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, 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, delivered on tape or electronically

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

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

Tools and utilities

The information in this document provides procedures using common upgrade tools and utilities for:

- CS2000 Core Manager platform software upgrades available from tape or electronic software delivery (ESD): SDM Out of Service (OOS) Upgrade Procedure and enhanced SDM upgrade procedure (ESUP)

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

- Hardware upgrades to the latest CPU modules

Upgrade process overview

Task flow diagrams and detailed instructions for specific upgrade procedures are provided in this document.
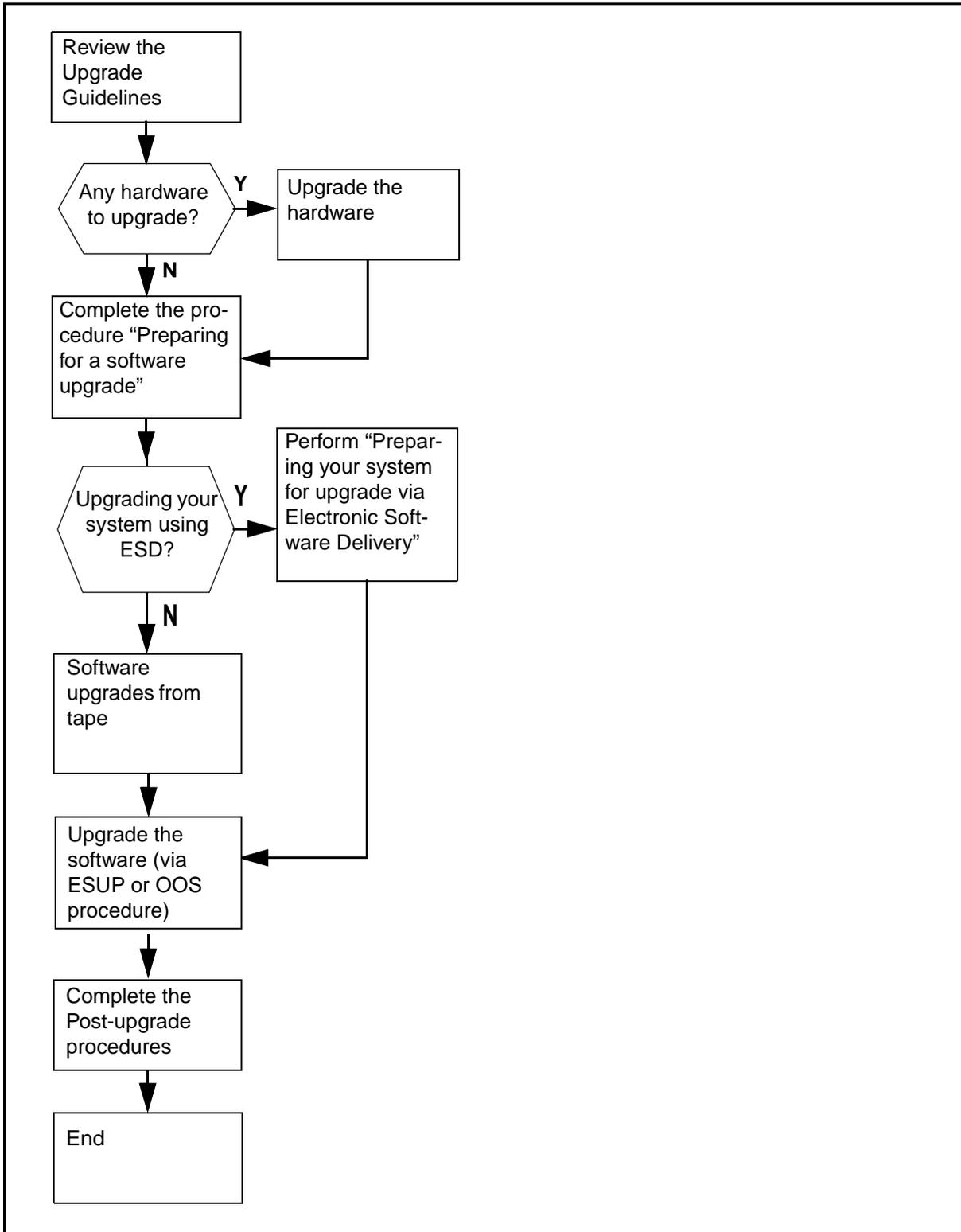

ATTENTION
For an MNCL upgrade, check the release notes.

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

Upgrade flowchart

The following flowchart provides a summary of the upgrade process. Use the instructions in the specific procedures to complete each task.

Summary of upgrading the CS 2000 Core Manager

```
┌─────────────────┐
│ Review the      │
│ Upgrade         │
│ Guidelines      │
└─────────────────┘
         │
         ▼
      ╱───────────╲        Y    ┌─────────────────┐
     ╱ Any hardware ╲───────────▶│ Upgrade the     │
     ╲ to upgrade?  ╱            │ hardware        │
      ╲───────────╱             └─────────────────┘
         │ N                             │
         ▼                               │
┌─────────────────┐                      │
│ Complete the pro-│◀────────────────────┘
│ cedure "Preparing│
│ for a software   │
│ upgrade"         │
└─────────────────┘
         │
         ▼
      ╱───────────╲        Y    ┌─────────────────┐
     ╱ Upgrading your╲──────────▶│ Perform "Prepar-│
     ╲ system using  ╱           │ ing your system │
      ╲   ESD?     ╱             │ for upgrade via │
       ╲─────────╱               │ Electronic Soft-│
         │ N                     │ ware Delivery"  │
         ▼                       └─────────────────┘
┌─────────────────┐                      │
│ Software        │                      │
│ upgrades from   │                      │
│ tape            │                      │
└─────────────────┘                      │
         │                               │
         ▼                               │
┌─────────────────┐                      │
│ Upgrade the     │◀─────────────────────┘
│ software (via   │
│ ESUP or OOS     │
│ procedure)      │
└─────────────────┘
         │
         ▼
┌─────────────────┐
│ Complete the    │
│ Post-upgrade    │
│ procedures      │
└─────────────────┘
         │
         ▼
┌─────────────────┐
│ End             │
│                 │
└─────────────────┘
```

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 two methods of upgrading the CS 2000 Core Manager to the CS2E0070 software release:

- Out of Service (OOS) Upgrade Procedure via Electronic software delivery (ESD) or tape: This procedure busies the CS 2000 Core Manager and upgrades both domains at the same time.

- 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.

  ESUP upgrades can be performed in the following ways:

  — via a telnet connection (only for upgrades to SDM20/CS2E0070 or later)

  — via a remote console connection (modem, terminal server, etc.) (all releases)

  — via a local console connection (vt100 terminal/emulation) (all releases)

When to use each method

The following table indicates when to use the OOS Upgrade Procedure or ESUP method to upgrade your CS 2000 Core Manager to the CS2E0070 release:

If you are upgrading...	OOS Upgrade Procedure	ESUP
a rootvg-only system	x	
a rootvg/datavg system	x	x
the software and CPU hardware		

Hardware baseline

The following table indicates the supported hardware to upgrade to the CS2E0070 release.

Hardware baseline

PEC	Description
CPU	
NTRX50NB	Arthur 750 - 400MHz/512MB
Disk/DAT and LAN PM	
NTRX50ND	9G + DAT (rootvg)
	Note: Replacements for the NTRX50ND will be filled on a best-effort basis before and after the MD date of 31 December 2004. After 31 December 2004 the NTRX50NM will be the replacement for the NTRX50ND.
NTRX50FS	LAN personality module
Disk expansion	
NTRX50NC	9G + 9G (datavg)
	Note: Replacements for the NTRX50NC will be filled on a best-effort basis before and after the MD date of 31 December 2004. After 31 December 2004 the NTRX50NL will be the replacement for the NTRX50NC.
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

You can have different MFIO/UMFIO datavg and rootvg combinations configured on your system. The following table lists the combinations that are supported for the CS2E0070 release.

Supported MFIO and UMFIO, datavg and rootvg configurations

Configura-tion	Domain 0		Domain 1		Total disk storage
	Rootvg	**Datavg**	**Rootvg**	**Datavg**	
Most basic (not recommended)	NTRX50GN 4-Gbyte	N/A	NTRX50GN 4-Gbyte	N/A	4-Gbyte (rootvg only)
Moderate	NTRX50GN 4-Gbyte	NTRX50GP 8-Gbyte	NTRX50GN 4-Gbyte	NTRX50GP 8-Gbyte	12-Gbyte
Largest with 4-Gbyte disk	NTRX50GN 4-Gbyte	NTRX50GP (8-Gbyte) + (expansion chassis) NTRX50GP (8-Gbyte) 16-Gbyte	NTRX50GN 4-Gbyte	NRTX50GP (8-Gbyte) + (expansion chassis) NTRX50GP (8-Gbyte) 16-Gbyte	20-Gbyte
Basic with 9-Gbyte disk	NTRX50ND 9-Gbyte[1]	N/A	NTRX50ND 9-Gbyte[1]	N/A	9-GByte (rootvg only)
Moderate	NTRX50ND 9-Gbyte[1]	NTRX50NC 18-Gbyte[2]	NTRX50ND 9-Gbyte[1]	NTRX50NC 18-Gbyte[2]	27-Gbyte
Largest with 9-Gbyte disk	NTRX50ND 9-Gbyte[1]	NTRX50NC (18-Gbyte)[2] + (expansion chassis) NTRX50NC (18-Gbyte) 36-Gbyte	NTRX50ND 9-Gbyte[1]	NTRX50NC (18-Gbyte)[2] + (expansion chassis) NTRX50NC (18-Gbyte) 36-Gbyte	45-Gbyte
4-Gbyte/ 9-Gbyte mix	NTRX50GN 4-Gbyte	NTRX50NC 18-Gbyte[2]	NTRX50GN 4-Gbyte	NTRX50NC 18-Gbyte[2]	22-Gbyte
Basic with 36-Gbyte disk	NTRX50NM 36-Gbyte	N/A	NTRX50NM 36-Gbyte	N/A	36-Gbyte

Supported MFIO and UMFIO, datavg and rootvg configurations

Configura-tion	Domain 0		Domain 1		Total disk storage
	Rootvg	**Datavg**	**Rootvg**	**Datavg**	
Largest with only 36-Gbyte disk	NTRX50NM 36-Gbyte	NTRX50NL 72-Gbyte	NTRX50NM 36-Gbyte	NTRX50NL 72-Gbyte	108-Gbyte
4-Gbyte/ 36-Gbyte mix	NTRX50GN 4-Gbyte	NTRX50NL 72-Gbyte	NTRX50GN 4-Gbyte	NTRX50NL 72-Gbyte	76-Gbyte
9-Gbyte/ 36-Gbyte mix	NTRX50ND 9-Gbyte1	NTRX50NL 72-Gbyte	NTRX50ND 9-Gbyte1	NTRX50NL 72-Gbyte	81-Gbyte

> *Note 1:* The maximum number of NTRX50GP MFIOs allowed in a system is four. The expansion shelf is required for this configuration.
>
> *Note 2:* NTRX50GN and NTRX50GP will not be supported after November 2004. These disks should be replaced by NTRX50GP and NTRX50NM.
>
> *Note 3:* The maximum number of NTRX50NC MFIOs allowed in a system is four. The expansion shelf is required for this configuration.
>
> *Note 4:* The maximum number of NTRX50NL UMFIOs allowed in a system is two. Disk expansion shelf is not required in this configuration.
>
> *Note 5:* MFIOs and UMFIOs must be deployed in matched pairs. MFIO and UMFIO modules cannot be intermixed; a volume group must have all one or the other. For example, a pair of 4-Gbyte MFIO modules can be mixed with a pair of 9-Gbyte MFIOs in datavg. A pair of 9-Gbyte MFIOs cannot be mixed with a pair of 36-Gbyte UMFIOs in datavg.
>
> *Note 6:* A single 4-Gbyte MFIO module cannot be mixed with a single 9-Gbyte module or a 36-Gbyte module to form a pair.

1. Replacements for the NTRX50ND will be filled on a best-effort basis before and after the MD date of 31 December 2004. After 31 December 2004 the NTRX50NM will be the replacement for the NTRX50ND.
2. Replacements for the NTRX50NC will be filled on a best-effort basis before and after the MD date of 31 December 2004. After 31 December 2004 the NTRX50NL will be the replacement for the NTRX50NC.

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:

- CS2E0004.3
- CS2E0005.2
- CS2E0006.0.1

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 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 CSP17 release or higher to upgrade the CS 2000 Core Manager to the CS2E0070 release.

Filesets to solution mapping

This module provides information on the filesets included in the CS2E0007 load.

The following table lists CS2E0007 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)

| | | Succession Solutions | | | | | | |
| | | IAC | IAW | PT-AAL1 | PT-IP | UA-AAL1 | UA-IP | DCE? |
Fileset	**Description**							
SDM_VERSION.info	CS2E0007 7.0	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.dfquery	Check disks and disk drives	Y	Y	Y	Y	Y	Y	N
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

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

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

Fileset	Description	IAC	IAW	PT-AAL1	PT-IP	UA-AAL1	UA-IP	DCE?
				Succession Solutions				
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
SDM_BMI.bmi	Base Maintenance Interface	Y	Y	N	Y	Y	Y	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

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

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

Fileset	Description	IAC	IAW	PT-AAL1	PT-IP	UA-AAL1	UA-IP	DCE?
		Succession Solutions						
SDM_OMDD.omdd	OM Delivery	Y	Y	Y	Y	Y	Y	N
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 SN07 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

Purpose

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:

-

-

If the files already exist in a directory on the CS 2000 Core Manager, proceed with the OOS Upgrade Procedure or ESUP upgrade using the appropriate procedure.

Prerequisites

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 the repository server by FTP.

Before you can begin preparing the repository server for the CS 2000 Core Manager load, you will need a decompression tool on the repository server 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 that 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.

Procedures

Preparing the repository server for the CS 2000 Core Manager load

On the client workstation

1   Choose a directory location on the repository server to which 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 `df -k.` command:

> *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>:

```
> cd <directory_path_A>
```

where

> *directory_path_A*
> is the directory location on the repository server to which 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:

```
> mkdir CS2E0070
```

4 Access the CS2E0070 directory:

```
> cd CS2E0070
```

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

6 Display your directory:

```
> pwd
```

Example response

```
/local/CS2E0070
```

7 List the files in the directory:

```
> ls -al
```

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
CS2E0070.7.V.NCL.NAP.VAULT.2.D.tar.gz
```

8 Check the disk space availability on the server:

```
> df -k.
```

The system displays the free unallocated disk space.

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

```
> gunzip <order_name>.tar.gz
```

or

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

where

> *order_name*
> is the order name for the current load of this release

Example command

```
> gunzip CS2E0070.7.V.NCL.NAP.VAULT.2.D.tar.gz
```

or

```
> gzip -d CS2E0070.7.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, depending on the computing capabilities of the repository server.

10   List the files in the directory:

> **> ls -al**

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
CS2E0070.7.V.NCL.NAP.VAULT.2.D.tar
```

11   Unarchive (un tar) the filesets:

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

where

> *order_name*
>   is the order name for the current load of this release

Response

The system creates a subdirectory (for example, CS2E0070.7.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:

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

where

> *order_name*
> is the order name for the current load of this release

Example command

```
> rm CS2E0070.7.V.NCL.NAP.VAULT.2.D.tar
```

Go to step .

14   Move the tar file to a different directory:

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

where

> *file name*
> is the name of the tar file
>
> *directory path*
> is the 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:

```
# cd <directory_path>
```

where

   directory_path
    is the logical volume directory that you want to convert

4

<table>
<tr><td>⚠️</td><td>

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` . 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.

</td></tr>
</table>

Remove all files and subdirectories within this logical volume directory:

```
# rm -r *
```

5   Access the storage level:

```
# sdmmtc storage
```

6   Add a logical volume to store the ESD loads:

```
> esdadd
```

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. If the backup Required alarm is disabled, the alarm will not be raised, but it is still recommended that you perform a backup using the procedure "Creating system image backup tapes (S-tape) manually" in

the Security and Administration document so that you can restore your system at any time if necessary. If the alarm is enabled, and you choose not to perform a backup, you can force-clear the alarm using the procedure "Clearing a system image backup Required or Failed alarm" in the Fault Management document.

If you	Do
want to convert an existing logical volume	enter the name of the logical volume to be converted (including the leading forward slash (/) symbol), 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

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 necessary, you can increase the size of a logical volume using the procedure "Increasing the size of a logical volume" in the Security and Administration document.

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

8   Exit the maintenance interface:

```
> quit all
```

9   Change to the /swd/sdm/esd upgrade directory:

```
# cd /swd/sdm/esd
```

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

Example of 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/CS2E0070/CS2E0070.7.V.NCL.NAP.VAULT.2.D
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.

Software upgrade

This section contains procedures associated with upgrading a CS 2000 Core Manager software load.

Preparing the CS 2000 Core Manager for a software upgrade

Purpose

Nortel Networks recommends that you perform the procedures in this section prior to a CS 2000 Core Manager software upgrade. The purpose of these procedures is to ensure that the CS 2000 Core Manager is configured correctly, and that all hardware and software are in good operating condition.

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

ATTENTION

Nortel Networks strongly recommends that you **perform this procedure seven days before** 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.

By completing each of the pre-check tasks and submitting a list of any failed pre-check tasks to Nortel Networks, you will minimize potential disruption to the software upgrade, minimize any risk to the switch, and assist Nortel Networks in providing full support on the upgrade, should assistance be required. Nortel Networks will assist in recovering a 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

Procedures

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 any pre-check step that failed.

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

Capturing the pre-check session file

At the CS 2000 Core Manager VT100 console

1   Start the capture of the pre-check session:

    #script -a sdmprecheck_YYMMDD

    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.

3   You have completed this procedure.

Pre-check list

Each required pre-check task 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

Before beginning the software upgrade process, ensure that 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-Computing Load (MNCL) release installed on the CS 2000 Core Manager before you upgrade to the new NCL release. Refer to for the software baseline.

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

- Ensure that 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.

  Note: Make sure that you have selected one of the brands and lengths approved by Nortel Networks. The approved brands are: Hewlett Packard (HP), Maxell, Verbatim, Imation. The approved lengths (from any of the listed manufacturers) are: 90-meter (90M), 120-meter (120M), or 125-meter (125M). The 125M tape

is approved for UMFIOs only, provided that your system is equipped with DDS3-capable devices to read the content of the tape.

- 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.

- Check your VT100 terminals and cables.

- Clean tape drive 0 (slot 2) and tape drive 1 (slot 13) if you will be upgrading using the procedure Software upgrades from tape on page 48 or directly from tape. Refer to the procedure "Cleaning the DAT drive" in the Fault Management document.

    Note: Nortel Networks recommends that you upgrade your system directly from tape only if you are unable to complete the procedure Software upgrades from tape on page 48.

- 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 that the following hardware spares are on site (check which versions of these cards you have on your system):
    — CPU controller card
    — DS512 controller card
    — spare hard drive module
    — spare DAT/hard drive module

- Ensure that adequate backup space is available on the Communication Server 2000 core, because the upgrade procedure stops the Billing Application for
    — over 1 hour (OOS Upgrade Procedure)
    — approximately 20 minutes (ESUP)

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

System audit pre-check

The purpose of the system audit pre-check is to execute a 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 CS 2000 Core Manager Basics document.

Note: Once your system is upgraded to the CS2E0070 software 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 upgrading to CS2E0070.

Installing the system audit script

At the VT100 console

1   Determine whether the system audit functionality exists on your CS 2000 Core Manager:

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

If sysaudit script	Do
does not exist on your system	step 2
exists on your system	Performing the system audit pre-check on page 32

2   Use the following table to determine your next step.

If the fileset is	Do
on tape	insert the tape labeled CS2E0070.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 from tape:

`# installp -ad /dev/rmt0 SDM_PRECHECK.sysaudit`

Response

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

Press the Enter to key to continue.

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 .

4   Install the system audit precheck software from a directory:

```
# installp -ad <dir> SDM_PRECHECK.sysaudit
```

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   You have completed this procedure. To perform the pre-check,
follow the instructions in [Performing the system audit pre-check](#).

Performing the system audit pre-check

At the VT100 console

1   Access the pre-check directory:

```
# cd /sdm/mtce/precheck
```

2   Execute the system audit check:

```
# ./sysaudit -all
```

Response

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

3   Display the system audit report:

```
# ./sysaudit -report
```

Use the procedure "Viewing the system audit report and taking corrective action" in the Fault Management document (start at step 2) to analyze the report and take corrective action, if necessary.

4   Return to the default directory:

```
# cd
```

5   You have completed this procedure.

Hardware baseline pre-check

The purpose of the hardware baseline pre-check is to display the hardware PEC codes and ensure compatibility with the CS2E0070 hardware baseline.

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

Performing the hardware baseline pre-check

At the VT100 console

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

```
# locate
```

2   Refer to Hardware baseline on page 6 and verify that the product engineering codes (PECs) on the output meet the minimum hardware baseline.

3   You have completed this procedure.

CPU stability pre-check

The purpose of the CPU stability 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.

WARNING
Because the master CPU will be Offline, the system will be in a NON-Fault tolerant mode for the duration of the pre-check.

Performing the CPU stability pre-check

At the VT100 console

1   Determine which CPU is currently master:

```
# ftctl -status
```

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:

```
# sdmmtc hw
```

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:

```
> bsy  <domain> cpu
```

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 busy CPU to service:

> rts   <domain> cpu

where

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

    Example
    # rts 1 cpu

5   Use the following table to determine your next step.

If the rts command	Do
succeeds	step 7
fails	step 6

6   The CPU reintegration may have 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 -vL 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 the reintegration must be deferred until the system load has lowered. You can attempt the reintegration as many times as necessary, until it succeeds. Once you have successfully reintegrated the CPUs, go to step 7.

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

7   Exit the hardware level:

```
> quit all
```

8 Monitor the integration status of the CPU:

```
# ftctl -status
```

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)
```

9   Wait until the CPU has been fully integrated, then re-enter the hardware level to ensure that the CPU has returned to service:

```
# sdmmtc hw
```

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 >
```

10   Repeat steps 3 through 9 for the second CPU. For example, if previously you have busied and returned to service CPU 1, repeat steps 3 through 9 for CPU 0.

11   You have completed this procedure.

DS512 fiber link pre-check

The purpose of the DS512 fiber link 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, you must perform the DS512 fiber link pre-check during a maintenance shift to ensure that the traffic on the DS512 links does 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:

> `mapci;mtc;appl;sdm`

2   Identify 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:

> `trnsl`

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>`

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:

    > bsy 0 link <link_number>

    > bsy 1 link <link_number>

    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:

 # sdmmtc hw

6   Busy the DS512 controller module:

> bsy <domain_number> 512

where:

<domain_number>
is the domain number of the DS512 link

7   Return the DS512 controller module to service:

> rts <domain_number> 512

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:

> rts 0 link <link_number>

> rts 1 link <link_number>

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 has been busied and returned-to-service successfully.

10   You have completed this procedure.

Application/fileset status and configuration pre-check

The purpose of the application/fileset status and configuration pre-check is to verify that the applications on the CS 2000 Core Manager are in-service and configured.

At the VT100 console

1   Access the application level:

```
# sdmmtc appl
```

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

 # config

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 that all required in-service applications are configured. Use the up/down commands to scroll through the list of applications if necessary.

5   You have completed this procedure.

User configuration pre-check

The purpose of the user configuration pre-check is to ensure that the CS 2000 Core Manager user attributes are configured correctly.

Performing the user configuration pre-check

At the VT100 console

1   Display the user attributes for the root user:

       # **lsuser root**

2   Display the user attributes for the maint user:

       # **lsuser maint**

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

4   You have completed this procedure.

Ethernet configuration pre-check

The purpose of the Ethernet configuration pre-check is to display the status and configuration of the Ethernet interfaces.

Performing the Ethernet configuration pre-check

At the VT100 console

1   Identify and record the IP address for an external network element than can be used to test network continuity.

 # hostent -s

> *Note:* Select a known functional external network element. Do not use the loopback or proprietary DS512 CM and SDM IPs.

2   Display the configuration and status of the Ethernet interfaces:

 # dbgent

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
```

3   Verify that the selected external network element can be reached.

 # ping -c 3 <ip_address>

4   Switch the active and backup Ethernet interfaces.

```
#  dbgent -sl ent0
```

5   Verify that the switch occurred.

```
# dbgent
```

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
```

6   Verify that the selected external network element can still be reached.

```
# ping -c 3 <ip_address>
```

7   Switch the active and backup Ethernet interfaces.

```
#  dbgent -sl ent0
```

8   Verify that the switch occurred.

```
# dbgent
```

9   Verify that the selected external network element can still be reached.

