller module's product engineering code (PEC)

Action

The following flowchart provides an overview of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the task.

Summary of Adding I/O controller modules

```
┌─────────────────┐
│ Remove the      │
│ filler face     │
│ plates          │
└─────────────────┘
        │
        ▼
┌─────────────────┐
│ Insert the new  │
│ I/O controller  │
│ modules         │
└─────────────────┘
        │
        ▼
┌─────────────────┐
│ Insert the LAN  │
│ personality     │
│ modules         │
└─────────────────┘
        │
        ▼
┌─────────────────┐
│ Log in to the CS│
│ 2000 Core Man-  │
│ ager.           │
└─────────────────┘
        │
        ▼
┌─────────────────┐
│ Access the      │
│ hardware level. │
└─────────────────┘
        │
        ▼
┌─────────────────┐
│ Add the I/O     │
│ controller      │
│ module          │
└─────────────────┘
        │
        ▼
┌─────────────────┐
│ Monitor the     │
│ status of the   │
│ new modules     │
└─────────────────┘
        │
        ▼
┌─────────────────┐
│ End             │
└─────────────────┘
```

This flowchart summarizes the procedure.

Use the instructions in the procedure that follows this flowchart to perform the procedure.

At the front of the CS 2000 Core Manager

1
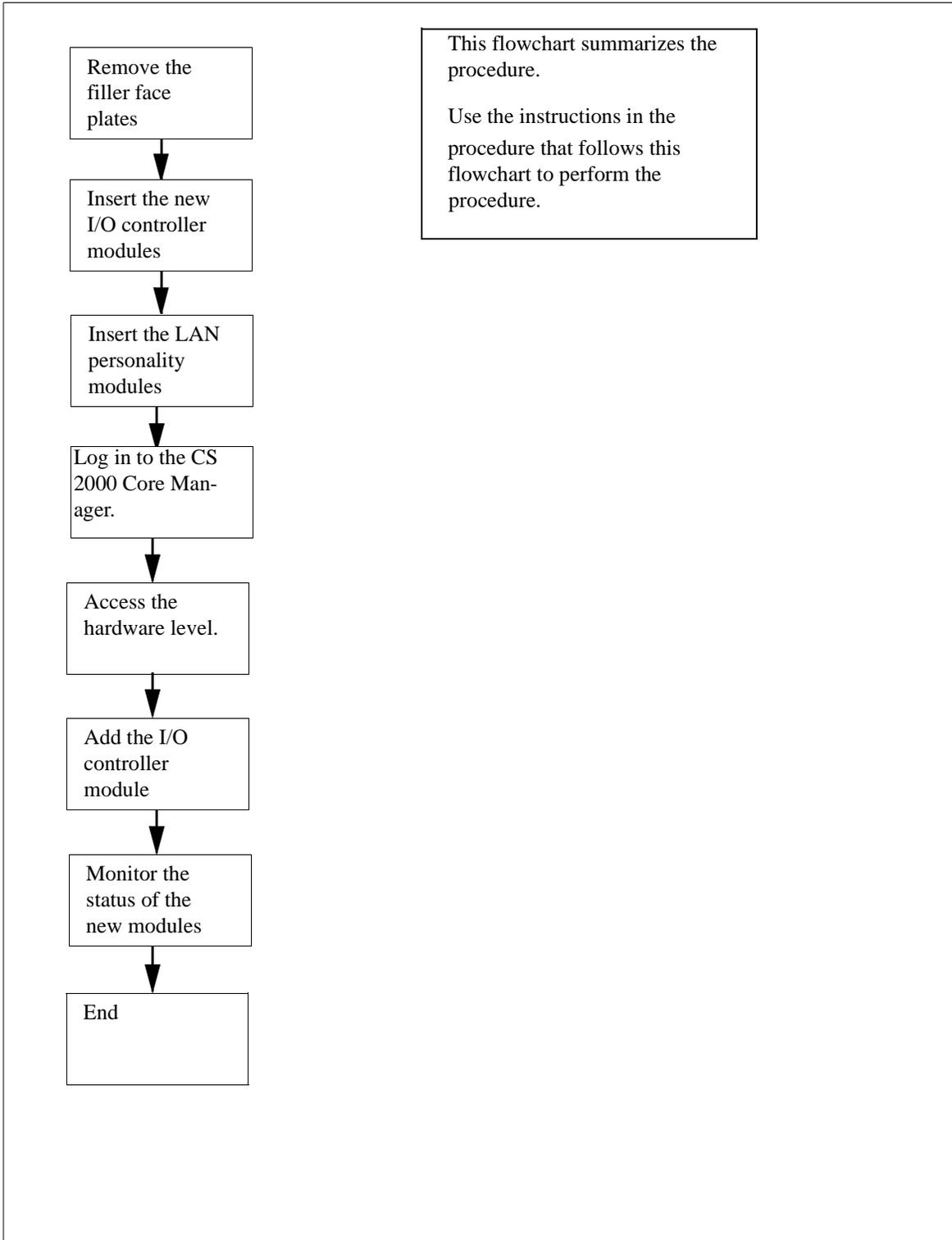
> ⚠ **WARNING**
> **Static electricity damage**
> Wear an ESD grounding wrist strap connected to the C28B cabinet when handling a module. This protects the module against damage caused by static electricity.

Put on the ESD grounding wrist strap.

2   Remove the filler plates covering the slots in which you will install the new modules.

> *Note 1:* I/O controller modules can be added to slots 4 and 5, and 15 and 16, of the CS 2000 Core Manager main chassis. All available slots can be used in the I/O expansion chassis to install two I/O controller modules as a logical pair, however, the left slot position of the left I/O controller module must be 8 slot positions apart from the left slot position of the right I/O controller module of the pair. For example, if the left I/O controller module of the pair occupies slots 1 and 2, the right I/O controller module must occupy slots 9 and 10. Both modules in a logical pair must have the same PEC.

> *Note 2:* The rear LAN personality module I/O controller module must occupy the lower number of the two rear slots that are associated with the front module. For example, if the new I/O controller module occupies front slots 4 and 5, its associated LAN personality module must be installed in rear slot 4. The unused rear slots remain covered by filler plates.

3 Insert the replacement module into the CS 2000 Core Manager shelf.

4 Gently slide the module into the shelf until it is fully inserted.
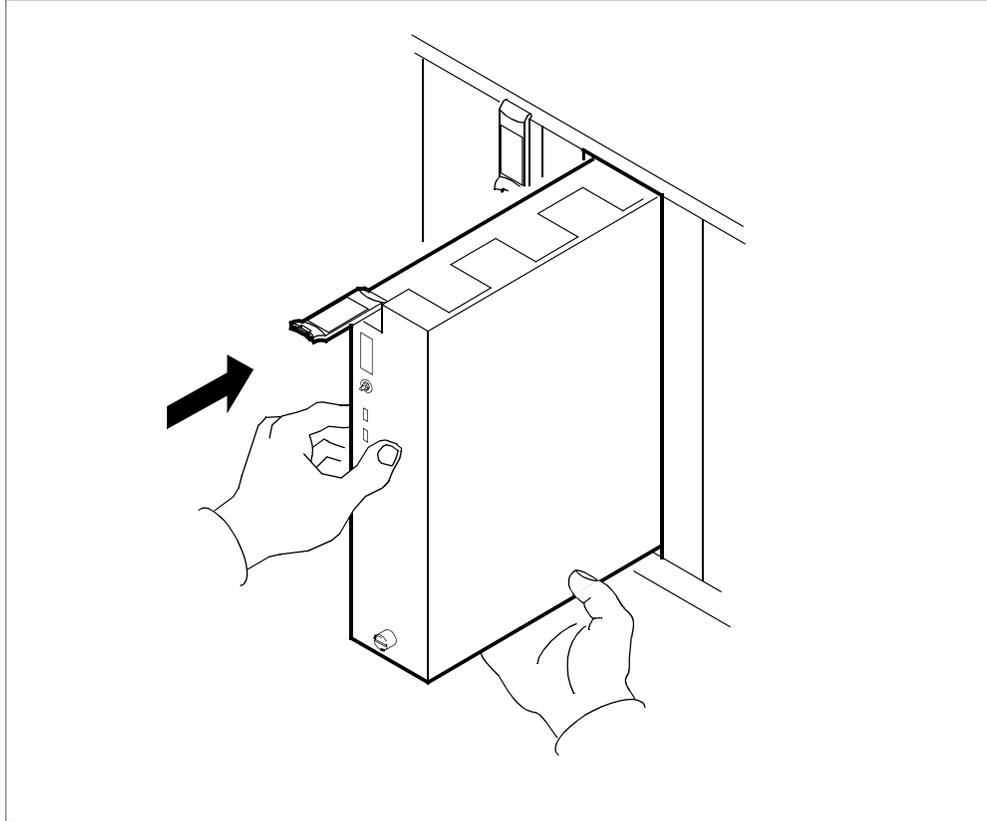
5   Close the locking lever to secure the module. Ensure that the top micro switch is lined up with the locking lever to properly seat the module.

Micro switch
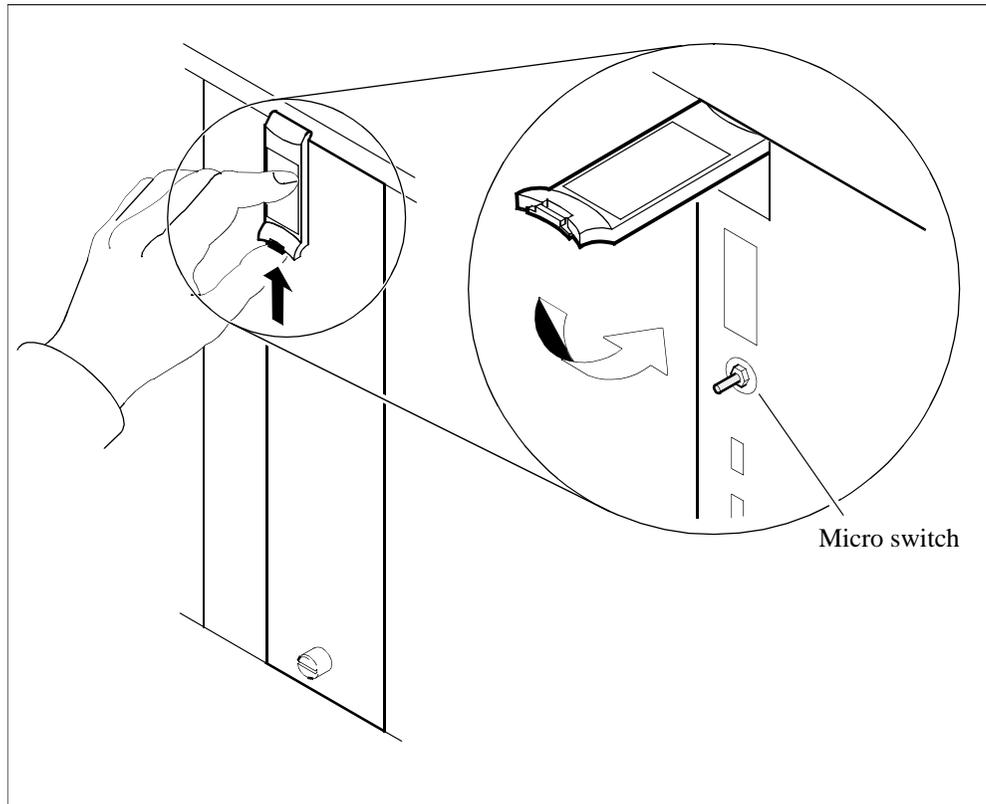
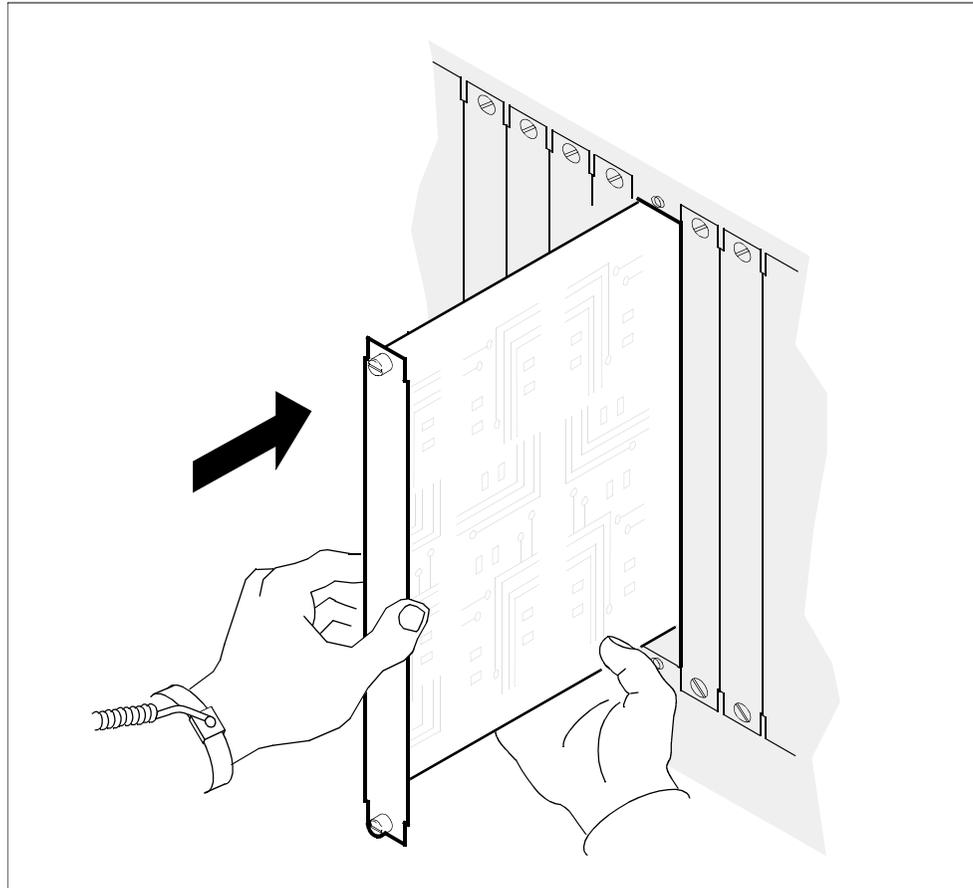**6**   Tighten the thumbscrews on the module.

7   Use the following table to determine your next step.

If you	Do
need to install a LAN personality module	step 8
do not need to install a LAN personality module	step 11

At the back of the CS 2000 Core Manager

8 Insert the new LAN personality module into the CS 2000 Core Manager shelf.

9 Gently slide the LAN personality module into the shelf until it is fully inserted.

10 Tighten the thumbscrews at the top and the bottom of the LAN personality module.

At the local or remote VT100 console

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

12 Access the maintenance interface by typing

   # sdmmtc

   and pressing the Enter key.

13 Access the hardware (Hw) level by typing

> **> hw**

and pressing the Enter key.

14 Add the logical pair of I/O controller modules by typing

> **> add *<chassis> <slot> <pec>***

and pressing the Enter key.

where

> **chassis**
> is the chassis where the module will be located ("SDMM" for a main chassis or "SDME" for an I/O expansion chassis)

> **slot**
> is the lower of the two physical slot numbers the module occupies

> **pec**
> is the product engineering code (PEC) of the I/O controller module you want to add

> **Note:** This command adds both modules in the logical pair simultaneously. The command '>add <chassis> simplex <slot> <pec>' addsone I/O controller module to domain 0.

15 The ADD command may take several minutes to complete. When the command is finished, the following message is displayed:

Response:

```
Hardware Add Module - Command complete.
```

16 Monitor the status of the new hardware at the hardware (Hw) level. The screen does not initially show the new hardware that has been added.

Example response:

```
        I  F  C  E  D  5  D  X
        C  A  P  T  S  1  A  2
        M  N  U  H  K  2  T  5

Domain 0   .  .  .  .  .  .  .  .
Domain 1   .  .  .  .  .  .  .  .
```

The system takes a few seconds to display the appropriate new hardware elements (DSKn for hard disks). Previously installed disks on the system are automatically renumbered, as required, to reflect the new hardware configuration. The status of the new hardware elements may initially appear as "F" (failed).

Example response:

```
        I  F  C  E  D  D  D  D  5
        C  A  P  T  S  S  S  A  1
        M  N  U  H  K  K  K  T  2
                    1  2  3
Domain 0 .  .  .  .  .  F  F  .  .
Domain 1 .  .  .  .  .  F  F  .  .
```

After a few seconds, the modules are automatically put in service, at which time their status changes to in service (indicated by a dot).

Example response:

```
        I  F  C  E  D  D  D  D  5
        C  A  P  T  S  S  S  A  1
        M  N  U  H  K  K  K  T  2
                    1  2  3
Domain 0 .  .  .  .  .  .  .  .  .
Domain 1 .  .  .  .  .  .  .  .  .
```

> ***Note:*** Devices have been renumbered. Use the Locate command to verify slot numbers.

17 You have completed this procedure.

Installing and configuring the OM Data Delivery application

This procedure provides the necessary steps for the following tasks:

- Installing the OM Data Delivery application

    If you are installing the OM Data Delivery application for the first time, ensure that the OM Access Service and Table Access Service application filesets are installed and in service on your CS 2000 Core Manager before executing this procedure.

    For the wireless market, the Nortel support group needs to increase the buffer size within the OM Access Service to 2.5 MB. This is done to accommodate the amount of data being transferred by the front end for a transfer period of every 30 minutes.

- Configuring the OM Data Delivery application

    The OM Data Delivery application collects and stores operational measurement (OM) data from the switch. The application stores the data in comma separated value (CSV) files that are sent to the client operations support system (OSS).

    The Tuple Number option allows you to activate or disable a tuple number so that it can be included in a CSV file with other OM information. You can activate or disable the Tuple Number option at the Config menu level on the CS 2000 Core Manager.

ATTENTION

You must busy (BSY) and return to service (RTS) the OM Data Delivery application for the Tuple Number option to be either activated or disabled.
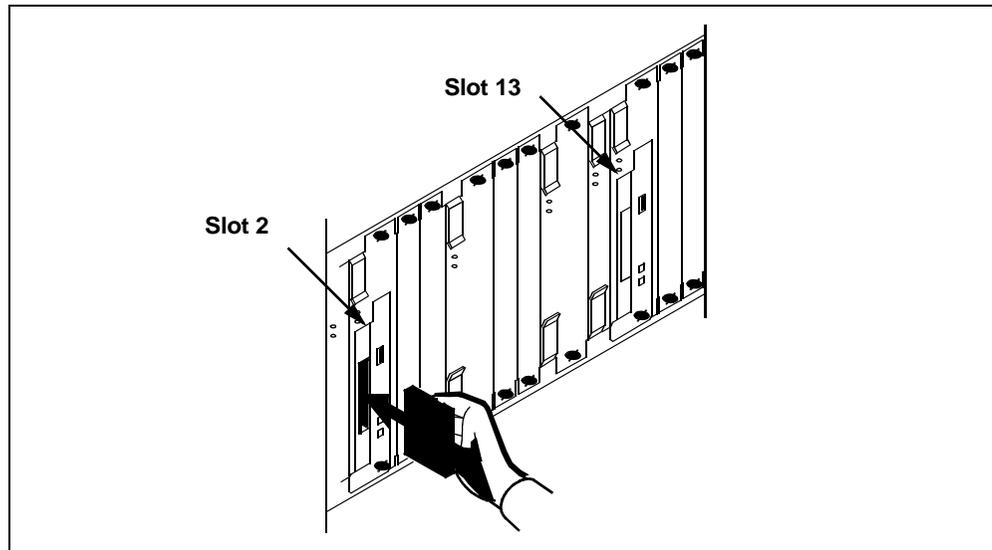

Installing the OM Data Delivery application

At the CS 2000 Core Manager

1   Insert tape CS2E00006 NCL 6.x (2 of 2) into one of the tape drives (slot 2 or slot 13) of the main chassis, as shown in the following figure.

> *Note:* Wait until the tape drive stabilizes (yellow LED is off) before you proceed.

Tape drive in main chassis

At the maintenance interface

2   Use the following table to determine your next step.

If you choose to install OM Data Delivery by	Do
logging onto a local VT100 terminal connected to the CS 2000 Core Manager	log on to the CS 2000 Core Manager as root user at the VT-100 terminal, and continue with step 6
using telnet from a remote UNIX workstation to the CS 2000 Core Manager	step 3

3   Open a terminal window that is VT-100 compatible at the remote UNIX workstation.

   Note: To install the OM Data Delivery application using a remote UNIX workstation, verify that telnet is enabled on the CS 2000 Core Manager.

4   Log onto the CS 2000 Core Manager from the terminal window prompt by typing

   `telnet <ip_address>`

   and pressing the Enter key.

   Where

   <ip_address> is the IP address of the CS 2000 Core Manager you want to install the OM Data Delivery application on.

5 When prompted, enter the login ID and password for the root user.

6 Access the maintenance interface level by typing:

`# sdmmtc`

and pressing the Enter key.

7 Access the software inventory manager (SWIM) level by typing:

`> swim`

and pressing the Enter key.

The CS 2000 Core Manager lists the software applications currently installed.

8 List the contents of the tape you previously inserted by typing

`> apply <n>`

and pressing the Enter key.

where

> **<n>**
> is either 0 (slot 2) or 1 (slot 13).

9 Locate the OM Data Delivery application fileset.

> *Note 1:* If necessary, use the up (type 12, u, or up) and down (type 13, d, or down) commands to locate the OM Data Delivery application fileset.

> *Note 2:* If you have a previous release of the OM Data Delivery application installed, its release number appears in the *Current* column, while the new version you are installing appears in the *Available* column.

10 Select and install the new OM Data Delivery application fileset by typing

`> apply <n>`

and pressing the Enter key.

where

> **<n>**
> is the number next to the OM Data Delivery application fileset.

Response:

```
You have selected to install the following new
filesets or fileset updates.OM Delivery
Application 19.0.xx.0. Do you wish to proceed?
Please confirm ("YES", "Y", "NO", or "N"):
```

11   Confirm the apply command by typing

     > y

     and pressing the Enter key.

     Response:

```
Command in progress.
APPLYING fileset: 9
SDM_OMDD.OMD 19.0.XX.0
```

Configuring the OM Data Delivery application

At the CS 2000 Core Manager console

1   Access the Config menu by typing

     # sdmmtc config

     and press the Enter key.

2   Configure OM Data Delivery by typing

     > config <n>

     and pressing the Enter key.

     where

         <n>
         is the number next to OM Data Delivery under fileset
         description

     Refer to the following table to determine your next step.

If OM Data Delivery	Do
is being initially installed or upgraded to CS2E06	step 3
has already been installed and is currently active	step 4
has already been installed and is currently disabled	step 5

3   The system indicates that the Tuple Number option is undefined.

Example response:

```
The Tuple number inclusion option is currently
 undefined.
Do you want the Tuple number to be provided with the
 OM Group information (Y/N) [N]?
```

Note: For fresh installations or upgrades from releases prior to CS2E06, the default value is *disabled (N)*.

If you	Do
activate the Tuple Number option	type **y**, press the Enter key, and go to step 6
do not want to activate the Tuple Number option	press the Enter key, and go to step 6

4   The system indicates that the Tuple Number option is active.

Example response:

```
The Tuple number inclusion option is currently
 active.
Do you want the Tuple number to be provided with the
 OM Group information (Y/N) [Y]?
```

If you	Do
want to disable the Tuple Number option	type **n**, press the Enter key, and go to step 6
do not want to disable the Tuple Number option	press the Enter key, and go to step 6

5 The system indicates that the Tuple Number option is disabled.

Example response:

```
The Tuple number inclusion option is currently
  disabled.
Do you want the Tuple number to be provided with the
  OM Group information (Y/N) [N]?
```

If you	Do
want to activate the Tuple Number option	type **y**, press the Enter key, and go to step 6
do not want to activate the Tuple Number option	press the Enter key, and go to step 6

6 The system prompts you to confirm whether the MDM and SDM are integrated.

Example response:

```
Are the MDM and SDM integrated [Y|N]?
```

7 When prompted, confirm the MDM and SDM are integrated by typing

y

and pressing the Enter key.

8 Configure the CS 2000 Core Manager to communicate with the Preside MDM as follows:

a When prompted, enter the IP address of the first MDM, and press the Enter key.

b When prompted, enter the hostname of the first MDM, and press the Enter key.

c When prompted, enter the IP address of the second MDM, and press the Enter key.

d When prompted, enter the hostname of the second MDM, and press the Enter key.

e When prompted, enter the port for 5-minute PM data, and press the Enter key.

f When prompted, enter the port for 30-minute PM data, and press the Enter key.

9 When prompted, indicate whether you want to use custom retry settings.

If you	Do
do not want to use custom retry settings	type **n**, press the Enter key, and go to step 11
want to use custom retry settings	type **y**, press the Enter key, and continue with step 10

10 Respond to the prompts with your custom retry settings and press the enter key after each entry:

> *Note:* The retry setting values shown here are examples. Retry setting values are in seconds (values higher than 300 seconds are not recommended as they may adversely affect recovery time).

```
> Enter the first connection retry interval: 2

> Enter the number of retry attempts at that
interval: 10

> Enter the second connection retry interval: 10

> Enter the number of retry attempts at that
interval: 40

> Enter the third connection retry interval: 60
```

11 When prompted, confirm the data by typing

```
> y
```

and pressing the Enter key.

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

If the OM Data Delivery application	Do
is ManB or Offl	step 13
is in any state *other* than ManB or Offl	step 14

13 The system indicates that the configuration is complete.

Response:

```
Configuration complete. Please press Enter . . .
```

Press the Enter key, and go to step 15.

14   The system indicates that the changes will take place after the OM Data Delivery application is restarted.

Response:

```
Changes will take effect after OM Delivery is restarted.
Configuration complete. Please press Enter . . .
```

Press the Enter key, and go to step 15.

15   Exit the CS 2000 Core Manager maintenance interface by typing

> **quit all**

and press the Enter key.

16   You have completed this procedure.

Installing or upgrading DDMS

Use this procedure to install and configure DDMS for the first time, which consists of Creating user IDs on the CM and Installing or upgrading DDMS filesets.

> *Note 1:* The following mandatory user IDs created on the CM must also be added when you configure DDMS: SDM01, SDM02, SDM03, SDM04. These user IDs are mandatory on the CM and DDMS.

> *Note 2:* If Enhanced Password Control is in effect on the CM, and any of the passwords are changed on the CM, you need to apply the same password changes in the DDMS configuration file. Refer to Changing passwords in the DDMS configuration file.

Also use this procedure to upgrade DDMS prior to a CM one night process (ONP), which consists of Installing or upgrading DDMS filesets.

> *Note:* The DDMS application must be stopped before the CM Swact. Refer to procedure "Controlling SDM applications" in the Security and Administration section to stop DDMS. When the CM ONP is complete, restart DDMS using the same procedure.

Ensure you meet all the prerequisites listed below prior to installing or upgrading DDMS.

Prerequisites for DDMS installation

Following are the prerequisites for a successful DDMS installation:

- Hardware requirements
  - CS 2000 Core Manager Fault Tolerant (FT) Platform
  - VT100 terminal
- Software requirements
  - Installed CS 2000 Core Manager base software including the OM access and table access applications, and the filesets associated with the log delivery application (refer to procedure "Installing and configuring the log delivery application" in the Configuration section).
  - The Log Delivery Service application must be in service.
- User privilege requirements
  - root access to the CS 2000 Core Manager
  - maintenance (maint) access to the CS 2000 Core Manager
  - execute access to ftp on the CS 2000 Core Manager

Creating user IDs on the CM

The CS 2000 Core Manager requires you to create at least four user IDs on the CM.

Creating user IDs on the CM

At the CI prompt on the switch

1   Type each of the following commands and press Enter after each:

> `permit sdm01 <sdm01_pswd> 4 10000 english all`

> `permit sdm02 <sdm02_pswd> 4 10000 english all`

> `permit sdm03 <sdm03_pswd> 4 10000 english all`

> `permit sdm04 <sdm04_pswd> 4 10000 english all`

Where

   <sdm0n_pswd>
      is the CM password for user SDM0n

Note 1: If Enhanced Password Control is in effect on the CM, the password must be at least six characters in length.

Note 2: If Enhanced Password Control is in effect on the CM, and any of the SDM01-SDM04 passwords are changed on the CM, you need to apply the same password changes in the

DDMS configuration file. Refer to <u>Changing passwords in the DDMS configuration file</u>.

2   You have completed this procedure.

Changing passwords in the DDMS configuration file

At the CS 2000 Core Manager

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

2   Access the maintenance interface by typing

   # sdmmtc

   and pressing the Enter key.

3   Access the application level by typing

   > appl

   and pressing the Enter key.

4   Locate and busy the OSS Comms Svcs application by typing

   > bsy <n>

   and pressing the Enter key.

   <n>
      is the number next to the OSS Comms Svcs fileset

5   Change the passwords in the DDMS configuration file as follows:

   a   Access the configuration level by typing

      > config <n>

      and pressing the Enter key.

         <n>
            is the number next to the OSS Comms Svcs fileset

   b   Perform steps <u>8</u> through <u>12</u> in <u>Installing or upgrading DDMS filesets</u>, which follows.

   c   Once you have completed the configuration, return the OSS Comms Svcs application to service by typing

      > rts <n>

      and pressing the Enter key.

         <n>
            is the number next to the OSS Comms Svcs fileset

6   You have completed this procedure.

Installing DDMS filesets

The DDMS software is located in filesets on the CS 2000 Core Manager non-CM load (NCL) digital audio tape (DAT).   The following table shows the names, descriptions and contents of the DDMS filesets. These filesets are automatically installed when the schema fileset appropriate for your switch is installed.

DDMS contents of CS 2000 Core Manager NCL DAT tape

Fileset name	Fileset description	Contents
SDM_DDMS.ossaps	OSS and Application Svcs	OSSAPS
		Transaction Manager (ddmstxmgr)
		View Server (ddmsschema)
		Data Input Handler (ddmsdih)
		Data Change Notification Handler (ddmsdcnh)
		Synchronizing Interface Module (ddmssimif)
SDM_DDMS.osscomms	OSS Comms Svcs	OSSCOMMS
		Communications Manager (ddmscomms)
		Passthru Interface Manager (ddmspim)
		User Administration (ddmsuAdmin)
		System Administration (ddmssysadm

Installing or upgrading DDMS filesets

At the CS 2000 Core Manager

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

2   Use the following table to determine your next step.

If the software is	Do
on tape	insert the tape labeled CS2E0006 6.x (1 of 1) into the tape drive in slot 2 as shown in the following figure, and continue with step 3
	Note: Wait until the tape drive stabilizes (yellow LED is off) before you proceed.
in a directory	step 3

Main chassis tape drive
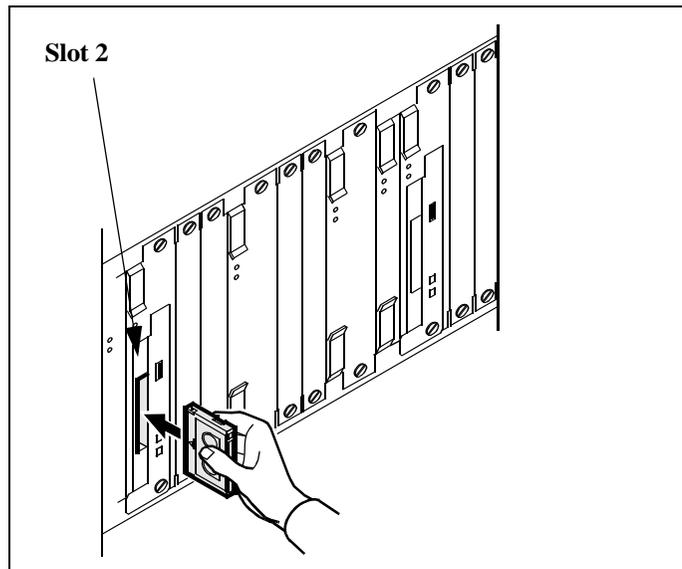
3   Access the maintenance interface by typing

 # sdmmtc

and pressing Enter.

4   Use the following table to determine your next step.

If the software is	Do
on tape	list the filesets by typing apply 0 and pressing the Enter key
in a directory	list the filesets by typing apply <directory path> and pressing the Enter key.

5   Select the filesets to install or upgrade by typing

> **`select <x>`**

and pressing the Enter key.

Where

> **`<x>`**
>> is the number next to the following filesets
>> - OSS Comms Svcs
>> - OSS and Application Svcs

Your selections are now highlighted.

6   Apply the selected filesets by typing

> **`apply`**

and pressing the Enter key.

The list of required filesets is displayed.

> **`y`**

and press the Enter key.

7   Confirm the Apply command by typing

> **`y`**

and pressing the Enter key.

Response:

```
Command in progress, 2 filesets to process.
Processing fileset 1
Applying OSS Comms Svcs 17.x.x.x
```

> *Note:* This can take up to 10 minutes to complete.

8   Press Enter to begin configuration of the OSS and Application Svcs, and the OSS Comms Svc filesets.

9   When prompted to enter the logroute tool, as shown in table DDMS logroute tool banner, press Enter.

The Logroute Main Menu appears, as shown in table Logroute tool main menu.

DDMS logroute tool banner

```
############################################################
 # Adding DDMS logroute configuration
############################################################
Please add DDMS log routing:
        Device type          = file
        File                 = /data/logs/ossaps/ossapslog
        Routing              = addrep
        log_type             = DDMS
Press <RETURN> when ready
```

Logroute tool main menu

Logroute Main Menu
1 -   Device List
2 -   Global Parameters
3 -   CM Configuration File
c: change menu, q:quit, h:help, s:save changes
Warning: You must save, then BSY and RTS the Log Delivery
======== application for any changes to take effect.
Enter command ==>

10   Set up a path and file to store DDMS customer logs as follows:

  a   Access the Logroute main menu by typing

     `> c`

     and pressing the Enter key.

  b   Select the Device List menu by typing

     `> 1`

     and pressing the Enter key.

The Device List screen is displayed.

If the list	Do
includes device /data/logs/ossaps/ossapslog	sub-step <u>c</u>
does not include device /data/logs/ossaps/ossapslog	sub-step <u>k</u>

c   Add a device by typing

> **a**

and pressing the Enter key.

d   Add a device file by typing

> **f**

and pressing the Enter key.

e   Add log routing by typing

> **a**

and pressing the Enter key.

f   Select addrep by typing

> **a**

and pressing the Enter key.

g   Enter the log identifier by typing (in uppercase)

> **DDMS**

and pressing the Enter key.

h   Change the parameter to FILENAME by typing

> **c**

and pressing the Enter key.

i   Select the FILENAME device parameter by typing

> **1**

and pressing the Enter key.

The directory path /data/logs/ appears on the screen.

j   Complete the path name by typing

> **ossaps/ossapslog**

and pressing the Enter key.

You have now set up the log routing for the DDMS.

k Exit logroute by typing

`> q`

and pressing the Enter key.

l Save the changes by typing

`> y`

and pressing the Enter key.

Response:

`Save completed -- press return to continue`

m Press Enter to continue.

The CM User Setup screen is displayed as shown in the following example.

The required CM users, SDM01-SDM04, for DDMS will be added to the DDMS configuration file. The passwords for these users should be the same as those entered in Creating user IDs on the CM in this procedure, during the NCL installation.

> *Note:* The userIDs and passwords are not case sensitive

Example of DDMS CM user setup screen

```
                        CM User Setup

    0. QUIT
    1. Add user
    2. Delete user(by ID)
    3. Update passwd(by ID)
    4. Display users(ID)

    Enter choice:

```

11 Follow sub-steps a through c for each of the required userIDs:

a Add a new user by typing

`> 1`

and pressing the Enter key.

b When prompted, enter the user name (i.e. sdm01) and press Enter.

    c When prompted enter the user password and press Enter.

        Note: Your first entry of a user name and password will cause an error message: "Error: file not valid." Ignore this message and continue to add the other user names and passwords.

    d Exit the CM User Setup screen by typing

        `> 0`

        and pressing the Enter key.

        The DDMS Clients Configuration screen is displayed as shown in the following example.

Example of DDMS Clients Configuration screen

```
                    DDMS Clients Configuration

    0. Quit
    1. Add new clients
    2. Remove existing clients
    3. List existing clients
    Enter choice:
```

12   Follow sub-steps <u>a</u> through <u>c</u> to configure the DDMS clients.

        Note: The DDMS clients are the CS 2000 Management tools servers with the SESM load.

    a Add a new client by typing

        `> 1`

        and pressing the Enter key.

    b When prompted, enter the IP address for each of the CS 2000 Management tools servers. Press the Enter key after each entry and type "done" once you have entered all the IP addresses.

    c Exit the DDMS clients configuration screen by typing

        `> 0`

        and pressing the Enter key.

13   You have completed this procedure

Installing or upgrading the GR740 TCP/IP Pass Through application

Application

Use this procedure to install or upgrade the GR740 TCP/IP Pass Through application on the CS 2000 Core Manager.

Prerequisites for GR740 TCP/IP Pass Through installation

Following are the prerequisites for successful GR740 TCP/IP Pass Through operation:

- Ensure that the Distributed Computing Environment (DCE) is installed and configured if you want to use the GR740 TCP/IP Pass Through application in secure mode.

- Ensure that the settings for office parameters "eadas_dc_interface" and "eadas_nm_interface" in table OFCVAR, and the settings for the EADAS SOCs (OAM00005 and OAM00006) are correct for your configuration.

CM EADAS TCP/IP configurations

Supported configurations	Setting for eadas_dc_interface	Setting for eadas_nm_interface	SOC OAM00005	SOC OAM00006
DC and NM over BX25	X25[a]	N/A	ON	IDLE
DC and NM over TCP/IP	TCP_IP	N/A	ON	IDLE
DC and Netminder over BX25	X25*a*	X25*a*	IDLE	ON
DC over BX25 and Netminder over TCP/IP	X25*a*	TCP_IP	IDLE	ON
DC over TCP/IP and Netminder over BX25	TCP_IP	X25*a*	IDLE	ON
DC and Netminder over TCP/IP	TCP_IP	TCP_IP	IDLE	ON

a. It is assumed that OAM00004 for EADAS/DC is ON and that office parameters "eadas_mpc_and_link" and "netminder_mpc_and_link" are appropriately datafilled in table OFCVAR when BX25 connectivity is required.

The following table lists the channel assignments for EADAS.

EADAS channel assignments

Description	Service name	TCP port	MTS offset
DC EADAS lc 1[a]	DC_EADAS_LOG_CHAN1	9550	234
DC EADAS lc 2	DC_EADAS_LOG_CHAN2	9551	235
DC EADAS lc 3	DC_EADAS_LOG_CHAN3	9552	236
NM EADAS lc 1[b]	NM_EADAS_LOG_CHAN1	9553	237
NM EADAS lc 2	NM_EADAS_LOG_CHAN2	9554	238
NM EADAS lc 3	NM_EADAS_LOG_CHAN3	9555	239

a.DC EADAS channels 1, 2 and 3 support TR-740/746 compliant header and message.
b.NM EADAS channels 1, 2 and 3 support SR3942 and TR746 to Netminder.

Use the following procedure to install the GR740 TCP/IP Pass Through application.

Installing the GR740 TCP/IP Pass Through application

At the CS 2000 Core Manager

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

2   Use the following table to determine your next step.

If the NCL filesets are	Do
on tape	insert the CS2E0006 6.x (1 of 1) tape in slot 2 of the tape drive, and continue with step 3 ***Note:*** Wait until the tape drive stabilizes (yellow LED is off) before you proceed.
in a directory	step 3

3   Access the maintenance interface by typing

    # sdmmtc

and pressing the Enter key.

The CS 2000 Core Manager maintenance menu appears, with menu selections highlighted in the left column.

4   Use the following table to determine your next step.

If the NCL filesets are	Do
on tape	list the filesets by typing apply 0 and pressing the Enter key
in a directory	list the filesets by typing apply <directory path> and pressing the Enter key

5   Select the GR740 fileset by typing

> `select <x>`

where:

  x is the number next to the GR740 TCP/IP Pass Through fileset

and pressing the Enter key.

6   Apply the GR740 fileset by typing

> `apply`

and pressing the Enter key.

Confirm the **apply** command by typing

> `y`

and pressing the Enter key.

The system begins to apply the fileset and displays the following message:

```
GR740 Pass Through Installation

Command in Progress, x filesets to process.
Processing fileset x.

APPLYING GR740 Pass Through xx.xx.xx.xx

Since the following filesets were applied to the system
for the first time, their configuration programs will
now be executed.
```

7 Press Enter to begin configuration.

If	Do
you are not configuring GR740 TCP/IP Pass Through in secure mode	enter **n**
you are configuring GR740 TCP/IP Pass Through in secure mode	enter **y**

The system displays a response indicating successful installation.

8 You have completed this procedure.

Installing or upgrading Reach Through SPM

This procedure provides instructions on how to install or upgrade the Reach Through SPM application on the CS 2000 Core Manager.

Installing Reach Through SPM

At the CS 2000 Core Manager

1   Log on to the CS 2000 Core Manager as the root user.

2   Use the following table to determine your next step.

If the software is	Do
on tape	insert the CS2E0006 6.x (1 of 1) tape into slot 2 of the tape drive, and go to step 3
	Note: Wait until the tape drive stabilizes (yellow LED is off) before you proceed.
in a directory	step 3

3   Access the maintenance interface by typing

   # sdmmtc

   and pressing the Enter key.

4   Use the following table to determine your next step.

If the software is	Do
on tape	list the filesets by typing apply 0 and pressing the Enter key
in a directory	list the filesets by typing apply <directory path> and pressing the Enter key.

5   Select Reach Through SPM fileset by typing

   > select <n>

   and pressing the Enter key.

   Where

   <n> is the number next to the Remote Registration System fileset.

6   Apply the selected fileset by typing

          `> apply`

          and pressing the Enter key.

7   Confirm the apply command by typing

          `> y`

          and pressing the Enter key.

8   You have completed this procedure.

Installing or upgrading OpenSSH

The following procedure provides instructions on how to install the OpenSSH fileset. For more information on OpenSSH, refer to "OpenSSH overview" in the Basics section.

At the CS 2000 Core Manager

1 Log on to the CS 2000 Core Manager using the root user ID and password.

2 Use the following table to determine your next step.

If the software is	Do
on tape	insert the tape labeled CS2E0006 6.x (1 of 1) into the tape drive in slot 2, and continue with step 3 *Note:* Wait until the tape drive stabilizes (yellow LED is off) before you proceed.
in a directory	step 3

3 Access the maintenance interface by typing

 # sdmmtc

and pressing the Enter key.

4 Use the following table to determine your next step.

If the software is	Do
on tape	list the filesets by typing apply 0 and pressing the Enter key
in a directory	list the filesets by typing apply <directory path> and pressing the Enter key.

5 Select the latest version of the OpenSSH fileset by typing

> select <x>

and pressing the Enter key.

where

<x> is the number next to the OpenSSH fileset.

6   Apply the selected fileset by typing

     `> apply`

     and pressing the Enter key.

7   Confirm the apply command by typing

     `> y`

     and pressing the Enter key.

8   You have completed this procedure.

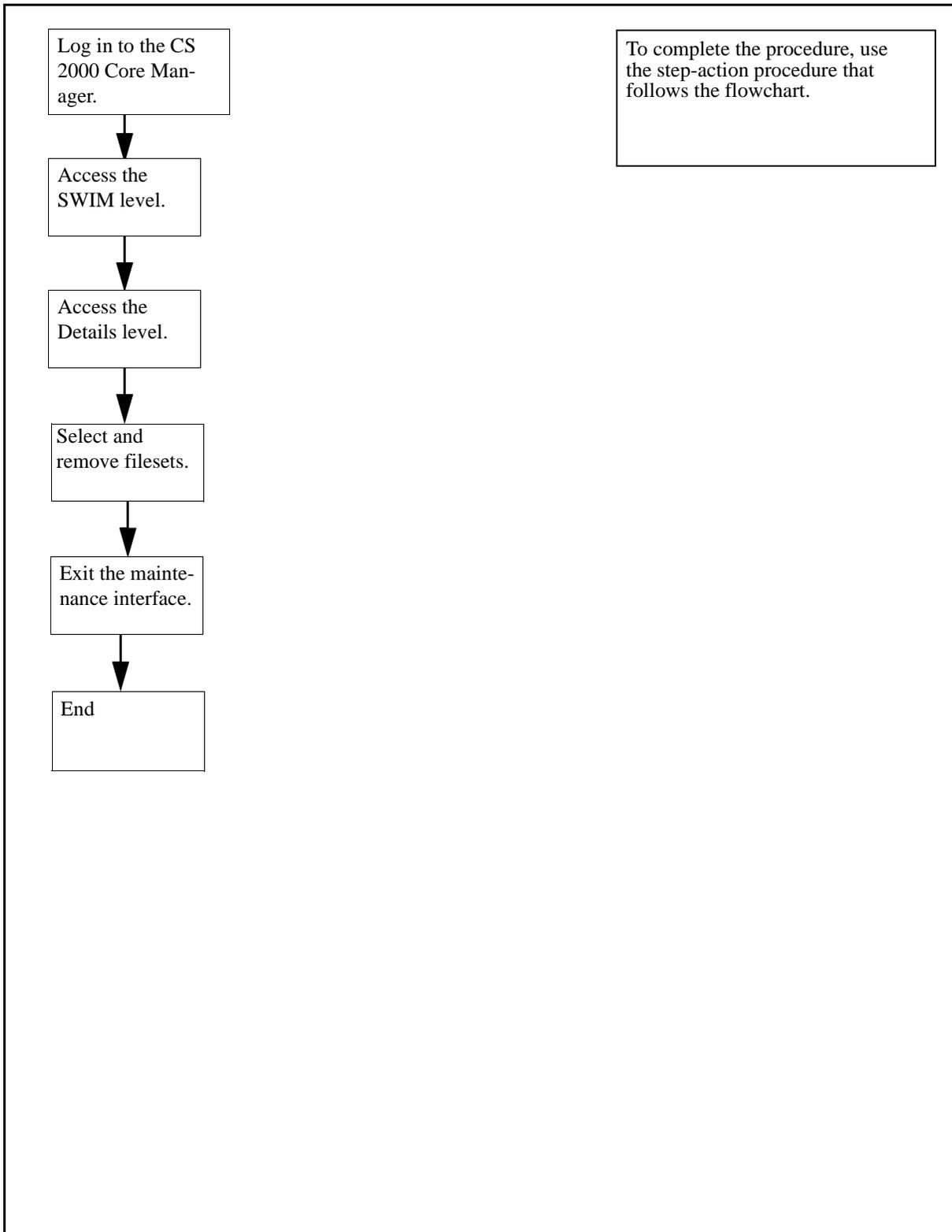## Removing CS 2000 Core Manager application filesets

This procedures provides instructions on how to remove application filesets that reside on the CS 2000 Core Manager.

You display the list of application filesets available on the CS 2000 Core Manager at the Details level, which includes the version and status of each application fileset. An application fileset can be in one of the following states:

- APPLIED—the CS 2000 Core Manager is using the software. If a previous version of the fileset exists in the archived state, the applied fileset may be removed. In that case, the previous version is restored.
- ARCHIVED -— a backup version of the fileset is available and can be restored.
- FAILED— the fileset failed and must be reinstalled before use.
- OBSOLETED—the fileset is no longer active

The following flowchart summarizes procedure. To complete the procedure, use the instructions in the step-action procedure that follows the flowchart.

Summary of removing corrective content

Log in to the CS 2000 Core Manager.

↓

Access the SWIM level.

↓

Access the Details level.

↓

Select and remove filesets.

↓

Exit the maintenance interface.

↓

End

To complete the procedure, use the step-action procedure that follows the flowchart.

At the local or remote VT100 console:

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

2   Access the software inventory manager (SWIM) level of the maintenance interface by typing

`# sdmmtc swim`

and pressing the Enter key.

3   Access the Details level by typing

`> details`

and pressing the Enter key.

4   Remove one or more filesets by typing

`> remove <#>`

Where

`<#>`
is the number next to the fileset you want to remove

Note: You can specify as many numbers as you want to remove multiple filesets at one time.

5   When prompted, confirm the remove command by typing

`> y`

and pressing the **Enter** key.

6   Exit the maintenance interface by typing

`> quit all`

and pressing the Enter key.

7   You have completed this procedure.

Removing DDMS filesets

Use this procedure to remove the DDMS filesets, as well as the DDMS logical volumes only if DDMS is no longer required.

At the local VT100 console

1   Log into the CS 2000 Core Manager using the root user ID and password.

2   Access the SWIM level of the maintenance interface by typing

`# sdmmtc swim`

and pressing the **Enter** key.

3   Access the Details level by typing

`> details`

and pressing the **Enter** key.

4   Remove the DDMS filesets by typing

`> remove  <n>`

and pressing the **Enter** key.

where

    `<n>`

      is the number next to each of the following DDMS filesets

- OSS and Application Svcs
- OSS Comms Svcs

5   When prompted, confirm the remove command by typing

`> y`

and pressing the **Enter** key.

6   Delete the file log device for DDMS as follows:

a   Start the log delivery commissioning tool if it does not automatically appear by typing

`# logroute`

and pressing the Enter key.

b   Access the Change menu by typing

`> c`

and pressing the **Enter** key.

c Access the Device list menu by typing

```
> l
```

and pressing the **Enter** key.

d Delete the file log device for DDMS by typing

```
> d <n>
```

and pressing the **Enter** key.

where

> **<n>**
>   is the number next to the file log device for DDMS
>   "/data/logs/ossaps/ossapslog"

e Return to the main menu by typing

```
> m
```

and pressing the **Enter** key.

f Save the change by typing

```
> s
```

and pressing the **Enter** key.

g Exit logroute by typing

```
> q
```

and pressing the **Enter** key.

7 Remove the DDMS logical volumes as follows:

a List the logical volumes by typing

```
# df -k
```

and pressing the Enter key.

The logical volumes you need to remove are

- /osscomms
- /ossapslog
- /ossaps

b Proceed with the removal by typing

```
# cd /
# unmount /ossaps
# unmount /ossapslog
# unmount /osscomms
# rmfs /ossaps
```

```
# rmfs /ossapslog
# rmfs /osscomms
# rmdir /ossaps
# rmdir /ossapslog
# rmdir /osscomms
# rm /data/logs/ossaps
# rm /data/ossaps
# rm /data/ossapslog
# rm /data/osscomms
# cd /sdm
# rm -rf osscomms
# rm -rf ossaps
```

8　　You have completed this procedure.

Removing I/O controller modules

Application

Use this procedure to delete the following hardware modules from the CS 2000 Core Manager:

- NTRX50FU - I/O controller module with two 2-GByte disk drives and Ethernet
- NTRX50GP - I/O controller module with two 4-GByte disk drives and Ethernet

Note: This procedure can also be followed by the procedure Adding I/O controller modules to change or correct the physical location. The I/O controller modules (NTRX50GN) in slots 2 and 3, and 13 and 14, of the main chassis are mandatory for system operation and cannot be removed.

> ⚠️ **CAUTION**
> **Removing a module**
> Do not delete modules that are part of a volume group. If the module is not part of a volume group, you can continue with this procedure.

> ⚠️ **CAUTION**
> **Re-using an I/O controller module**
> An I/O controller module must be manually busied and deleted before it can be re-used in a different slot.

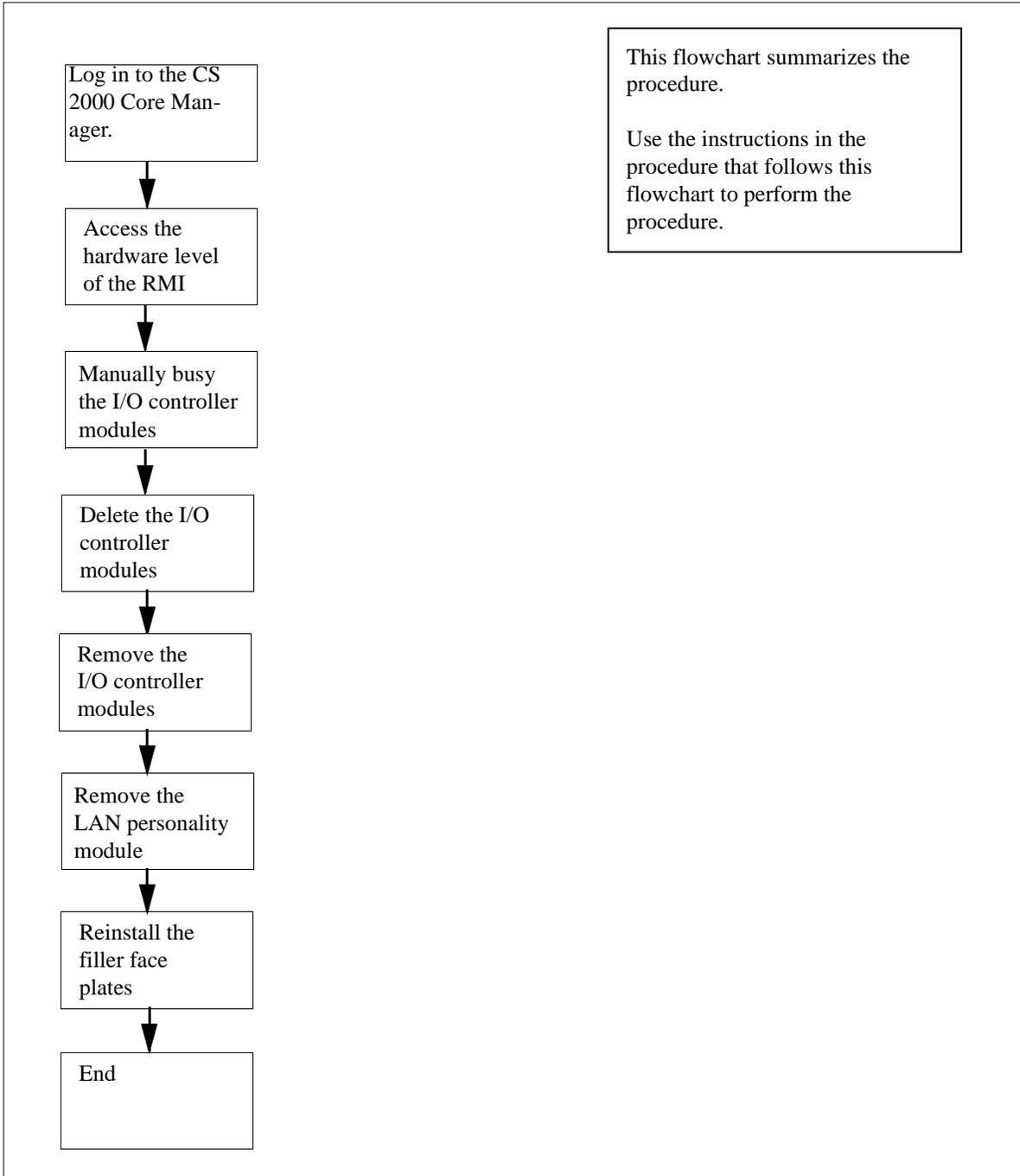To perform this procedure, you must know the following information:

- the chassis (SDMM for main chassis; SDME for I/O expansion chassis)
- the I/O controller module's slot number (from 1 to 16)

Note: Nortel Networks recommends that you contact Nortel Networks personnel before you remove any I/O controller modules. You cannot remove I/O controller modules until Nortel Networks deletes the data volume group (datavg) to which the module belongs. Nortel Networks also recommends you remove I/O controller modules in pairs.