```
# ping -c 3 <ip_address>
```

10   You have completed this procedure.

Software upgrades from tape

> **ATTENTION**
> If you are planning to upgrade your system from tape, Nortel Networks strongly recommends that you upload the software from tape to a disk, and then upgrade your system from the directory created during this procedure, in order to avoid any potential tape problems during the upgrade.

The purpose of transferring the upgrade software from tape to a disk is to help ensure a trouble-free upgrade by avoiding tape problems that can occur during the upgrade.

Installing 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 the procedure "Cleaning the DAT drive" in the Fault Management document.

3 Insert the tape labeled "CS2E0070 NCL 7.x (1 of 1)" into the tape drive in slot 2 (DAT0) or slot 13 (DAT1).

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

- If the tape is inserted in slot 2:

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

- If the tape is inserted in slot 13:

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

  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:

`# sdmmtc`

6 List the filesets in directory /home/swd:

`> apply /home/swd`

7 Select the UPGRADE Tools fileset:

`> select <x>`

where

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

8 Install the UPGRADE Tools fileset:

`> apply`

9 If prompted, confirm the command:

`> y`

10 Exit the sdmmtc interface:

> **`> quit all`**

Uploading 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:

`# unpacktape`

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

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:

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

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

4 Use the following table to determine your next step.

If in step 2 you have selected option	Do
automatic	the system provides the location of the directory where the tape load is being transferred. ***Record the directory path for reference***, then go to step 9.
interactive	continue with step 5

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

- **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

6   Use the following table to determine your next step.

If you entered	Do
yes	enter the directory path where you want to transfer the load, and press the Enter key. Go to step 9.
no	go to step 7

7   To continue the procedure, enter

 # yes

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

     Note: If there is insufficient free space on datavg and rootvg, the system aborts the procedure. Contact your next level of support for further instructions.

9   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>`
Record the directory path for reference.
	go to step 12

displays a failure message *Note:* If this is your second attempt to complete the procedure, contact your next level of support.	go to step 10

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

11   Once the DAT drive is clean, repeat steps <u>1</u> through <u>9</u>.

12   You have completed this procedure. You are now ready to upgrade the CS 2000 Core Manager software.

Upgrading CS 2000 Core Manager software using ESUP

> **ATTENTION**
> Nortel Networks recommends the usage of the system console (SP0) for the upgrade. When upgrading the software using ESUP via TELNET, ensure that the device used to connect to the console port (modem, VDU - Visual Display Unit or VT-100 terminal, terminal server, dual input VDU, etc.) is configured with flow control off. Failure to turn off flow control may cause the SDM to hang during the reboot conducted at the end of each upgrade.

Purpose

This procedure provides information about upgrading your CS 2000 Core Manager software from the latest CS2E0004, CS2E0005, or CS2E0006 release to the CS2E0070 release using an enhanced SDM upgrade procedure (ESUP).

Note: This procedure does not apply to rootvg-only systems.

This procedure references other procedures in the CS 2000 Core Manager Upgrades, Fault Management, Configuration Management, Accounting, and Security and Administration documents. Ensure that you have access to those documents while performing this procedure.

You can perform this procedure from a VT100 console. You can also use this procedure 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 <u>Upgrade guidelines on page 5</u> 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 procedure <u>Preparing the CS 2000 Core Manager for a software upgrade on page 25</u> 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) manually" in the Security and Administration document. 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.

  Because you must log on to the CS 2000 Core Manager using the root user ID and password to perform the upgrade, you will need to obtain the password for the root user before you begin. Failure to log on as the root user may cause your upgrade to fail.

- Ensure that no other users are logged on during the upgrade. Only the user at the VT100 console or the upgrade telnet session 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:
  - if your system has SAM21 element manager installed, verify 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.

- If upgrading from tape, ensure that you have the tape labeled "CS2E0070 NCL 7.x (1 of 1)".

  Note: Nortel Networks recommends that you upgrade your system directly from tape only if you are unable to complete the procedure <ins>Uploading the software from tape to a disk on page 50</ins>.

- If upgrading via Electronic Software Delivery (ESD), ensure that the required files are in the directory 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 the procedures <ins>Preparing your system for upgrade via Electronic Software Delivery on page 15</ins> and "Transferring and retrieving files using SFT" in the Security and Administration document.

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

- 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 Passport 15000 and Preside MDM in Succession Networks Fault Management Troubleshooting, NN10198-912, for instructions on how to configure the pserver application.

- Ensure that 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.

- Ensure that you either

  — Have VT100 terminal emulation.
  Before you perform this procedure, it is recommended that you ensure that your terminal is capable of VT100 terminal emulation and that you can establish a VT100 connection to SP0.

  or

  — Have a PC or UNIX workstation connected to the LAN.
  Ensure that you have access to a PC or UNIX workstation from which you are able to telnet and access 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 the procedure "Querying the status of RTB for a billing stream" in the Accounting document.

- 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 document to complete the task.

Accounting procedure for each task and file transfer mode

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"

Accounting procedure for each task and file transfer mode

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`.
		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.

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

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 the procedure "Copying billing files to tape (backup)" in the Accounting document.

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 the procedure "Sending billing files from tape" in the Accounting document.

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 CS2E0070.

ATTENTION

Some obsolete applications in SN07 are automatically removed. If Remote Registration system fileset is present, it is automatically removed when upgrading to CS2E0070.

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 the procedure Recovering the system from an ESUP failure on page 109.

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

If upgrading from tape, verify that you have completed procedure Uploading the software from tape to a disk

Prepare the system

Upgrade the software

Complete Post-upgrade procedures

This flowchart summarizes the upgrade process.

To complete the tasks, use the procedures that follow the flowchart.
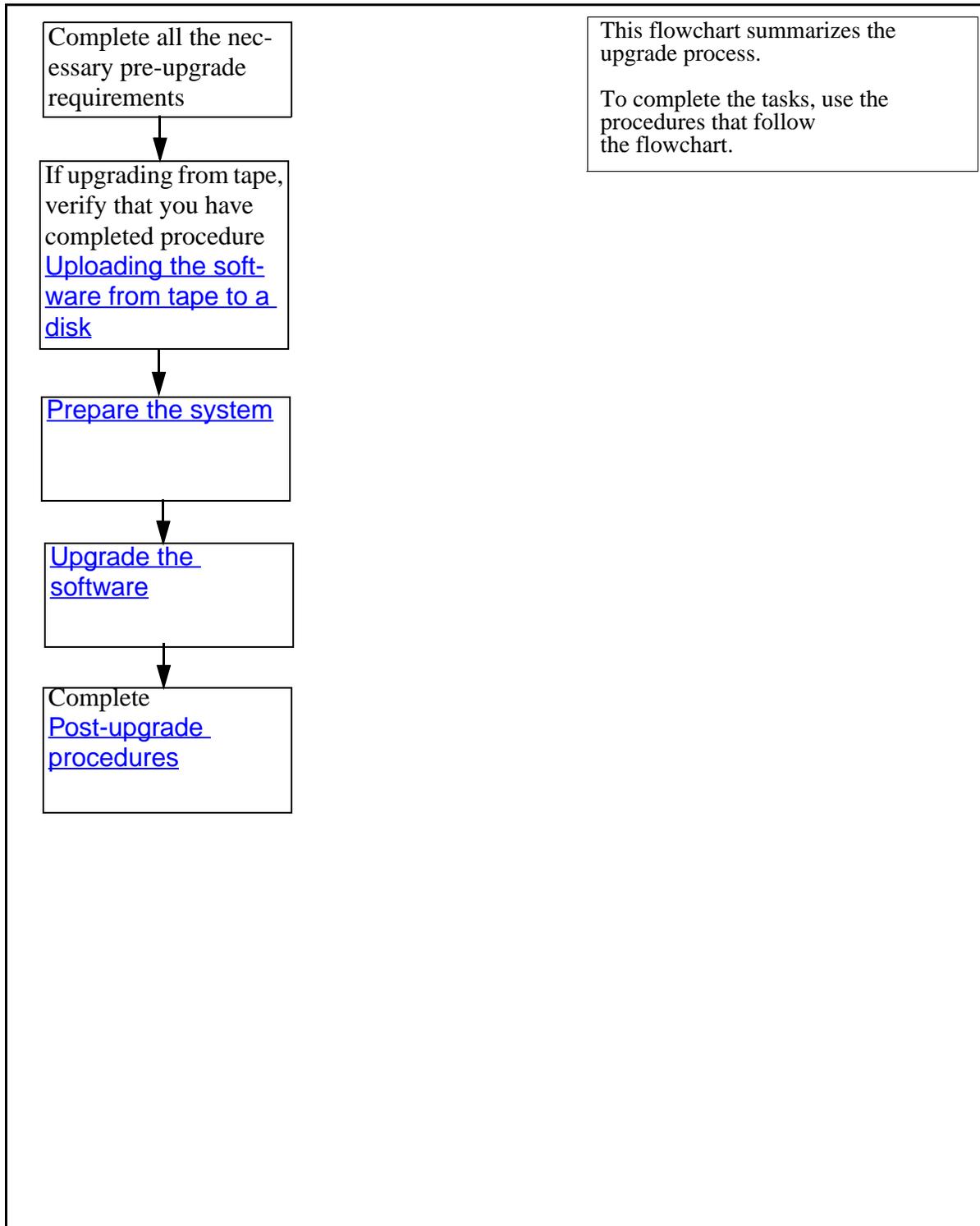
Prepare the system

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

This procedure can be performed from either a VT100 console or a
telnet session.

If you choose	Do
telnet session	step 1
VT100 console	step 2

At the PC or UNIX workstation

1 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:

        `telnet <ip_address>`

    where

        <ip_address>
           is the IP address of the CS2000 Core Manager

    c Keep window size at 80x24.

At the VT100 console or telnet session

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

3 If you are upgrading from tape (not from ESD), verify that the
procedure Uploading the software from tape to a disk on
page 50 has been completed. If not, perform the procedure
now.

4   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 Uploading the software from tape to a disk on page 50	step 5
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 "CS2E0070 NCL 7.x (1 of 1)" into the tape drive in slot 13 (DAT1) as shown in the following figure, and continue with step 5. *Note:* Wait until the tape drive stabilizes (yellow LED is off) before you proceed.

Main chassis tape drive
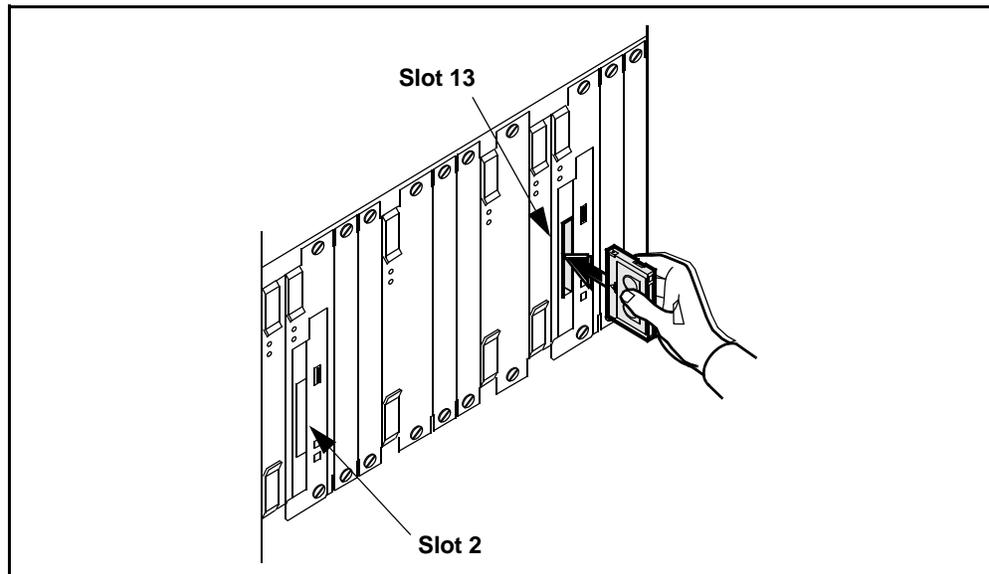
5   Perform the following substeps to remove all archived filesets from the system, which will free up disk space:

    a   Access the Details level:

       `# sdmmtc details`

    b   Show all software:

       `> filter off`

   c Select all archived filesets:

      > select all

      Note: If there are no archived filesets to remove, go to step 6.

   d Remove all archived filesets:

      > remove all

      Note: System will automatically select appropriate files to remove.

   e Confirm the command:

      > y

      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.* If the backup Required alarm is disabled, the alarm will not be raised. If the alarm is enabled, perform a backup of your new system image using procedure "Creating system image backup tapes (S-tape) manually" in the Security and Administration section. If you choose not to perform a backup, you can force-clear the alarm using procedure "Clearing a system image backup Required or Failed alarm" in the Fault section.

6   Exit the maintenance interface:

    > quit all

7   Use the following table to determine your next step.

If you	Do
have pre-loaded the software from tape, as described in procedure <u>Uploading the software from tape to a disk on page 50</u>	go to step 10
are upgrading your system from an ESD directory (not after tape pre-loading)	go to step 9
are upgrading your system directly from tape inserted in slot 13	go to step 8

8   Install the Upgrade Tools fileset:

    # installp -ad /dev/rmt1 SDM_UPGRADE.tools

    Note: When prompted, press the Enter key again.

    Go to step 10.

9 Install the Upgrade Tools fileset:

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

where

<directory>
   is the directory where the software is located

Note: When prompted, press the Enter key again.

10 Install the ESUP software by completing the following substeps.

a Begin the installation:

```
# esupinstall
```

b When prompted, select the location of the software load: 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

If you entered	Do
D	step c
0, 1, or ABORT	step d

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
```

11 Verify the Sysdump devices by completing the following steps.

Start the verification:

 # sysdumpdev -l

If the following message is displayed	Do

`primary      /dev/sysdump0`
`secondary    /dev/sysdumpnull`
`copy directory   /var/adm/ras`
`forced copy flag    FALSE`
`always allow dump   FALSE`
`dump compression    OFF`
	step 12

`primary      /dev/sysdump0`
`secondary    /dev/sysdump1`
`copy directory   /var/adm/ras`
`forced copy flag    FALSE`
`always allow dump   FALSE`
`dump compression    OFF`
	step 13

12 Change the sysdump devices to sysdump1:

#sysdumpdev -P -s /dev/sysdump1

The following message is displayed.

```
primary/dev/sysdump0
secondary/dev/sysdump1
copy directory/var/adm/ras
forced copy flagFALSE
always allow dumpFALSE
dump compressionOFF
```

13 You have completed this 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.

This procedure can be performed from either a VT100 console or a telnet session.

If you choose	Do
telnet session	step 1
VT100 console	step 2

At the PC or UNIX workstation

1 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:

    telnet <ip_address>

    where

        <ip_address>
        is the IP address of the CS2000 Core Manager

    c Keep window size at 80x24.

At the VT100 console or telnet session

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

3 Begin the upgrade:

 # esup

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

4   To continue, type

> **> go**

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

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 9
directly from tape	type 1 and press the Enter key, then go to step 6

Note: If you wish to abort, enter 0.

6   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:

> **> yes**

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.

7 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 "CS2E0070 NCL 7.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

8 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 13
not correct	replace it with the tape labeled "CS2E0070 NCL 7.x (1 of 1)", enter `go` and press the Enter key, then go to step 13

9 The system confirms that you have selected Media Type: DISK. Continue the upgrade:

> **yes**

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.

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

If the CS2E0070 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 an upload of the software from tape to a disk	enter the directory path where the files are located, then press the Enter key

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

If the directory is	Do
correct	step 12
not correct	re-type the directory path, press the Enter key, then go to step 12

12 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 Uploading the software from tape to a disk procedure	enter the directory path where the files are located, then press the Enter key.

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

13

ATTENTION

Before the system prompts you to busy the SDM it automatically sets AFT and SBA applications into offline state. ESUP will automatically brings them back in service after the SDM reboots and is returned into service.

At the PC or UNIX workstation

14 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:

        `telnet <ip_address>`

    where

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

    c Keep window size at 80x24.

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

15 If your office is equipped with a third-party Call Agent, continue with step 16. Otherwise, go to step 17.

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

    a Access the SDM maintenance level by typing

        `# sdmmtc;mtc`

    b Busy the CS 2000 Core Manager by typing

        `> bsy`

    c Confirm the busy request by typing

        `> y`

    d Continue with step 18.

At the MAP display

17 Busy the CS 2000 Core Manager level at the MAP display by completing the following substeps.

    a Access the SDM level of the MAP display:

        `> mapci;mtc;appl;sdm`

    b Busy the CS 2000 Core Manager:

        `> bsy`

    c Confirm the busy request:

        `> y`

At the MAP display

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

    `> sdmbil;post<stream>;query`

At the VT100 console or telnet session

19 Continue the procedure, by typing

    `> go`

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

The system automatically reboots. This process can take up to ten minutes.

    Note: If the upgrade is being done via telnet, the system reboot will close the telnet session.

20 Wait until the system has finished rebooting. Use the following table to determine your next step:

If you are using	Do
VT100 console	go to step 23
Telnet session	go to step 21

The upgrade automatically continues.

At the PC or UNIX workstation

21 The reboot process closed the previous telnet session. Re-establish a new telnet session by :

a

```
telnet <ip_address>
```

where

<ip_address>
is the IP address of the SDM

b Keep window size at 80x24

At the VT100 console or telnet session

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

23 Continue the upgrade:

```
# esup
```

24 Use the following table to determine your next step.

If you are	Do
prompted to configure DDMS clients	step 25
not prompted to configure DDMS clients	step 31

25 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:

```
> 1
```

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:

```
> 0
```

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

26 Use the following table to determine your next step.

If your office	Do
is equipped with a third-party Call Agent	step 27
is not equipped with a third-party Call Agent	step 35

At the PC or UNIX workstation

27 Access the Application level of the CS 2000 Core Manager maintenance interface:

```
# sdmmtc appl
```

28 Locate and busy the OSS Comms Svcs application:

```
> bsy <x>
```

where

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

29 Return the OSS Comms Svcs application to service:

```
> rts <x>
```

where

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

30 Continue with step 31 (the system automatically returns to service).

At the VT100 console or telnet session

31 Use the following table to determine your next step.

If your office	Do
is equipped with a third-party Call Agent	continue with step 34 (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 35

At the PC or UNIX workstation

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

a   Connect to the SDM from the terminal window prompt:

```
telnet <ip_address>
```

where

<ip_address>
is the IP address of the SDM

b   Keep window size at 80x24

At the VT100 console or telnet session

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

34   Continue the procedure:

```
# esup
```

The upgrade continues until you are prompted to return the SDM to service.

At the MAP display

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

a   Access the SDM level of the MAP display:

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

b   Return the CS 2000 Core Manager to service:

```
> rts
```

At the VT100 console or telnet session

36   Continue by typing

```
> go
```

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.

At the MAP display

37   Verify that all billing streams are either in-service or in recovery on the CS 2000 Core Manager side:

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

38   Use the following table to determine your next step.

If your system	Do
has SAM21 EM application, and you are upgrading from CS2E0005 to CS2E0070 or from CS2E0006 to CS2E0070 loads	step 39
does not have SAM21 EM application	step 40

At the PC or UNIX workstation

39   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:

 # sdmmtc config

b   Start the configuration process:

> config <x>

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:

> quit all

At the VT100 console or telnet session

40 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
continue the upgrade	step 41
abort the upgrade	type **abort** and press the Enter key. Complete the procedure Recovering the system from an ESUP failure on page 109.

41 Use the following table to determine your next step.

If you	Do
have SBA on your system	step 42
do not have SBA on your system	step 45

At the PC or UNIX workstation

42 Establish a telnet connection to the SDM by completing the following substeps.

 a Open a terminal window that is VT100 compatible.

 b Log onto the SDM from the terminal window prompt:

 telnet <ip_address>

 where

  <ip_address>
   is the IP address of the SDM

 c Keep window size at 80x24.

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

43 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 were recorded, continue with step 45.

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

44 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 the procedure "Returning RTB stream instance to service" in the Accounting document.

At the VT100 console

45

<table>
<tr>
<td>⚠</td>
<td>

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.

</td>
</tr>
</table>

Begin the integration process:

```
> go
```

When the system confirms that the upgrade is complete, go to step 46.

46   Complete any post-upgrade commissioning:

```
# sdmconfig auto
```

47   If you have the SDM Billing Application (with or without the SBA Automatic File Transfer application), proceed to the section Upgrade the SBA and AFT applications on page 79, and then return to step 48.

48   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, and then return to step 49.

49   Use the following table to determine your next step.

If you	Do
need to install new CS2E0070 applications and services	step 50
do not need to install new CS2E0070 applications and services	step 51

50   Install new CS2E0070 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 51.

> *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.

51   You have completed the procedure.

Apply the SDM_Base.dfquery fileset

This fileset must be manually applied after an upgrade.

At the VT100 console or telnet session

1   Access the maintenance interface:

```
# sdmmtc
```

2   Use the following table to determine your next step.

If upgrading from	Do
a directory (ESD or pre-loaded from tape)	step a
directly from tape	step c

a   List the filesets:

```
> apply <directory_path>
```

where

> **<directory_path>**
> is the directory where the filesets are located

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

  b Go to 3.

  c List the filesets:

```
> apply <domain_number>
```

where

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

3   Select the SDM_BASE.dfquery fileset;

```
> select <x>
```

where

> **<x>**
>   is the number next to the SDM_BASE.dfquery fileset

4   Apply the SDM_BASE.dfquery fileset:

```
> apply
```

Example response

```
You have selected to install the following new
filesets or fileset updates.

SDM_BASE.dfquery xx.xx.xx.x

Do you wish to proceed?

Please confirm ("YES", "Y", "NO", or "N")
```

5   When prompted, confirm the apply command:

```
> Y
```

6   You have completed this procedure.

7   Complete the .

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.

> **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 document. To set up the backup space, refer to procedure "Configuring the SBA on the Communication Server 2000 core" in the Accounting document.

At the VT100 console or telnet session

1 Access the maintenance interface:

`# sdmmtc`

2 Use the following table to determine your next step.

If upgrading from	Do
a directory (ESD or pre-loaded from tape)	step a
directly from tape	step c

a List the filesets:

`> apply <directory path>`

where

  <directory_path>
    is the directory where the filesets are located

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

b Go to 3.

c List the filesets:

`> apply <domain_number)`

where

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

3   Select all versions of the SDM Billing Application filesets and, if required, the SBA Automatic File Transfer filesets:

```
> select <x> <y>...
```

where

    \<x\> \<y\>...
        are the numbers next to the SDM Billing Application
        filesets and the SBA Automatic File Transfer filesets

Note: If you do not have the SBA Automatic File Transfer application on your system, do not select the AFT filesets.

4   Apply the SDM Billing Application fileset and, if required, the SBA Automatic File Transfer fileset:

```
> apply
```

Note: The system automatically selects the SDM_ACE fileset, which is required by the SBA and AFT applications. When you confirm the apply command, the system will automatically install the ACE fileset first.

Example response

```
You have selected to install the following new
filesets or fileset updates.

SBA Automatic File Transfer xx.xx.xx.x
SDM Billing Application xx.xx.xx.x

You did not select the following filesets that
are required by some of the selected filesets.
If you proceed, they will be applied
automatically before the selected filesets.

SDM ACE distribution x.x.x.x

Do you wish to proceed?
Please confirm ("YES", "Y", "NO", or "N")
```

5   When prompted, confirm the apply command:

      `> y`

6   Exit the maintenance interface:

      `> quit all`

7   If applicable, restart the AFT application as follows:

    a   Access the billing maintenance interface:

       `# billmtc`

    b   Restart the AFT application:

       `> start <session_name>`

       where

         <session_name>
           is the name of the AFT session

    c   Exit the billing maintenance interface:

       `> quit all`

8   Go back to step 47.

Upgrading CS 2000 Core Manager software using Out of Service (OOS) Upgrade Procedure

Purpose

This procedure provides information about upgrading your CS 2000 Core Manager software from the latest CS2E0004, CS2E0005, or CS2E0006 release to the CS2E0070 release using the OOS Upgrade Procedure.

Note: This procedure references other procedures in the CS 2000 Core Manager Upgrades, Fault Management, Configuration Management, Accounting, and Security and Administration NTPs. Ensure that you have access to those documents while performing this procedure.

During the 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 that the latest MNCL release is installed on your system.

  Refer to Upgrade guidelines on page 5 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 the CS 2000 Core Manager for a software upgrade on page 25 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) manually" in the Security and Administration NTP. 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 that no other users are logged on during the upgrade. Only the user at the VT100 console should be logged on. For a procedure used to determine who is logged on, refer to the section, "Accessing the CS 2000 Core Manager" in the Basics NTP for your core manager.

- Obtain the following information from your network administrator:
  — if your system has SAM21 element manager installed, verify whether DNS is configured 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. Ensure that you have the tape labeled "CS2E0070 NCL 7.x (1 of 1)".

- 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: If necessary, contact your next level of support, or refer to the procedures Preparing your system for upgrade via Electronic Software Delivery on page 15 and "Transferring and retrieving files using SFT" in the Security and Administration NTP.

- 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 Passport 15000 and Preside MDM in Succession Networks Fault Management Troubleshooting, NN10198-912, for instructions on how to 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 Management NTP for alarm-clearing
  procedures.

- Have VT100 terminal emulation. Before you perform this procedure,
  make sure that your terminal is configured for VT100 terminal
  emulation and that you can establish a connection to SP0 either
  locally or remotely through modem or terminal server.

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
CS2E0070.

Procedures

The following task flow diagram summarizes the software upgrade
process. To complete the tasks, use the instructions in the procedures
that follow the flowchart.

Task flow for upgrading CS 2000 Core Manager software using the OOS Upgrade Procedure

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

If you are upgrading from tape, perform "Preparing for a software upgrade from tape" (Not applicable for ESD).

Offline the SDM.

Prepare the system for the upgrade.

Upgrade the system software.

Return the core manager to service.

Complete the "Post-upgrade procedures"

End

This flowchart summarizes the process.

To complete the tasks, use the procedures that follow the flowchart.

ATTENTION
Read the instructions in <u>Pre-upgrade requirements on page 83</u> and <u>Upgrade notices on page 85</u>, and complete any necessary activities before you proceed with the upgrade.

ATTENTION
Nortel Networks recommends that you deliver unprocessed billing files downstream. Ensure that no unprocessed billing file remains on the system.

ATTENTION
Nortel Networks recommends that you complete the entire upgrade procedure in one session, without interruption, to avoid any unnecessary disruption in billing file processing.

Preparing for a software upgrade from tape

At the VT100 console

1   If you are upgrading from tape, verify that the procedure
     Software upgrades from tape on page 48 has been completed.

2   You have completed this procedure.

Taking the CS 2000 Core Manager offline

At the console connected to SP0 (local VT100 terminal or remote access)

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

2   If the SuperNode Billing Application (SBA) is installed on your system, determine the operational status of the SBA application and then record this status for future reference; you will be asked to return the SBA application to this operational state later on in this procedure. Use the following table to determine your first step.

If the SBA application	Do
is installed on your system and is not busy or offline	step 3
is installed on your system, but is busy or offline	step 23
is not installed on your system	step 24

At the MAP display

3   Busy all billing streams on the core. Post the required billing stream:

> `> mapci;mtc;appl;sdmbil;post<stream>`

where

> **<stream>**
>   is the name of the billing stream

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

4   Busy the posted stream:

> `> bsy`

5   Confirm the request to **bsy**:

> `> y`

6   Verify that the status of the posted stream changed to ManB (manual busy):

> `> status`

7   Repeat steps 3 through 6 for each billing stream.

8   Examine the SDMB 621 logs to determine the volume names and backup file names for each billing stream:

> **`> logutil;open sdmb 621:back 10`**

In response to the command, the system displays the sdmb 621 logs.

Example sdmb 621 log:

```
BRW_CENTREX  SDMB621  AUG03 14:19:05  4500  INFO SDM BILLING BACKUP
            STREAM=  AMA:  Backup started to record to file.

            VOLUME=  S00DAMA       FILE=  BACK01AMA_01
```

9   For each configured billing stream, verify that at least one backup file exists on at least one of the configured backup volumes.