Action

The following flowchart provides an overview of the procedure. Use the instructions in the step-action procedure that follows the flowchart to perform the task.

Summary of Removing I/O controller modules

This flowchart summarizes the procedure.

Use the instructions in the procedure that follows this flowchart to perform the procedure.

```
┌──────────────────┐
│ Log in to the CS │
│ 2000 Core Man-   │
│ ager.            │
└──────────────────┘
         │
         ▼
┌──────────────────┐
│ Access the       │
│ hardware level   │
│ of the RMI       │
└──────────────────┘
         │
         ▼
┌──────────────────┐
│ Manually busy    │
│ the I/O controller│
│ modules          │
└──────────────────┘
         │
         ▼
┌──────────────────┐
│ Delete the I/O   │
│ controller       │
│ modules          │
└──────────────────┘
         │
         ▼
┌──────────────────┐
│ Remove the       │
│ I/O controller   │
│ modules          │
└──────────────────┘
         │
         ▼
┌──────────────────┐
│ Remove the       │
│ LAN personality  │
│ module           │
└──────────────────┘
         │
         ▼
┌──────────────────┐
│ Reinstall the    │
│ filler face      │
│ plates           │
└──────────────────┘
         │
         ▼
┌──────────────────┐
│ End              │
└──────────────────┘
```

Removing I/O controller modules

At the local or remote VT100 console

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

2 Access the top menu level of the remote maintenance interface (RMI) by typing

`# sdmmtc`

and pressing the Enter key.

3 Access the hardware (Hw) menu level by typing

`> hw`

and pressing the Enter key.

4 Determine the devices on the I/O controller module by typing

`> locate`

and pressing the Enter key.

5

⚠	**CAUTION** **Deleting an I/O controller module** Deleting an I/O controller module requires you to put the module in both domains in ManB state. These modules will not be in service.

Manually busy the module in each domain by typing

`> bsy <domain> dsk <n>`

and pressing the Enter key.

where

    <domain>
        is the domain (0 or 1) of the I/O controller module that you are replacing

    <n>
        is the disk number that you are replacing (Use the Locate command to determine the disk number of the module.)

Use the following list to determine the domain number. The domain number is

- 0 if the module is located in slots 4 and 5 of the main chassis,

- 1 if the module is located in slots 15 and 16 of the main chassis

- 0 if the module is located in any two slots from 1 to 8 in the I/O expansion chassis

- 1 if the module is located in any two slots from 9 to 16 of the I/O expansion chassis

Example response:

```
Hardware Bsy - Domain 1 Device DSK2
Busying DSK2(1) will also busy DSK3(1).

Do you wish to proceed?
Please confirm ("YES", "Y", "NO", "N"):
```

6   Confirm the Bsy command by typing

> **Y**

and pressing the Enter key.

7   After you confirm the Bsy command, the following is displayed:

Example Response:

```
Hardware Bsy: Domain 1 Device DSK2 - Command
initiated.
Please wait...
```

When the Bsy command is finished, the "Please wait..." message, and the command confirmation disappear. The word "initiated" also changes to "submitted", then change to "complete".

Example Response:

```
Hardware Bsy: Domain 1 Device DSK2 - Command
complete.
```

If you have not yet manually busied the module in both domains, go to step <u>5</u>. Otherwise, continue this procedure.

> *Note:* After you see the response to the Bsy command, the I/O controller module's state changes to "M" at the hardware level.

8   Use the Locate command to determine the chassis and slot number of the module you wish to delete by typing

> **locate**

and pressing the Enter key.

Example response:

```
Site Flr RPos Bay_id Shf   Description    Slot
EQPEC
HOST 00  00   CSDM   SDME   DSK2(0),DSK3(0)  02
 NTRX50FU

   FRNT
```

Note: The example shown only displays part of the information generated from the Locate command. Press the Enter key to scroll through the display.

9   Delete the module by typing

> **delete <chassis> <slot>**

and pressing the Enter key.

where

<chassis>
    is the chassis where the module is located (SDMM for the main chassis or SDME for the I/O expansion chassis)

<slot>
    is the slot number (from 1 to 16) where the module is located

Note 1: The module in the corresponding slot of the other domain will also be deleted.

Note 2: In the example response shown in step 8, type DEL SDME 2.

Example response:

```
Module in slot 4 of SDMM will be deleted.
DSK2(0), DSK3(0) will be deleted.
Module in slot 15 of SDMM will also be deleted.

Do you wish to proceed?
Please confirm ("YES", "Y", "NO", "N"):
```

10   Confirm you want to delete the module by typing

> **y**

and pressing the Enter key.

The DEL command may take several minutes to complete. When the command is finished, the following message is displayed:

```
Hardware Del Module - Command complete.
```

Within a few seconds, the module disappears from the listing shown at the hardware level.

> *Note:* The device numbers change on the screen display.

At the front of the CS 2000 Core Manager

11

	WARNING
⚠	**Static electricity damage** Wear an electrostatic discharge (ESD) grounding wrist strap connected to the C28B cabinet when handling a module. This protects the module against damage caused by static electricity.

Put on an electrostatic discharge grounding wrist strap.

12   Undo the thumbscrews located on the top and the bottom of the I/O controller module.

> *Note:* The thumbscrews are the captive type, and cannot be removed from the module.

**13** Depress the tip of the locking lever on the face of the I/O controller module.
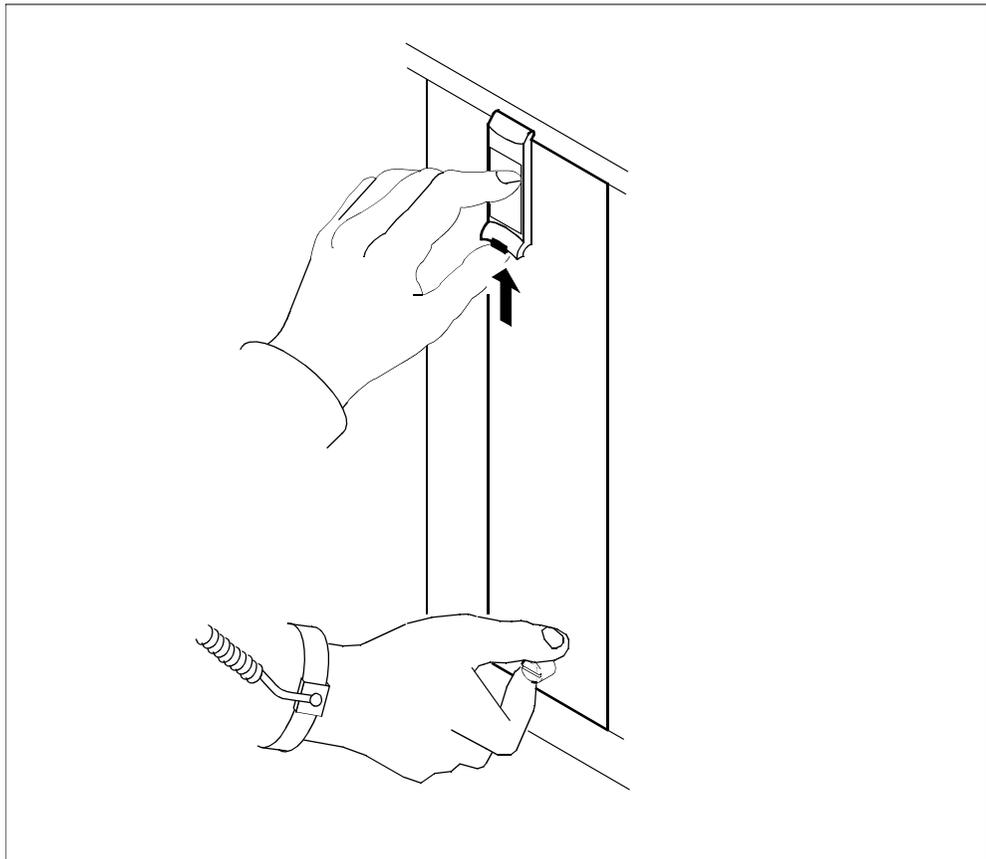
14 Open the locking lever on the face of the module by moving the lever outwards.
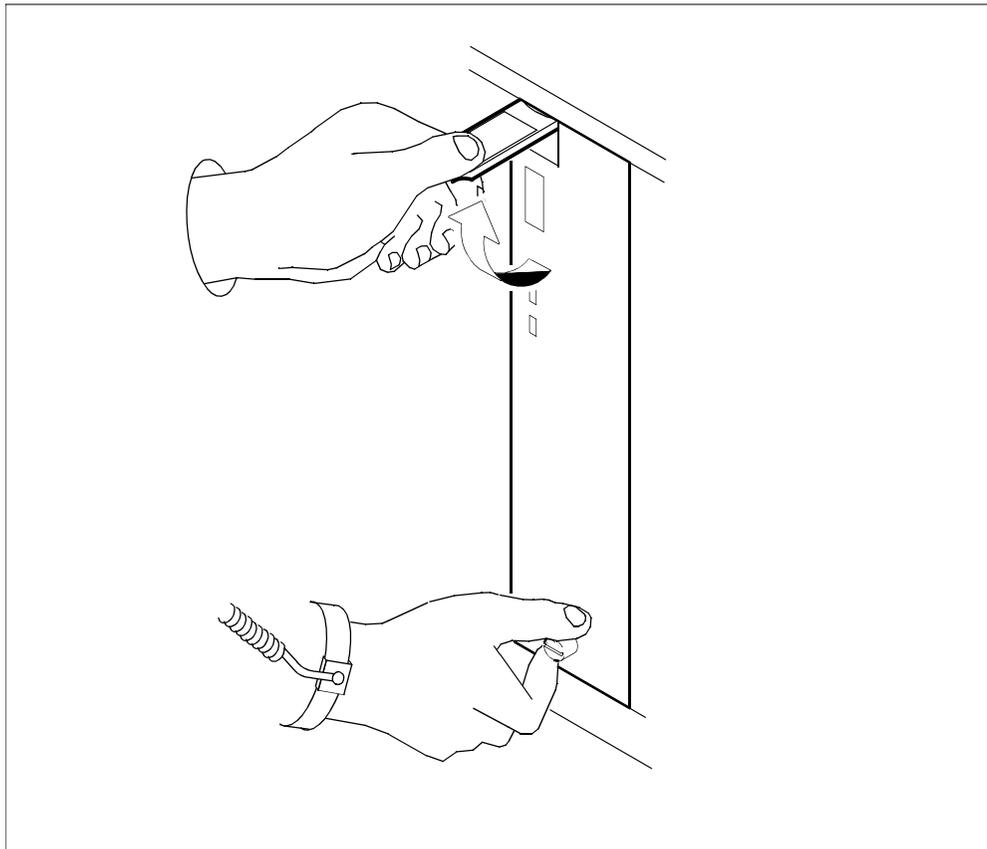
15 While grasping the locking lever, gently pull the module towards you until it protrudes about 2 in (5.1 cm) from the CS 2000 Core Manager shelf.
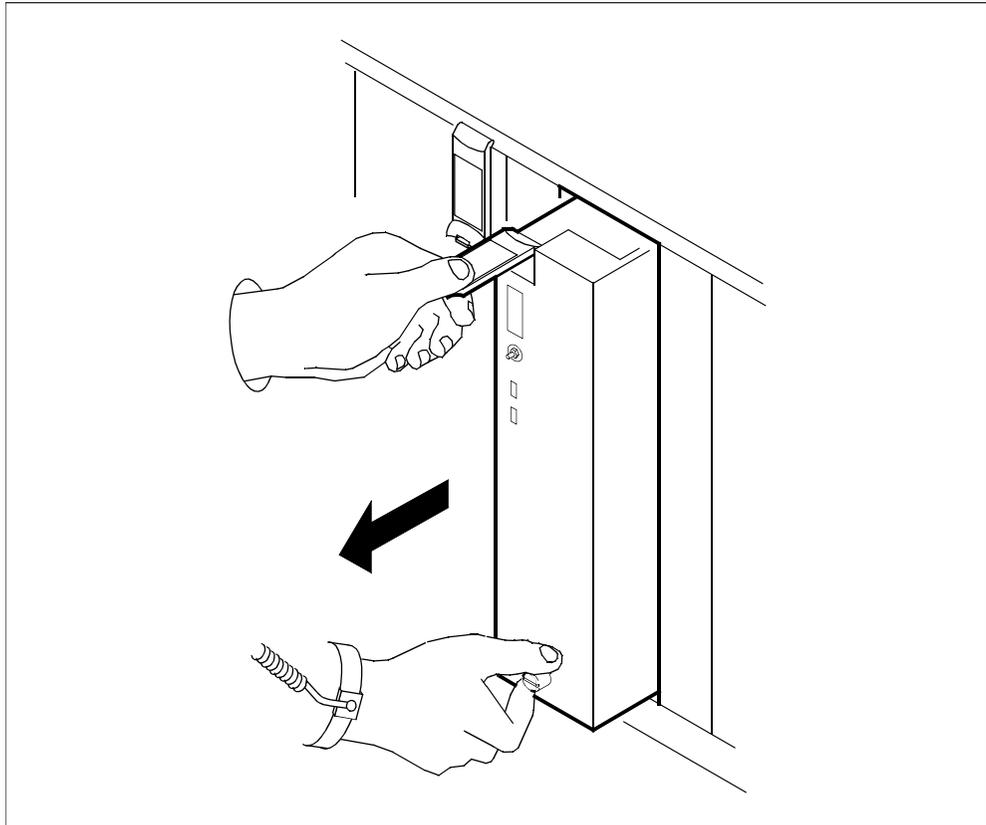
16   Hold the module by the face plate with one hand while supporting the bottom edge with the other hand. Gently pull the module toward you until it clears the shelf.
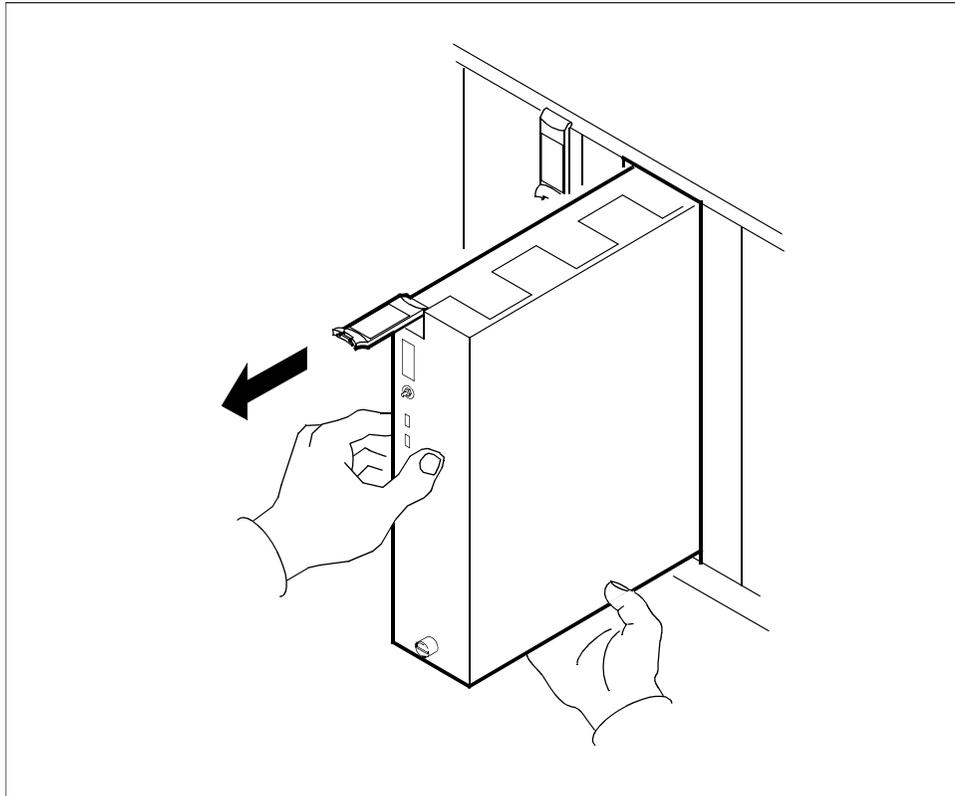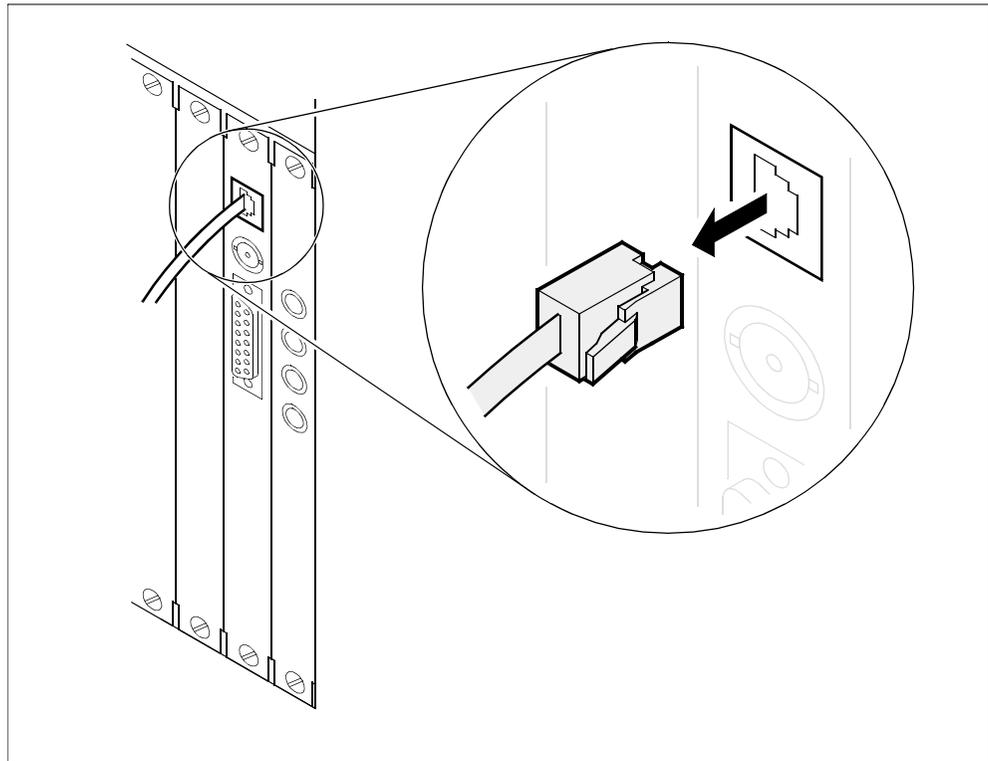

17   Place the module you have removed in an ESD protective container.

At the back of the CS 2000 Core Manager

18   Determine what kind of hardware module your CS 2000 Core Manager has.

If you have	Do
NTRX50GN	step 19
NTRX50FU and NTRX50GP	step 20

19   Disconnect the 10BASE-T cable from the corresponding LAN personality module, as shown in the following diagram.


20   Loosen the two thumbscrews located at the top and the bottom of the LAN personality module.

> *Note:* The thumbscrews are the captive type, and cannot be removed from the module.

21 While grasping the thumbscrews, gently pull the LAN personality module towards you until it protrudes about 2 in (5.1 cm) from the CS 2000 Core Manager shelf.
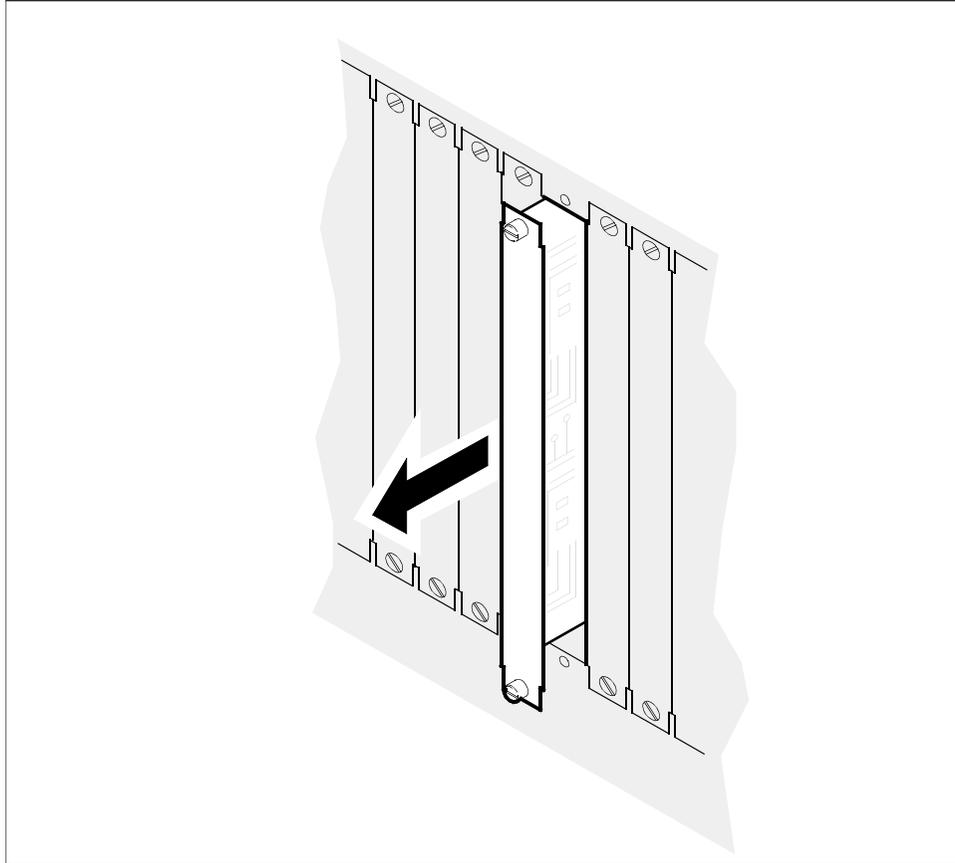
22 Hold the LAN personality module by the face plate with one hand while supporting the bottom edge with the other hand. Gently pull the module toward you until it clears the shelf.
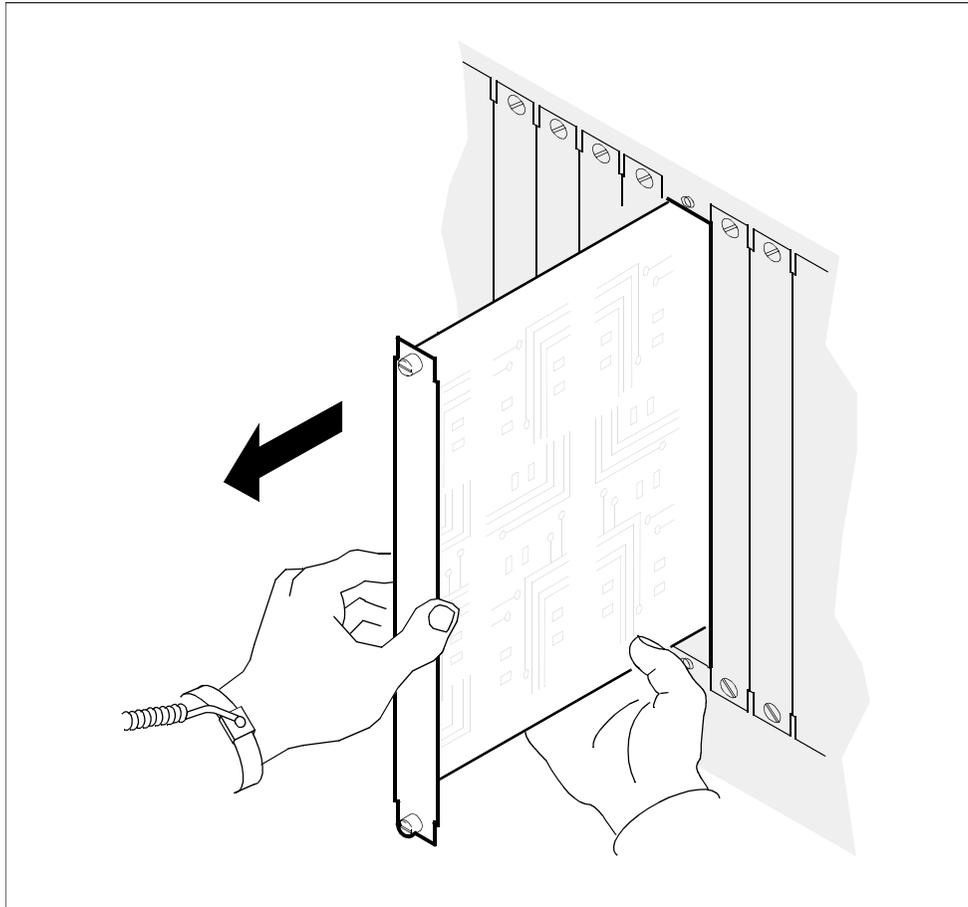
23 Place the LAN personality module you have removed in an ESD protective container.

24 Reinstall the filler plates covering the slots in which you removed the modules.

25 You have completed this procedure.

Upgrading from a rootvg-only system (with SYNC X25) to a rootvg/datavg UMFIO/X25PM system

Application

Use this procedure to move a system from a rootvg-only system with SYNC X25 into a rootvg/datavg system with UMFIO/X25PM.

Action

The following flowchart is only a summary of the procedure. To move from a rootvg-only system to a rootvg/datavg with X25, use the instructions in the procedure that follows the flowchart.