Display the names of the backup volumes configured for the specified billing stream:

> **`> mapci;mtc;appl;sdmbil;conf view <stream>`**

where

<stream>
is the name of the billing stream

10   Verify that SBA backup file exists on at least one of the displayed backup volumes:

If the backup disk type is	Enter command
DDU	> **dskut;liv <volume name> all**
IOP	> **diskut;lf <volume name>**
SLM	> **diskut;lf <volume name>**

Note: The name of each backup file begins with "BK".

11   Repeat steps 9 and 10 for each billing stream.

At the console connected to SP0 (local VT100 terminal or remote access)

12   Close all unprocessed billing files by performing the procedure "Closing billing files", located in your Accounting NTP.

13 Send downstream all unprocessed billing files. Use the following table to determine the procedure to perform.

File transfer mode	Procedure in the Accounting NTP
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"
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 for each AFT session. Use the following commands to query AFT sessions: **`billmtc, appl, aft, aftconfg, list`**. To verify which billing files for each session are still pending, enter the following commands: **`billmtc, appl, aft, query <session_name>`**.

Note 1: To display the details about a stream, refer to the procedure "Listing billing streams" in the Accounting NTP. To list all files currently stored in a stream, refer to the procedure "Listing billing files" in the Accounting NTP.

Note 2: 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 the procedure "Copying billing files to tape (backup)" in the Accounting NTP.

Note 3: 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 using the procedure "Sending billing files from tape" in the Accounting NTP.

14 Access the APPL level of the maintenance interface:

> **> sdmmtc appl**

If the AFT application	Do
is installed on your system	step 15
is not installed on your system	step 19

15 Determine the current operational status of the AFT application and then record this status for future reference; you will be asked to return the AFT application to this operational state later on in this procedure. Use the following table to determine your next step.

If the AFT application	Do
is in service	step 16
is busy	step 18
is offline	step 19

16 Busy the AFT application:

> **> bsy <application_number>**

where

> **<application_number>**
> is the number next to the Automatic File Transfer application

17 Confirm the command:

> **> y**

18 Offline the AFT application:

> **> offl <application_number>**

> *where*

> **<application_number>**
> is the number next to the Automatic File Transfer application

19   Busy the SuperNode Billing Application (SBA):

   > `bsy <application_number>`

   where

   <application_number>
   is the number next to the SuperNode Billing Application

20   Confirm the command:

   > `y`

21   Take the SBA offline:

   > `offl <application_number>`

   where

   <application_number>
   is the number next to the SuperNode Billing Application

22   Exit from SDMMTC:

   > `quit all`

   Go to step 24

At the console connected to SP0 (local VT100 terminal or remote access)

23   Use the following table to determine your next step.

If the SBA application	Do
is busy	step 21
is offline	step 24

At the console connected to SP0 (local VT100 terminal or remote access)

24   Use the following table to determine your next step.

If your core manager	Do
is connected to a CS 2000 - Compact	step 25
is not connected to a CS 2000 - Compact	step 26

25   Busy the CS 2000 Core Manager.

   a   Access the MTC level of the maintenance interface:

      > `sdmmtc mtc`

b 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 NTP for alarm-clearing procedures. If you have alarms or faults that you cannot clear, stop and contact your next level of support.

c Busy the CS 2000 Core Manager:

> `> bsy`

d Confirm the busy request:

> `> y`

e Offline the CS 2000 Core Manager:

> `> offl`

f Exit from SDMMTC:

> `> quit all`

g Go to step 31.

At the MAP display

26 Access the SDM level of the MAP display:

> `> mapci;mtc;appl;sdm`

27 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 NTP for alarm-clearing procedures. If you have alarms or faults that you cannot clear, stop and contact your next level of support.

28 Busy the CS 2000 Core Manager:

> `> bsy`

29 Confirm the busy request:

> `> y`

30 Take the CS 2000 Core Manager offline:

> `> offl`

31 You have completed this procedure.

Preparing the system

At the local VT100 console

1   Use the following table to determine your next step.

If you are upgrading	Do
from a directory created during ESD or during the procedure Software upgrades from tape on page 48	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 "CS2E0070 NCL 7.x (1 of 1)" into the tape drive in slot 2 as shown in the following figure, and continue with step 2. *Note:* Wait until the tape drive stabilizes (yellow LED is off) before you proceed.

Inserting a tape into the tape drive
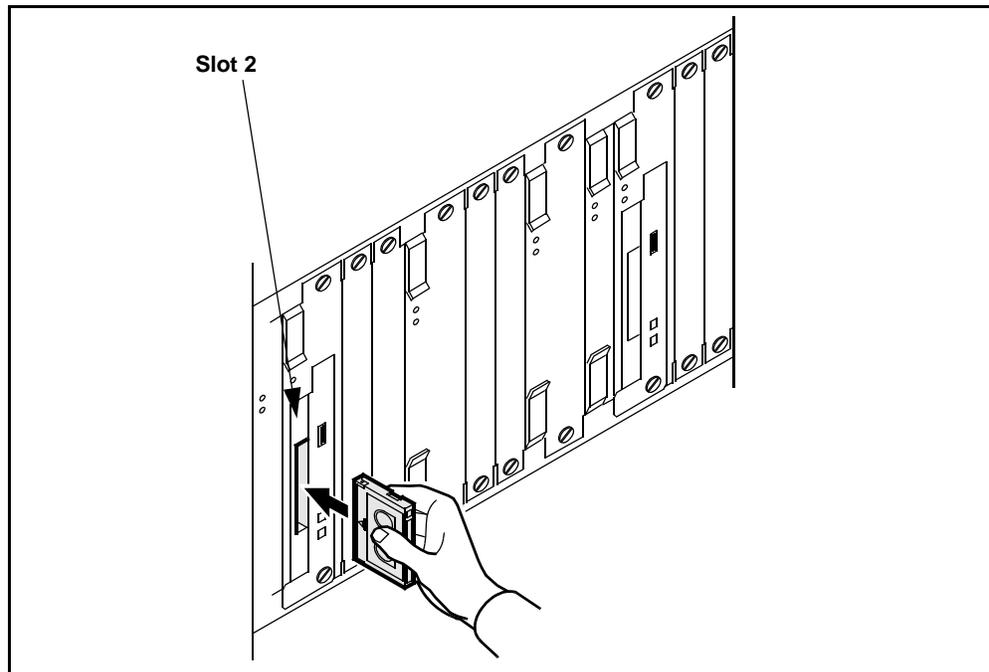
2   If you are upgrading from the CS2E0006 release, verify the version of the tape. Otherwise, continue with step 3.

Verify the version of the tape:

 # querytape dat0

Example response

SDM_VERSION.info: CS2E0070.0 : 20.87.7.0

The displayed product name (in this example, CS2E0070.0) must match the label on the tape that you inserted in step 1.

3 Remove all archived filesets from the system, to free up disk space. Access the Details level:

 # sdmmtc details

4 Show all software:

> filter off

5 Select all archived filesets:

> select all

6 Remove all archived filesets:

> remove all

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

7 Confirm the command:

> y

8 You have completed this procedure.

Upgrading the software

At the console connected to SP0 (local VT100 terminal or remote access)

1   Use the following table to determine your next step.

If you are upgrading	Do
from a directory created during ESD or during the procedure <u>Software upgrades from tape on page 48</u>	list the filesets: `> apply <directory path>` *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.
directly from tape (not recommended; use this option only if you are unable to upload the software from tape to a disk)	list the filesets: > apply 0

2   Select all the new application filesets:.

   `> select new`

3   Apply all the new software:

   `> apply`

4   Confirm the apply command:

   `> y`

   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 <u>5</u>

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:

       `> 1`

    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:

       `> 0`

       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:

> **> y**

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 and 15.

14 Access the hardware level of the maintenance interface:

> **# sdmmtc hw**

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

> **> querysdm flt**

> *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 Management NTP, 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 Preparing the CS 2000 Core Manager for a software upgrade on page 25.

If you	Do
have X.25	step 17
do not have X.25	proceed to the procedure Returning the system to service on page 103

17 Use the following table to determine your next step.

If you are upgrading	Do
from a directory created during ESD or during the procedure Software upgrades from tape on page 48	list the filesets: `> apply <directory path>` *Note:* <directory path> may be the /swd/sdm/esd directory.
directly from tape (not recommended; use this option only if you are unable to upload the software from tape to a disk)	list the filesets: > apply 0

18 Install the X.25 software:

`> apply bundle x25`

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:

`> y`

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:

`> y`

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:

`# sdmmtc hw`

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

`> querysdm flt`

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 Management NTP, and return to this procedure
no faults are present	step 25

25   You have completed this procedure.

Returning the system to service

26   After returning your CS 2000 Core Manager to service, consult the notes you recorded about the pre-upgrade operational status of the SBA application in step 2 and about the pre-upgrade operational status of the AFT application in step 15 of the procedure, Taking the CS 2000 Core Manager offline.

At the console connected to SP0 (VT100 or remote access)

27   Use the following table to determine your next step.

If your core manager	Do
is connected to the CS 2000 - Compact	step 28
is not connected to the CS 2000 - Compact	step 29

28   Return the CS 2000 Core Manager to service.

     a   Access the MTC level of the maintenance interface:

        `> sdmmtc mtc`

     b   Busy the CS 2000 Core Manager:

        `> bsy`

     c   Return the CS 2000 Core Manager:

        `> rts`

     d   Exit from SDMMTC:

        `> quit all`

     e   Go to step 32

At the MAP display

29   Access the SDM level of the MAP display:

     `> mapci;mtc;appl;sdm`

30   Change the state of the CS 2000 Core Manager from offline to busy:

     `> bsy`

31   Return the CS 2000 Core Manager to service:

     `> rts`

     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.

At the console connected to SP0 (local VT100 terminal or remote access)

32 Use the following table to determine your next step.

If the SBA application	Do
was not offline prior to the upgrade	step 33
was offline prior to the upgrade	step 46
is not installed on your system	step 46

33 Access the APPL level of the maintenance interface:

```
# sdmmtc appl
```

34 Wait until the Table Access Service application is in service (InSv), then continue with the procedure. If the application does not return to service after 15 minutes, contact your next level of support.

35 Busy the SBA:

```
> bsy <application_number>
```

where

<application_number>
is the number next to the SuperNode Billing Application

36 Confirm the command:

```
> y
```

If the SBA application	Do
was in service prior to the upgrade	step 37
was busy prior to the upgrade	step 46

37 Return the SBA to service:

> **> rts <application_number>**

    where

        <application_number>
        is the number next to the SuperNode Billing Application

If the AFT application	Do
is installed on your system	step 38
is not installed on your system	step 42

38 Use the following table to determine your next step.

If the AFT application	Do
was not offline prior to the upgrade	step 39
was offline prior to the upgrade	step 42

39 Busy the AFT application:

> **> bsy <application_number>**

where

    <application_number>
    is the number next to the Automatic File Transfer application

40 Confirm the command:

> **> y**

If the AFT application	Do
was in service prior to the upgrade	step 41
was not in service prior to the upgrade	step 42

41 Return the AFT application to service:

> **rts <application_number>**

where

   <application_number>
is the number next to the Automatic File Transfer
application

At the MAP display

42 Return all billing streams to service. For each stream, post the
required billing stream:

> **mapci;mtc;appl;sdmbil;post<stream>**

where

<stream>
is the name of the billing stream

43 Return the posted stream to service:

> **rts**

44 Repeat steps 42 and 43 for each billing stream.

> *Note:* Check to ensure that all billing streams are either
> in-service or in recovery on the core side before
> continuing.

At the console connected to SP0 (local VT100 terminal or remote access)

45 Verify that billing is collecting records:

query <stream_name>

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 <u>for each billing stream</u>.

If the number of records	Do
increased from the first query command (meaning billing is working)	step 46
did not increase from the first query command (meaning billing is not working)	contact your next level of support

46   Use the following table to determine your next step.

If you	Do
need to install new CS2E0070 applications and services	step <u>47</u>
do not need to install new CS2E0070 applications and services	step <u>48</u>

47   Install new CS2E0070 applications and services using the procedures in the CS 2000 Core Manager information modules that correspond to the applications or services you want to install. When complete, return to this procedure and proceed to step <u>48</u>.

>   ***Note 1:*** Only install the required Succession applications. For a list of applications required for each Succession solution, refer to <u>Filesets to solution mapping on page 11</u> in the Upgrades section.

>   ***Note 2:*** Install new applications and services from the console connected to SP0 (local VT100 terminal or remote access).

48   Complete the <u>Post-upgrade procedures on page 117</u>.

49   You have completed this procedure.

Recovering the system from an ESUP failure

Purpose

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).

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.

Task flow diagram

The following task flow diagram summarizes the recovery process. To recover the CS 2000 Core Manager, use the instructions in the procedure that follows the flowchart.

Task flow for Recovering the system from an ESUP failure

Busy the system

↓

Return the system to service

This flowchart summarizes the recovery process.

To complete the tasks, use the procedure that follows the flowchart.
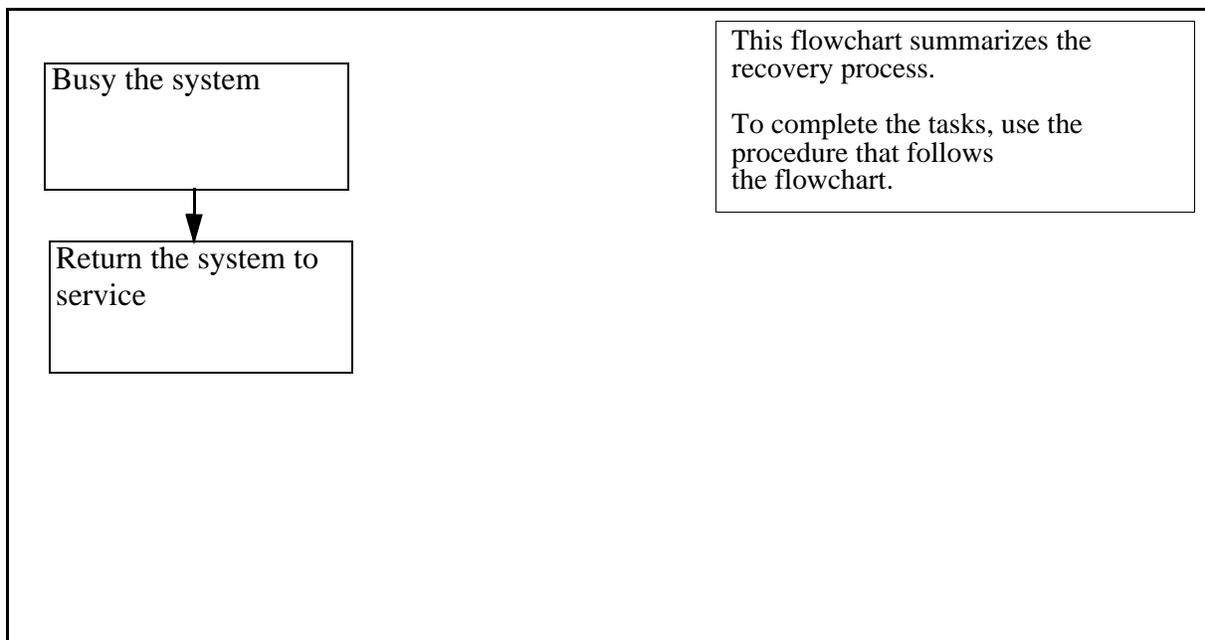
Procedure

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

This procedure can be performed from either a VT100 console or a telnet session.

If you choose	Do
telnet session	step 1
VT100 console	step 3

Recovering the system from an ESUP failure

At the PC or UNIX workstation

1 If you don't already have a telnet session open and ESUP activated, re-establish a telnet connection by completing the following substeps:

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

   telnet <ip_address>

   where

   <ip_address>
       is the IP address of the CS2000 Core Manager

   b Keep window size at 80x24

At the VT100 console or telnet session

2 If you are not already logged in and have ESUP activated, login, start ESUP and continue as in the following substeps.

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

   b Enter the following command at the shell prompt:

   `# ESUP`

   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 4. Otherwise, go to step 6.

3

ATTENTION

Before the system prompts you to busy the SDM it automatically sets AFT and SBA applications into offline state. ESUP will automatically brings them back in service after the SDM reboots and is returned into service.

At the PC or UNIX workstation

4 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:

   `telnet <ip_address>`

   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.

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

a Access the SDM maintenance level:

> **> sdmmtc;mtc**

b Busy the CS 2000 Core Manager:

> **> bsy**

3 min.

c Confirm the busy request:

> **> y**

d Continue with step <u>9</u>.

At the MAP display

6 Busy the CS 2000 Core Manager. Access the SDM level of the MAP display:

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

7 Busy the CS 2000 Core Manager:

> **> bsy**

8 Confirm the busy request:

> **> y**

At the MAP display

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

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

At the VT100 console or telnet session

10 When the CS 2000 Core Manager is fully busy, continue the procedure:

> **> go**

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

> The system automatically reboots. This process can take up to 10 minutes.

> *Note:* If the abort is being done via telnet, the system reboot will close the telnet session.

11   Wait until the system has finished rebooting. Use the following table to determine your next step:

If using a	Do
telnet session	step 12
VT100 console	step 13

At the PC or UNIX workstation

12   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:

   telnet <ip_address>

   where

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

   b   Keep the window size at 80x24.

At the VT100 console or telnet session

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

14   Enter the following command at the shell prompt:

   # esup

15   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 not equipped with a third-party Call Agent, go to step 18 (the CS 2000 Core Manager automatically returns to service). Otherwise, continue with step 17.

At the MAP display

16   Access the SDM level of the MAP display:

   > mapci;mtc;appl;sdm

17   Return the CS 2000 Core Manager to service:

>   **> rts**

At the VT100 console or telnet session

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

>   **> go**

>   ***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

19   Verify that all billing streams are either in-service or in recovery on the CS 2000 Core Manager side:

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

At the PC or UNIX workstation

20   The reboot process closed the previous telnet session. Establish a new telnet connection by logging onto the CS 2000 Core Manager from the terminal window prompt:

>   **telnet <ip_address>**

>   *where*

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

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

22   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 Upgrading CS 2000 Core Manager software using ESUP.

>   If required, refer to the following procedures in the Accounting document:

>   • "Querying the status of RTB for a billing stream"

>   • "Returning RTB stream instance to service"

At the VT100 console or telnet session

23   The recovery procedure continues until the Abort complete prompt is displayed. This process will take approximately 30 minutes.

24   You have completed this procedure.

Post-upgrade procedures

Purpose

After completing specific software upgrade tasks, you must perform the following post-upgrade procedures:

- verify the application state, to ensure that all applications are in-service. Use the procedure Verifying the application state on page 118.

- verify the current software load, to confirm that the upgrade was successful. Use the procedure Verifying the current software load on page 119.

- perform a backup of your new system image. Use the procedure "Creating system image backup tapes (S-tapes)" in the Security and Administration document (NN10170-611 SN07 Standard 05.01 August 2004 CS 2000, *Core Manager Administration and Security*).

If the upgrade software was delivered using Electronic Software Delivery (ESD), you will have an ESD logical volume on your system, which must be removed to free up disk space. Follow the instructions in the procedure Removing an ESD logical volume on page 121.

If you upgraded from tape, eject the CS2E0070 NCL 7.x (1 of 1) from the tape drive and store it in a safe place.

Depending on the configuration of your network, you may also be required to:

- remove any DDMS filesets and logical volumes which you no longer require. See the procedure Removing DDMS filesets on page 179. Succession PT-AAL1 offices MUST perform this procedure.

- upgrade and configure client-side application software on the required workstations in your network. See the procedure Upgrading and configuring client-side application software on page 120.

- apply additional software patches. Contact your Operations management office to determine if and when any patches need to be applied to your system. If you need to apply a patch, use the procedure Upgrading the CS 2000 Core Manager with software patches on page 133. For more information, contact your next level of support.

Procedures

Verifying the application state

At the VT100 console

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

 # sdmmtc appl

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 Management document 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	step 7
not all applications are in service	step 3

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

> bsy <x>

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):

> rts <x>

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.

7   You have completed this procedure. To confirm that the upgrade was successful, perform the procedure .

Verifying the current software load

At the CS 2000 Core Manager console

1   Exit the maintenance interface:

```
> quit all
```

2   Verify that the product code, located at the top left-hand corner of the screen, is CS2E0070:

```
# querysdm loads
```

If the product code	Do
is CS2E0070	step 3
is *not* CS2E0070	contact your next level of support

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

3   You have completed this procedure.

Optional post-upgrade tasks

> **ATTENTION**
>
> If your system is configured with the Distributed Computing Environment (DCE) service, and you plan to remove it, make sure that you do not decommission the DCE until the CS2000 Management Tools server is upgraded. Otherwise, communication outages between the CS2000 Core Manager and the CS2000 Management Tools server will occur.
>
> DO NOT decommission DCE if your system is configured with any DCE-dependent application, such as ETA, ATA, SFT, or GR740 Pass Through.

Upgrading and configuring client-side application software

1   Upgrade and configure client-side application software on the required workstations in your network. Refer to the specific application procedures in the CS 2000 Core Manager information suite. 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-side upgrades require root access to the workstations.

2   After your CS 2000 Core Manager is upgraded from the CS2E0004 to the CS2E0070 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.

   b   Stop and start the Tomcat Servlet Container component on the CS 2000 Management Tools server.

   c   Configure the SESM server application. Refer to the Configuring the SESM server application procedure in the Upgrades section.

3   You have completed this procedure.

Removing an ESD logical volume

ATTENTION
If you choose to remove the ESD logical volume from the CS 2000 Core Manager, the removal is permanent.

At the CS 2000 Core Manager

1   Access the storage level:

      `# sdmmtc storage`

2   Remove the ESD logical volume and its contents:

      `> esddel`

3   When prompted, confirm the Delete command:

      `> y`

4   Exit the maintenance interface:

      `> quit all`

5   If you upgraded from the CS2E0004 or CS2E0005 load, and you have SAM21 EM on your system, the SAM21 EM application on the SDM is temporary. Please see section "Upgrading the CS 2000 Management Tools" in the Upgrading the Succession Network document 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 of this document.

6   You have completed this procedure.

Performing a system image backup

1   Perform a backup of your new system image using the procedure "Creating system image backup tapes (S-tape) manually" in the Security and Administration document (NN10170-611 SN07 Standard 05.01 August 2004 CS 2000, *Core Manager Administration and Security*).

      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* (if the alarm is enabled). You can force-clear the alarm using the procedure "Clearing a system image backup Required or Failed alarm" in the Fault Management document. If the backup Required alarm is disabled, the alarm will not be raised.

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 SN07, 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.
     SAM21-EM client-server mismatch:

        Client: 6.0.384.0
        Server: 6.0.483.0

     Attempting to connect the SAM21-EM client application
     to a server of a different version. Application has aborted.


                          OK
```
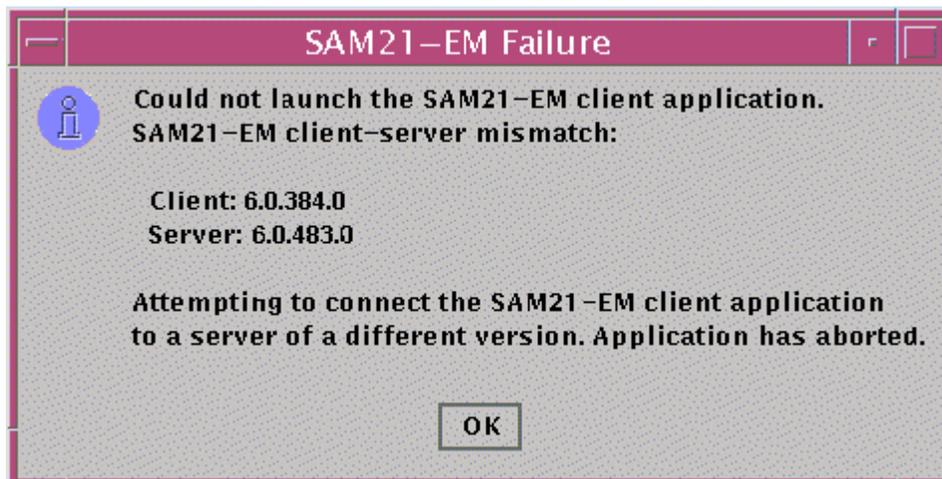
2   If a previous manager client has been installed, verify the client machine is still using the old version of the manager software by typing:

> `/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> 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.

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 SN07.

```
                          ATTENTION
Perform this procedure only if you are upgrading from SN04 to
SN07.
```

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.

Upgrading the CS 2000 Core Manager with software patches

Purpose

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

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

Attention
Before applying the fixes fileset you should capture the session file. See Capturing the pre-check session file.

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).

Note: Patches for the CS 2000 Core Manager are referred to in this document as fix filesets.

The Regional Patch Selector (RPS) 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.

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 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 on page 136 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 the procedure "Transferring and retrieving files using SFT" in the Security and Administration document.

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 . Fix filesets that require user intervention need to be applied manually. Refer to .

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 can 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 screen

```
    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 that the fix fileset has dependencies that have not been installed and are not available, contact your Nortel Networks 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 for more details on the configured directory.

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

> *Note:* The system generates log SDM610 when a fix fileset, scheduled to be applied automatically, is applied successfully or fails to apply. If you receive this log because a fix fileset failed to apply, contact your Nortel Networks representative.

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".

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 of available space. The recommended amount of available space is 400 MB, which is the default.

Procedures

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:

 # sdmmtc swim

3 Access the Fixes level:

> fixes

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:

> select <n>

where

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

5 Apply the fix fileset:

> apply

6 You have completed this procedure.

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:

 # sdmmtc swim

3   Access the Fixes level:

> fixes

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.

Response
```
The /swd/sdm/fixes directory has been
successfully created.
Press ENTER to continue.
```

4   Press the Enter key to continue.

Note: If the system responds with the message:
```
The directory /swd/sdm/fixes does not exist or
cannot be read,
```
stop the procedure and contact your next level of support. Otherwise, continue with the following step.

5   To set the time interval, enter the schedule level:

> sched

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:
```

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

7 When prompted, confirm your entry:

> **> y**
>
> *Response*

```
Auto fix schedule has been updated.