Summary of upgrading from a rootvg-only system (with SYNC X25) to a rootvg/datavg UMFIO/X25PM system

Obtain the UMFIO and X25PM modules for rootvg & datavg

↓

Upgrade the MFIO rootvgs into UMFIO/X25PM

↓

Add the datavg UMFIO and X25PM modules.

↓

Move from rootvg-only system to rootvg/datavg.

↓

End

This flowchart summarizes the procedure.

Use the instructions in the procedure that follows this flowchart to perform the procedure.
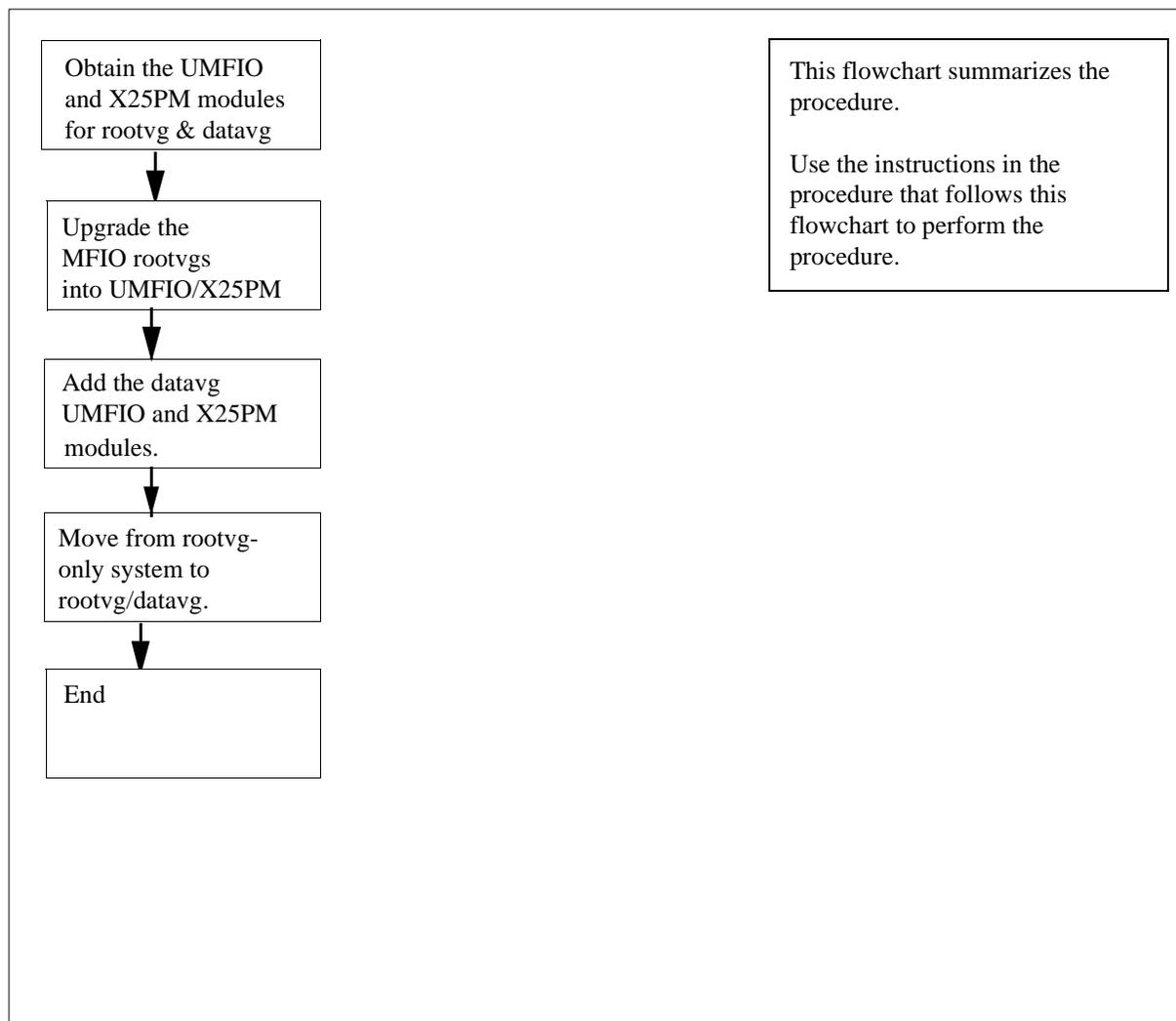
Upgrading from a rootvg-only system (with SYNC X25) to a rootvg/datavg UMFIO/X25PM system

At the CS 2000 Core Manager

1   Upgrade from rootvg MFIO with SYNC X.25 to UMFIO/X25PM as follows:

    a   Obtain the UMFIO controller modules for rootvg and the X25PM modules. Ensure that the upgraded modules have the correct product engineering code (NTRX50NM for rootvg UMFIO and NTRX50NN for X25PM). The PEC is written on the module's top locking lever.

    b   Perform procedure Upgrading the rootvg MFIO to MFIO or UMFIO in the Upgrades section, to upgrade from rootvg MFIO with SYNC X25 into rootvg UMFIO/X25PM for both domains

2   Add the datavg UMFIO and X.25 PM to the system as follows:

    a   Obtain the UMFIO controller modules for datavg and the X25PM modules. Ensure that the upgraded modules have the correct product engineering code (NTRX50NL for datavg UMFIO and NTRX50NN for X25PM). The PEC is written on the module's top locking lever.

    b   Follow procedure Adding I/O controller modules in the Upgrades section, to add the datavg UMFIO and X25PM modules for both domains into the system.

3   Move the system from rootvg-only to rootvg/datavg as follows:

    a   Perform procedure "Migrating from a rootvg system to a rootvg/datavg system" in the Upgrades section, to move from a rootvg-only system to a rootvg datavg system.

4   You have completed this procedure.

Migrating from a rootvg system to a rootvg/datavg system

Application

> **ATTENTION**
> This procedure must be performed by a trained AIX system administrator who has root user privileges to access the CS 2000 Core Manager.

> **ATTENTION**
> Perform this procedure after you have installed the required I/O controller modules (in pairs) in the appropriate slots in the main or I/O expansion chassis. If you have not installed the required modules, refer to the procedure "Adding I/O controller modules" in the Upgrades section.

> **ATTENTION**
> This procedure requires that your system is MANB. Nortel Networks recommends that you add a datavg when you upgrade the CS 2000 Core Manager.

> **ATTENTION**
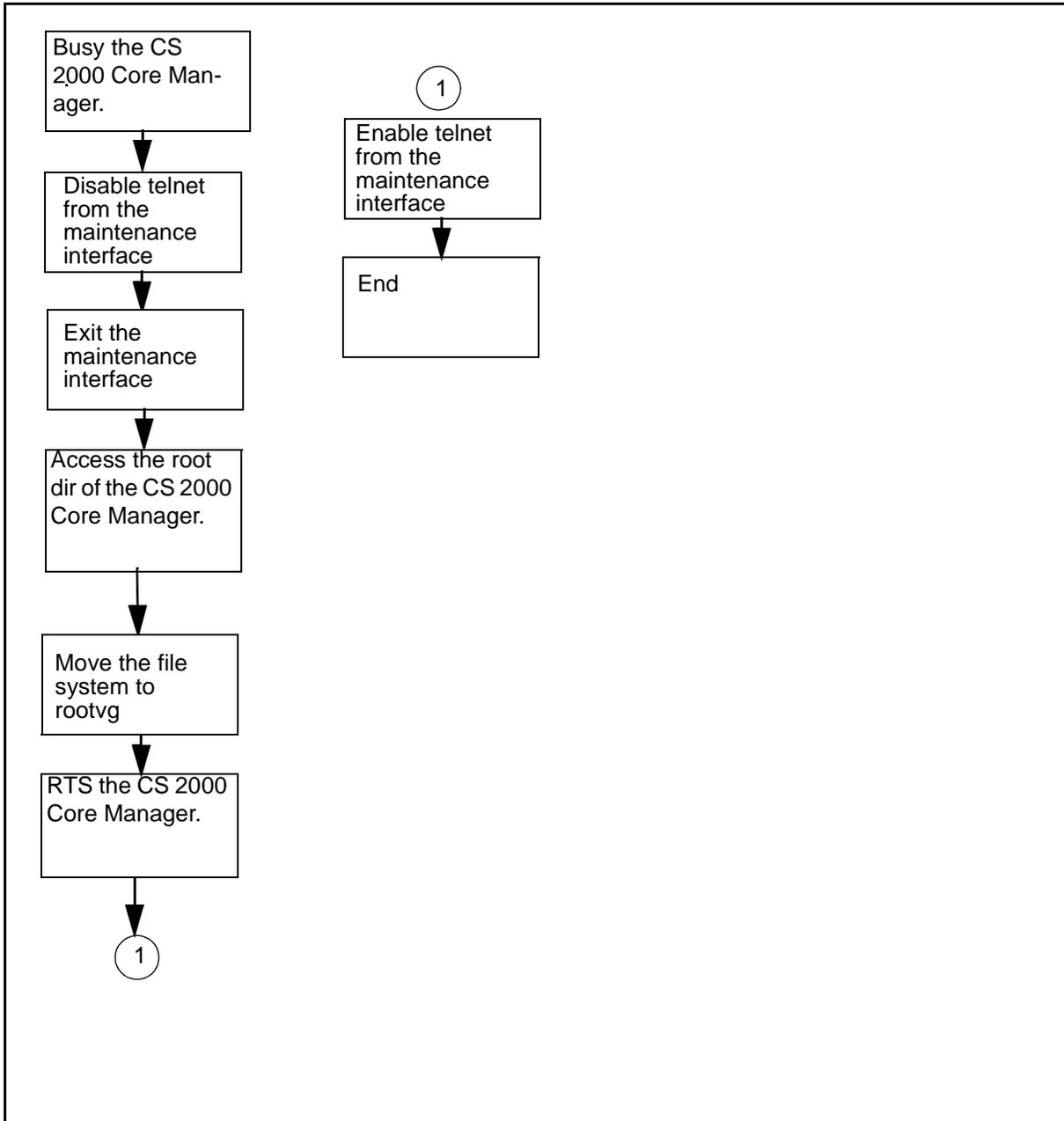> A maximum of 16-Gbyte storage capacity is supported for datavg.

Use this procedure to move from a rootvg system to a system with both rootvg and datavg. This procedure creates datavg, and moves logical volumes from rootvg to datavg.

Logical volume data can be stored in the root volume group (rootvg) or the data volume group (datavg). Nortel recommends that you create datavg for logical volumes with large amounts of data. If you do not create datavg, the system stores logical volume data in rootvg.

Action

The following flowchart provides an overview of the procedure. Use the instructions in the procedure that follows the flowchart to perform the task.

Summary of migrating from a rootvg system to a rootvg/datavg system

```
┌─────────────────────┐
│ Busy the CS          │
│ 2000 Core Man-       │            ( 1 )
│ ager.                │
└─────────────────────┘       ┌──────────────────┐
         │                    │ Enable telnet    │
         ▼                    │ from the         │
┌─────────────────────┐       │ maintenance      │
│ Disable telnet       │      │ interface        │
│ from the             │      └──────────────────┘
│ maintenance          │               │
│ interface            │               ▼
└─────────────────────┘       ┌──────────────────┐
         │                    │ End              │
         ▼                    │                  │
┌─────────────────────┐       │                  │
│ Exit the             │      └──────────────────┘
│ maintenance          │
│ interface            │
└─────────────────────┘
         │
         ▼
┌─────────────────────┐
│ Access the root      │
│ dir of the CS 2000   │
│ Core Manager.        │
└─────────────────────┘
         │
         ▼
┌─────────────────────┐
│ Move the file        │
│ system to            │
│ rootvg               │
└─────────────────────┘
         │
         ▼
┌─────────────────────┐
│ RTS the CS 2000      │
│ Core Manager.        │
└─────────────────────┘
         │
         ▼
        ( 1 )
```

Creating a data volume group

At the SDM level of the MAP display

1 Busy the CS 2000 Core Manager by typing

> **bsy**

and pressing the Enter key.

At the local or remote VT100 console

2 Log into the CS 2000 Core Manager as the root user.

3 Access the administration (Admin) level by typing

> **admin**

and pressing the Enter key.

4 Access the Access level by typing

> **access**

and pressing the Enter key.

The CS 2000 Core Manager displays the state of the telnet service. If telnet is already disabled, proceed to step 17.

5 Disable telnet to ensure no other user has access to CS 2000 Core Manager during the volume group migration by typing

> **change**

and pressing the Enter key.

6 Confirm the command by typing

> **y**

and pressing the Enter key.

7 Exit the maintenance interface by typing

> **quit all**

and pressing the Enter key.

8 Access the root directory by typing

cd /

and pressing the Enter key.

9   Move the file system from rootvg to datavg by typing

    # movevg

and pressing the Enter key.

> *Note 1:* The movevg process takes some time to complete. When the process is complete, the system returns to the # prompt.

> *Note 2:* It may be several minutes after the movevg command is completed before datavg is displayed as "Mirrored" under the storage level.

At the SDM level of the MAP display

10   Return the CS 2000 Core Manager to service by typing

    > rts

and pressing the Enter key.

At the local or remote VT100 console

11   Log into the CS 2000 Core Manager as the root user.

12   Access the administration (Admin) level by typing

    > admin

and pressing the Enter key.

13   Access the Access level by typing

    > access

and pressing the Enter key.

14   Enable telnet by typing

    > change

and pressing the Enter key.

15   Confirm the command by typing

    > y

and pressing the Enter key.

16   Exit the maintenance interface by typing

    > quit all

and pressing the Enter key.

17   You have completed this procedure.

Refer to the procedure "Adding disks and creating a logical volume in datavg" in the Security and Administration section.

Upgrading the rootvg MFIO to MFIO or UMFIO

Application

ATTENTION

Have the correct UMFIO LAN PM.

In order to upgrade to the UMFIO, you must have either the UMFIO LAN personality module (NTRX50NK) or the X25 personality module (NTRX50NN) available.

CAUTION

Back up the system before you begin this procedure. If SBA is installed, make sure you back up the billing data. Also, make sure there is no tape in the MFIO DAT drive.

Use this procedure to upgrade from a 4GB + DAT Multifunction Input/Output (MFIO) module to a 9GB + DAT MFIO module.

You can also use this procedure to upgrade from a 4GB + DAT MFIO module or a 9GB + DAT MFIO module to a 36GB + DAT Ultra-Multifunction Input/Output (UMFIO) module.

Note 1: You can use this procedure to revert a rootvg I/O module to the original hardware configuration, but only if the rootvg I/O module in a single domain was upgraded. Before reverting back, confirm that the storage system has regained full mirroring.

Note 2: As of the 15.2 release, the system allows you to gracefully back out of an MFIO upgrade.

ATTENTION

Do not use this procedure to revert to the original rootvg I/O module if you have successfully upgraded the rootvg I/O module in both domains, or if you have upgraded from an MFIO with SYNC X.25 to a UMFIO with X.25 PMs

---

Refer to the following table for the product engineering codes (PEC).

Nortel PEC	Name
NTRX50FS	LAN personality module for MFIO
NTRX50GN	4GB + DAT rootvg MFI
NTRX50ND	9GB + DAT rootvg MFIO
NTRX50NK	LAN personality module for UMFIO
NTRX50NN	X25 personality module for UMFIO
NTRX50NM	36GB + DAT rootvg UMFIO

Action

The flowchart that follows provides a summary of this procedure. Use the instructions in the step action procedure that follows the flowchart to perform the routine maintenance procedure.

Summary of Upgrading the rootvg MFIO to MFIO or UMFIO
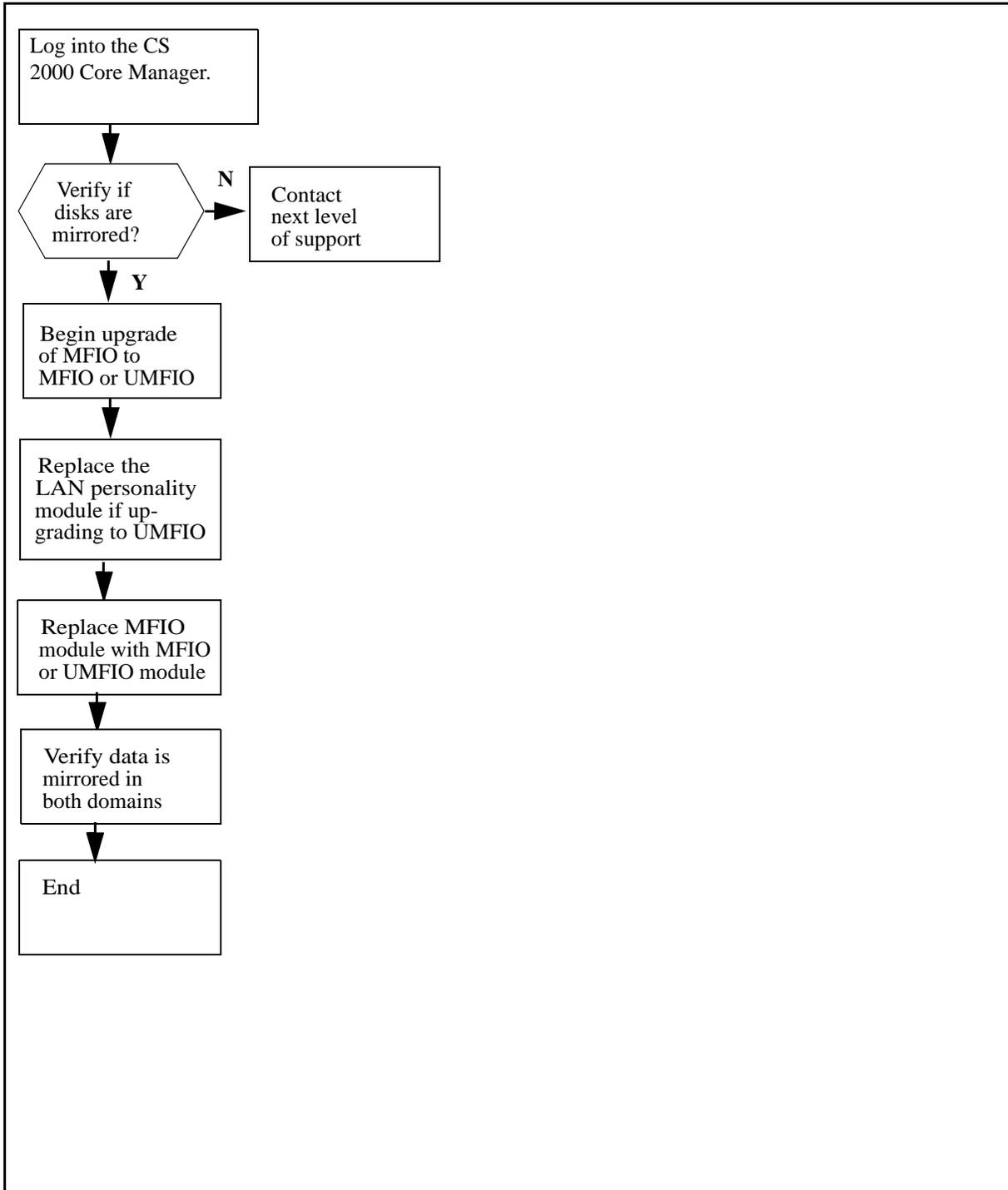
```
┌─────────────────┐
│ Log into the CS │
│ 2000 Core Manager.│
└─────────────────┘
         │
         ▼
    ╱─────────╲        N    ┌──────────────┐
   ╱ Verify if  ╲───────────▶│ Contact      │
   ╲ disks are  ╱            │ next level   │
    ╲ mirrored? ╱            │ of support   │
     ╲─────────╱             └──────────────┘
         │ Y
         ▼
┌─────────────────┐
│ Begin upgrade   │
│ of MFIO to      │
│ MFIO or UMFIO   │
└─────────────────┘
         │
         ▼
┌─────────────────┐
│ Replace the     │
│ LAN personality │
│ module if up-   │
│ grading to UMFIO│
└─────────────────┘
         │
         ▼
┌─────────────────┐
│ Replace MFIO    │
│ module with MFIO│
│ or UMFIO module │
└─────────────────┘
         │
         ▼
┌─────────────────┐
│ Verify data is  │
│ mirrored in     │
│ both domains    │
└─────────────────┘
         │
         ▼
┌─────────────────┐
│ End             │
│                 │
└─────────────────┘
```

Upgrading the rootvg MFIO to MFIO or UMFIO

At the VT100 console

1   Log into the CS 2000 Core Manager as the root user.

2   Access the storage level by typing

 # sdmmtc storage

and pressing the Enter key.

3   Use the following table to determine your next step.

If the "Status" of both volumes is	Do
"Mirrored"	step 4
not "Mirrored"	contact your next level of support

4   Access the hardware level under RMI by typing

> hw

and pressing the Enter key.

5   Upgrade the MFIO by typing

> **upgrade <chassis> <slot> <pec>**

and pressing the Enter key.

where

<chassis>
is sdmm since both rootvg MFIOs are located in the main chassis.

<slot>
is slot 2 if you are upgrading domain 0 or slot 13 if you are upgrading domain 1.

<pec>
is the product engineering code of the MFIO or UMFIO controller module you want to add.

Example
upgrade sdmm 2 NTRX50NM

This example indicates an upgrade to the 36GB + DAT UMFIO in slot 2 of the main chassis.

6 Use the following table to determine your next step.

If you are	Do
prompted to delete the x25 sync module configuration	step 7
not prompted to delete the x25 sync module configuration	step 8

7 Confirm the deletion of the X25 SYNC module configuration by typing

> **> y**

and pressing the Enter key.

8 You can replace the MFIO, or exit the upgrade when you see the following system response:

> *Note 1:* DO NOT enter 1 until you have first replaced the MFIO.

> *Note 2:* Enter 99 to exit the procedure. The system gracefully backs you out of the upgrade procedure if you choose to exit the upgrade at this point without replacing the hardware.

Example response:

```
Transitioning forward from START to INFO_RETRIEVED

Volume group = rootvg on hdisk0
Physical partition size 16 with max partitions 3048

Transitioning forward from INFO_RETRIEVED to OFFLINED
Transitioning forward from OFFLINED to DEPENDENCIES_REMOVED
Transitioning forward from DEPENDENCIES_REMOVED to REPLACED

Replace ORIGINAL MFIO I/O-2 (c1-f2) with UPGRADED MFIO

Enter 1 to continue, 99 to exit:
```

The following response may be displayed as the MFIO upgrade progresses.

0516-1193 chvg: WARNING, once this operation is completed, volume group rootvg cannot be imported into AIX 430 or lower versions. Continue (y/n)?

If this response is	Do
displayed	step 9
not displayed	step 10

9 Confirm the operation by typing

> **y**

and pressing the Enter key.

Response:

0516-1164 chvg: Volume group rootvg changed. With given characteristics rootvg can include up to 10 physical volumes with 3048 physical partitions each.

At the front of the CS 2000 Core Manager

10

WARNING
Static electricity damage
Wear an electrostatic discharge (ESD) grounding wrist strap connected to the C28B cabinet when handling a module. This protects the module against damage caused by static electricity.

Put on an electrostatic discharge grounding wrist strap.

11 Undo the thumbscrews located on the top and the bottom of the MFIO controller module to be upgraded.

Note 1: The thumbscrews are the captive type, and cannot be removed from the module.

Note 2: Make sure the LED of the module you want to upgrade is either red or off before you remove it.

12 Depress the tip of the locking lever on the face of the MFIO controller module.

13   Open the locking lever on the face of the module by moving the lever outwards.

14 While grasping the locking lever, gently pull the module towards you until it protrudes about 2 in. (5.1 cm) from the CS 2000 Core Manager shelf.

15   Hold the card by the face plate with one hand while supporting the bottom edge with the other hand. Gently pull the module toward you until it clears the shelf.
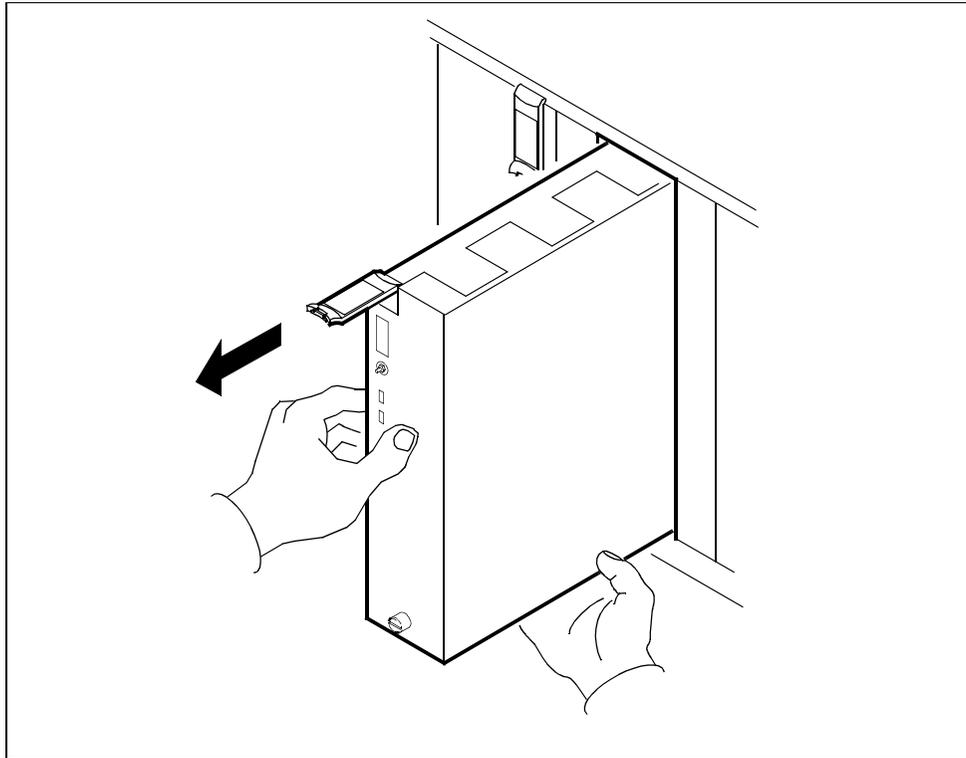

16   Place the module you have removed in an ESD protective container.

At the back of the CS 2000 Core Manager

17   Use the following table to determine your next step.

If you are	Do
upgrading to the UMFIO	step 18
not upgrading to the UMFIO	step 29

18   You will now be removing the existing LAN personality module and replacing it with the new personality module (NTRX50NK or NTRX50NN) that came with the new UMFIO module. This must be done before inserting the new UMFIO module. It is located at the rear of the I/O controller module to be upgraded.

19   Label the ethernet cable connected to the LAN personality module you wish to replace.

20   Disconnect the ethernet cable, as shown in the following diagram.
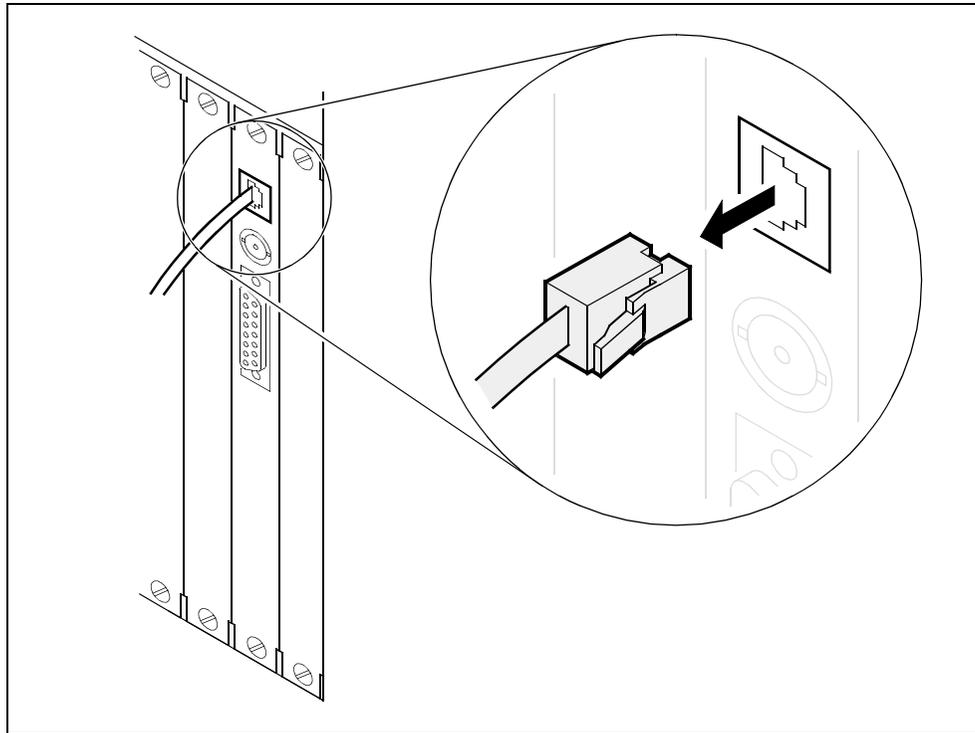
21   Loosen the two thumbscrews located at the top and the bottom of the LAN personality module.

> *Note:* The thumbscrews are the captive type, and cannot be removed from the module.

22 While grasping the thumbscrews, gently pull the LAN personality
module towards you until it protrudes about 2 in. (5.1 cm) from
the CS 2000 Core Manager shelf.

23 Hold the LAN personality module by the face plate with one hand while supporting the bottom edge with the other hand. Gently pull the module toward you until it clears the shelf.
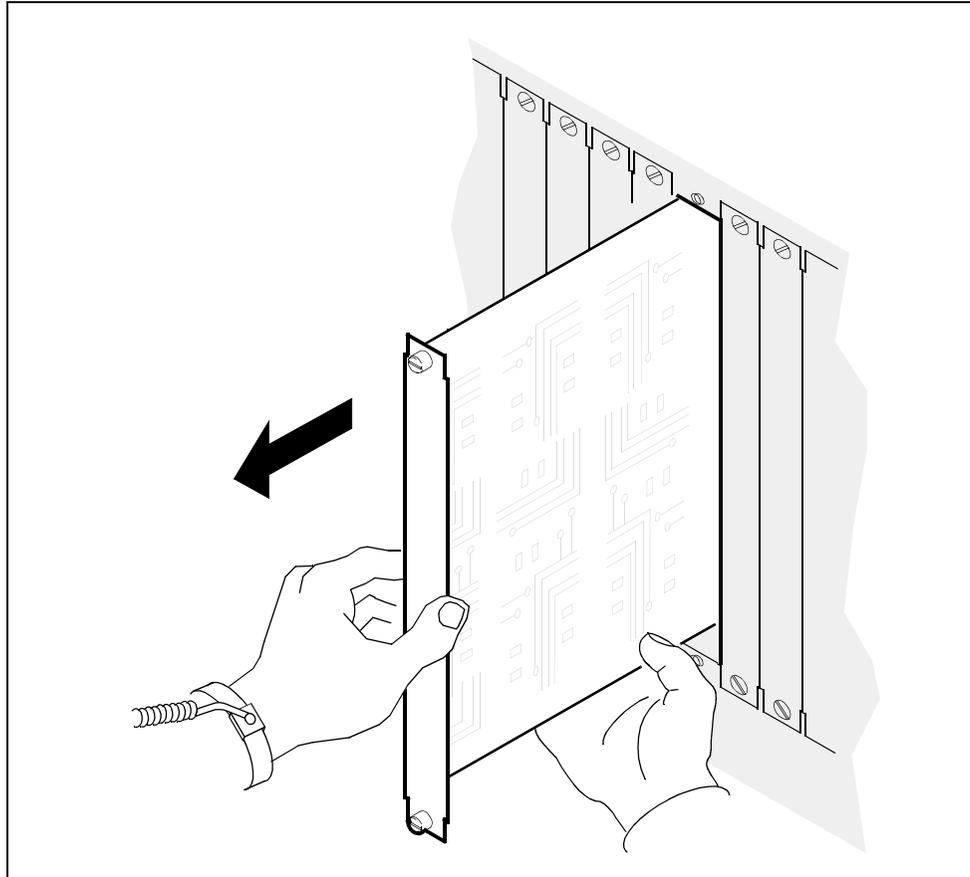
24 Place the LAN personality module you have removed in an ESD protective container.

25 Insert the new personality module (NTRX50NK or NTRX50NN) into the CS 2000 Core Manager shelf.

**26**   Gently slide the LAN personality module into the shelf until it is fully inserted.
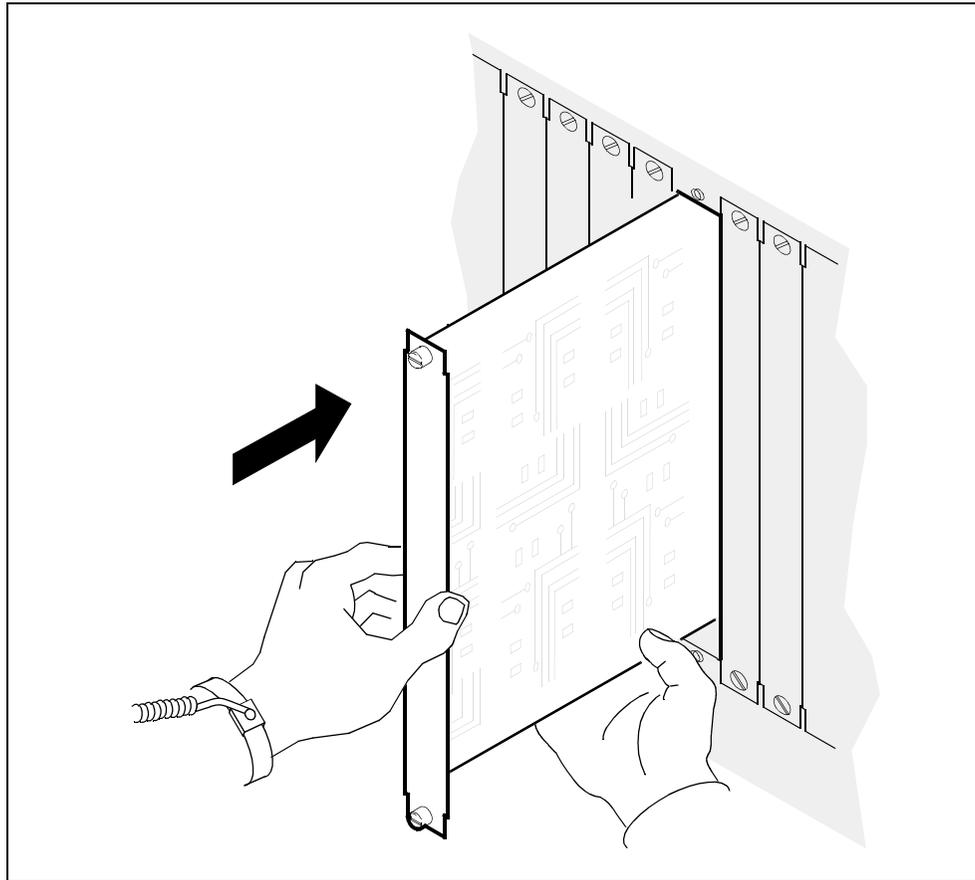
27   Tighten the thumbscrews at the top and the bottom of the LAN personality module.

28   Reconnect the ethernet cable to the LAN personality module. If you wish, remove the label that you put on the cable in step 19.
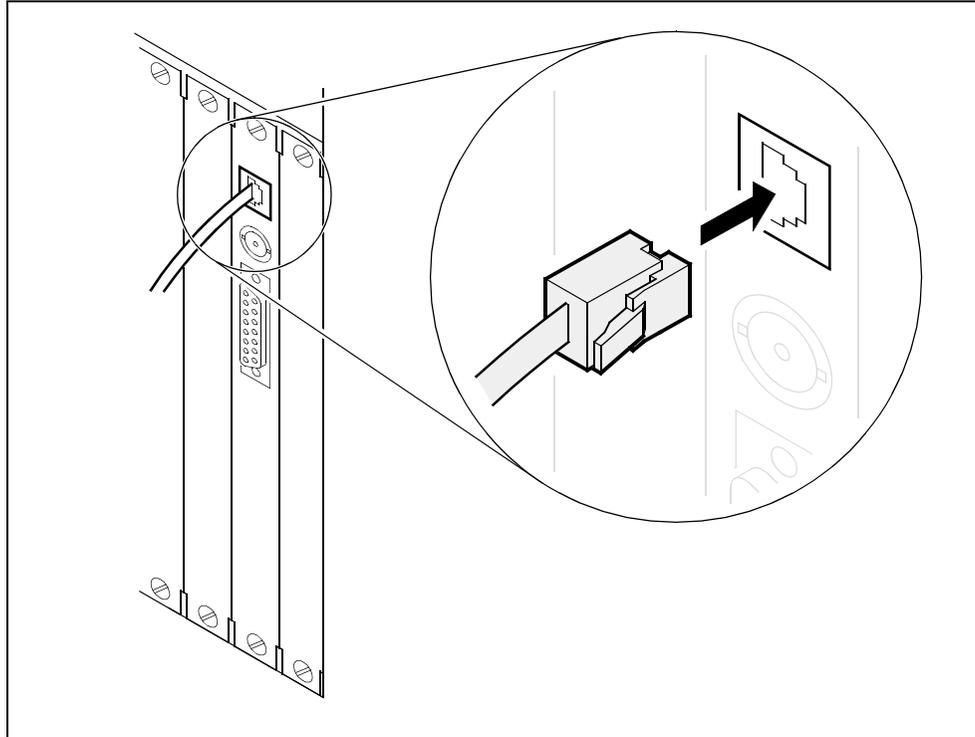
At the front of the CS 2000 Core Manager

29 Insert the PEC MFIO or PEC UMFIO module into the CS 2000 Core Manager shelf.

30 Gently slide the module into the shelf until it is fully inserted.
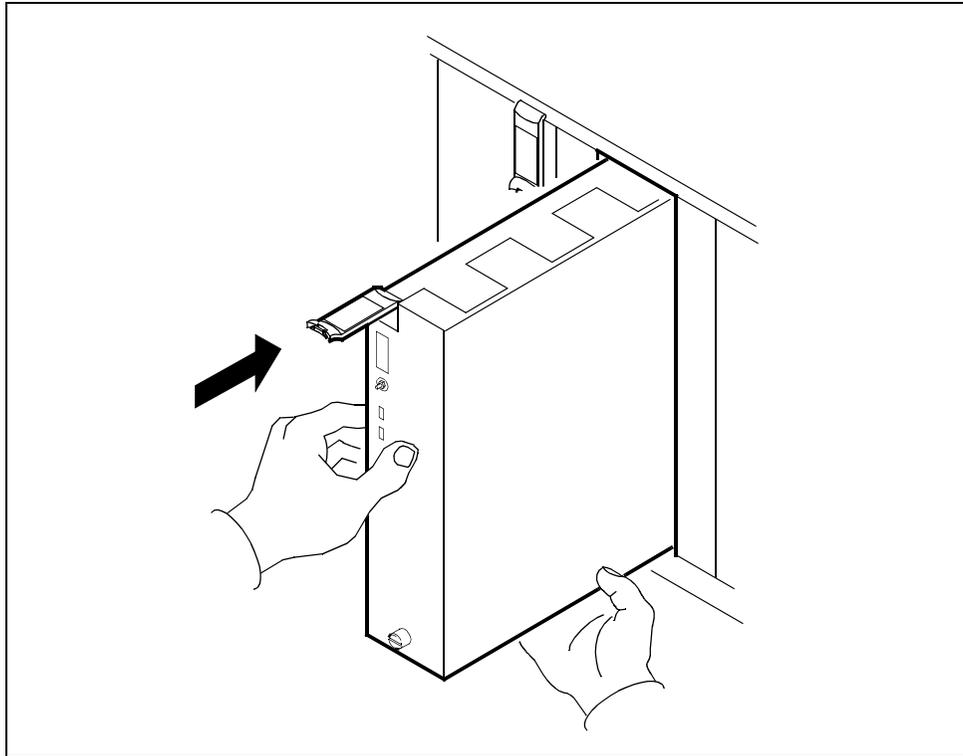
31   Close the locking lever to secure the module. Ensure that the top micro switch is lined up with the locking lever to properly seat the module.

Micro switch

32   Tighten the thumbscrews on the module.

33   Continue the upgrade by typing

> **1**
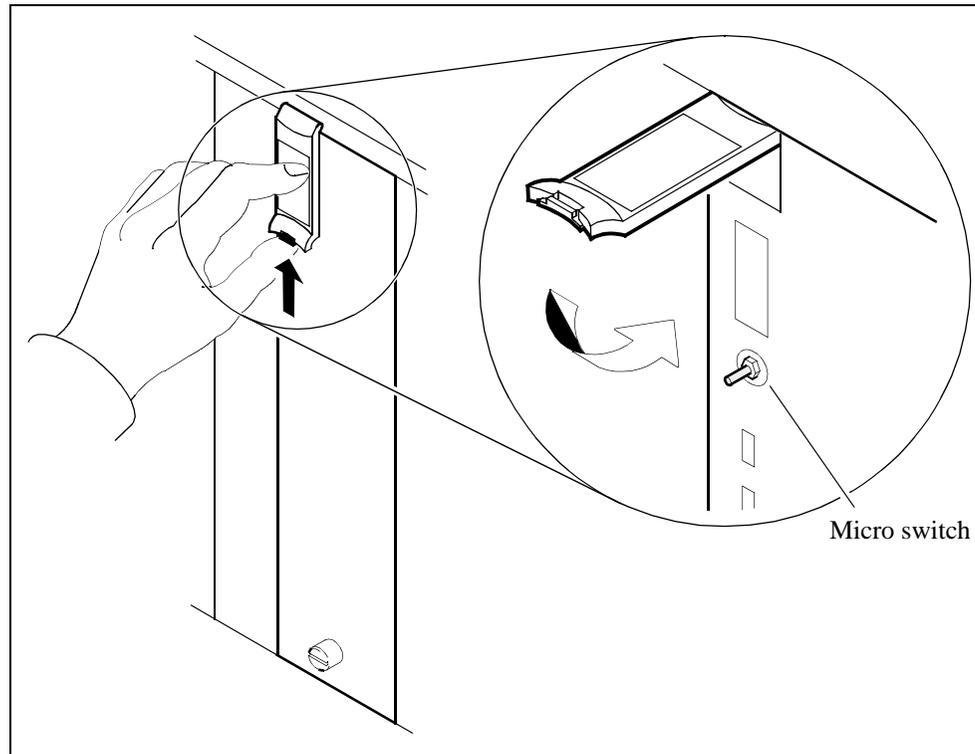
and pressing the Enter key.

Response:

```
Transitioning forward from REPLACED to ONLINED
Transitioning forward from ONLINED to DEPENDENCIES_ADDED
Transitioning forward from DEPENDENCIES_ADDED to OFFLINED_AFTER_UPGRADE
Transitioning forward from OFFLINED_AFTER_UPGRADE to ONLINED2
Transitioning forward from ONLINED2 to COMPLETE
>
```

34   Use the following table to determine your next step.

If the system	Do
prompts you to remove the X25 SYNC module from slot <n>	step 35
does not prompt you to remove the X25 SYNC module from slot <n>	step 37

35   Remove the X25 SYNC module from the slot indicated in the display.

Example display:

```
Please wait while the configuration for SYNC-0 is deleted...

Please remove the X.25 SYNC module from the main chassis
slot 4.

Enter 1 to continue when ready:("1"):
```

36   Once you have removed the X25 SYNC module, continue the upgrade by typing

> 1

and pressing the Enter key.

37   You are automatically returned to the sdmmtc Hw level. Wait until the system completes the reintegration.

Note: X25 users who are upgrading to UMFIO with X25PM need to re-configure the X25 ports as part of the UMFIO. This can be done during system integration. To configure the X25 ports, refer to procedure Commissioning or recommissioning X.25 connectivity in the Upgrades section.

Once the system completes the reintegration, the status of the volume group changes to Mirrored.

38   Upgrade the MFIO /UMFIO module in the other domain by repeating steps 3 through 37.

39   You have completed this procedure.

Upgrading a datavg MFIO to MFIO or UMFIO

Application

Use this procedure to upgrade from 4GB + 4GB Multifunction Input/Output (MFIO) to a 9GB + 9GB Multifunction Input/Output (MFIO).

You can also use this procedure to upgrade from the 4GB + 4GB MFIO or the 9GB + 9GB MFIO to the 36GB + 36GB Ultra-Multifunction Input/Output (UMFIO).

> *Note 1:* You can use this procedure to revert to the original MFIO in a single domain, but only once the procedure is complete and you have confirmed that the storage system has regained full mirroring. Do not use this procedure to revert to the original MFIO if you have successfully upgraded the MFIO in both domains.

> *Note 2:* As of the 15.2 release, the system allows you to gracefully back out of an MFIO upgrade.

Refer to the following table for the product engineering codes.

Nortel PEC	Name
NTRX50FS (back)	LAN personality module for MFIO
NTRX50GP (front)	4GB + 4GB datavg MFIO
NTRX50NC (front)	9GB + 9GB datavg MFIO
NTRX50NK (back)	LAN personality module for UMFIO
	Note: The NTRX50NK is required if you want to use the datavg UMFIO (NTRX50NL) for LAN access. If you intend to use the datavg UMFIO for storage only, or if you do not currently have LAN cards, then you do not need to install the NTRX50NK.
NTRX50NN (back)	X25 personality module for UMFIO
NTRX50NL (front)	36GB + 36GB datavg UMFIO

> **ATTENTION**
> Perform a backup of your billing files before starting this procedure. Also, ensure that an S-tape (System Image Tape) of your CS 2000 Core Manager is made prior to starting the upgrade procedures.

> **ATTENTION**
> In order to upgrade to the UMFIO, you must have either the UMFIO LAN personality module (NTRX50NK) or the X25 personality module (NTRX50NN) available.

> **ATTENTION**
> Upgrading a mirrored pair of MFIOs can require a full maintenance window to complete. When an existing expansion chassis is provisioned, multiple maintenance windows may be required to complete upgrade of additional mirrored pairs of MFIOs.

> **ATTENTION**
> You must have root user access to the CS 2000 Core Manager to perform this procedure.

Limitations

No CS 2000 Core Manager should be populated with more than 2 MFIOs per I/O domain (for any combination) as part of datavg.

If a CS 2000 Core Manager is equipped with more than 2 MFIOs per side (prior to upgrading to CS2E04), then it is not possible to upgrade regular MFIOs to UMFIOs, and it is not possible to upgrade to CS2E04 without first contacting a Nortel-qualified personnel. Operating a CS 2000 Core Manager with more than 2 MFIOs (called large volume support) is possible but not supported in CS2E04. Additionally, Nortel does not support an upgrade path to UMFIOs with such a configuration.

If your system is already configured with more than 2 MFIOs per I/O domain, and you wish to upgrade to CS2E04, you must contact Nortel before attempting to upgrade to CS2E04.
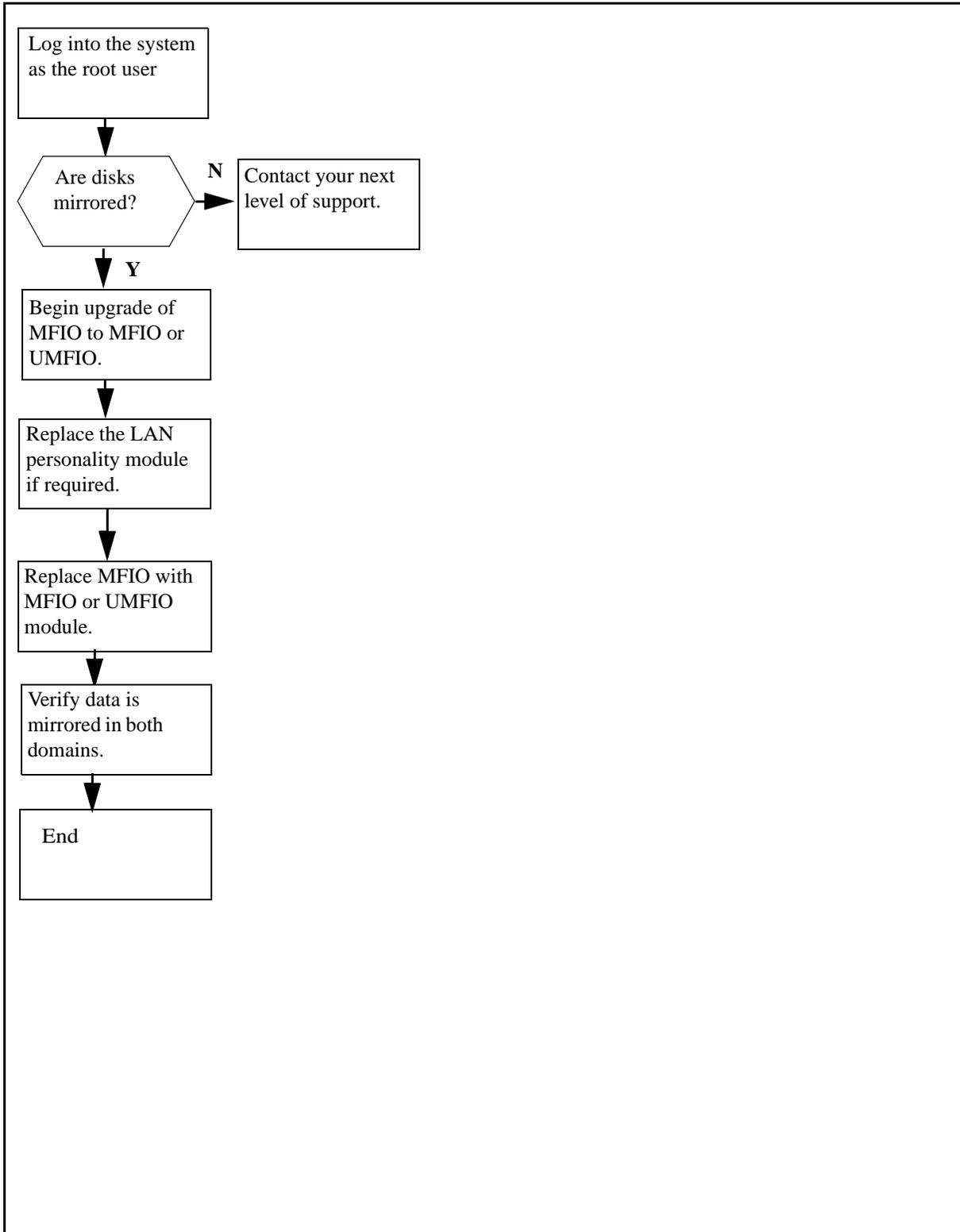
It is recommended that the MFIOs in the main chassis be upgraded first, starting with domain 1 and completing with domain 0. After upgrading the main chassis, proceed with upgrading the expansion chassis if installed. Datavg modules must be upgraded in pairs. For example, if you upgrade the MFIO in slot 4 of the main chassis, then you must also upgrade the MFIO module in slot 15 of the main chassis.

Upgrade Sequence	Domain 0	Domain 1	MFIO davavg pairing location
1.	slot 4	slot 15	main chassis
2.	slot 1	slot 9	expansion chassis
3.	slot 3	slot 11	expansion chassis
4.	slot 5	slot 13	expansion chassis
5.	slot 7	slot 15	expansion chassis

Action

The flowchart that follows provides a summary of this procedure. Use the instructions in the step action procedure that follows the flowchart to perform the routine maintenance procedure.

Summary of Upgrading the MFIO to MFIO or UMFIO (datavg)

```
┌─────────────────────┐
│ Log into the system │
│ as the root user    │
└─────────────────────┘
          │
          ▼
      ⬡ Are disks ⬡    N    ┌──────────────────────┐
      ⬡ mirrored? ⬡ ──────▶ │ Contact your next    │
      ⬡          ⬡          │ level of support.    │
          │                 └──────────────────────┘
          ▼ Y
┌─────────────────────┐
│ Begin upgrade of    │
│ MFIO to MFIO or     │
│ UMFIO.              │
└─────────────────────┘
          │
          ▼
┌─────────────────────┐
│ Replace the LAN     │
│ personality module  │
│ if required.        │
└─────────────────────┘
          │
          ▼
┌─────────────────────┐
│ Replace MFIO with   │
│ MFIO or UMFIO       │
│ module.             │
└─────────────────────┘
          │
          ▼
┌─────────────────────┐
│ Verify data is      │
│ mirrored in both    │
│ domains.            │
└─────────────────────┘
          │
          ▼
┌─────────────────────┐
│  End                │
│                     │
└─────────────────────┘
```

Upgrading the MFIO to MFIO or UMFIO

At the VT100 console

1   Log into the CS 2000 Core Manager as the root user.

2   Determine the physical location of the hard disk drives by typing

   # locate

   and pressing the Enter key.