Press Enter...
```

8 Press Enter to return to the Fixes level.

9 You have completed this procedure.

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:

 # sdmmtc swim

3 Access the Options level:

> options

4 Change the value of the default fixes directory:

> change 2

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

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

Response

```
Change 2 - Command complete
```

6 Access the Fixes level:

> fixes

7 Press Enter to confirm the changed default fixes directory.

8 You have completed this procedure.

Performing a full restore of the software from S-tape

Purpose

> **ATTENTION**
> You must be a trained AIX system administrator who has root user privileges to the CS 2000 Core Manager to perform this procedure.

> **ATTENTION**
> You must mirror all volume groups on the CS 2000 Core Manager before you perform this procedure. If you perform this procedure when disk mirroring is not at the Mirrored state, the system displays an error message.

> **ATTENTION**
> If your system includes the SuperNode Billing Application (SBA), Nortel Networks recommends that you use tape drive DAT0 to perform this procedure.

Use this procedure to perform a full restore of the CS 2000 Core Manager software load from the system image backup tape (S-tape). You can also perform this procedure when the CS 2000 Core Manager is out-of-service because the software load has become corrupted.

You must be a root user at a local VT100 console to perform this procedure.

Procedures

Follow the procedures outlined in "Performing a full restore of the software from S-tape" in NN10082-911 *CS 2000 Core Management Fault Management*.

Applications upgrades

This section contains procedures associated with installing or upgrading specific applications.

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:* 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.

If Enhanced Password Control is in effect on the CM, the DDMS software will manage automatic password changing on the CM before the passwords expire. You therefore do not have to manually change the passwords for users SDM01-SDM04 on the CM.

When DDMS software is returned to service (RTSd), it reads the ofpcopt and ofceng tables on the CM to determine whether Enhanced Password Control is in effect. If Enhanced Password Control is in effect, the software will read the password lifetime value and automatically change passwords one day before expiry. If you make manual changes to the password lifetime value or turn on/off Enhanced Password control, then these changes must be synchronized with the DDMS software by busying/returning to service (bsy/rts) the DDMS. However, if any of the SDM01-SDM04 passwords are changed on the CM manually, 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 CS2E0007 7.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
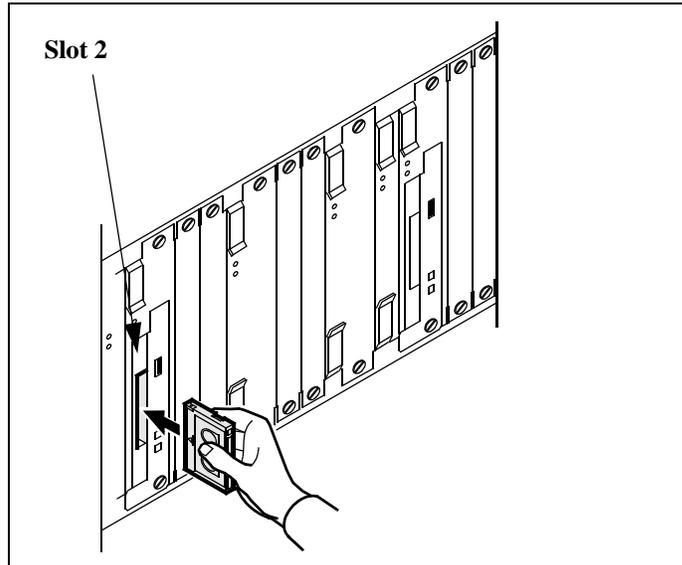
3 Access the maintenance interface by typing

```
# 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 figure .

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
            4 –     GDD Configuration
            5 –     Help
            6 –     Quit Logroute




    Enter Option   ==>
```

10　Set up a path and file to store DDMS customer logs as follows:

a　Select the Device List menu by typing

```
> 1
```

and pressing the Enter key.

The Device List Menu screen is displayed.

If the list	Do
includes device /data/logs/ossaps/ossapslog	sub-step l
does not include device /data/logs/ossaps/ossapslog	sub-step b

b　Begin to add a new device by typing

```
> 2
```

and pressing the Enter key.

c　Select a file device by typing

```
> 3
```

and pressing the Enter key.

Response:

```
Enter file name ==> /data/logs/
```

d　Complete the path name by typing

ossaps/ossapslog

and pressing the Enter key.

You have now set up the log routing for the DDMS.

e　When prompted, enter the log format (from the range displayed), and press the Enter key.

Note 1: Enter STD or SCC2 if you want the following information to be displayed in all log reports (otherwise, enter STD_OLD or SCC2_OLD):

- user-defined office ID, same for all logs and streams
- the name of the node (ECORE) from which the log is generated
- the sequence number in dual (global and device) format

Note 2: The default format is STD.

f When prompted, set the ECORE option to ON or OFF, and press the Enter key.

> *Note:* Enter ON, if you want the log-generating node name to be displayed in all reports (the format must be STD or SCC2). Otherwise, enter OFF.

g Select addrep by typing

```
> a
```

and pressing the Enter key.

h Enter the log identifier by typing (in uppercase)

```
> DDMS
```

and pressing the Enter key.

i Save the new device by typing

```
> y
```

and pressing the Enter key.

Response:

```
Save completed -- press return to continue
```

Press the Enter key to return to the Add Device screen.

j Return to the Device List Menu screen by typing

```
> 5
```

and pressing the Enter key.

k Return to the Device List Menu screen by typing

```
> 6
```

and pressing the Enter key.

l Exit logroute by typing

```
> 6
```

and pressing the Enter key.

m 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

Upgrading DCE

Purpose

> **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 administration and upgrade tasks.

Use this procedure to upgrade your Distributed Computing Environment (DCE). For more information about DCE, refer to the following procedures:

- "Creating a DCE user" in the Security and Administration document
- "Configuring an SDM in a DCE cell" in the Configuration Management document
- "Removing an SDM from a DCE cell" in the Configuration Management document
- "Deleting a DCE user" in the Security and Administration document
- "Updating DCE principal names" in the Security and Administration document

Procedure

Upgrading DCE

At the CS 2000 Core Manager

1   Begin the DCE upgrade:

 # dceupgrade

> *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.

4   You have completed this procedure.

Installing and configuring the OM Data Delivery application

Purpose

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.

Prerequisites

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.

Procedures

Installing the OM Data Delivery application

At the CS 2000 Core Manager

1 Insert tape CS2E00007 NCL 7.x (1 of 1) 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
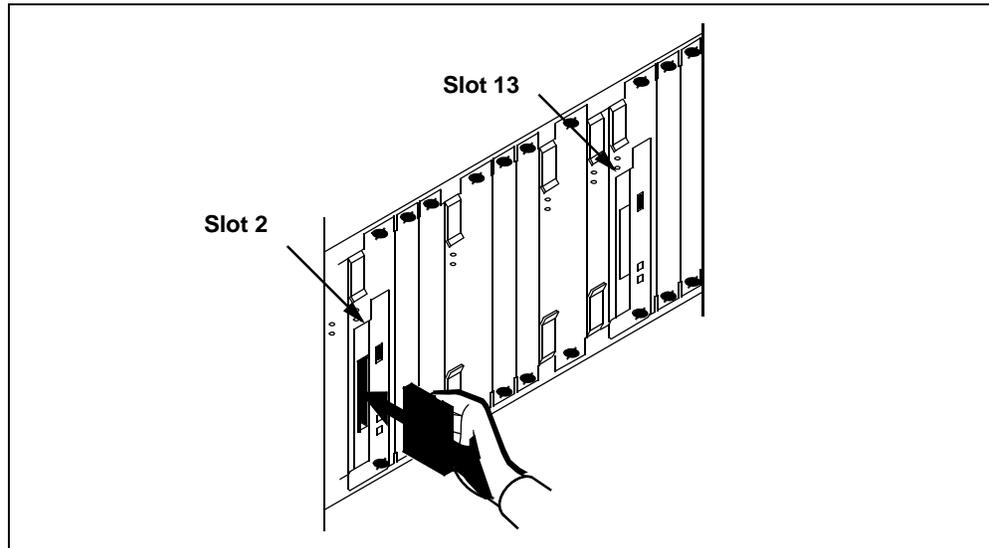
At the maintenance interface

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 go to 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:

   telnet <ip_address>

   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:

`# sdmmtc`

7   Access the software inventory manager (SWIM) level:

`> swim`

The CS 2000 Core Manager lists the software applications currently installed.

8   List the contents of the tape you previously inserted:

`> apply <n>`

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:

`> apply <n>`

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:

`> y`

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:

 # sdmmtc config

2 Configure OM Data Delivery:

> config <n>

where

   <n>
      is the number next to OM Data Delivery under fileset
      description

Use the following table to determine your next step.

If OM Data Delivery	Do
is being initially installed or upgraded to CS2E0070	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 CS2E0070, 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:

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:

```
> y
```

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

If the OM Data Delivery application	Do
is ManB or Offl	step 13

If the OM Data Delivery application	Do
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:

> quit all

16   You have completed this procedure.

Installing or upgrading OpenSSH

Purpose

The following procedure provides instructions on how to install the OpenSSH fileset. For more information on OpenSSH, refer to "OpenSSH overview" in the Basics document.

Procedure

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 CS2E0070 7.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:

 # sdmmtc

4 Use the following table to determine your next step.

If the software is	Do
on tape	list the filesets: **apply 0**
in a directory	list the filesets: **apply <directory path>**

5 Select the latest version of the OpenSSH fileset:

> select <x>

where

<x> is the number next to the OpenSSH fileset.

6 Apply the selected fileset:

> apply

7   Confirm the apply command:

> `y`

8   You have completed this procedure.

Installing or upgrading Reach Through SPM

Purpose

This procedure provides instructions on how to install or upgrade the Reach Through SPM application on the CS 2000 Core Manager.

Procedure

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 CS2E0070 7.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:

 # sdmmtc

4   Use the following table to determine your next step.

If the software is	Do
on tape	list the filesets: **apply 0**
in a directory	list the filesets: **apply <directory path>**

5   Select the Reach Through SPM fileset:

> select <n>

where

<n> is the number next to the Remote Registration System fileset.

6   Apply the selected fileset:

> apply

7   Confirm the apply command:

> `y`

8   You have completed this procedure.

Installing or upgrading the GR740 TCP/IP Pass Through application

Purpose

Use this procedure to install or upgrade the GR740 TCP/IP Pass Through application on the CS 2000 Core Manager.

Prerequisites

To ensure a 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.

- Ensure 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 supported configurations for EADAS GR740 TCP/IP.

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	N/A	ON	IDLE
DC and NM over TCP/IP	TCP_IP	N/A	ON	IDLE
DC and Netminder over BX25	X25	X25	IDLE	ON
DC over BX25 and Netminder over TCP/IP	X25	TCP_IP	IDLE	ON
DC over TCP/IP and Netminder over BX25	TCP_IP	X25	IDLE	ON
DC and Netminder over TCP/IP	TCP_IP	TCP_IP	IDLE	ON

The following table lists the channel assignments for EADAS. Note that DC EADAS channels 1, 2 and 3 support TR-740/746 compliant header and message. NM EADAS channels 1, 2 and 3 support SR3942 and TR746 to Netminder.

EADAS channel assignments

Description	Service name	TCP port	MTS offset
DC EADAS lc 1	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	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

Procedure

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 CS2E0070 7.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:

 # sdmmtc

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: `> apply 0`
in a directory	list the filesets: `> apply <directory path>`

5   Select the GR740 fileset:

`> select <x>`

where

> **x** is the number next to the GR740 TCP/IP Pass Through
> fileset

6   Apply the GR740 fileset:

`> apply`

7   Confirm the **apply** command:

`> y`

Response

```
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.
```

8   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.

9   You have completed this procedure.

Commissioning X.25 connectivity

Purpose

Use this procedure to commission or recommission X.25 connectivity 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.

Task flow diagram

The following task flow diagram provides an overview of the process. Use the instructions in the procedures that follow the flowchart to complete the tasks.

Task flow for commissioning 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 process.

Use the instructions in the procedures that follow this flowchart to perform the tasks.
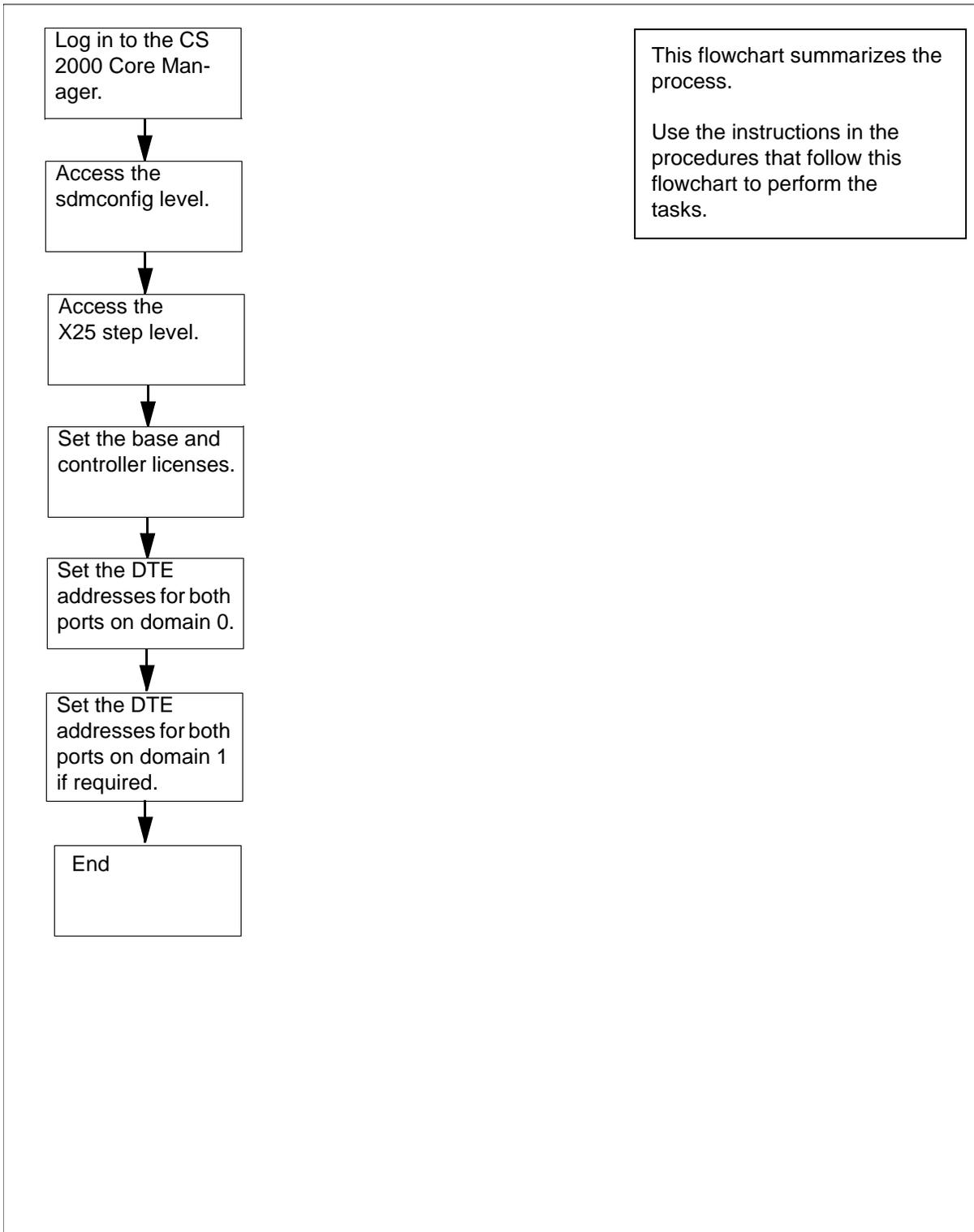
Procedure

If you are commissioning X.25 connectivity for the first time, follow the instructions in the procedure <u>Configuring X.25 licences</u> below. If you are recommissioning X.25 on domain 0 or domain 1, follow the instructions in <u>Configuring DTE addresses on page 176</u>.

Configuring X.25 licences

At the CS 2000 Core Manager

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

2   Access the configuration level:

 # sdmconfig

3   Access the X.25 commissioning step level:

> step <#>

where

#
  is the number next to the X.25 commissioning step.

4   Initiate the configuration process:

> change

5   When prompted, enter the new Base license key. The Base license key is the 28 alphanumeric character string for the X.25 hardware that you are commissioning.

6   When prompted, enter the new Controller license 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 changed:

Base license key: 3xcmwj6p4wmnxhyknmnbwvqzr2aa
Controller license key:
5me5q7itsuba5hyknmnbwvqzr2aa

Proceed with these values?
Enter Y to confirm, N to reject, or E to edit:
```

7   When prompted, confirm the values:

> y

Response

```
Change - Command submitted.
```

8 You have completed this procedure. To continue commissioning X.25 connectivity, follow the instructions in the procedure Configuring DTE addresses.

Configuring DTE addresses

At the X.25 commissioning step level

1 Configure the DTE addresses of the X25 ports on domain 0:

> **change 0 <port>**

where

> **port**
> is 0 or 1

2 Enter the DTE address (5 to 15 digits) that corresponds to the port.

Example response

```
X25 Connectivity values to be changed:

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:
```

3 Confirm the values:

> **y**

Example response

```
Change 00 - Command submitted.
```

4 Repeat steps 1 through 3 for the other port.

5 Use the following table to determine your next step

If the system	Do
has an X25 card in domain 1	step 6
does not have an X25 card in domain 1	you have completed this procedure

6 Configure the DTE addresses of the X25 ports on domain 1:

> **change 1 <port>**

where

port
    is 0 or 1

7   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:
```

8   Confirm the values:

> y

Example response:

```
Change 10 - Command submitted.
```

9   Repeat steps <u>6</u> through <u>8</u> for the other port.

10   You have completed this procedure.

Removing DDMS filesets

Purpose

Use this procedure to remove the DDMS filesets, as well as the DDMS logical volumes, only if DDMS is no longer required.

Procedure

Removing DDMS filesets

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:

`# sdmmtc swim`

3   Access the Details level:

`> details`

4   Remove the DDMS filesets:

`> remove   <n>`

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:

`> y`

6   Delete the file log device for DDMS. Start the log delivery commissioning tool if it does not automatically appear:

```
# logroute
```

The Logroute Main Menu screen appears.

```
                 Logroute Main Menu


         1 - Device List
         2 - Global Parameters
         3 - CM Configuration File
         4 - Gdd Configuration
         5 - Help
         6 - Quit Logroute




  Enter Option ==>
```

7   Access the Device List Menu:

```
> 1
```

The Device List Menu screen appears.

```
                 Device List Menu

         1 - View Device
         2 - Add Device
         3 - Delete Device
         4 - Modify Device
         5 - Help
         6 - Return to Main Menu




  Enter Option ==>
```

8   Access the Delete Device menu screen:

> **> 3**

The system displays the list of configured devices and prompts you to enter the number of the device that you want to delete.

Example response

```
                Delete Device Menu
Enter ABORT to return to Device List Menu
       Devices:                           Type:
       1 - HOST: any            PORT: 8551     TCPIN
       2 - HOST: 10.102.4.4     PORT: 14450    TCP
       3 - /data/logs/faults                   FILE




 Enter device number to delete ==>
```

9   Delete the file log device for DDMS:

> **> <x>**

> *where*

> **<x>**
> is the number next to the file log device for DDMS
> (/data/logs/ossaps/ossapslog)

Response

```
Device will be deleted permanently.
Continue... (Y/N)[N]:
```

10   Confirm that you want to delete the selected device:

> **> y**

Response

```
Save data completed -- press return to continue
```

11   Return to the Device List menu screen:

> **> abort**

12   Return to the Logroute Main menu screen:

> **> 6**

13 Quit the logroute tool:

```
> 6
```

14 List the DDMS logical volumes:

```
# df -k
```

The logical volumes you need to remove are

- /osscomms
- /ossapslog
- /ossaps

15 Proceed with the removal:

```
# 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
```

16 You have completed this procedure.

Removing CS 2000 Core Manager application filesets

Purpose

This procedure provides instructions on how to remove application filesets that reside on the CS 2000 Core Manager.

You can 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

Task flow diagram

The following task flow diagram summarizes the process. To complete the tasks, use the instructions in the procedure that follows the flowchart.

Task flow for Removing application filesets

```
┌─────────────────┐
│ Log in to the CS│                    ┌──────────────────────┐
│ 2000 Core Man-  │                    │ To complete the tasks,│
│ ager.           │                    │ use the procedure that│
└────────┬────────┘                    │ follows the flowchart.│
         │                             │                      │
         ▼                             └──────────────────────┘
┌─────────────────┐
│ Access the      │
│ DETAILS         │
│ level.          │
└────────┬────────┘
         │
         ▼
┌─────────────────┐
│ Select and      │
│ remove          │
│ filesets.       │
└────────┬────────┘
         │
         ▼
┌─────────────────┐
│ Exit the main-  │
│ tenance inter-  │
│                 │
└────────┬────────┘
         │
         ▼
┌─────────────────┐
│ End             │
│                 │
│                 │
└─────────────────┘
```
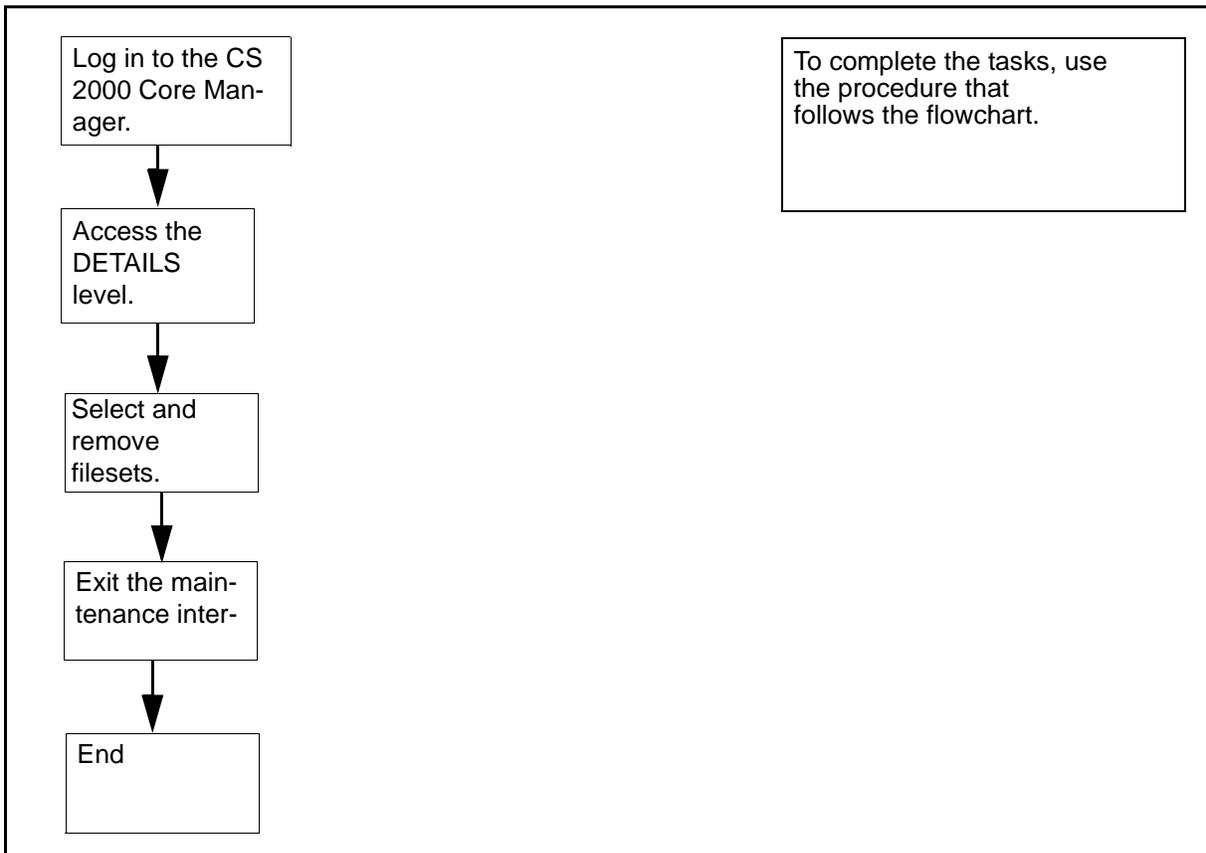
Procedure

Removing application filesets

At the local or remote VT100 console:

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

2   Access the DETAILS level of the maintenance interface:

   # sdmmtc details

3   Remove one or more filesets:

   > 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.

4   When prompted, confirm the remove command:

```
> y
```

5   Exit the maintenance interface:

```
> quit all
```

6   You have completed this procedure.

Hardware upgrades

This section contains procedures associated with upgrading hardware components on your system.

188

Upgrading the CPU controller modules

Purpose

Use this procedure when you want to upgrade the CPU controller modules independently from the CS 2000 Core Manager software.

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 on page 6 for a list of the CPU modules that are supported.

Prerequisites

> **CAUTION**
>
> **Risk of service disruption**
>
> This upgrade stops the CS 2000 Core Manager billing Application. Ensure that 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 document. To set up the backup space, refer to "Configuring the SBA on the Communication Server 2000 core" in the Accounting document.

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

Task flow diagram

The following task flow diagram provides an overview of the upgrade process. Use the instructions in the procedures that follow the flowchart to complete the tasks.

Task flow for Upgrading the CPU controller modules

Ensure the CS 2000 Core Manager is fault free.

Busy billing streams

Verify the SBA went into backup mode

Close and send downstream each active billing file

Busy the CS 2000 Core Manager

Delete the CPU database information

Reboot the CS 2000 Core Manager

Determine the GMT for CPUs

Replace CPU controller modules

1

1

Restore power to the CS 2000 Core Manager.

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

This flowchart summarizes the process.

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

Return all billing streams to service

Verify SBA billing stream is actively recording

End

Procedure

Upgrading the CPU controller modules

At the MAP display

1   Ensure that you have configured adequate backup space and performed a system image backup.

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

Note: Any alarms that recur after a CPU upgrade 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.

3   Busy all billing streams on the core. Post the required billing stream:

`> mapci;mtc;appl;sdmbil;post<stream>`

where

<stream>
   is the name of the billing stream

4   Busy the posted stream:

`> bsy`

5   Repeat steps 3 and 4 for each billing stream.

6   For each configured billing stream, verify that at least one backup file exists on at least one of the configured backup volumes.

Display the names of the backup volumes configured for the specified billing stream:

`> mapci;mtc;appl;sdmbil;conf view <stream>`

where

<stream>
   is the name of the billing stream

7   Verify that an SBA backup file exists on at least one of the displayed backup volumes:

`> diskut;lf <backup_volume>`

where

<backup_volume>
   is the name of the selected backup volume

Note: The name of each backup file begins with "BACK".

8   Repeat steps 6 and 7 for each billing stream.

At the local or remote VT100 console

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

10   Close and send downstream all unprocessed billing files. Use the following table to determine your specific method.

Task	File transfer mode	Procedure in the Accounting document
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"
	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`. To verify which billing files for each session are still pending, enter the following commands: `billmtc, appl, aft, query <session_name>`.

Note: To display the details about a stream, refer to the procedure "Listing billing streams" in the Accounting

document. To list all files currently stored in a stream, refer to procedure "Listing billing files" in the Accounting document.

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 back up the billing files to a DAT tape. If required, refer to procedure "Copying billing files to tape (backup)" in the Accounting document.

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 using the procedure "Sending billing files from tape" in the Accounting document.

At the MAP display

11 Access the CS 2000 Core Manager level of the MAP display:

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

Example response:

    SDM InSv

12 Busy the CS 2000 Core Manager:

> **bsy**

Response:

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

13 Confirm the busy command:

> **y**

Response:

    SDM Bsy initiated.
    SD Bsy completed.

At the local or remote VT100 console

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

15   Display information for the root volume group (rootvg):

```
# lsvg -p rootvg
```

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
```

16   Record which hard disks (physical volumes) provide rootvg storage on the CS 2000 Core Manager. (In the example shown in step 15, the hard disks are hdisk0 and hdisk7.)

17   Delete the CS 2000 Core Manager configuration database information for the CPU controller modules currently installed on the system:

```
# ftcpuclean
```

18

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

ATTENTION

Before continuing, verify what keystrokes are required to perform a "Break" on your VT100 console.

</div>

Shut down the CS 2000 Core Manager and initiate a reboot:

```
# shutdown -Fr
```

19   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.

20   Determine the current Greenwich Mean Time (GMT) setting on the existing CPU controller modules:

```
FX-Bug> time
```

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.

21   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 20 to calculate the number of hours that your local time differs from GMT.

At the modular supervisory panel (MSP)

22   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

23   Replace the CPU controller modules using the procedure "Replacing a CPU controller module during an upgrade" . When complete, return here, and continue with step 24.

At the MSP

24   Restore power to the CS 2000 Core Manager by turning on the MSP breakers. Proceed according to 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

25

> **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 the following message appears after you press the Break key, 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>
```

26   Determine the current Greenwich Mean Time (GMT) setting on the new CPU controller modules:

FX-Bug> time

Example response

```
FRI NOV 16 18:41:49:00
```

27   Determine if the GMT setting for the new CPU controller modules is correct.

If the GMT setting is	Do
incorrect	step 28
correct	step 29

28

> ⚠️ **CAUTION**
>
> Potential loss of service
>
> Ensure that the GMT setting on the new CPU controller modules is later than the setting on the previous modules (recorded in step 21). Do not reboot the system if the GMT setting is earlier than the time of the shutdown. This action can corrupt the system configuration and status information.

Correct the time setting to the current GMT:

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)
>>
>> hh is the current hour
>>
>> mm is the current minute (00 to 59)

29 Ensure that the environment parameters are set to the default values:

FX-bug> env;d

Response

```
Update with Auto-Configuration Defaults

Update Non-Volatile RAM (Y/N)?
```

30 Enter **y** to confirm the NVRAM update.

Response

```
Reset Local System (CPU) (Y/N)?
```

31 Enter **y** to reset the system.

32 Interrupt the reboot process by pressing the Break key.

Response

```
FX-bug>
```

33 Boot the CS 2000 Core Manager from disk:

FX-bug> pboot 1 0

Note: During this time, the CPU firmware is automatically upgraded.

If you	Do
return to the FX-bug prompt again	step 34
do not return to the FX-bug prompt again	step 35

34   Boot the CS 2000 Core Manager again:

```
FX-bug> pboot 1 0
```

35   At the login prompt, log in to the CS 2000 Core Manager as the root user.

36   Restore the bootlist:

```
# bootlist -m normal <hdiskx> <hdisky>
```

> **where**
> hdiskx and hdisky are the two physical disks that provide rootvg storage, as recorded in step 16.

37   Check the CPU firmware for the CPU in domain 0:

```
# ftbugver -l CPU-0
```

Note: The "-l" is a lower-case L.

38   Check the CPU firmware for the CPU in domain 1:

```
# ftbugver -l CPU-2
```

Note: The "-l" is a lower-case L.

The next three steps allow the CPU controller modules to complete integration.

39   Access the maintenance interface:

```
# sdmmtc
```

40   Access the hardware level:

```
> hw
```

41   Check the CPU integration status:

```
> querysdm flt
```

42   Once the CPU controller modules have been integrated, exit the maintenance level:

```
> quit all
```

43   Force each CPU controller module to assume mastership to synchronize their clocks:

`# ftctl -switch`

Repeat the command for the other CPU controller module.

44   Proceed according to whether you have upgraded or downgraded a module.

If you have	Do
upgraded a module	step 45
downgraded a module	step 48

45   View the current paging space to ensure that it is twice the memory size of the CPU:

`# lsps -a`

Example response:

Page Space	Physical Volume	Volume Group	Size	%Used	Active	Auto	Type
hd6	hdisk0	rootvg	512MB	1	yes	yes	lv

This response is an example 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 48
not twice the size of the CPU	step 46

46   Increase the paging space:

`# sdmconfig cpu`

The paging space is now reset at twice the memory size of the CPU.

47   Verify the paging space has been increased:

`# lsps -a`

Example response

Page Space	Physical Volume	Volume Group	Size	%Used	Active	Auto	Type
hd6	hdisk0	rootvg	1024MB	1	yes	yes	lv

This response is an example 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 46 and 47. If after repeating these steps the paging space still does not increase, contact your next level of support.

At the MAP display

48 Access the SDM level of the MAP display:

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

Example response

SDM ManB

49 Return the CS 2000 Core Manager to service:

> **rts**

Response

SDM RTS initiated.
SDM RTS completed.

The system automatically returns all modules to service.

50 Ensure the CS 2000 Core Manager hardware and software applications have been restored to the previous inservice state (before the upgrade).

51 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.

52 Return all billing streams to service. For each billing stream, complete steps 53 through 54.

53 Post the required billing stream:

> **mapci;mtc;appl;sdmbil;post<stream>**

where

<stream>
is the name of the billing stream

54   Return the posted stream to service:

> **`> rts`**

55   Post each billing stream again (see step 53) and make sure that each stream is in-service (InSv).

56   Verify that billing is collecting records:

`# query <stream_name>`

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 57
did not increase from the first query command (meaning billing is not working)	contact your next level of support

57   You have completed this procedure.

Apply the RPM package

Once you have upgraded the software, you must apply the RPM package to the system.

At the VT100 console or telnet session

1   Access the maintenance interface:

`# sdmmtc`

2   Access the SWIM level:

`> swim`

3   List the filesets:

`> apply <directory path>`

where

<directory_path>
    is the directory where the filesets are located

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

4   Select the RPM package

> **select <n>**

where

> **<n>**
>   is the number next to the RPM fileset.

5   Apply the RPM fileset:

> **apply**

6   When prompted, confirm the apply command:

> **y**

7   You have completed this procedure.

Upgrading the CPU firmware

Purpose

This procedure provides instructions for upgrading the CPU firmware. Once 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. You can also perform this procedure at any time in order to check the status of the CPU firmware.

Task flow diagram

The task flow diagram that follows provides a summary of this process. Use the instructions in the procedure that follows the flowchart to perform the tasks.

Task flow for upgrading the CPU firmware

```
                                    ┌─────┐
                                    │  2  │
                                    └──┬──┘                ┌──────────────────────────┐
┌──────────────────┐          ┌───────┴────────┐          │ This flowchart summarizes │
│ Log in to the CS │          │ Interrupt power│          │ the process.              │
│ 2000 Core Man-   │          │ to the CS 2000 │          └──────────────────────────┘
│ ager.            │          │ Core Manager.  │
└────────┬─────────┘          └───────┬────────┘
         │                            │
         ▼                            ▼                              ┌─────┐
┌──────────────────┐          ┌───────────────┐                     │  3  │
│ Check the f/w    │          │ Unseat the    │                     └──┬──┘
│ version on the CS│          │ CPU module    │
│ 2000 Core Manager│          └───────┬───────┘              ┌───────────────┐
└────────┬─────────┘                  │                      │ Reboot the    │
         │                            ▼                      │ system        │
         ▼                   ┌────────────────┐              └───────┬───────┘
    ╱────────────╲   Y  ┌─┐  │ Restore power  │                      │
   ╱  Is the      ╲─────│1│  │ to the CS 2000 │                      ▼
   ╲  version     ╱     └─┘  │ Core Manager.  │              ┌───────────────┐
    ╲ correct?   ╱           └───────┬────────┘              │ Log in to the │
     ╲──────────╱                    │                       │ CS 2000 Core  │
         │ N                         ▼                       │ Manager.      │
         ▼                   ┌───────────────┐               └───────┬───────┘
┌──────────────────┐         │ Reinsert the  │                       │
│ Busy and offline │         │ CPU module    │                       ▼
│ the CS 2000 Core │         └───────┬───────┘               ┌───────────────┐
│ Manager.         │                 │                       │ Wait for CPUs │
└────────┬─────────┘                 ▼                       │ to integrate  │
         │                   ┌───────────────┐               └───────┬───────┘
         ▼                   │ Log in to the │                       │
    ╱────────────╲   N  ┌─┐  │ CS 2000 Core  │                       ▼
   ╱ Is firmware  ╲─────│3│  │ Manager.      │               ┌───────────────┐
   ╲ version 17RM01╱    └─┘  └───────┬───────┘               │ Busy and RTS  │
   ╲ or 17IR06?  ╱                   │                        │ the CS 2000   │
    ╲──────────╱                     ▼                        │ Core Manager. │
         │ Y                 ┌───────────────┐                └───────┬───────┘
         ▼                   │ Check the f/w │                        │
┌──────────────────┐         │ version on the│                        ▼
│ Halt the CS 2000 │         │ CS 2000 Core  │                      ┌─┐
│ Core Manager     │         │ Manager.      │                      │1│
│ after 1st CPU    │         └───────┬───────┘                      └─┘
│ upgrade.         │                 │
└────────┬─────────┘                 ▼
         │                   ┌───────────────┐
         ▼                   │ Busy and RTS  │
       ┌─┐                   │ the CS 2000   │
       │2│                   │ Core Manager. │
       └─┘                   └───────┬───────┘
                                     │
                                     ▼
                             ┌─┐ ┌───────────────┐
                             │1│ │ End           │
                             └─┘ │               │
                                 └───────────────┘
```

Procedure

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:

     # sdmfirmware

     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:

     > mapci;mtc;appl;sdm

5   Busy the CS 2000 Core Manager:

     > bsy

6   Confirm the busy command:

     > y

7   Take the CS 2000 Core Manager offline:

     > offl

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, so that you can execute them 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, enter:

```
FX-Bug> switch <cpu> ;h
```

where

    <cpu>
       is the CPU number (0 or 2) from step <u>10</u>

13   Boot the system:

```
FX-Bug> gevboot
```

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:

```
# sdmfirmware
```

16   Wait for the CPU modules to integrate.

17   Press the Enter key to continue, and go to step <u>31</u>.

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 bottom of the CPU module noted in step <u>18</u>. 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
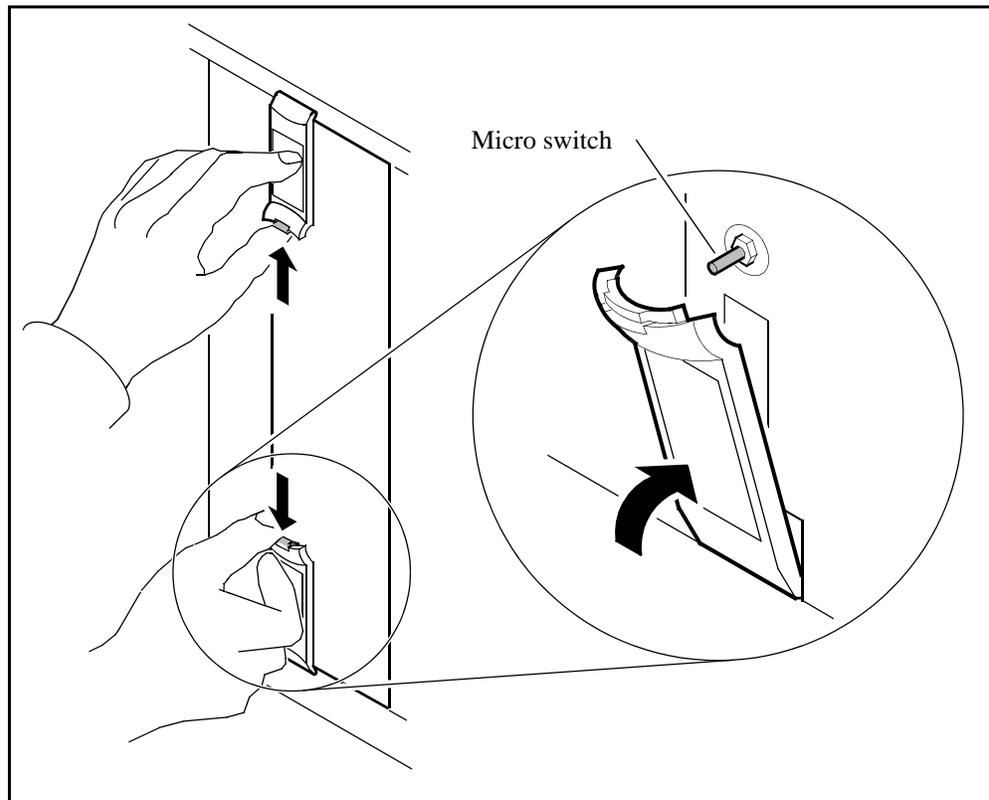
23   Open the locking levers on the face of the module by moving the levers outwards.
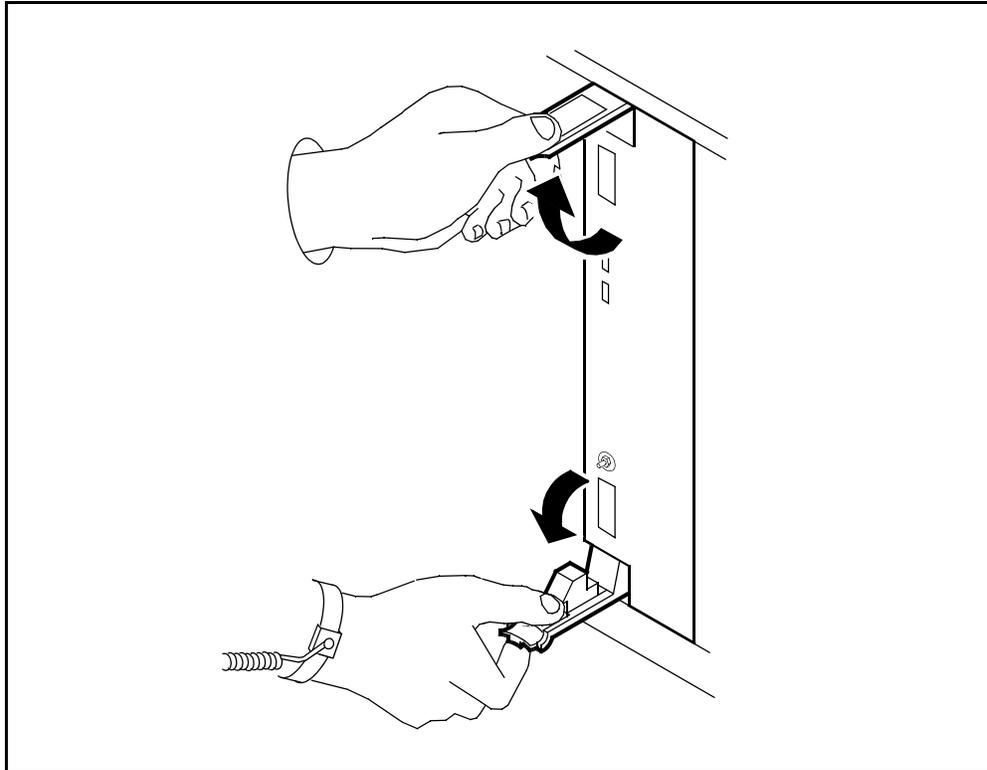
24 While grasping the locking levers, gently pull the module towards you until it protrudes about 2 in. (5 cm) from the CS 2000 Core Manager shelf.
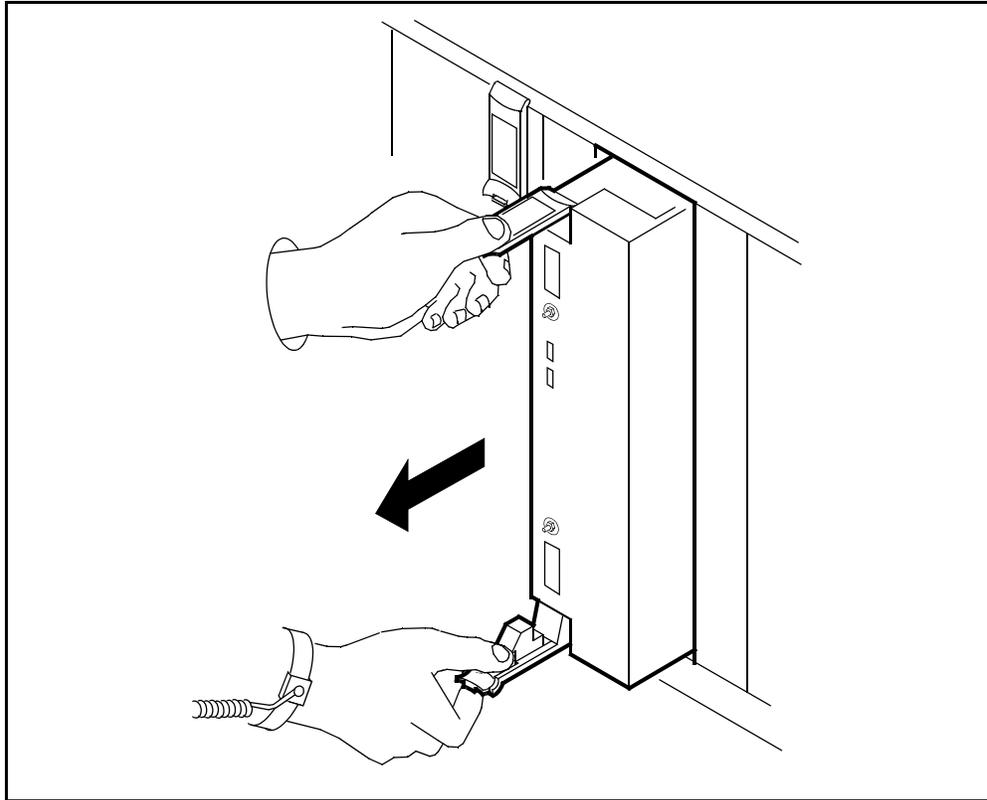
At the MSP

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.
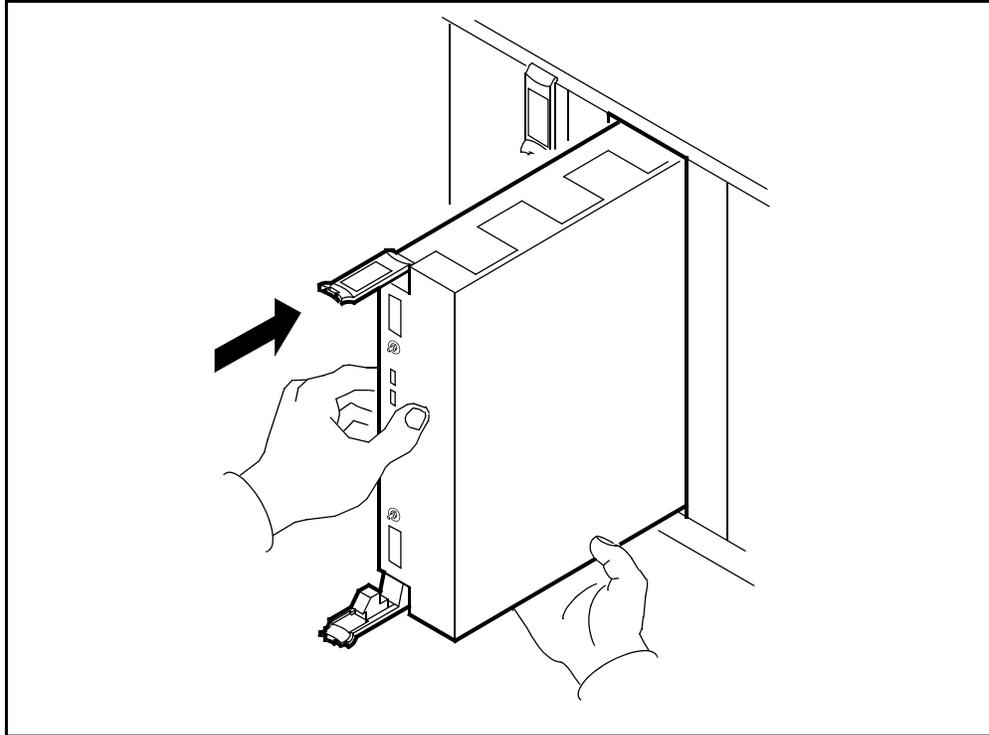
27   Close the locking lever to secure the module. Ensure that both the top and bottom micro switches are lined up with the locking levers to seat the module properly.
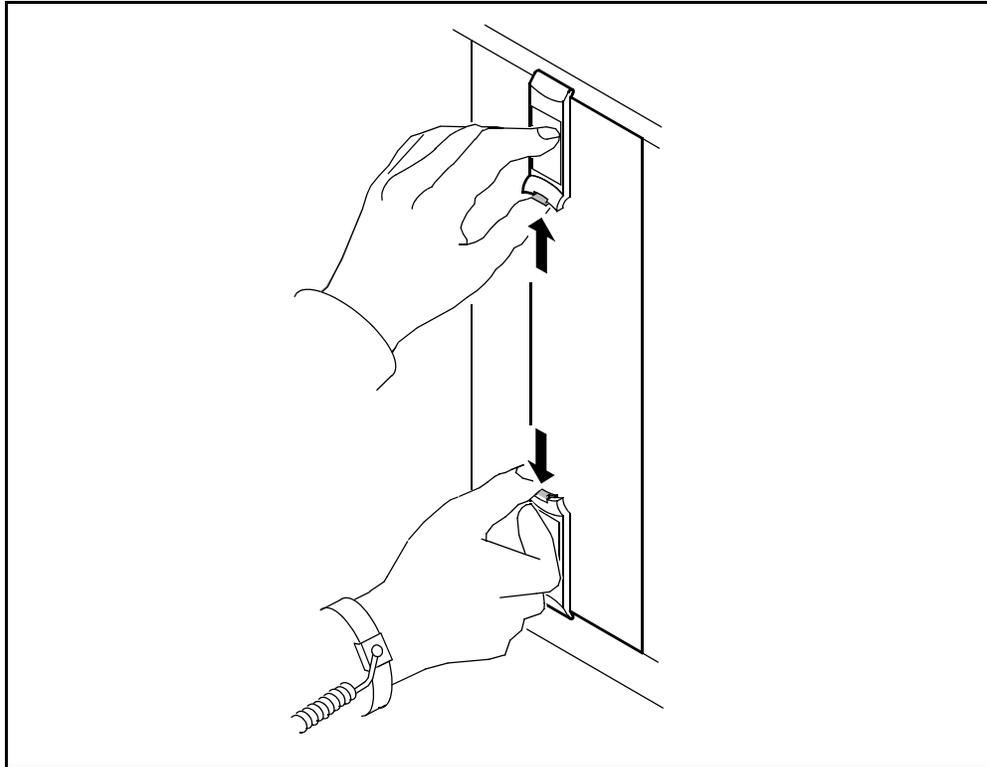
28   Tighten the thumbscrews on the module.

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 is upgraded 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 through 28.

30   The system indicates that the CPU modules have fully integrated with the CS 2000 Core Manager, and that they have

the correct firmware. Press the Enter key to continue the procedure.

31 Return the CS 2000 Core Manager to service:

```
> rts
```

32 You have completed this procedure.

Installing an X.25 controller module and personality module

Purpose

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).

Task flow diagram

The task flow diagram that follows provides a summary of this process. Use the instructions in the procedures that follow the flowchart to perform the tasks.

Task flow for Installing an X.25 controller module and personality module