   Example response:

Site	Flr	RPos	Bay_id	Shf	Description	Slot EqPEC
HOST	01	A02	CSDM	SDMM	512(0)	01 NTRX50GA FRNT
HOST	01	A02	CSDM	SDMM		01 NTRX50FS BACK
HOST	01	A02	CSDM	SDMM	ETH(0),DSK1(0),DAT(0)	02 NTRX50GN FRNT
HOST	01	A02	CSDM	SDMM		02 NTRX50FS BACK
HOST	01	A02	CSDM	SDMM	DSK2(0),DSK3(0)	04 NTRX50GP FRNT
HOST	01	A02	CSDM	SDMM	CPU(0)	06 NTRX50FK FRNT
HOST	01	A02	CSDM	SDMM		06 NTRX50FD BACK
HOST	01	A02	CSDM	SDMM	CPU(1)	10 NTRX50FK FRNT
HOST	01	A02	CSDM	SDMM	512(1)	12 NTRX50GA FRNT
HOST	01	A02	CSDM	SDMM		12 NTRX50GH BACK
HOST	01	A02	CSDM	SDMM	ETH(1),DSK1(1),DAT(1)	13 NTRX50GN FRNT
HOST	01	A02	CSDM	SDMM		13 NTRX50FS BACK
HOST	01	A02	CSDM	SDMM	DSK2(1),DSK3(1)	15 NTRX50GP FRNT
HOST	01	A02	CSDM	SDMM	FAN1(0)	-- NTRX50FE FRNT
HOST	00	A02	CSDM	SDMM	FAN1(1)	-- NTRX50FF FRNT
HOST	01	A02	CSDM	SDME	ICM1(0)	-- NTRX50FG BACK
HOST	01	A02	CSDM	SDME	ICM1(1)	-- NTRX50FH BACK
HOST	01	A02	CSDM	SDME	DSK4(0), DSK5(0)	01 NTRX50FU FRNT

3   Record the physical location of all hard disk drives in order to avoid removing the wrong drive, and record the chassis, slot, and PEC of the IO module you want to upgrade.

   where

   chassis
   is the chassis where the IO module you want to upgrade is located. The main chassis is identified as 'sdmm'. The expansion chassis is identified as 'sdme'. The chassis identifier is displayed under the "Shf" heading in the output from the *locate* command.

   slot
   is the slot number (1-16) in the chassis where the IO module to be upgraded is located. The slot number is displayed under the "slot" heading in the output from the *locate* command.

   pec
   is the product engineering code for the IO controller module you want to add (either NTRX50NC or NTRX50NL).

4   Ensure the datavg logical volumes are in sync by typing

`# lsvg -l datavg`

and pressing the Enter key.

From the output, check that all logical volumes have a status of "open/syncd" under column "LV State", and that each logical volume has "2" physical volumes under column "PVs".

If	Do
all logical volumes show LV State as "open/syncd" and PVs as "2"	step 5
not all logical volumes show LV State as "open/syncd" or PVs as "2"	contact your next level of support

5   Access the storage level by typing

`# sdmmtc storage`

and pressing the Enter key.

6   Use the following table to determine your next step.

If the status of the datavg disks is	Do
mirrored	step 7
not mirrored	contact your next level of support

7   Access the hardware level by typing

> hw

and pressing the Enter key.

8   Upgrade the MFIO by typing

> upgrade <chassis> <slot> <pec>

and pressing the Enter key.

where

chassis

is the chassis where the MFIO module to be upgraded is located. The main chassis is identified as 'sdmm'. The expansion chassis is identified as 'sdme'.

slot

is the slot number (1-16) in the chassis where the MFIO module to be upgraded is located.

pec

is the product engineering code for the MFIO or the UMFIO controller module you want to add (either NTRX50NC or NTRX50NL).

Note: For slots 1-9 you are not required to enter a 0 (zero) before the slot number. For instance, to enter slot 5, type "5" rather than "05".

Example

> upgrade sdmm 4 NTRX50NL

This example indicates an upgrade to the 36GB + 36GB UMFIO in slot 4 of the main chassis.

After pressing the Enter key, wait until the system shows the following response:

Note 1: DO NOT enter 1 until you have first replaced the MFIO

Note 2: The system gracefully backs you out of the upgrade procedure if you choose to exit the upgrade at this point without replacing the hardware.

Example response:

```
Transitioning forward from START to INFO_RETRIEVED

Volume group = datavg on hdisk4
Physical partition size 16 with max partitions 3048

Volume group = datavg on hdisk5
Physical partition size 16 with max partitions 3048

Transitioning forward from INFO_RETRIEVED to OFFLINED
Transitioning forward from OFFLINED to DEPENDENCIES_REMOVED
Transitioning forward from DEPENDENCIES_REMOVED to REPLACED

Replace ORIGINAL MFIO I/O-1 (c1-f15) with UPGRADED MFIO

Enter 1 to continue, 99 to exit:
```

The following response may be displayed as the MFIO upgrade progresses:

```
0516-1193 chvg: WARNING, once this operation is
completed, volume group datavg cannot be
imported into AIX 430 or lower versions.
Continue (y/n)?
```

If this response is	Do
displayed	step 9
not displayed	step 10

9   Confirm the operation by typing

> y

and pressing the Enter key.

Response:

```
0516-1164 chvg: Volume group datavg changed.
With given characteristics datavg can include up
to 10 physical volumes with 3048 physical
partitions each.
```

At the front of the CS 2000 Core Manager

10

> **WARNING**
> **Static electricity damage**
> Wear an electrostatic discharge (ESD) grounding wrist strap connected to the C28B cabinet when handling a module. This protects the module against damage caused by static electricity.
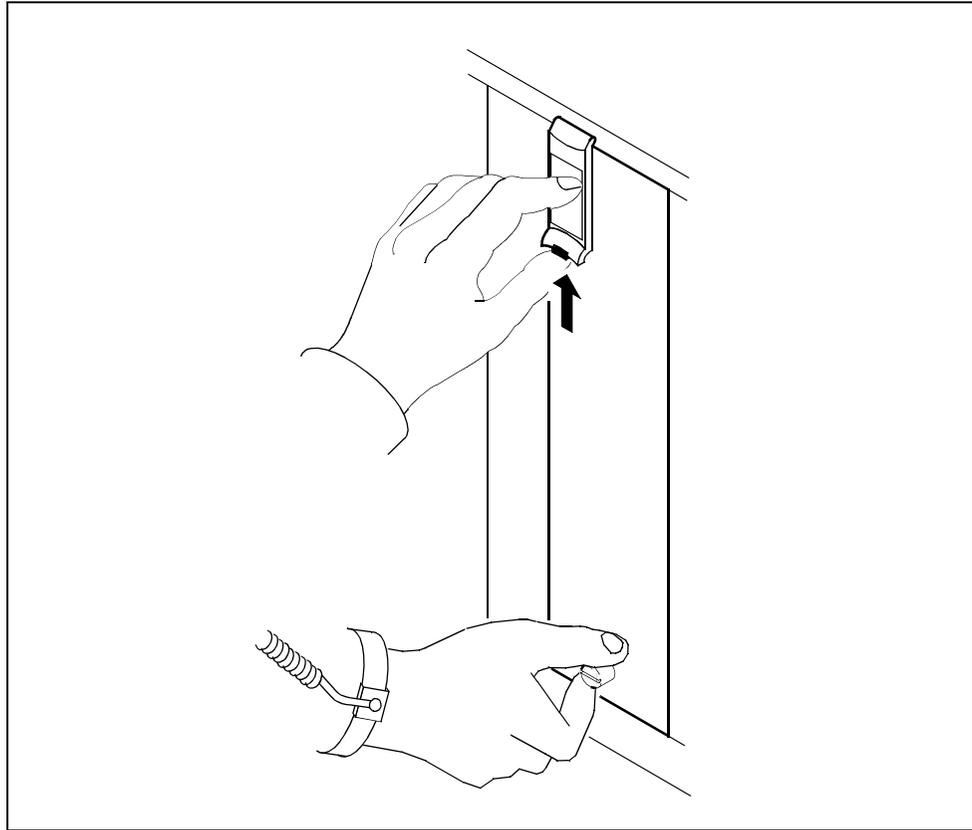
Put on an electrostatic discharge grounding wrist strap.

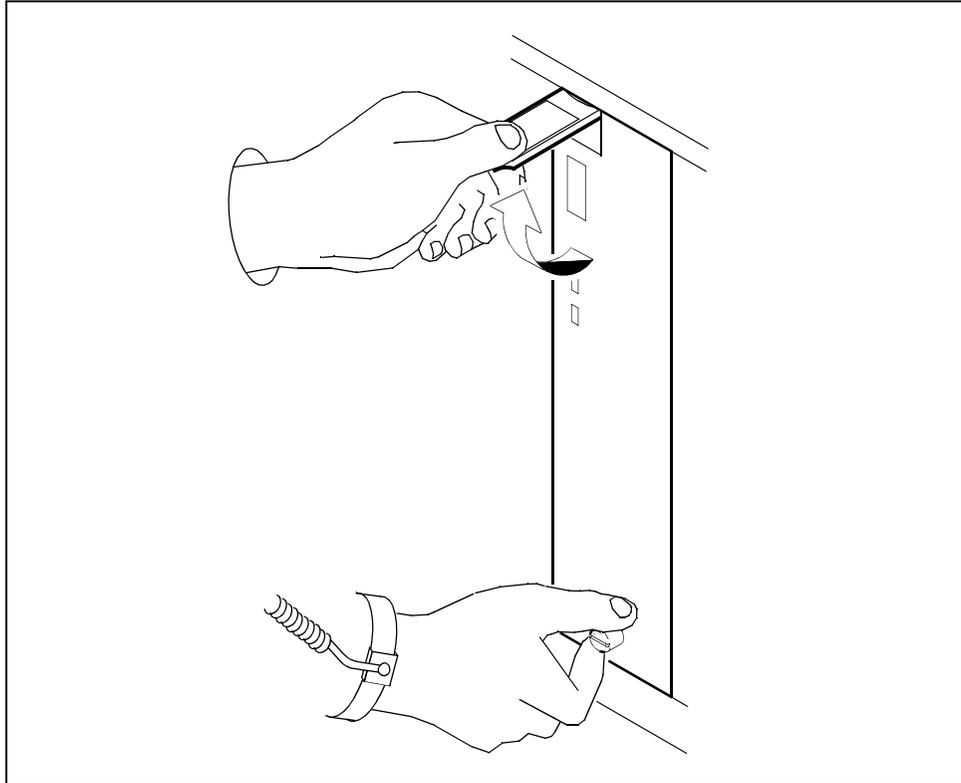**11**   Undo the thumbscrews located on the top and the bottom of the MFIO controller module to be upgraded.

> *Note 1:* The thumbscrews are the captive type, and cannot be removed from the module.

> *Note 2:* Make sure the LED of the module you want to upgrade is either red or off before you remove it.

12 Depress the tip of the locking lever on the face of the MFIO controller module.

13   Open the locking lever on the face of the module by moving the lever outwards.

14   While grasping the locking lever, gently pull the module towards
           you until it protrudes about 2 in. (5.1 cm) from the shelf.

15 Hold the card by the face plate with one hand while supporting the bottom edge with the other hand. Gently pull the module toward you until it clears the shelf.
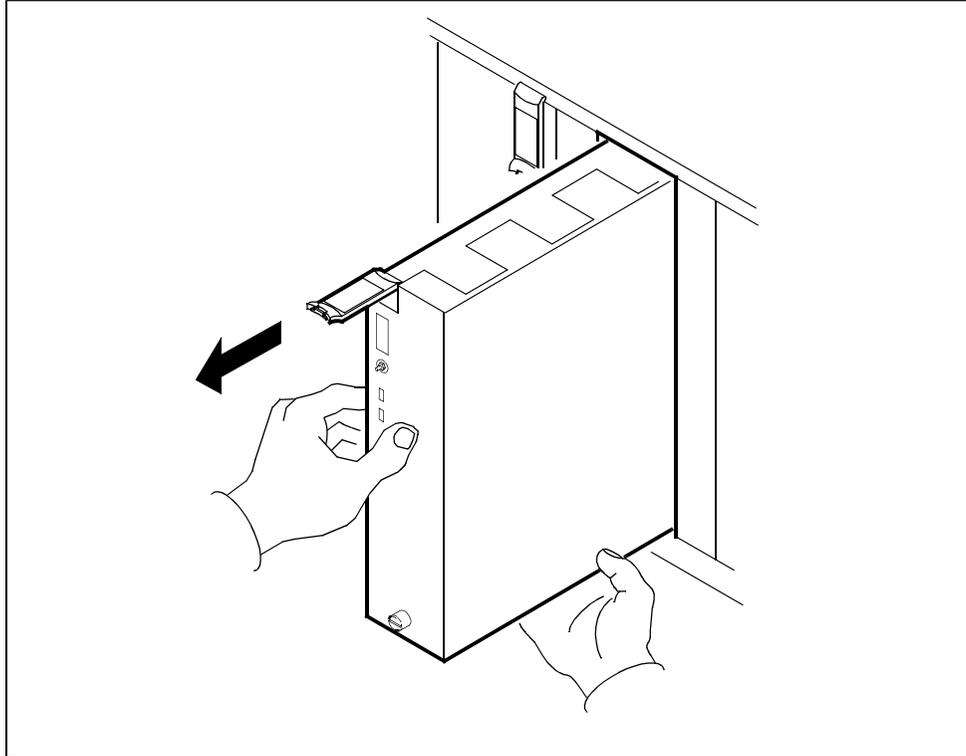
**16** Place the module you have removed in an ESD protective container.

At the back of the CS 2000 Core Manager

17 Use the table below to determine your next step.

If you	Do
are not upgrading to UMFIO, then	step 29
are upgrading to UMFIO, then	step 18

18 You will now be removing the existing LAN personality module and replacing it with the new personality module (NTRX50NK or NTRX50NN) that came with the new UMFIO module. This must be done before inserting the new UMFIO module. It is located at the rear of the I/O controller module to be upgraded.

19   Label the ethernet cable connected to the LAN personality module you want to replace.

20   Identify the correct LAN module (slot and PEC code) you wish to remove and disconnect the ethernet cable, as shown in the following diagram.
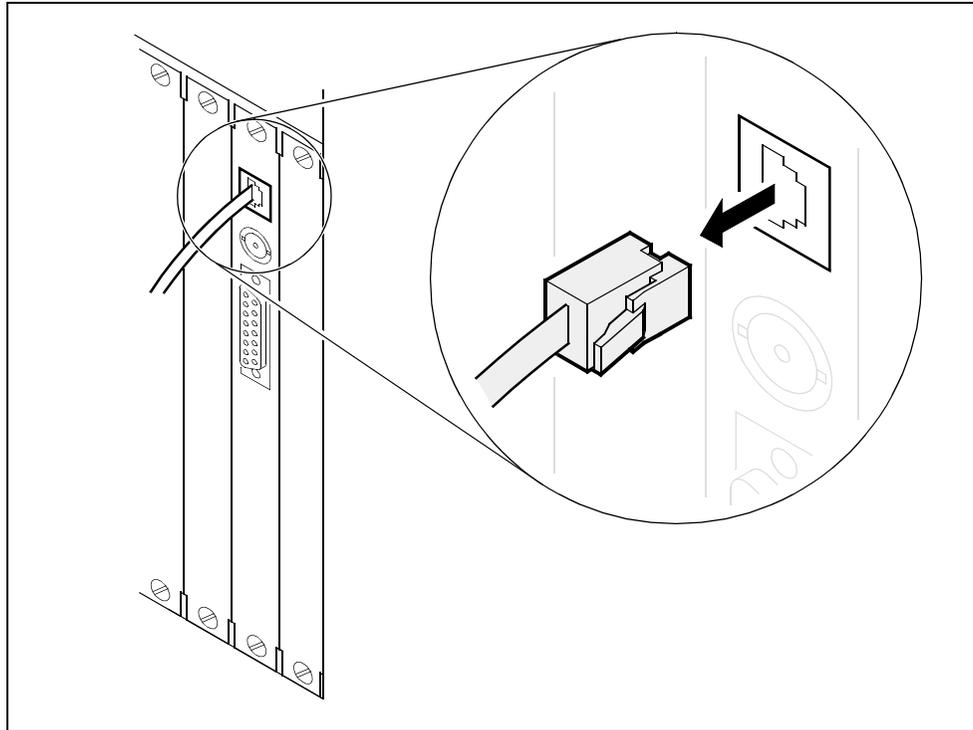

21   Loosen the two thumbscrews located at the top and the bottom of the LAN personality module.

> *Note:* The thumbscrews are the captive type, and cannot be removed from the module.

22 While grasping the thumbscrews, gently pull the LAN personality module towards you until it protrudes about 2 in. (5.1 cm) from the shelf.
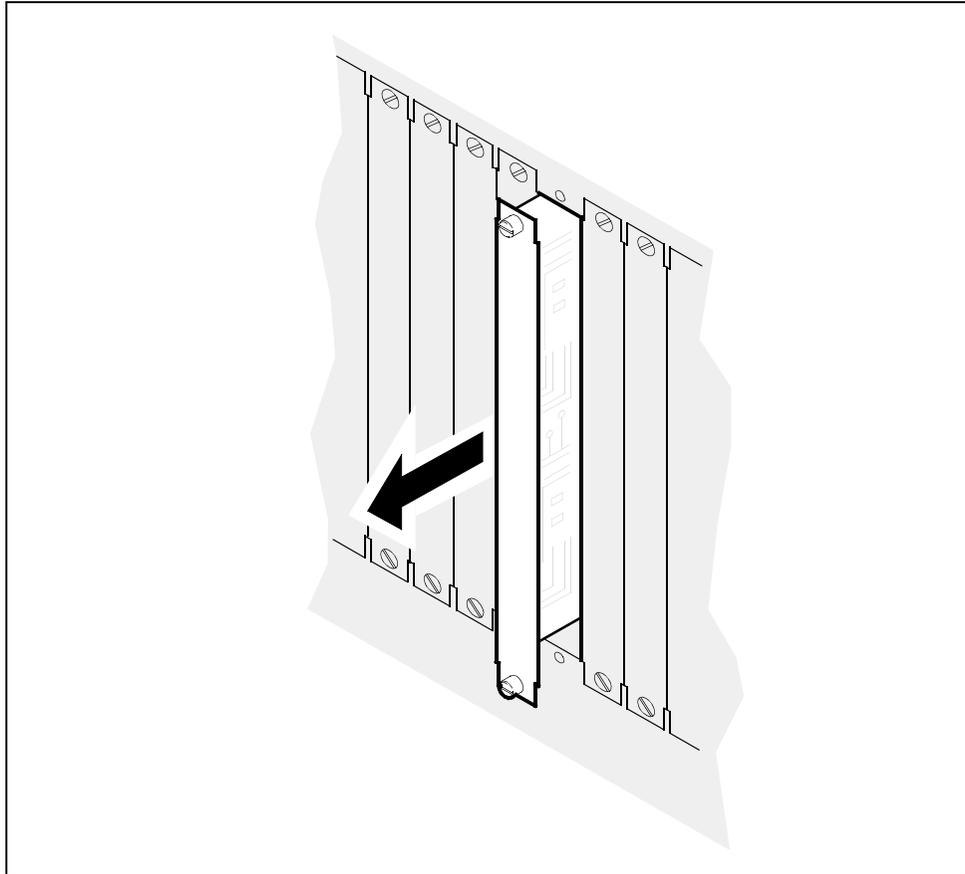
23   Hold the LAN personality module by the face plate with one hand while supporting the bottom edge with the other hand. Gently pull the module toward you until it clears the shelf.
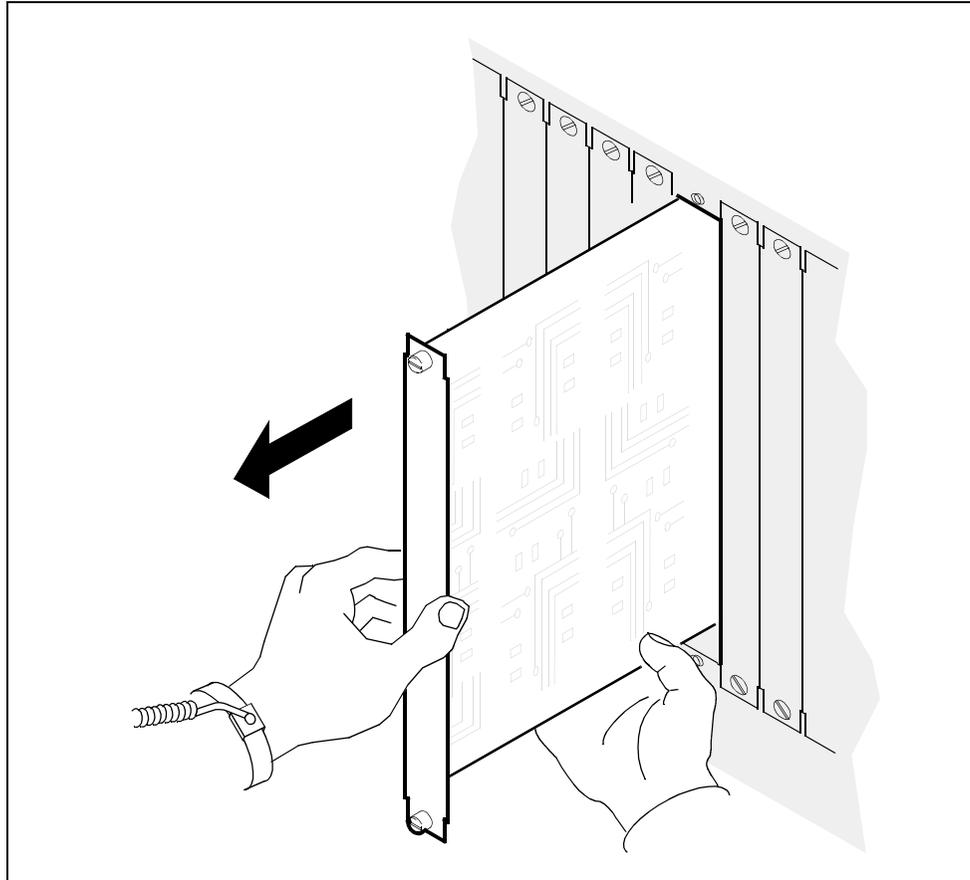

24   Place the LAN personality module you have removed in an ESD protective container.

25   Insert the new LAN personality module (NTRX50NK or NTRX50NN) into the shelf.

26 Gently slide the LAN personality module into the shelf until it is fully inserted.
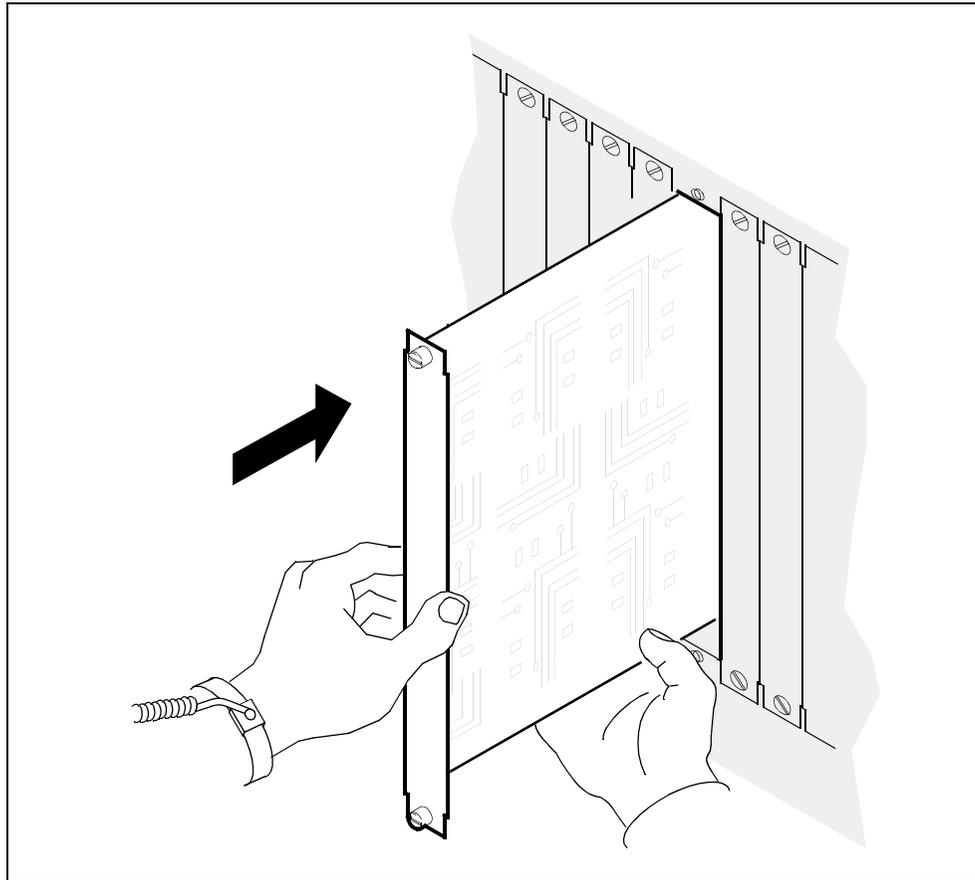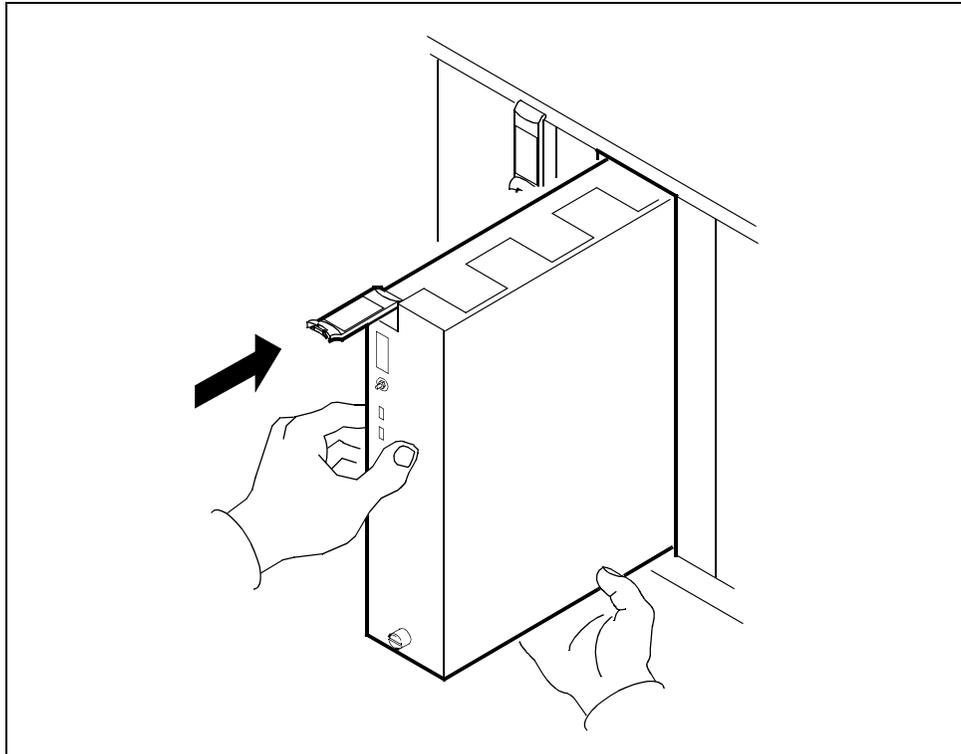

27 Tighten the thumbscrews at the top and the bottom of the LAN personality module.

28 Reconnect the ethernet cable to the LAN personality module. If you want, remove the label that you put on the cable in step 19.
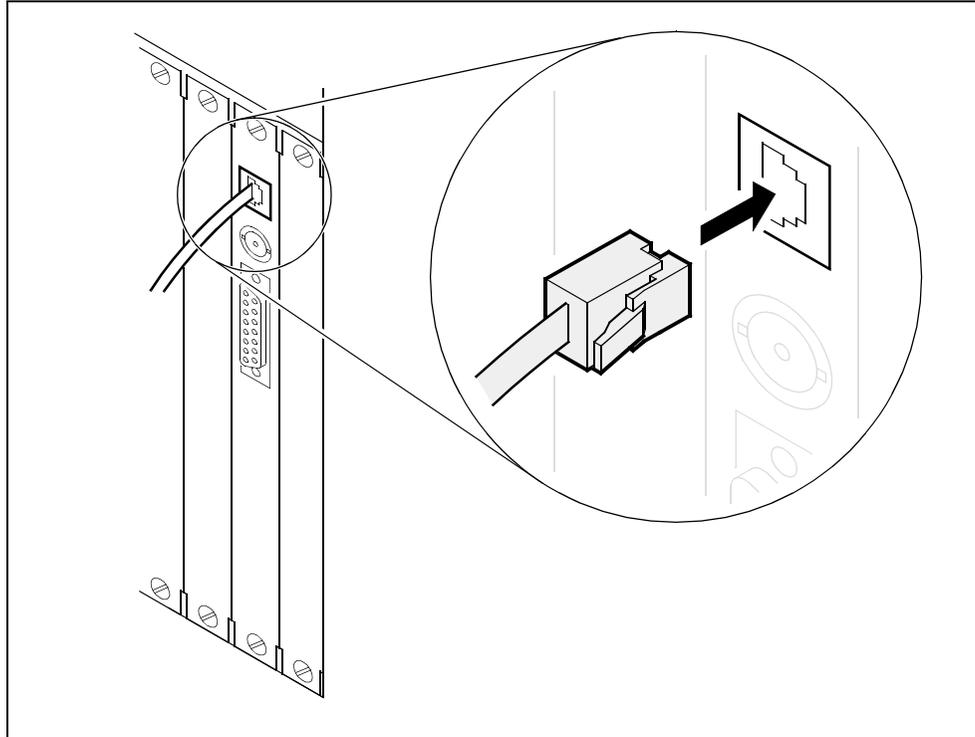
### *At the front of the CS 2000 Core Manager*

29 Insert the NTRX50NC MFIO / NTRX50NL UMFIO module into the shelf.

30 Gently slide the module into the shelf until it is fully inserted.

31   Close the locking lever to secure the module. Ensure that the top micro switch is lined up with the locking lever to properly seat the module.