```
┌─────────────────────────────────┐
│ ┌──────────────┐                 │
│ │ Log into the CS │              │
│ │ 2000 Core Man- │              │
│ │ ager.         │                │
│ └──────┬───────┘                 │
│        ▼                         │
│ ┌──────────────┐                 │
│ │ Install the X.25 │             │
│ │ personality   │                │
│ │ module.       │                │
│ └──────┬───────┘                 │
│        ▼                         │
│ ┌──────────────┐                 │
│ │ Install the X.25 │             │
│ │ controller module. │           │
│ └──────┬───────┘                 │
│        ▼                         │
│ ┌──────────────┐                 │
│ │ Ensure the cor- │             │
│ │ rect version of the │          │
│ │ X.25 software. │                │
│ └──────┬───────┘                 │
│        ▼                         │
│ ┌──────────────┐                 │
│ │ Provision the │                │
│ │ X.25 hardware. │               │
│ └──────┬───────┘                 │
│        ▼                         │
│ ┌──────────────┐                 │
│ │ End          │                 │
│ │              │                 │
│ └──────────────┘                 │
└─────────────────────────────────┘
```
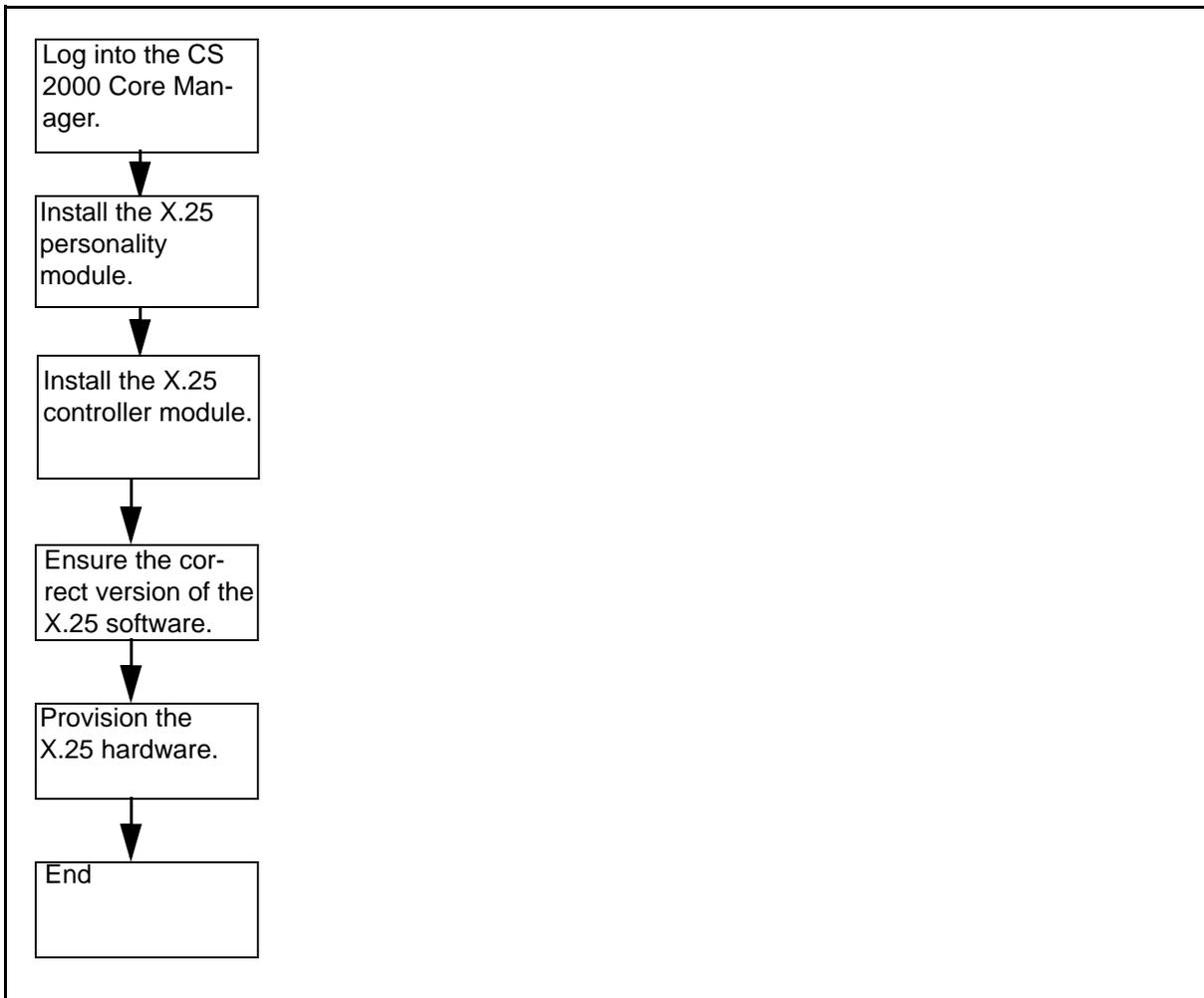
Procedures

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.
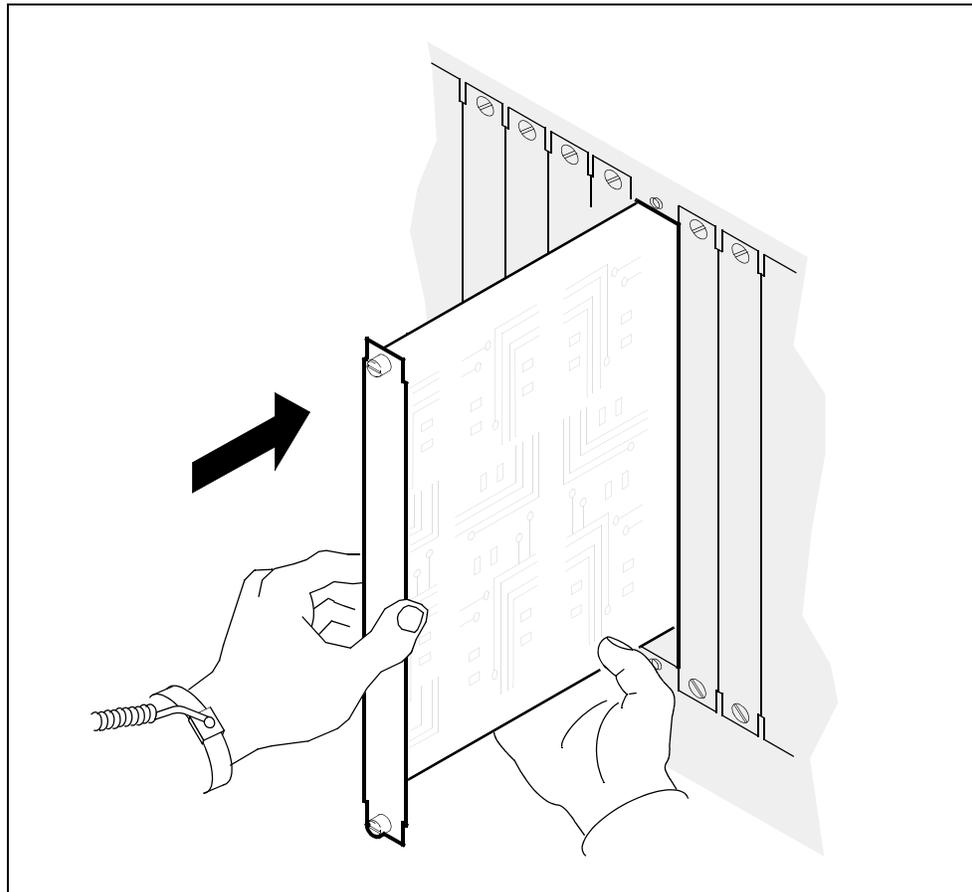
3   Tighten the thumbscrews at the top and bottom of the X.25 personality module.

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 1:* If you are installing a single X.25 module, you must install it on domain 0.

> *Note 2:* You can install two X.25 controller modules as a logical pair in either the main or expansion chassis. The two slots used for this 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.
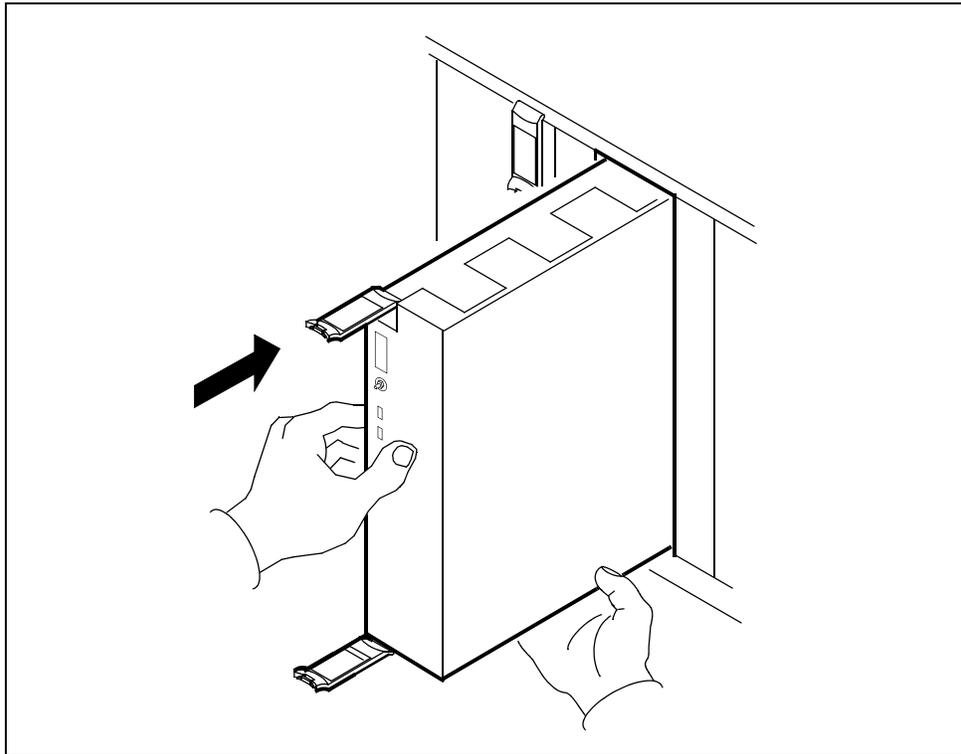
8 Close the locking lever to secure the module. Ensure that the top micro switch is lined up with the locking lever to seat the module properly.

Micro switch
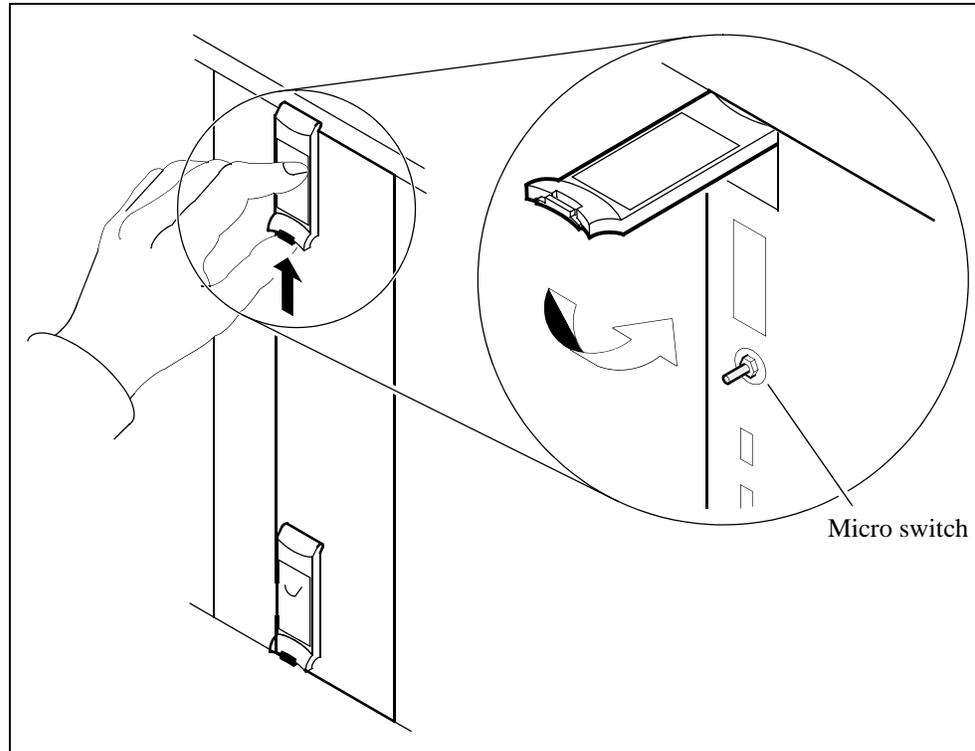
9 You have completed this procedure.

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. Insert the tape labeled *CS2E0007 7.x (1 of 1)* into slot 2.

>   *Note:* Wait until the tape drive stabilizes (yellow LED is off) before you proceed.

3 Access the maintenance interface:

   # sdmmtc

4 Display the contents of the tape:

   > apply 0

5   Install the X.25 software:

> **apply bundle x25**

6   Confirm the command:

> **y**

Response:

```
Command completed with no errors
```

7   Access the Hw level of the Maintenance Interface:

> **hw**

8   Add the X.25 hardware:

> **add <chassis> <slot> <pec> [SIMPLEX]**

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.

Response

```
Add sdme 5 ntrx50fy - Command complete.
```

9   You have completed this procedure.

Removing a standalone X.25 interface

Purpose

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.

Prerequisites

To perform this procedure, you must obtain the following information:

- the chassis (SDMM for main chassis; SDME for expansion chassis)
- the slot number of the X.25 controller module

Task flow diagram

The following task flow diagram provides an overview of the process. Use the instructions in the procedure that follows the flowchart to perform the tasks.

Task flow for 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 process.

Use the instructions in the procedure that follows this flowchart to perform the tasks.
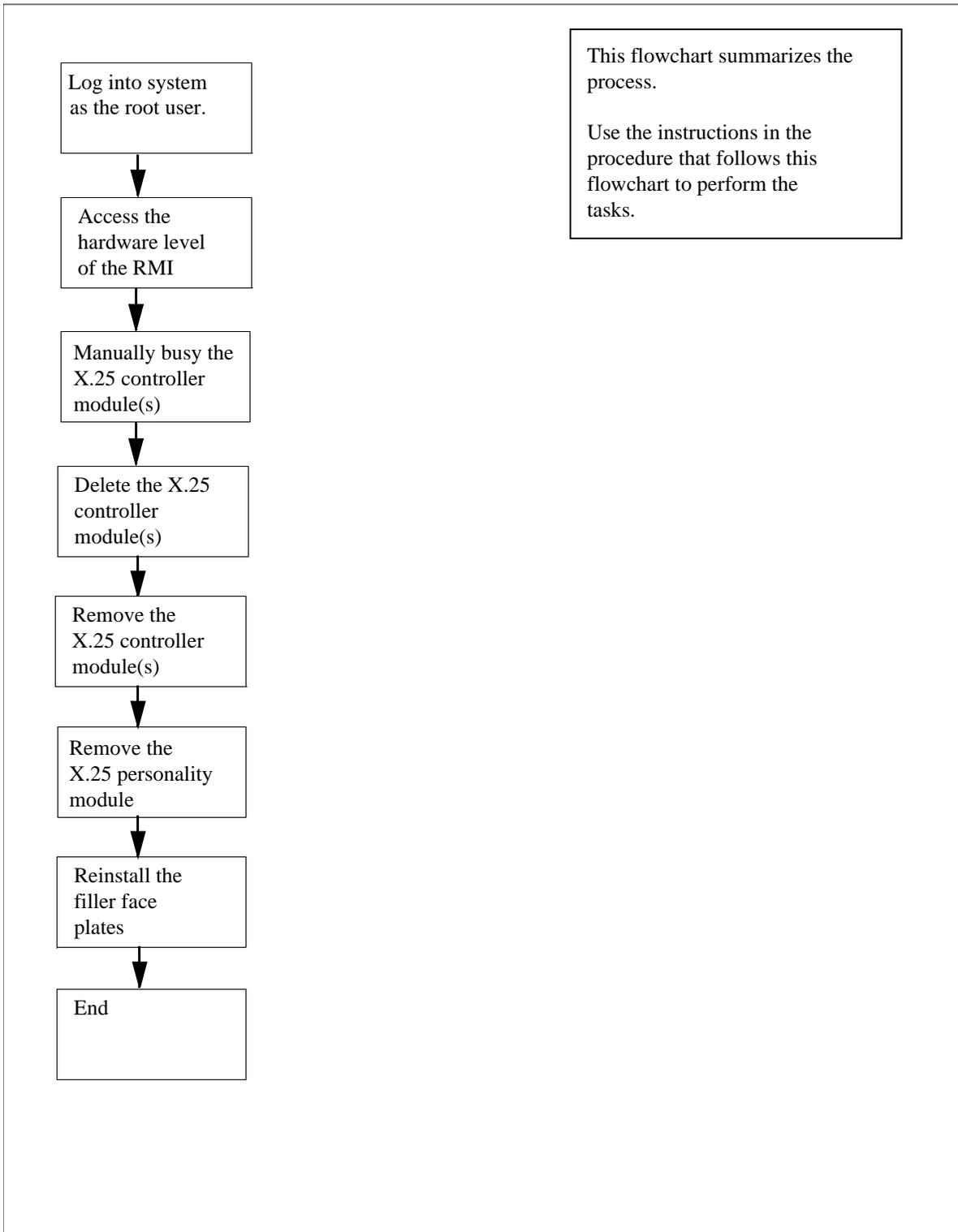
Procedure

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):

        # sdmmtc

3   Access the hardware (Hw) menu level:

        > hw

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:

> bsy <domain> X25

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:

```
> y
```

Example response

```
Hardware Bsy : Command submitted. Hardware Bsy
: Domain 1 Device X25.
```

6   When the Bsy command is finished, the "Please wait..."
        message and the command confirmation disappear. The word
        "initiated" also changes to "submitted", then changes 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:

```
> locate
```

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:

```
> delete chassis slot [SIMPLEX]
```

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 Confirm that this is the module you wish to delete:

> `y`

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 1 will 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.
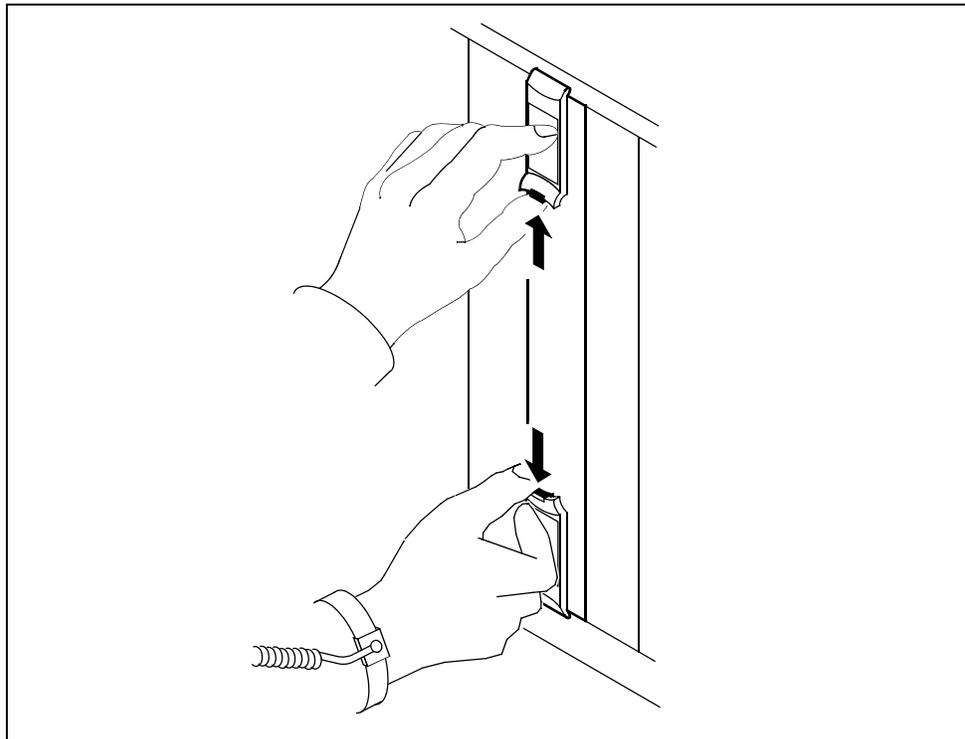
14 Open the locking levers on the face of the module by moving the levers outwards.
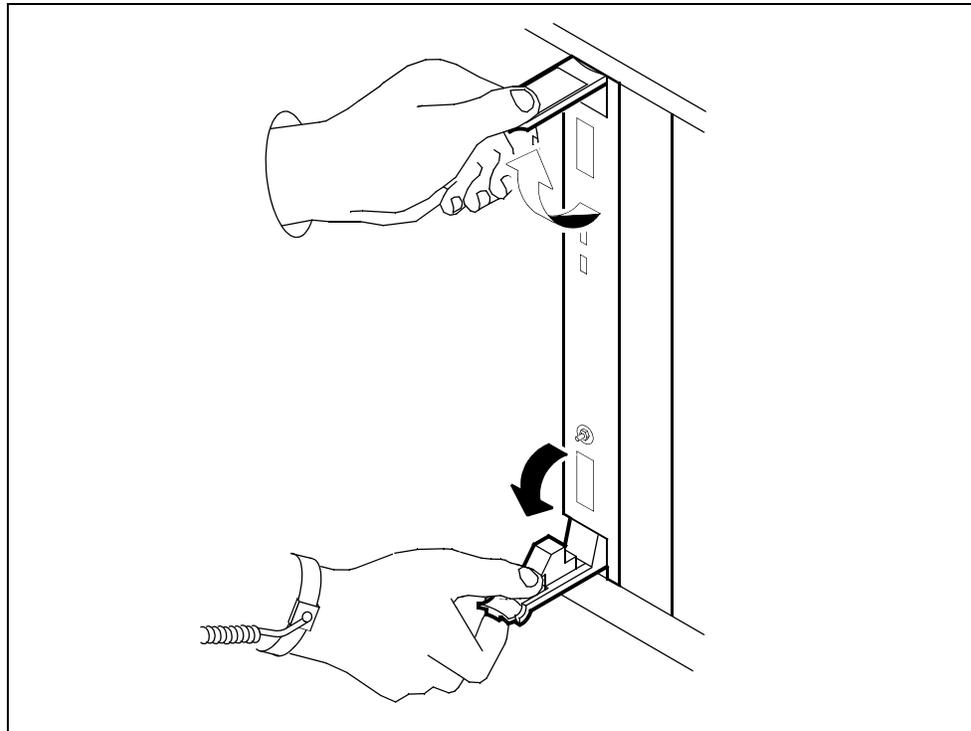
15 While grasping the locking levers, gently pull the module towards you until it protrudes about 2 in. (5 cm) from the shelf.
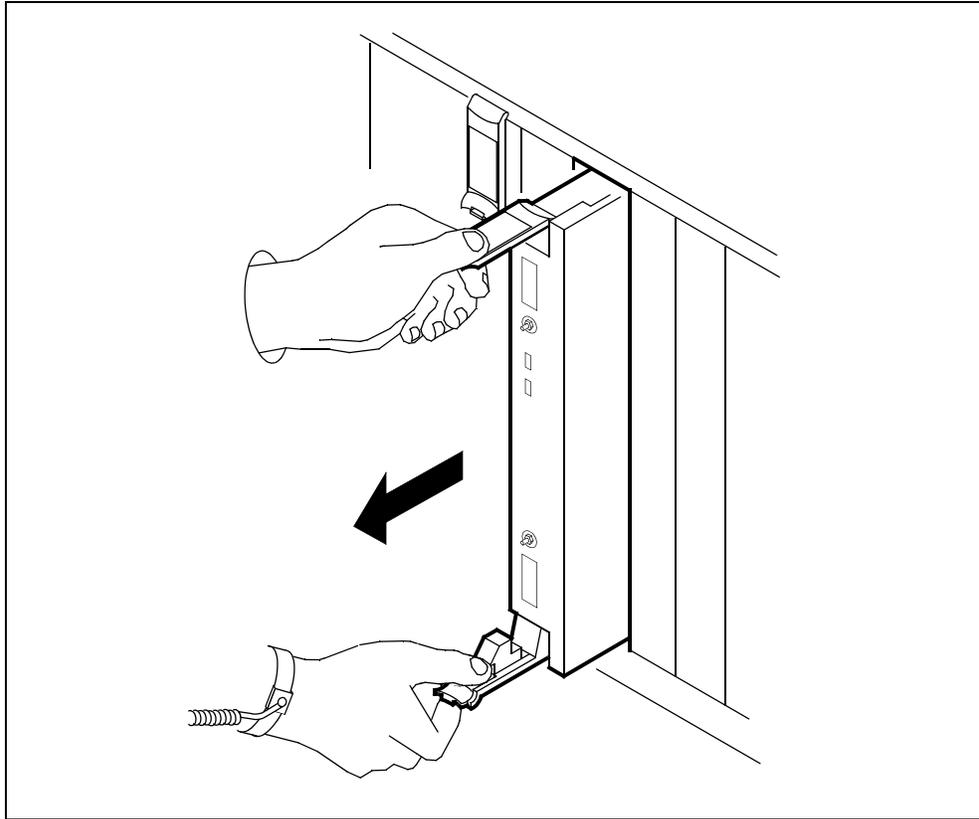
16   Hold the module by the face plate with one hand while supporting the bottom edge with the other hand. Gently pull the module toward you until it clears the shelf.
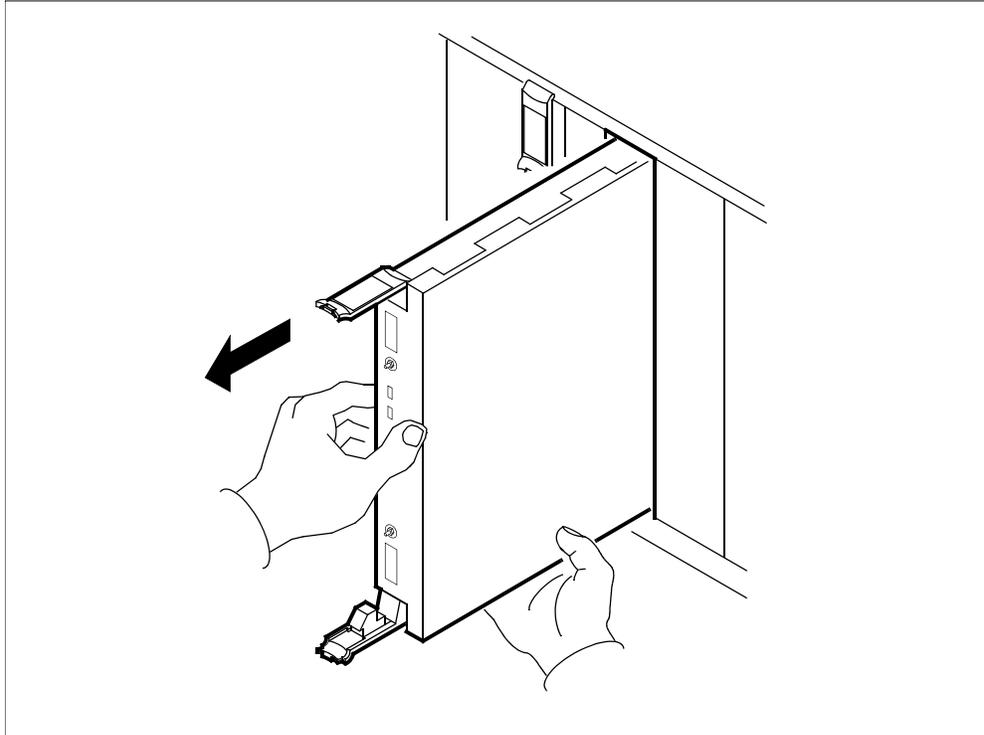
17   Place the module you have removed in an ESD protective container.

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 cm) from the shelf.
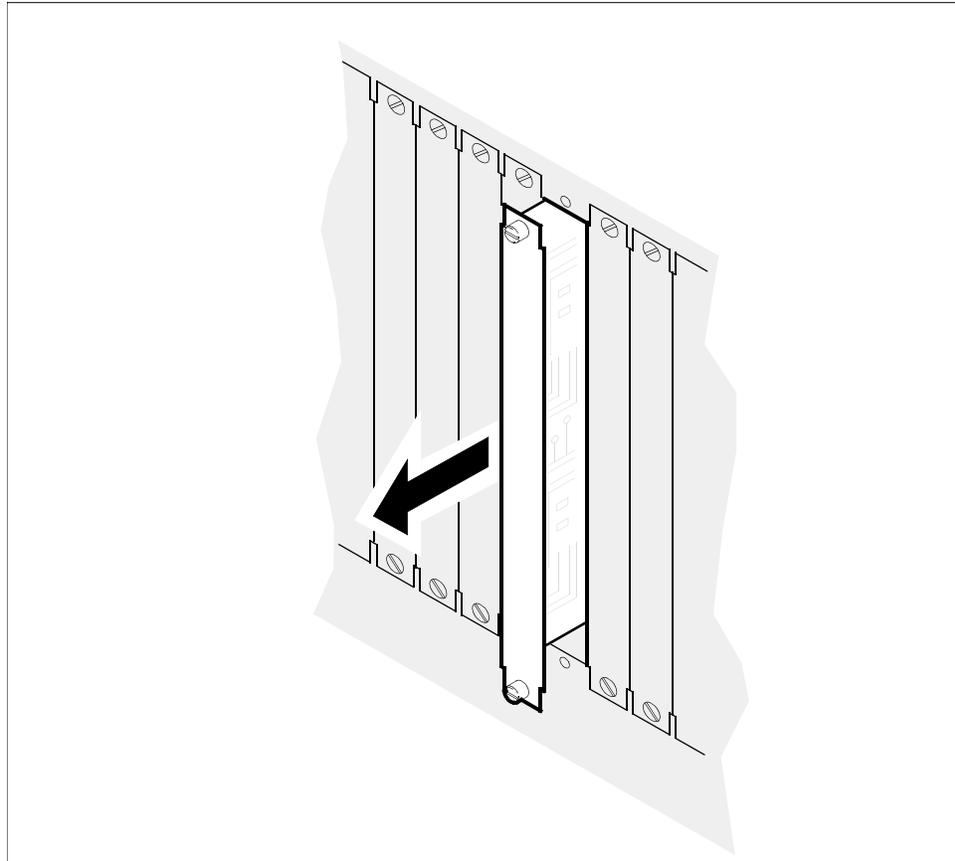
21   Hold the X.25 personality module by the face plate with one hand while supporting the bottom edge with the other hand. Gently pull the module toward you until it clears the shelf.
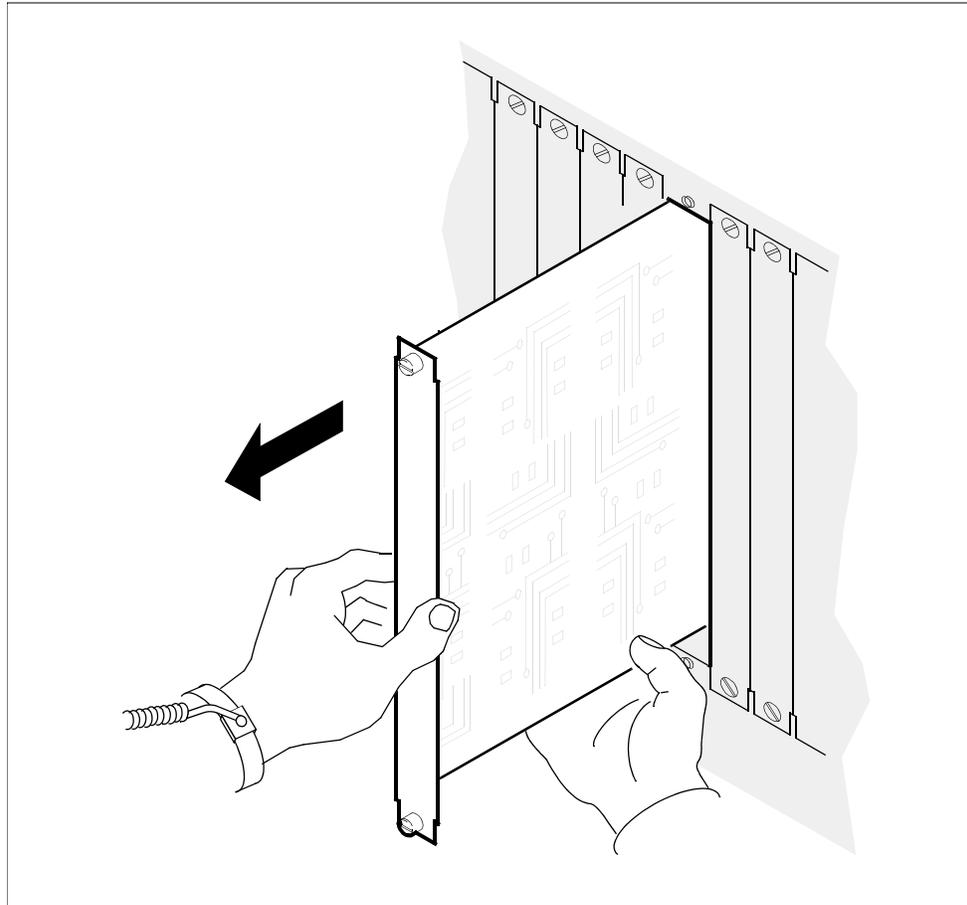
22   Place the X.25 personality module you have removed in an ESD protective container.

23   Reinstall the filler plates covering the slots from which you removed the modules.

24   You have completed this procedure.

Removing X.25 from your system

Purpose

This procedure only applies to SYNC X25 modules (standalone), and does not apply to X25 as part of the UMFIOs. The process of removing X.25 from the system has three phases:

- Deleting the X.25 hardware modules from the system

- Deleting the X.25 software

- Removing the X.25 hardware modules from the CS 2000 Core Manager (refer to the procedure)

Procedures

Removing X.25 from your system

At the CS 2000 Core Manager

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

2   Stop the X.25 daemon:

```
# /etc/rc.psx25 stop
```

3   Take the X.25 controller module offline:

```
# modchange -ol SYNC-<domain_num> -y
```

where

<domain_num>
is the domain number (0 or 1) of the X.25 controller module that you are taking offline

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 Take the X.25 personality module offline:

`# modchange -ol SYNCPM-<domain_num>`

where

> **\<domain_num>**
>   is the domain number (0 or 1) of the X.25 personality
>   module that you are taking offline.

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 Take the logical device offline:

`# modchange -ol pgen<domain_num>`

where

> **\<domain_num>**
>   is the domain number (0 or 1) of the logical device that you
>   are taking offline

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:

 # rmdev -dRl pgen<domain_num>

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 system response:

pgen0 deleted

7　　Delete the X.25 controller module:

 # rmdev -dRl SYNC-<domain_num>

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 through 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:

```
# /usr/lpp/psx25/tmp/psx25_remove
```

Note: The system may take several minutes to remove X.25 software. During this time the screen may display messages indicating that 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 the procedure Removing a standalone X.25 interface on page 221.

11   You have completed this procedure.

Adding I/O controller modules

Purpose

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. 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.

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.

Prerequisites

To perform this procedure, you must have 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)

Task flow diagram

The following flowchart provides an overview of the process. Use the instructions in the procedure that follows the flowchart to perform the task.

Task flow for 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 process.

Use the instructions in the procedure that follows this flowchart to perform the tasks.
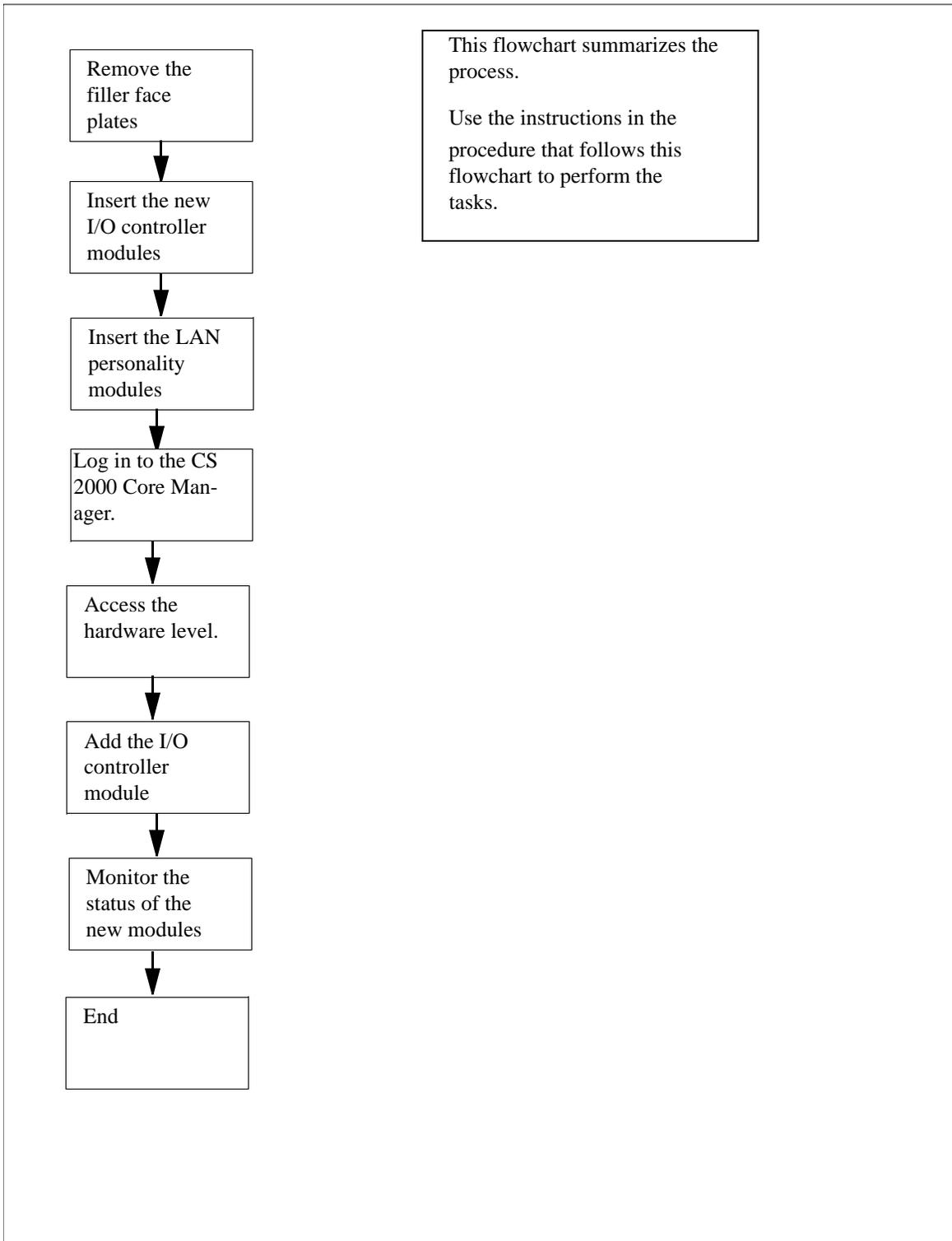
Procedure

Adding I/O controller modules

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.

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.
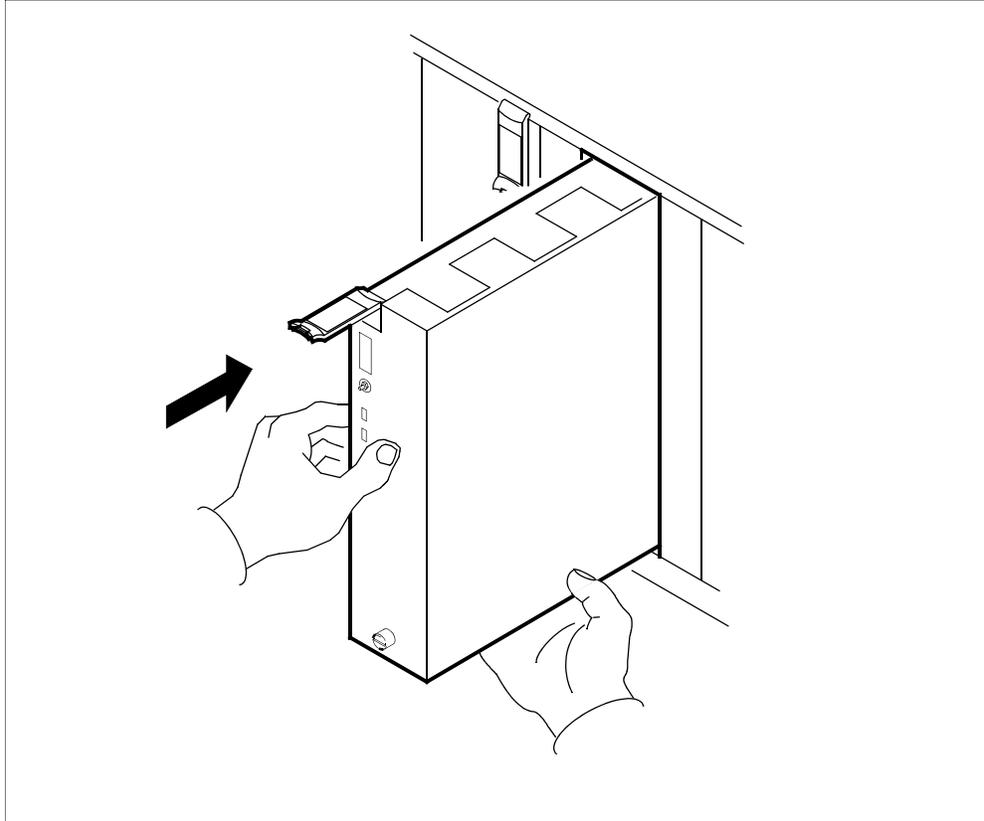
5 Close the locking lever to secure the module. Ensure that the top micro switch is lined up with the locking lever to properly seat the module.

Micro switch
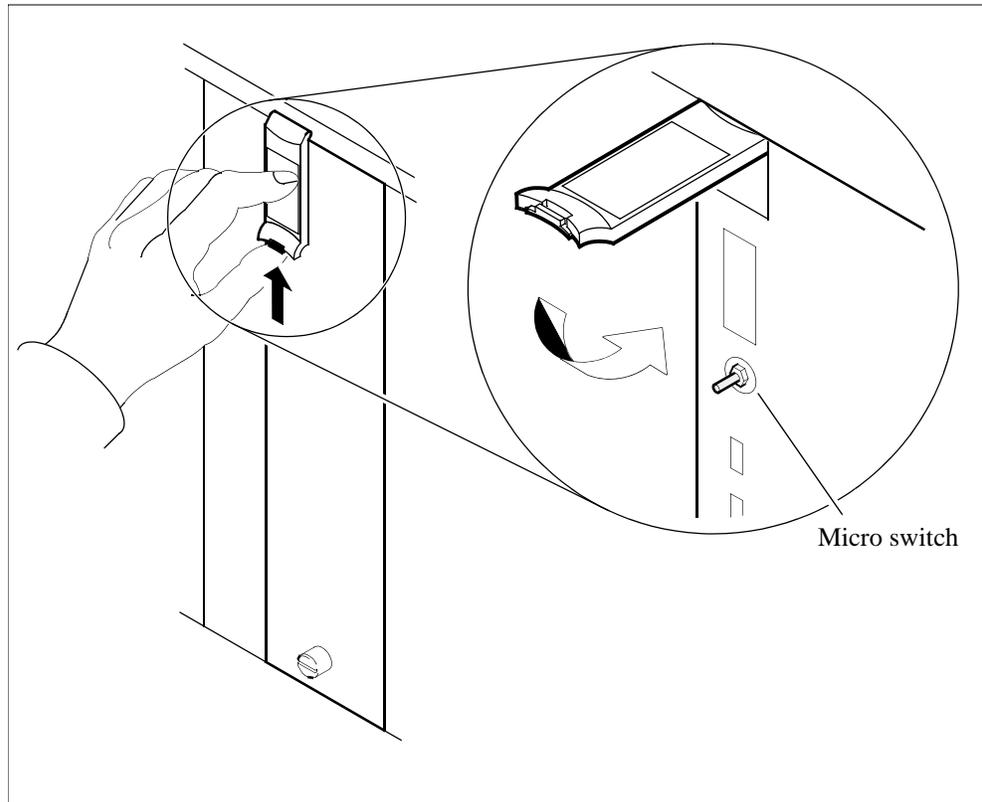
6 Tighten the thumbscrews on the module.

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.
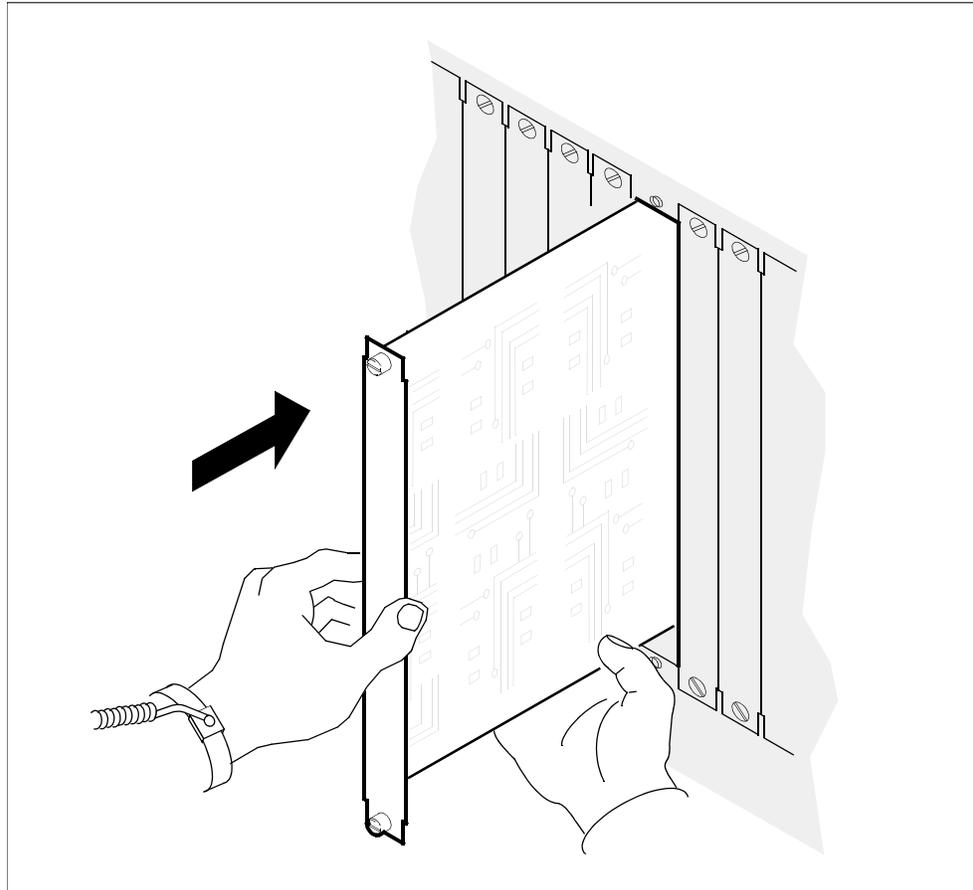
10 Tighten the thumbscrews at the top and the bottom of the LAN personality module.

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:

 # sdmmtc

13 Access the hardware (Hw) level:

> hw

14   Add the logical pair of I/O controller modules:

> **`> add <chassis> <slot> <pec>`**

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>' adds one 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 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.

Removing I/O controller modules

Purpose

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 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.

Prerequisites

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 that you remove I/O controller modules in pairs.

Task flow diagram

The following task flow diagram provides an overview of the process. Use the instructions in the procedure that follows the flowchart to perform the task.

Task flow for Removing I/O controller modules

```
┌──────────────────┐
│ 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              │
│                  │
│                  │
└──────────────────┘
```

This flowchart summarizes the process.

Use the instructions in the procedure that follows this flowchart to perform the tasks.
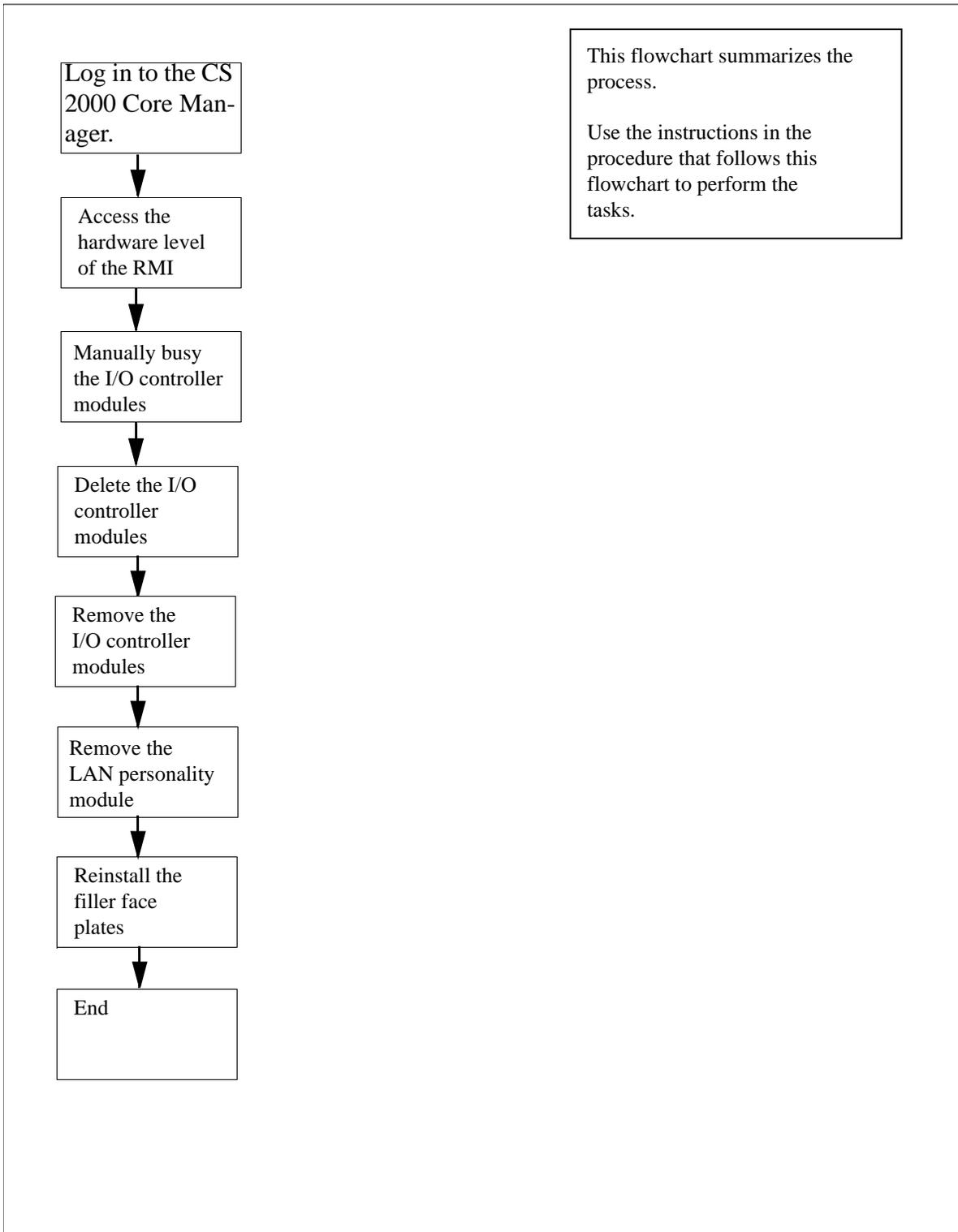
Procedure

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):

`# sdmmtc`

3   Access the hardware (Hw) menu level:

`> hw`

4   Determine the devices on the I/O controller module:

`> locate`

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:
`> bsy <domain> dsk <n>`

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:

> y

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 changes to "complete".

Example response

```
Hardware Bsy: Domain 1 Device DSK2 - Command
complete.
```

8　　Repeat steps 5 through 7 for the other domain. Once you have manually busied the module in both domains, go to step 9.

Note: After you see the response to the Bsy command, the I/O controller module's state changes to "M" at the hardware level.

9　　Use the Locate command to determine the chassis and slot number of the module you wish to delete:

> locate

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.

10 Delete the module:

> delete *<chassis> <slot>*

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: The module in the corresponding slot of the other domain will also be deleted.

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"):
```

11 Confirm that you want to delete the module:

> y

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, and the device numbers change on the screen display.

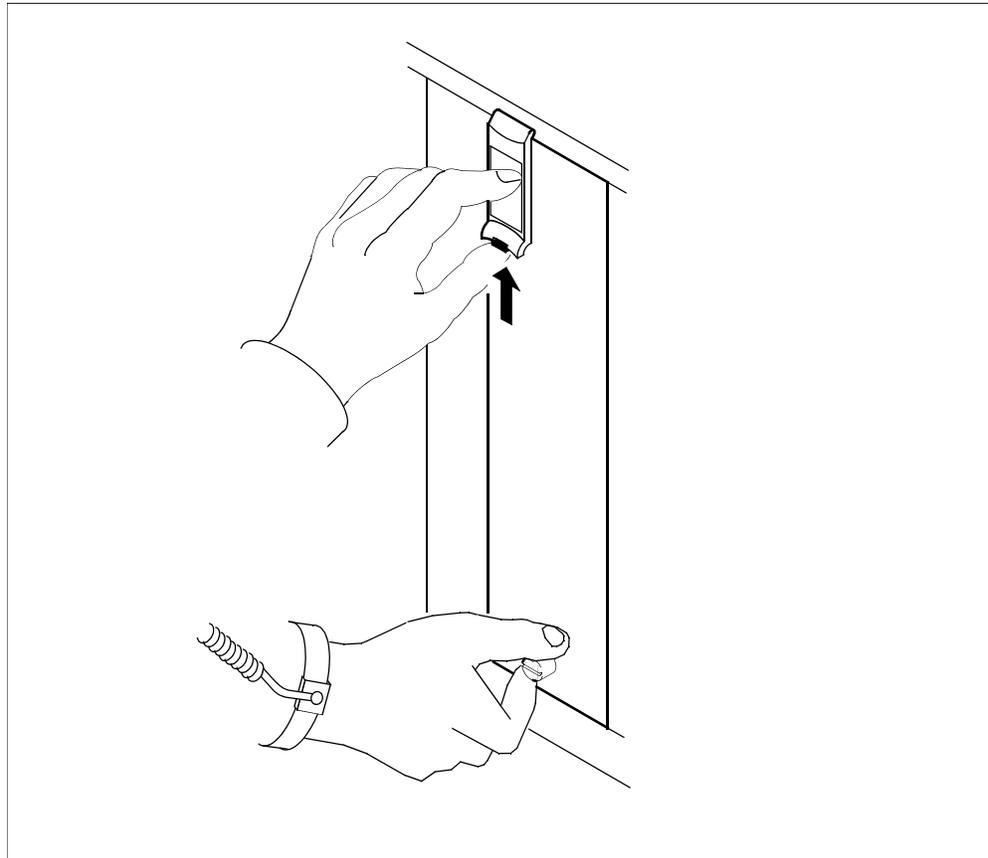*At the front of the CS 2000 Core Manager*

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   Undo the thumbscrews located on the top and the bottom of the I/O controller module. The thumbscrews are the captive type, and cannot be removed from the module.