Micro switch

32   Tighten the thumbscrews on the module.

33   Continue the upgrade by typing

> **1**
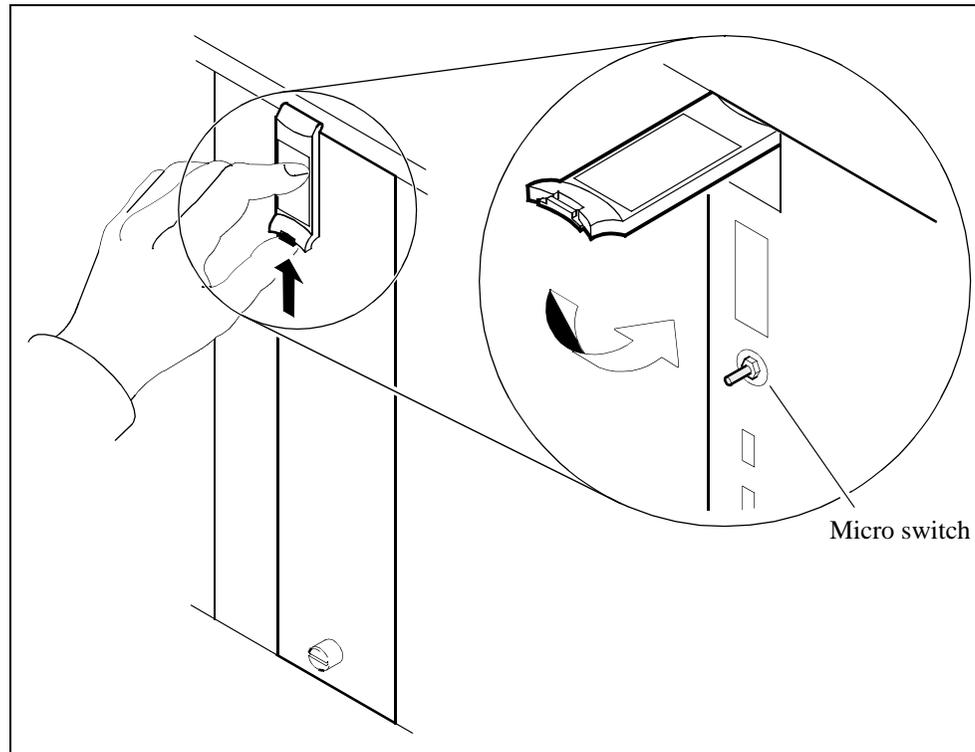
and pressing the Enter key.

The system shows the following response when the upgrade has been completed:

System response

```
Transitioning forward from REPLACED to ONLINED
Transitioning forward from ONLINED to DEPENDENCIES_ADDED
Transitioning forward from DEPENDENCIES_ADDED to OFFLINED_AFTER_UPGRADE
Transitioning forward from OFFLINED_AFTER_UPGRADE to ONLINED2
Transitioning forward from ONLINED2 to COMPLETE
>
```

34 You are automatically returned to the sdmmtc Hw level. Wait until the system completes the reintegration.

While the system integrates, you will see the following responses at the hardware menu level and the storage menu levels:

Hardware menu level

```
        SDM    CON   LAN    APPL   SYS    HW      CLLI : FCC1
        ISTb    .     .      .     ISTb   ISTb    Host : SDM1
                                                  Fault Tolerant
 Hw
  0 Quit
  2                       I  I  F  FCEE  D D D D D D 5
  3                       C C  A A  P T T  S  S  SSS  A 1
  4 Logs                   M M N N U H H K K K K K T 2
  5                        1  2  1 2    1  2 1  2 3 4 5
  6                 Domain 0  .   .   .  .  .  . I  .  I  I  .  .  .  .
  7 Bsy              Domain 1 .   .   .  .  .  . I  .  I  I  .  .  .  .
  8 RTS
  9
 10
 11
 12
 13
 14 QuerySDM
 15 Locate
 16
 17 Help
 18 Refresh


  root
 Time  19:48  >
```

Storage menu level

```
        SDM     CON   LAN    APPL   SYS    HW        CLLI : FCC1
        ISTb      .      .      .     ISTb   ISTb      Host : SDM1
                                                       Fault Tolerant
Storage
0 Quit
2                  Volume Group        Status            Free (MB)
3                     rootvg           Mirrored           31856
4                     datavg           Integrating (28%)  43360   !
5
6                  Logical Volume      Location      Size(MB) % full/ threshold
7                     1 /              rootvg           88        11/ 80
8                     2 /usr           rootvg          600        29/ 90
9                     3 /var           rootvg          200         5/ 70
10                    4 /tmp           rootvg           24         5/ 90
11                    5 /home          rootvg          304         4/ 70
12 Up                 6 /sdm           rootvg          504        24/ 90
13 Down               7 /data          datavg          208         5/ 80
14                                         Logical volumes showing: 1 to 7 of 7
15
16
17 Help
18 Refresh


 root
Time  19:48  >
```

35   Once the system completes the reintegration, the status of the volume group changes to `Mirrored`.

Storage menu level

```
        SDM    CON   LAN    APPL   SYS   HW        CLLI : FCC1
         .      .     .      .      .     .        Host : SDM1
                                                   Fault Tolerant
Storage
0 Quit
2                   Volume Group        Status        Free (MB)
3                       rootvg          Mirrored        31856
4                       datavg          Mirrored        43360
5
6                   Logical Volume      Location      Size(MB) % full/ threshold
7                       1 /              rootvg          88        11/ 80
8                       2 /usr           rootvg          600       29/ 90
9                       3 /var           rootvg          200       5/ 70
10                      4 /tmp           rootvg          24        5/ 90
11                      5 /home          rootvg          304       4/ 70
12 Up                   6 /sdm           rootvg          504       24/ 90
13 Down                 7 /data          datavg          208       5/ 80
14                              Logical volumes showing: 1 to 7 of 7
15
16
17 Help
18 Refresh


  root
Time  19:48  >
```

36   You have completed this procedure.

37   Upgrade the MFIO /UMFIO module in the other domain by repeating steps 1 and 3 through 36 inclusive.

Upgrading DCE

ATTENTION
This procedure will upgrade the DCE system files and provide the cell_admin user with sdm_admin sub administrator account access permissions. These permissions allow the cell_admin to default to the sdm_admin user id when prompted elsewhere in SDM upgrade and administration actions. If the cell_admin declines to enter the user id and password in this procedure, the cell_admin user id and password will need to be specified when performing subsequent CS 2000 Core Manager DCE admin and upgrade tasks.

At the CS 2000 Core Manager

1   Begin the DCE upgrade by typing

   # dceupgrade

   and pressing the Enter key.

   Note: The system displays the status of each step during the DCE upgrade.

   Response

   ```
   Update mkdce file now...
   Stop dce daemons now...
   Update rc.dce file and restart the dce daemons
   now...
   It may take about 3 minutes, please wait...
   You are required to login as cell_admin for the
   following operations

   DCE administrator user ID [cell_admin]:
   ```

2   At the prompt, enter the DCE cell_admin user ID.

   Note: If you do not have a DCE cell_admin user ID, press the Enter key to accept the default user ID (cell_admin).

   Response

   ```
   DCE administrator password:
   ```

3 At the prompt, enter the password for the DCE cell_admin user ID.

Response:

```
Update access permission for sdm_admin now...
Dceupgrade command complete
The DCE upgrade is complete.
```

Note: If you did not have a DCE cell_admin user ID and you pressed Enter in the previous step to accept the default DCE user ID, press Enter at the password prompt. The response will indicate that the DCE login failed, however, the DCE upgrade completed correctly and you can continue.

For more information about DCE, refer to the following procedures:

- "Creating a DCE user" in the Security and Administration section
- "Configuring an SDM in a DCE cell" in the Configuration section
- "Removing an SDM from a DCE cell" in the Configuration section
- "Deleting a DCE user" in the Security and Administration section
- "Updating DCE principal names" in the Security and Administration section

Upgrading the DS512 controller module from NTRX50GA to GX

Application

Use this procedure to perform the DS512 controller module upgrade from an NTRX50GA to an NTRX50GX module.

The NTRX50GA and NTRX50GX DS512 controller modules function identically. The NTRX50GX DS512 controller module has increased buffer memory with 16 kilobytes per link.

The NTRX50GX DS512 controller module requires software version SDMN0010 (or higher).

Before you begin this procedure, you must

- have two NTRX50GX controller modules

- have packaging material in which to return the two NTRX50GA controller modules

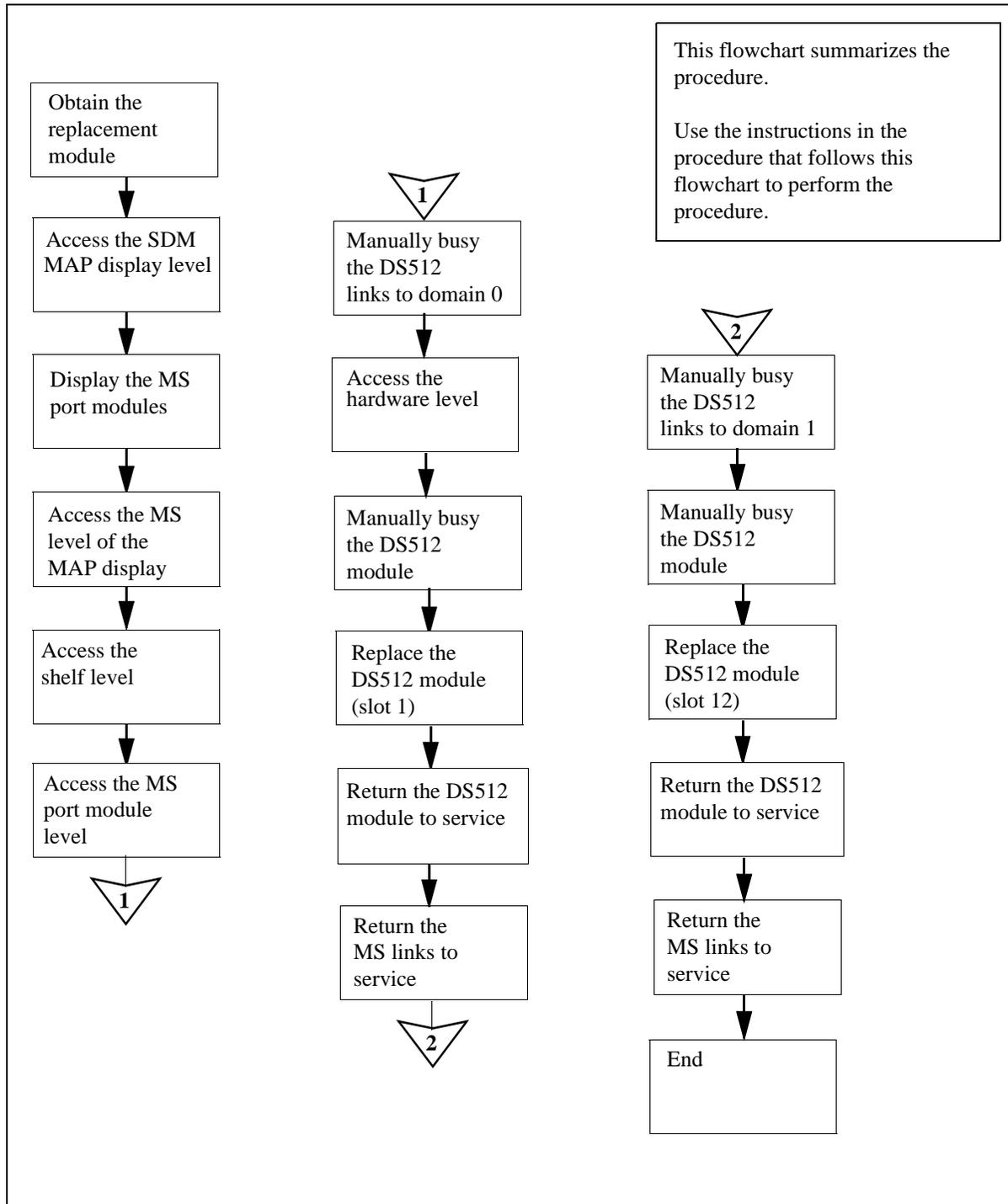- login capability for both the DMS MAP and CS 2000 Core Manager

Impact

This procedure allows the CS 2000 Core Manager applications to continue without interruption. During this procedure, one of the two DS512 controller modules remains in service while the other is being replaced. The state of applications running on the CS 2000 Core Manager is not a factor in this procedure. However, Nortel Networks recommends that you perform this procedure during a roughage period.

Action

The following flowchart is only a summary of the procedure. To upgrade the DS512 controller module, use the instructions in the procedure that follows the flowchart.

Summary of Upgrading the DS512 controller module from NTRX50GA to NTRX50GX

Obtain the replacement module

↓

Access the SDM MAP display level

↓

Display the MS port modules

↓

Access the MS level of the MAP display

↓

Access the shelf level

↓

Access the MS port module level

▽ **1**

▽ **1**

Manually busy the DS512 links to domain 0

↓

Access the hardware level

↓

Manually busy the DS512 module

↓

Replace the DS512 module (slot 1)

↓

Return the DS512 module to service

↓

Return the MS links to service

▽ **2**

This flowchart summarizes the procedure.

Use the instructions in the procedure that follows this flowchart to perform the procedure.

▽ **2**

Manually busy the DS512 links to domain 1

↓

Manually busy the DS512 module

↓

Replace the DS512 module (slot 12)

↓

Return the DS512 module to service

↓

Return the MS links to service

↓

End

Obtaining the DS512 controller module

1   Obtain an NTRX50GX DS512 controller module. Make sure that the upgrade module has the correct product engineering code (PEC). The PEC is written on the top locking lever of the module.

At the MAP display

2   Access the SDM level by typing

> **> mapci;mtc;appl;sdm**

and pressing the Enter key.

3   Display the card numbers that provide the DS512 links to the CS 2000 Core Manager by typing

> **> trnsl**

and pressing the Enter key.

Example response:

```
SDM 0 DOMAIN 0 PORT 0 (MS 0:15:0) OK  MsgCnd:Open
SDM 0 DOMAIN 0 PORT 1 (MS 1:15:0) OK  MsgCnd:Open
SDM 0 DOMAIN 1 PORT 0 (MS 0:15:1) OK  MsgCnd:Open
SDM 0 DOMAIN 1 PORT 1 (MS 1:15:1) OK  MsgCnd:Open
```

4   Record the card number associated with the CS 2000 Core Manager DS512 links. The card number is the middle number shown in the parentheses.

> **Note:** In the example response shown in step 3, the card number is 15.

5   Access the MS level of the MAP display by typing

> **> ms**

and pressing the Enter key.

6   Access the shelf level by typing

> **> shelf**

and pressing the Enter key.

7   Access the card number level that is associated with the CS 2000 Core Manager DS512 links by typing

> **> chain <card_number>**

and pressing the Enter key.

where

> **<card_number>**
> is the card number you recorded in step 4.

8   Manually busy the DS512 link between MS plane 0 and the CS 2000 Core Manager DS512 controller module or domain 0 by typing

> **bsy 0 link 0**

and pressing the Enter key.

Example response:

```
Request to MAN BUSY MS:0 shelf:0 chain:15 link:0
submitted.
Request to MAN BUSY MS:0 shelf:0 chain:15 link:0
passed.
```

>   ***Note:*** The state for the DS512 link changes to "M" for MS plane 0.

9   Manually busy the DS512 link between MS plane 1 and the CS 2000 Core Manager DS512 controller module on domain 0 by typing

> **bsy 1 link** *0*

and pressing the Enter key.

Example response:

```
Request to MAN BUSY MS: 1 shelf: 0 chain:15
link:  0 submitted.
Request to MAN BUSY MS: 1 shelf: 0 chain:15
link: 0 passed.
```

>   ***Note:*** The state for the DS512 link changes to "M" for MS plane 1.

At the local or remote VT100 console

10   Log in to the CS 2000 Core Manager as the root or maint user.

11   Access the maintenance interface by typing

sdmmtc

and pressing the Enter key.

12   Access the hardware (Hw) level by typing

> **hw**

and pressing the Enter key.

13   Busy the DS512 controller module by typing

    `> bsy 0 512`

    and pressing the Enter key.

If you are	Do
prompted to confirm the busy command	step 14
not prompted to confirm the busy command	step 15

14   Confirm the busy command by typing

    `> y`

    and pressing the Enter key.

At the front of the CS 2000 Core Manager

15

	WARNING **Static electricity damage** Wear an electrostatic discharge (ESD) grounding wrist strap connected to the C28B cabinet when handling a module. This protects the module against damage caused by static electricity.

   Locate the NTGX50GA card in slot 1.

16

> ⚠ **CAUTION**
> **Potential service interruption**
> Unseat only the DS512 controller module that you busied, and not the corresponding DS512 controller module in the other I/O domain. The in-service LED on the busied module is off, and the out-of-service LED is on (red). If you remove the remaining in-service DS512 controller module, you will isolate the CS 2000 Core Manager from the computing module (CM).
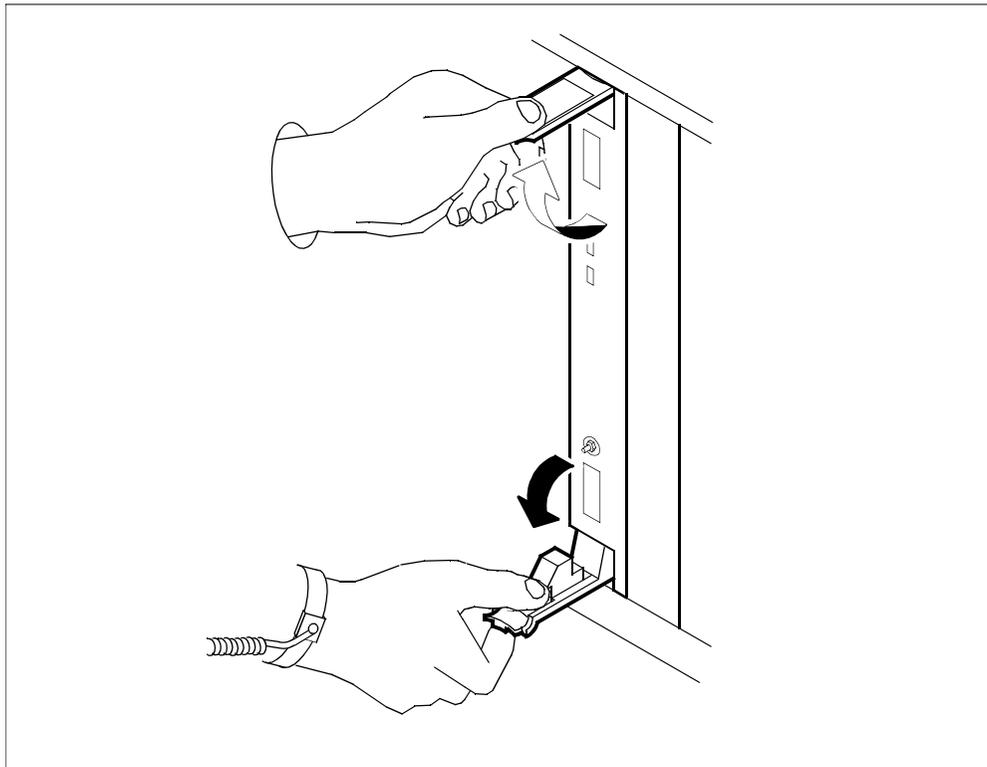
Undo the thumbscrews located (if present) on the top and the bottom of the DS512 controller module.

*Note:* The thumbscrews are the captive type, and cannot be removed from the module.

**17** Depress the tips of the locking levers on the face of the DS512 controller module.
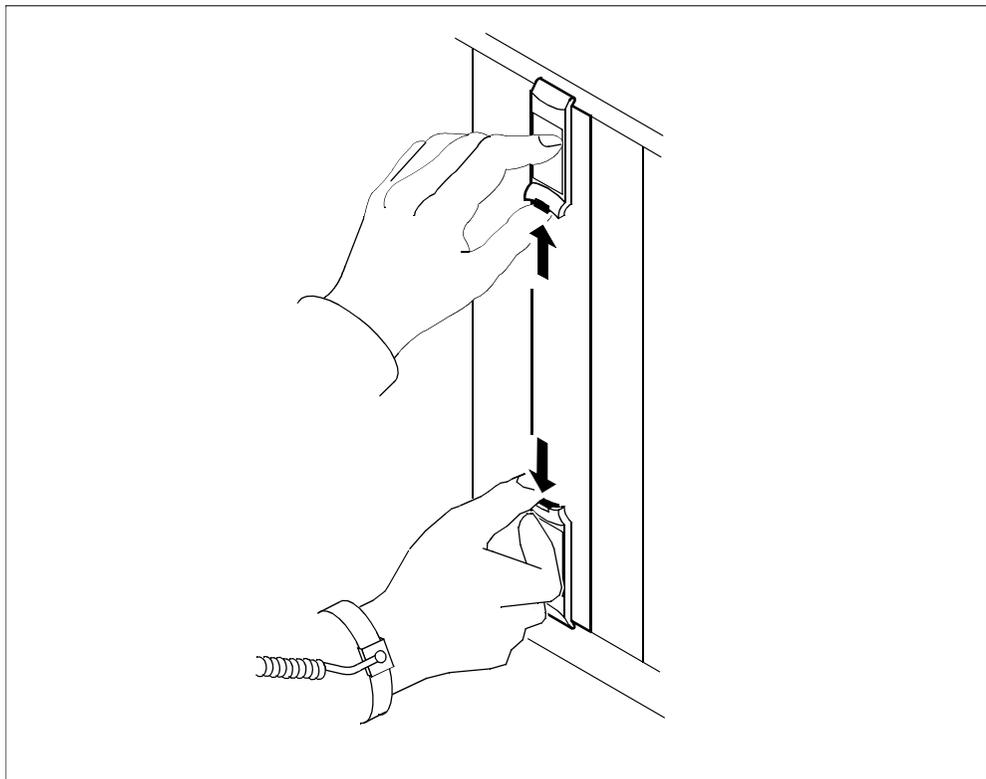
18 Open the locking levers on the face of the module by moving the levers outwards.

19   While grasping the locking levers, gently pull the module towards you until it protrudes about 2 in. (5.1 cm) from the CS 2000 Core Manager shelf.
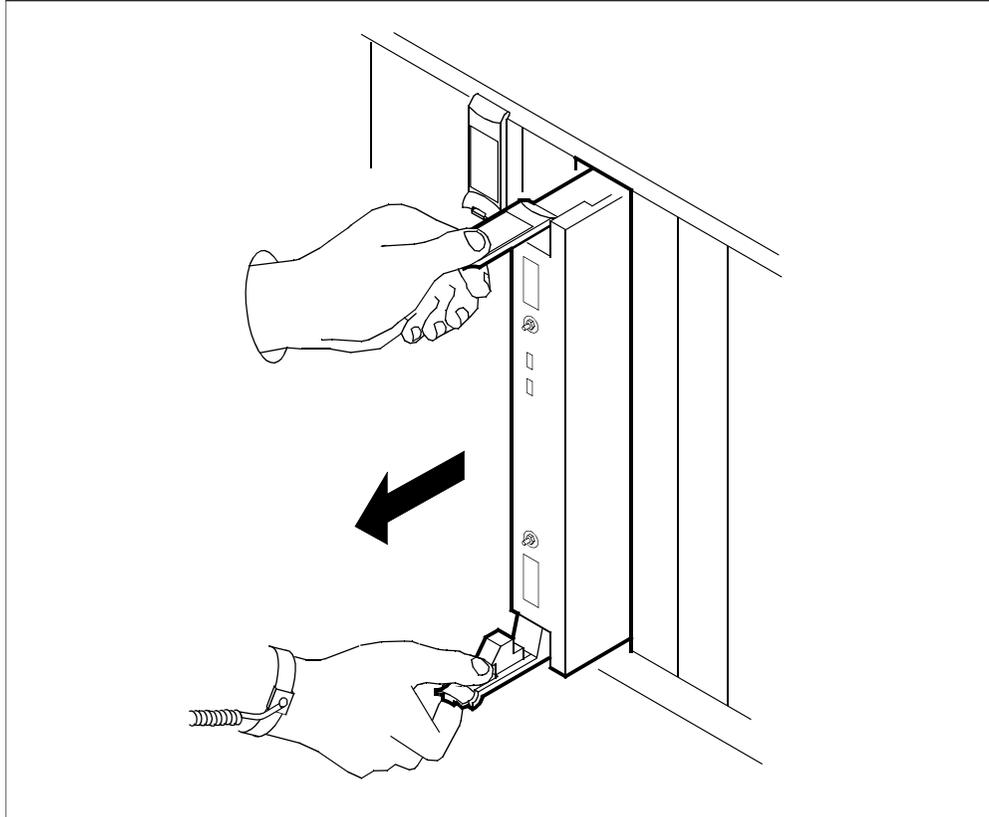
20 Hold the module by the face plate with one hand while supporting the bottom edge with the other hand. Gently pull the module toward you until it clears the shelf.
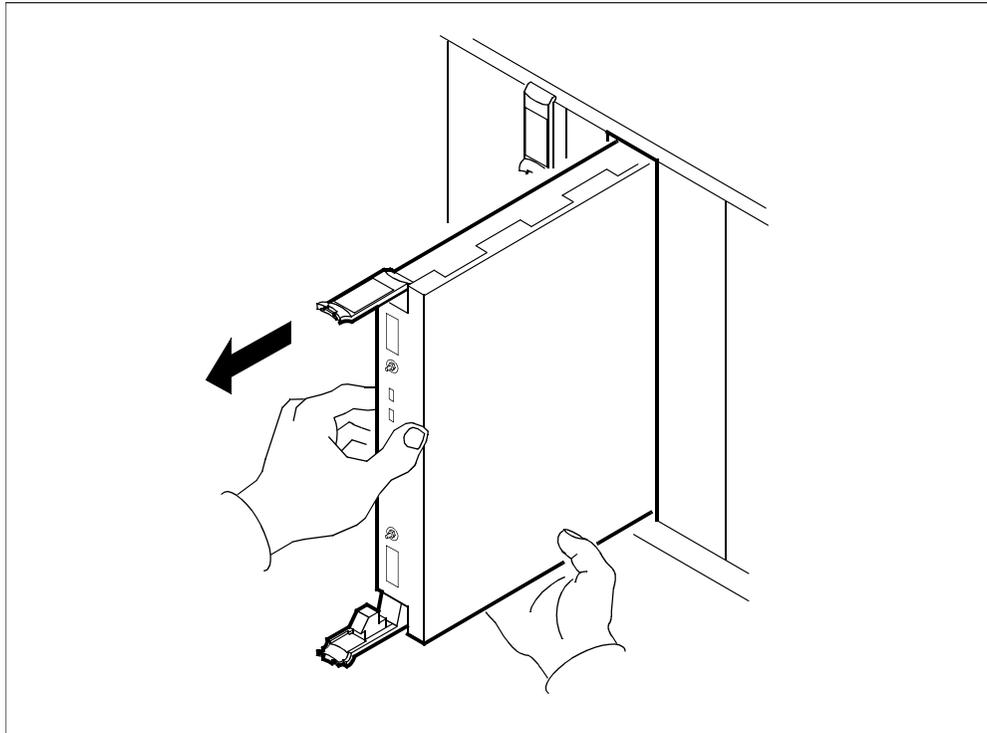

21 Place the module you have removed in an ESD protective container.

At the local or remote VT100 console
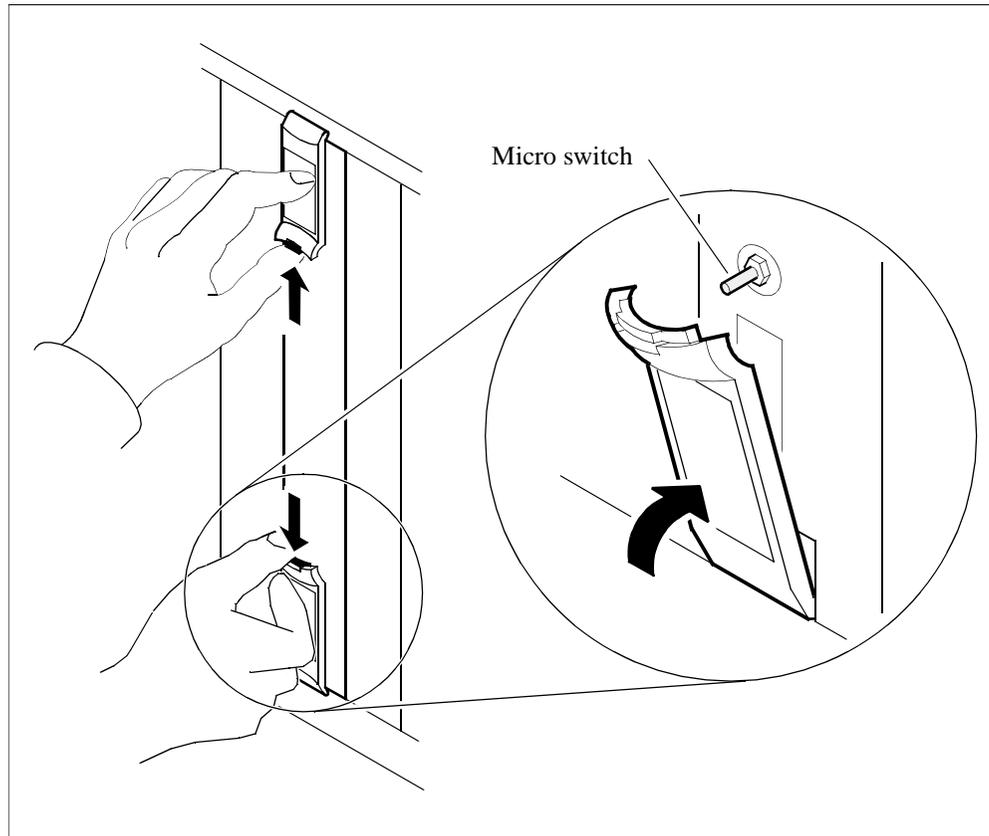
22 Exit the maintenance interface by typing

> **quit all**

and pressing the Enter key.

23 For the DS512 module you have removed, delete the information from the CS 2000 Core Manager configuration database by typing

 # ftds512clean <n>

and pressing the Enter key.

where

> **<n>**
>> is 0 if the removed module was in domain 0, and 1 for a module that was in domain 1.

At the front of the CS 2000 Core Manager

24 Insert the replacement module into the CS 2000 Core Manager shelf.

25 Gently slide the module into the shelf until it is fully inserted.
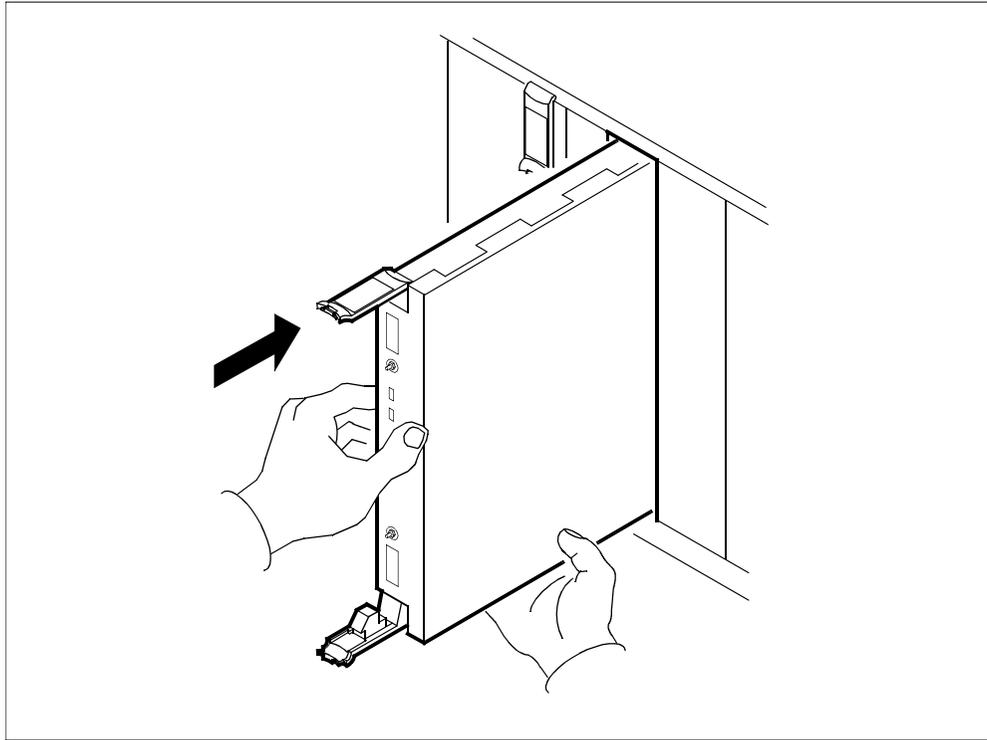
26 To properly seat the module, make sure that both the top and bottom micro switches are lined up with the levers. Close the locking levers to secure the module.

Micro switch

27 Tighten the thumbscrews (if present) on the module. If you are replacing domain 0, proceed to step 28. If you are replacing domain 1, proceed to step 39.

At the local or remote VT100 console

28 Access the maintenance interface by typing

   # sdmmtc

   and pressing the Enter key.

29 Access the hardware (Hw) level by typing

   > hw

   and pressing the Enter key.

30   Return the DS512 controller module to service by typing

```
> rts 0 512
```

and pressing the Enter key.

Example response:

```
Hardware RTS : Domain 0 Device 512 - Command
initiated.
Please wait...
```

When the RTS command is finished, the *Please wait...* message and the command confirmation disappear. The word *initiated* also changes to *submitted*, then *complete*.

Example response:

```
Hardware RTS : Domain 0 Device 512 - Command
complete.
```

> *Note:* At the hardware menu level of the CS 2000 Core Manager maintenance interface, the state of the DS512 controller module changes to a dot (.). This change indicates that the module has returned to service.   The in-service LED on the DS512 controller module is on (green).

At the MAP display

31   Access the MS port module level of the MAP display (accessed in step 7). Return to service the DS512 link between MS plane 0 and the DS512 controller module you replaced by typing

```
> rts 0 link 0
```

and pressing the Enter key.

Example response:

```
Request to RTS MS: 0 shelf: 0 chain:15 link:  0
submitted.
Request to RTS MS: 0 shelf: 0 chain:15 link: 0
passed.
```

> *Note:* The state for the DS512 link changes to a dot (.) if the CS 2000 Core Manager DS512 link is in service. Otherwise, the state for DS512 link changes to a "P".

32 Return to service the DS512 link between MS plane 1 and the DS512 controller module you replaced by typing

```
> rts 1 link 0
```

and pressing the Enter key.

Example response:

```
Request to RTS MS: 1 shelf: 0 chain:15 link:  1
submitted.
Request to RTS MS: 1 shelf: 0 chain:15 link: 1
passed.
```

> **Note:** The state for the DS512 link changes to a dot (.) if the CS 2000 Core Manager DS512 link is in-service. Otherwise, the state for DS512 link changes to a "P".

33 You must now replace the second NTRX50GA module with the second NTRX50GX module. Busy the DS512 link between MS plane 0 and the CS 2000 Core Manager DS512 controller module you wish to replace by typing

```
> bsy 0 link 1
```

and pressing the Enter key.

Example response:

```
Request to MAN BUSY MS: 0 shelf: 0 chain:15
link:  0 submitted.
Request to MAN BUSY MS: 0 shelf: 0 chain:15
link: 0 passed.
```

> **Note:** The state for the DS512 link changes to "M" for MS plane 0.

34 Busy the DS512 link between MS plane 1 and the CS 2000 Core Manager DS512 controller module you wish to replace by typing

```
> bsy 1 link 1
```

and pressing the Enter key.

Example response:

```
Request to MAN BUSY MS: 1 shelf: 0 chain:15
link:  0 submitted.
Request to MAN BUSY MS: 1 shelf: 0 chain:15
link: 0 passed.
```

> **Note:** The state for the DS512 link changes to "M" for MS plane 1.

At the local or remote VT100 console

35   Busy the DS512 controller module by typing

> **bsy 0 512**

and pressing the Enter key.

If you are	Do
prompted to confirm the busy command	step 36
not prompted to confirm the busy command	step 37

36   Confirm the busy command by typing

> **y**

and pressing the Enter key.

At the front of the CS 2000 Core Manager

37

	WARNING **Static electricity damage** Wear an electrostatic discharge (ESD) grounding wrist strap connected to the C28B cabinet when handling a module. This protects the module against damage caused by static electricity.

Locate the NTRX50GA card in slot 12.

38   Replace the NTRX50GA module in slot 12 with the NTRX50GX module. To replace the module in slot 12, use steps 16 to 27, then continue with step 39.

At the local or remote VT100 console

39   At the hardware level, return the DS512 controller module to service by typing

> **> rts 1 512**

and pressing the Enter key.

Example response:

```
Hardware RTS : Domain 1 Device 512 - Command
initiated.
Please wait...
```

When the RTS command is finished, the *Please wait...* message and the command confirmation disappear. The word *initiated* also changes to *submitted*, then *complete*.

Example response:

```
Hardware RTS : Domain 1 Device 512 - Command
complete.
```

> **Note:** At the hardware level, the state of the DS512 controller module changes to a dot (.). This change indicates that the module has returned to service. The in-service LED on the DS512 controller module is on (green).

At the MAP display

40   Access the MS port module level of the MAP display (accessed in step [7]). Return to service the DS512 link between MS plane 1 and the DS512 controller module you replaced by typing

> **> rts 0 link 1**

and pressing the Enter key.

Example response:

```
Request to RTS MS: 0 shelf: 0 chain:15 link:  0
submitted.
Request to RTS MS: 0 shelf: 0 chain:15 link: 0
passed.
```

> **Note:** The state for the DS512 link changes to a dot (.) if the CS 2000 Core Manager DS512 link is in service. Otherwise, the state for DS512 link changes to a "P".

41 Return to service the DS512 link between MS plane 1 and the DS512 controller module you replaced by typing

> **> rts 1 link 1**

and pressing the Enter key.

Example response:

```
Request to RTS MS: 1 shelf: 0 chain:15 link:  1
submitted.
Request to RTS MS: 1 shelf: 0 chain:15 link: 1
passed.
```

> ***Note:*** The state for the DS512 link changes to a dot (.) if the CS 2000 Core Manager DS512 link is in service. Otherwise, the state for DS512 link changes to a "P".

At the local or remote VT100 console

42 Exit the maintenance interface by typing

> **> quit all**

and pressing the Enter key.

43 Confirm that the new cards are properly installed by typing

> **> locate**

and press the Enter key.

The system displays a list of CS 2000 Core Manager hardware. The NTRX50GX module is the hardware in slots 1 and 12.

> ***Note:*** If the system does not list the NTRX50GX modules, the card(s) may be faulty. Replace the NTRX50GX DS512 controller modules with the original NTRX50GA modules. To replace the modules, return to step 13 of this procedure and reinstall the NTRX50GA DS512 controller modules.

At the MAP display

44 Exit the MAP session by typing

> **> quit all**

and pressing the Enter key.

45 You have completed this procedure.

Removing SBA NA100 script files

ATTENTION

Use this procedure only if you have been directed here from one of the following procedures: Upgrading CS 2000 Core Manager software using non-split mode, Upgrading CS 2000 Core Manager software using split-mode, or Upgrading CS 2000 Core Manager software using ESUP. Perform this procedure prior to a software upgrade.

As of SDM14, the NA100 version of the SDM billing application was converted to the DMS500 version. During the conversion, NA100 script files were removed with the exception of three NA100 script files.

This procedure provides instructions on how to verify whether the three NA100 script files are present on your system, and how to remove these files if they are present.

Removing SBA NA100 script files

At the CS 2000 Core Manager

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

2 Access the directory where SBA script files are located by typing

   `# ls /usr/lpp/SDM_SBA/deinstl`

   and pressing the Enter key.

   Note: The last character in the command string is the letter "l".

3 Verify whether the following SDM_SBA.NA100 files are present:

   - SDM_SBA.NA100.al
   - SDM_SBA.NA100.unconfig
   - SDM_SBA.NA100.inventory

If the NA100 script files	Do
are present	step 4
not present	you have completed this procedure and can return to the upgrade procedure that directed you here

4 Remove each of the NA100 script files by typing

`# rm SDM_SBA.NA100.al`

and pressing the Enter key.

`# rm SDM_SBA.NA100.unconfig`

and pressing the Enter key.

`# rm SDM_SBA.NA100.inventory`

and pressing the Enter key.

If you	Do
could not remove one or more of the NA100 script files	contact your next level of support
successfully removed all three NA100 script files	you have completed this procedure and can return to the upgrade procedure that directed you here

Upgrading the CS 2000 SAM21 manager GUI client application

Application

Use this procedure to upgrade the CS 2000 SAM21 manager GUI client application to the latest software release.

Prerequisites

The CS 2000 SAM21 manager server must have the same software version as the client version to which you are upgrading.

The CS 2000 SAM21 manager is a client/server application. The client runs on a Sun SPARC workstation, and the server runs on the CS 2000 Core Manager.

For SN06, the following requirements must be met for the client:

- The CS 2000 SAM21 manager client requires a Sun SPARC workstation. The workstation must run (at a minimum) the Solaris 2.7 operating system. The CS 2000 SAM21 manager is also supported on the Solaris 2.8 operating system. For optimum performance, Nortel Networks recommends you have a Sun Ultra10 with 512 Mbyte of DRAM and 70 Mbyte or higher of available disk space.

- The latest versions of the following patch IDs are required for Solaris 2.7 systems:
  — Patch 106300
  — Patch 106327
  — Patch 106541
  — Patch 106950
  — Patch 106980
  — Patch 107081
  — Patch 107226
  — Patch 107226
  — Patch 107544
  — Patch 107636
  — Patch 107656
  — Patch 107702
  — Patch 108374

The latest versions of the following patch IDs are required for Solaris 2.8 systems:

— Patch 108652

— Patch 108921

— Patch 108940

For further details see Sun's Solaris Java patch page at: http://java.sun.com/j2se/1.3/install-solaris-patches.html

Patches may be retrieved from Sun's Patchfinder at: http://sunsolve.sun.com

- The latest SAM21 client software version must be installed.

- The CS 2000 SAM21 manager client application requires the client machine to be configured in a pluggable authentication module (PAM) framework.

Action

At the Client Workstation

1   Log on the client workstation using the root user ID and password.

> *Note 1:* For all upgrades, the client software must be upgraded to match the server software before it is started.

> *Note 2:* If an attempt was made to launch the CS 2000 SAM21 manager client application (by typing: >sdm/bin/sam21gui), the user would receive a mismatch error. See the Mismatch error figure below. This indicates that the client machine needs to be upgraded to match the version of the manager running on the CS 2000 Core Manager. This error message only occurs for MNCL or maintenance release upgrades (not for upgrades from SN03 to SN04).

Mismatch error

```
┌──────────────────────────────────────────────────────────┐
│                    SAM21-EM Failure                       │
├──────────────────────────────────────────────────────────┤
│  ┌─┐  Could not launch the SAM21-EM client application.   │
│  │i│  SAM21-EM client-server mismatch:                    │
│  └─┘                                                       │
│        Client: 6.0.384.0                                   │
│        Server: 6.0.483.0                                   │
│                                                            │
│        Attempting to connect the SAM21-EM client applica-  │
│        tion to a server of a different version. Application│
│        has aborted.                                        │
│                                                            │
│                       ┌──────┐                             │
│                       │  OK  │                             │
│                       └──────┘                             │
└──────────────────────────────────────────────────────────┘
```
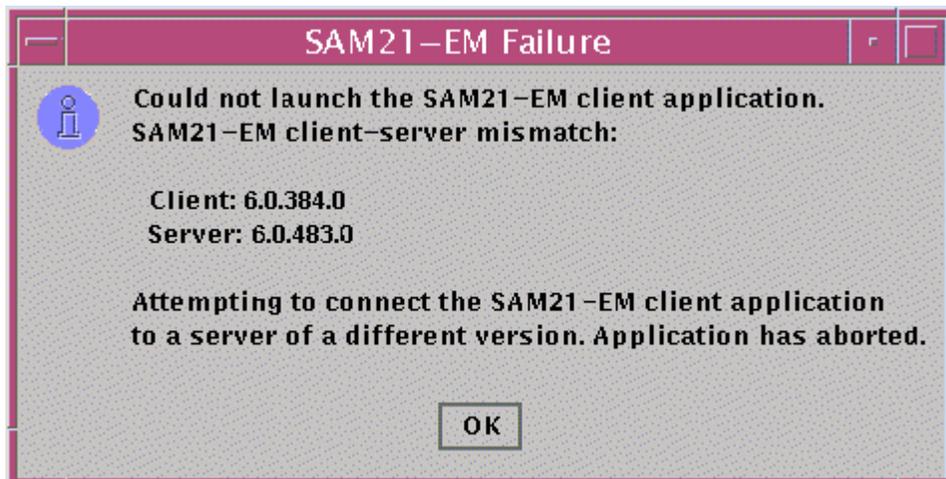
2   If a previous manager client has been installed, verify the client machine is still using the old version of the manager software by typing:

> `/sdm/bin/sam21gui -version`

The resulting version number indicates that we have not yet upgraded the client to match the server.

3   Access the directory where the Client Installer and Launcher (CIL) tool is to be located after the FTP operation by typing

> `cd /tmp`

and pressing the Enter key.

4   Connect to the CS 2000 Core Manager using file transfer protocol (FTP) by typing

> `ftp <ipaddress>`

and pressing the Enter key.

where

ipaddress
is the IP address of the CS 2000 Core Manager

5   Log on the CS 2000 Core Manager as an anonymous user by typing

Name:`ftp`

and pressing the Enter key.

6   When prompted for a password, ignore the prompt and press the Enter key to continue the procedure.

7 Get the Client Installer and Launcher tool (CIL) by typing

`ftp>` **`cd /swd`**

and pressing the Enter key.

`ftp>` **`get cil`**

and pressing the Enter key.

8 Quit the connection to the CS 2000 Core Manager by typing

`ftp>` **`quit`**

and pressing the Enter key.

9 Make the CIL program executable by typing

`>` **`chmod 755 cil`**

and pressing the Enter key.

10 Execute CIL by typing

`>` **`./cil`**

and pressing the Enter key.

Response:

```
    SDM CLIENT SOFTWARE INSTALLATION

Enter the IP address or hostname of the SDM that
you want to download the client software from.

SDM's Address:
```

11 At the CIL menu, connect to the CS 2000 Core Manager by typing

`SDM's Address:`**`<ipaddress>`**

and pressing the Enter key.

where

ip_address
is the IP address or the host name of the CS 2000 Core Manager.

12   Select the CS 2000 Core Manager fileset to upgrade the client workstation to by typing

```
cil> select <#>
```

and pressing the Enter key.

where

#
is the number of the CS 2000 Core Manager fileset. An example of the fileset is snm_sam21_client_7.0.*xxx*.n.tar.Z where xxx represents the latest version and n represents the MNCL version.

13   Install the selected fileset by typing

```
cil> apply
```

and pressing the Enter key.

14   Enter the IP address of the server when prompted for it by typing the IP address at the prompt and pressing the Enter key.

15   You have completed this procedure.

Stopping and starting the DDMS proxy

Application

> **ATTENTION**
> Use this procedure only if you have been directed here from the
> Post-upgrade procedures in the Upgrades section. Perform this
> procedure after a software upgrade.

Use this procedure to stop and start the DDMS proxy on the CS 2000
Management Tools server. The DDMS proxy enables communication
between the CS 2000 Management Tools server and the core.

Prerequisites

None

Action

Perform the following steps to complete this procedure.

At your workstation

1   Telnet to the CS 2000 Management Tools server by typing

    > **telnet <IP address>**

    and pressing the Enter key.

    where

    IP address
        is the IP address of the CS 2000 Management Tools server

2   When prompted, enter your user ID and password.

3   Change to the root user by typing

    $ **su - root**

    and pressing the Enter key.

4   When prompted, enter the root password.

5   Use the following table to determine your next step.

If you want to	Do
stop the DDMS proxy	step 6
start the DDMS proxy	step 7

6   Stop the DDMS proxy by typing

```
# /etc/init.d/ddmsproxy stop
```

and pressing the Enter key.

7   Start the DDMS proxy by typing

```
# /etc/init.d/ddmsproxy start
```

and pressing the Enter key.

8   You have completed this procedure.

Stopping and starting the Apache Web Server and Tomcat Servlet Container

Application

> **ATTENTION**
> Use this procedure only if you have been directed here from the
> <u>Post-upgrade procedures</u> in the Upgrades section. Perform this
> procedure after a software upgrade.

Use this procedure to stop and start the Apache Web Server and
Tomcat Servlet Container components on the CS 2000 Management
Tools server.

Prerequisites

None

Action

Perform the following steps to complete this procedure.

At your workstation

1   Telnet to the CS 2000 Management Tools server by typing

> `telnet <IP address>`

and pressing the Enter key.

where

IP address
is the IP address of the CS 2000 Management Tools server

2   When prompted, enter your user ID and password.

3   Change to the root user by typing

$ `su - root`

and pressing the Enter key.

4   When prompted, enter the root password.

5 Use the following table to determine your next step.

If you want to	Do
stop the Apache web server and Tomcat servlet container	step 6
start the Apache web server and Tomcat servlet container	step 7

6 Stop the Apache Tomcat component by typing

   # **/etc/init.d/apache stop**

   and pressing the Enter key.

7 Start the Apache Tomcat component by typing

   # **/etc/init.d/apache start**

   and pressing the Enter key.

8 You have completed this procedure.

Configuring the SESM server application

Application

Use this procedure to configure the SESM server application after your CS 2000 Core Manager has been upgraded from SN04 to SN06.

ATTENTION
Perform this procedure only if you are upgrading from SN04 to SN06.

Prerequisites

Prior to performing this procedure, obtain the following information:

- the IP address of the CS 2000 Management Tools server
- the CLLI name of the office (CM CLLI), and the IP address of the SDM (CS 2000 Core Manager) associated with the CLLI

Note: Only the root user can perform this procedure.

Action

Perform the following steps to complete this procedure.

At your workstation

1 Telnet to the CS 2000 Management Tools server by typing

> `> telnet <server>`

and pressing the Enter key.

where

> **server**
> is the IP address or host name of the CS 2000 Management Tools server

2 When prompted, enter your user ID and password.

3   Change to the root user by typing

```
$ su - root
```

and pressing the Enter key.

4   When prompted, enter the root password.

5   Change directory by typing

```
# cd /opt/nortel/NTptm/bin
```

and pressing the Enter key.

6   Execute the configuration script by typing

```
# ./configure
```

and pressing the Enter key.

Example response

```
SESM Common Configuration script

What do you wish to configure?

 1) SESM Common Configuration (IP addresses,
    DCE)
 2) Oracle Configuration
 3) EPM Configuration
 4) LTM Configuration
 5) Syslog Configuration
 6) Provisioning Configuration
 7) SESM SDM Configuration
 8) Display Settings
 9) Exit Configuration Setup
```

7   Select the "SESM SDM Configuration" option by typing

```
#? 7
```

and pressing the Enter key.

8   When prompted, enter the CLLI name of the SDM (CS 2000 Core Manager) office (CM CLLI).

> *Note:* The CLLI name is case sensitive.

9 When prompted, enter the IP address of the SDM (CS 2000 Core Manager) associated with the CM CLLI.

10 The system executes the command and displays the following message:

```
Do you wish to enter SDM data for any more CMs?
1) Yes
2) No
```

Select No by typing

`#?` **2**

and pressing the Enter key.

11 The system returns you to the SESM configuration main menu.

12 Exit SESM configuration by typing

`#?` **9**

and pressing the Enter key.

13 You have completed this procedure.