14   Depress the tip of the locking lever on the face of the I/O controller module.
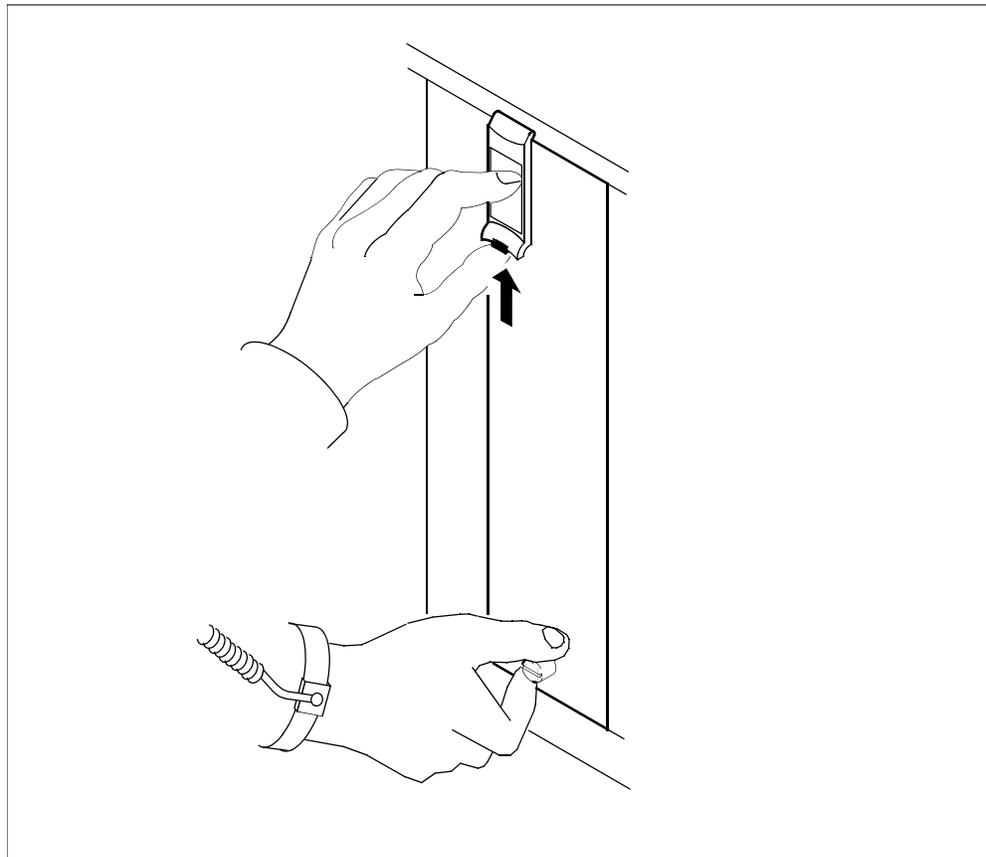
15   Open the locking lever on the face of the module by moving the lever outwards.
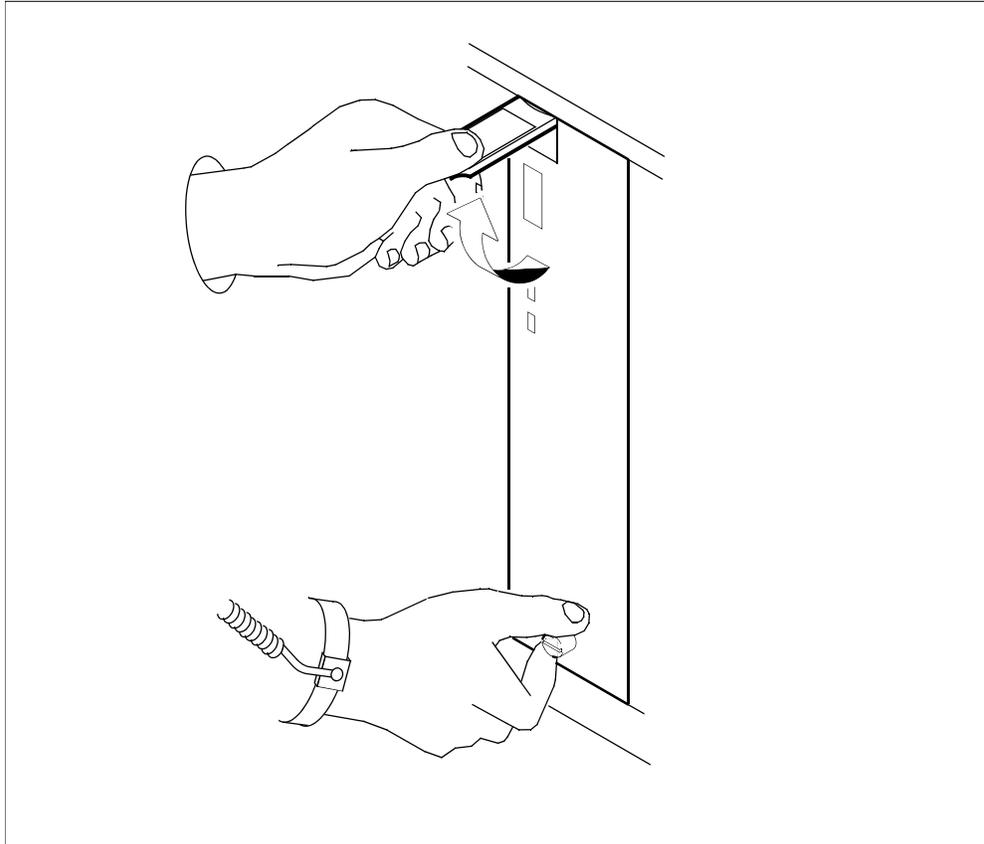
16   While grasping the locking lever, gently pull the module towards you until it protrudes about 2 in. (5 cm) from the CS 2000 Core Manager shelf.
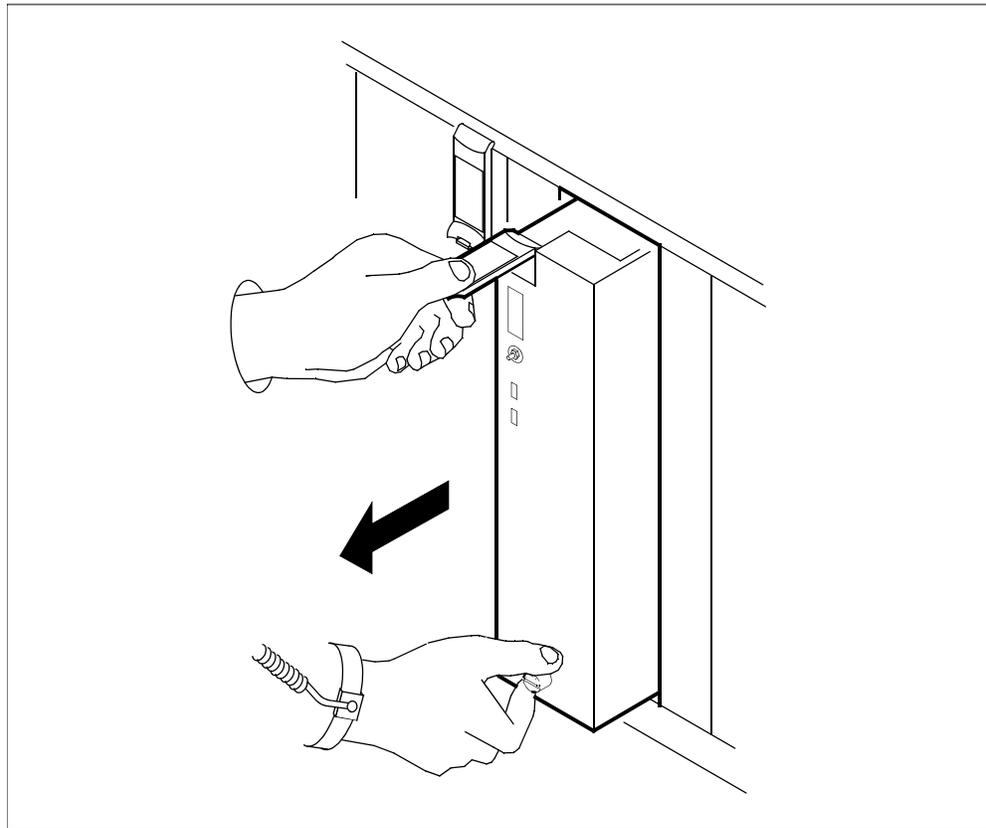
17   Hold the module by the face plate with one hand while
supporting the bottom edge with the other hand. Gently pull the
module toward you until it clears the shelf.
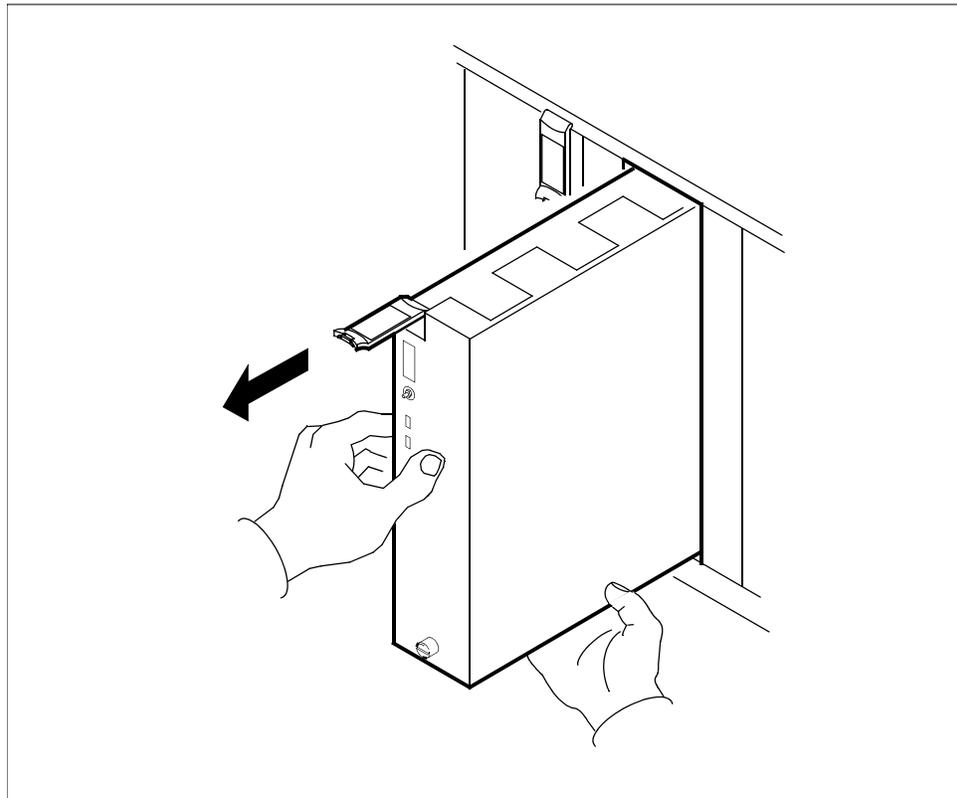
18 Place the module you have removed in an ESD protective container.

At the back of the CS 2000 Core Manager

19 Determine what kind of hardware module your CS 2000 Core Manager has.

If you have	Do
NTRX50GN	step 20
NTRX50FU and NTRX50GP	step 21

20 Disconnect the 10BASE-T cable from the corresponding LAN personality module, as shown in the following diagram.
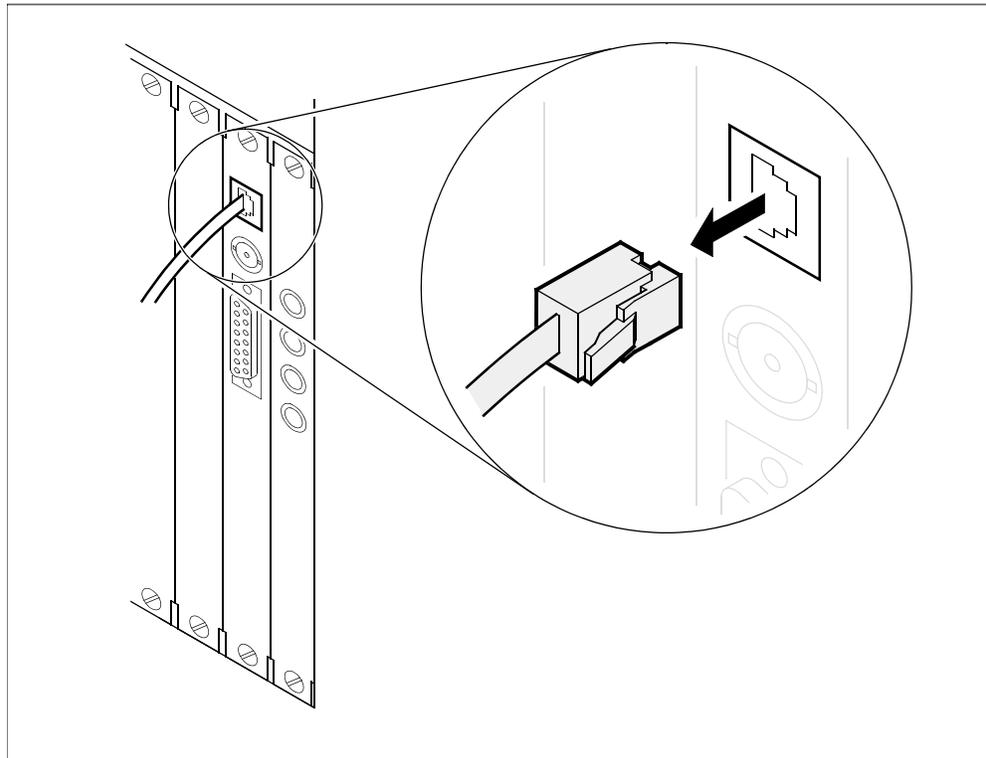
21 Loosen the two thumbscrews located at the top and the bottom of the LAN personality module. The thumbscrews are the captive type, and cannot be removed from the module.

22 While grasping the thumbscrews, gently pull the LAN personality module towards you until it protrudes about 2 in. (5 cm) from the CS 2000 Core Manager shelf.
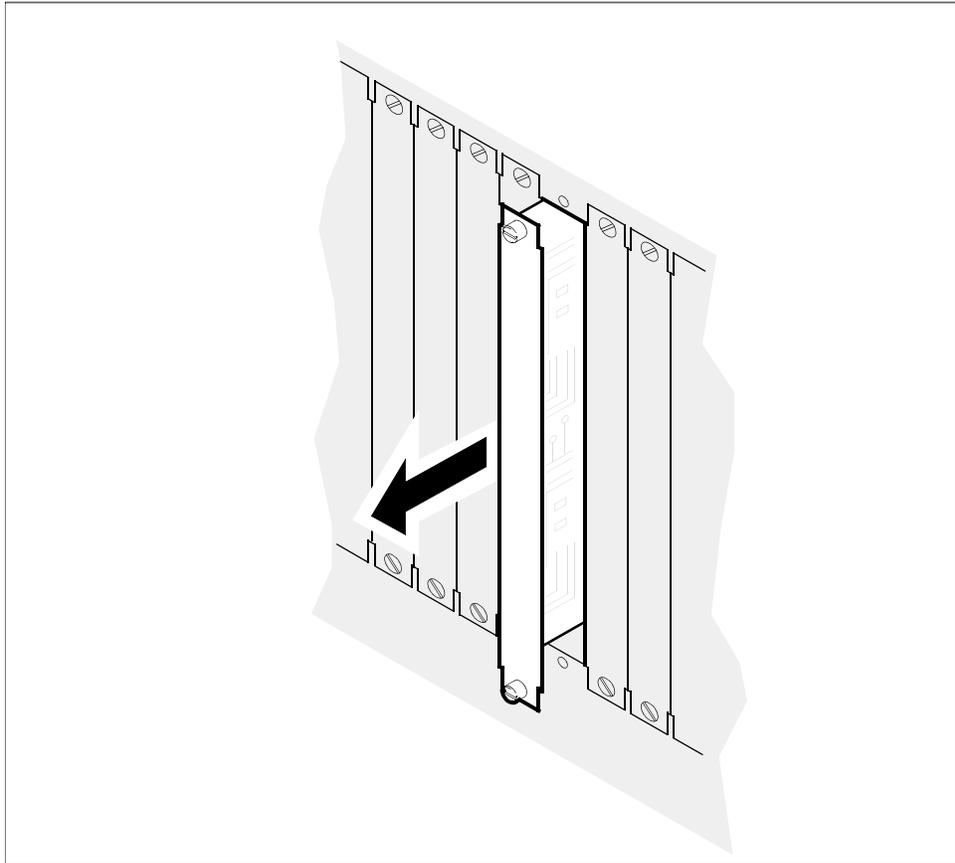
23 Hold the LAN personality module by the face plate with one hand while supporting the bottom edge with the other hand. Gently pull the module toward you until it clears the shelf.
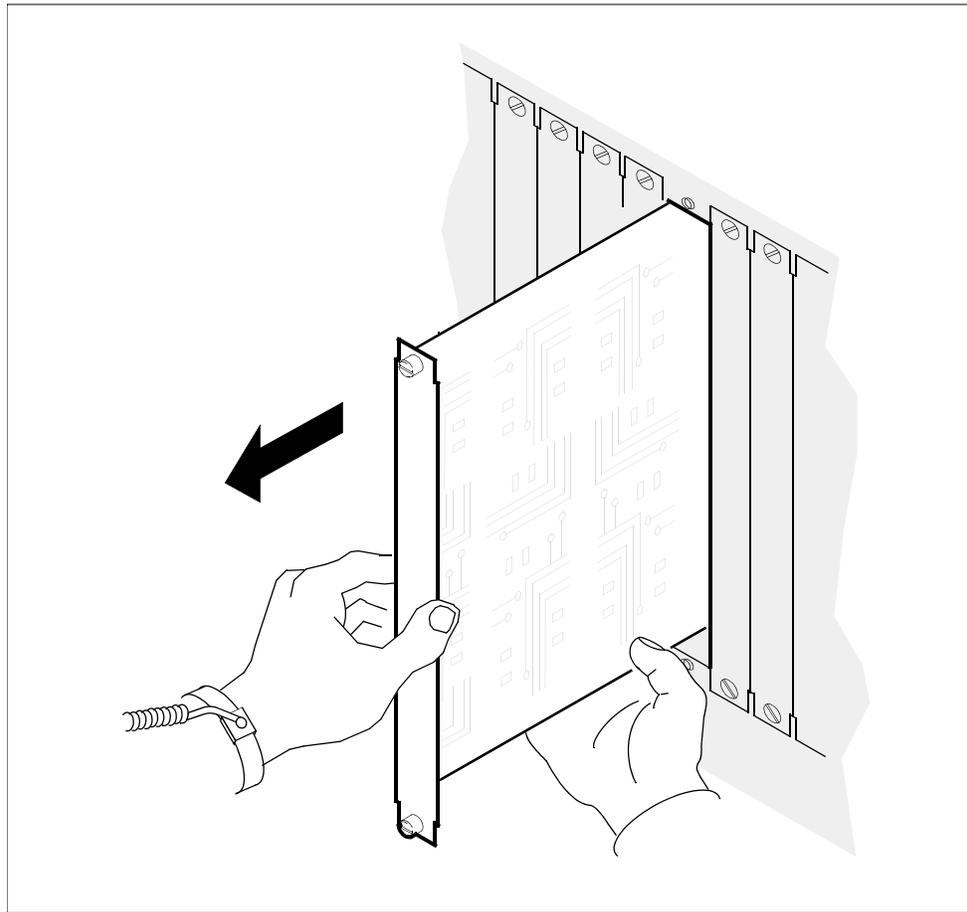
24   Place the LAN personality module you have removed in an ESD protective container.

25   Reinstall the filler plates covering the slots from which you removed the modules.

26   You have completed this procedure.

Removing an I/O expansion chassis (NTRX50EC)

Purpose

> **ATTENTION**
> Do not perform this procedure if there are any hardware faults on the CS 2000 Core Manager.

Use this procedure to remove an I/O expansion chassis (NTRX50EC) from an existing system.

Prerequisites

Make sure that your main chassis has been upgraded to the 36-Gbyte + 36-Gbyte Ultra-Multifunction Input/Output (UMFIO), before you start this procedure. Use the procedure , if required.

Task flow diagram

The following flowchart provides an overview of the process. Use the instructions in the procedure that follows the flowchart to perform the task.

Task flow for removing an I/O expansion chassis (NTR50EC)

Perform a system image backup procedure

↓

Start the datavg migration process

↓

Remove the datavg controller modules from the expansion chassis

↓

Perform a system image backup procedure

↓

Busy the CS 2000 Core Manager

↓

Shut down the system

↓

Turn off the power at the MSP

↓

Disconnect the cables

↓

▽ 1

▽ 1

Remove the modules and filler plates

↓

Disconnect the flex cables

↓

Reinstall the modules, cables and filler plates

↓

Turn on the power at the MSP

↓

Perform a full restore of the software from S-tape

↓

Return the system to service

↓

Perform a system image backup procedure

↓

End

This flowchart summarizes the process.

Use the instructions in the procedure that follows this flowchart to perform the tasks.

Procedure

Removing an I/O expansion chassis (NTRX50EC)

At the local or remote VT100 console

1 Perform a system image backup. Use the procedure "Creating system image backup tapes (S-tapes)" in the Security and Administration document.

2 Exit the maintenance interface and return to the AIX command line:

> **quit all**

3 Check that no faults exist on the CS 2000 Core Manager:

 # querysdm flt

If	Do
faults are present	correct the faults using the procedures in the Fault Management document, and return to this procedure
no faults are present	step 4

4 Start the process of migrating datavg from the expansion chassis to the main chassis:

ftmigratepv

The system performs several checks, listing them on the screen. If the system displays an error message, use the following table to determine your next step. If no error is displayed, continue with step 5.

If the error message is:	Do
`You don't have physical volumes for datavg in expansion chassis`	go to step 18
`There is insufficient free disk space on main chassis for migration`	contact your next level of support

5 When prompted, confirm that you want to continue the data migration:

Y

6   Confirm again that you want to continue the data migration:

        `y`

7   The system continues the data migration process, listing all completed sub-processes, and then it prompts you to remove the datavg modules on the expansion chassis. The migration process takes approximately 30 minutes.

        Example response

```
Please take out the datavg module in slot 1 on
the expansion chassis from the SDM. Please take
out the datavg module in slot 9 on the expansion
chassis from the SDM.
```

At the front of the CS 2000 Core Manager

8   Remove the datavg controller modules from the expansion chassis slots indicated by the system.

9

> ⚠️ **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.

10   Undo the thumbscrews located on the top and the bottom of the datavg controller module in domain 0.

        Note: The thumbscrews are the captive type, and cannot be removed from the module.

11 Depress the tip of the locking lever on the face of the I/O controller module.

12 Open the locking lever on the face of the module by moving the lever outwards.
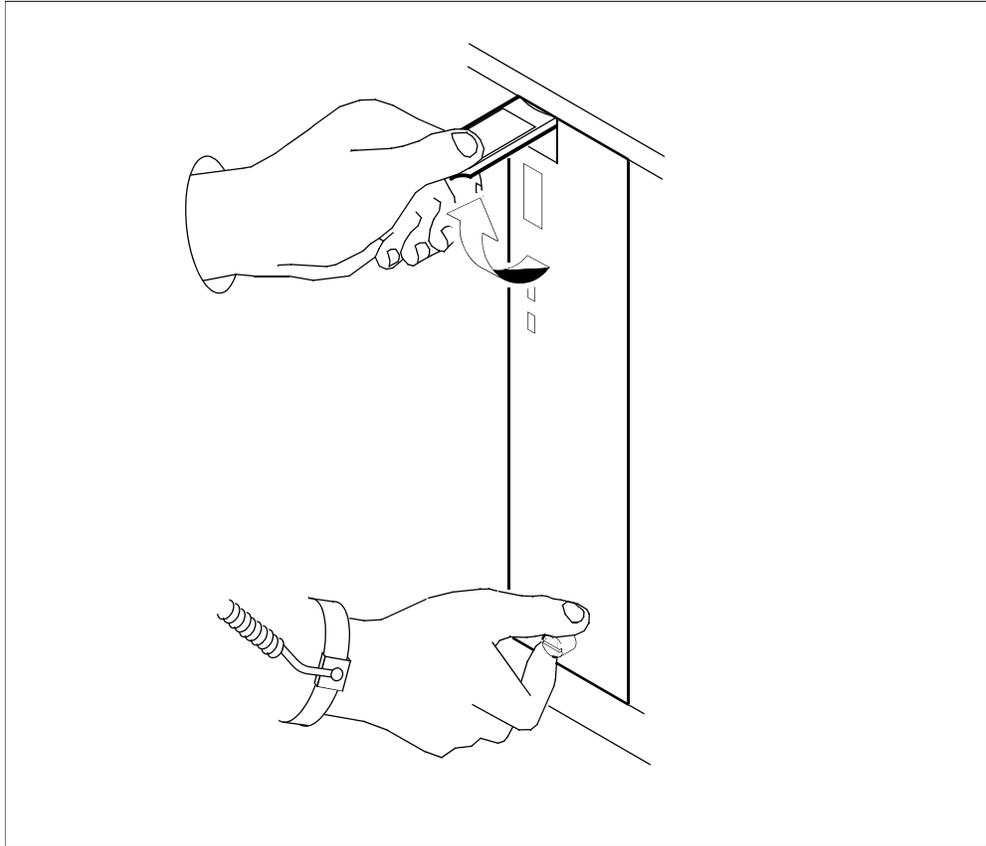
13   While grasping the locking lever, gently pull the module towards you until it protrudes about 2 in (5 cm) from the CS 2000 Core Manager shelf.
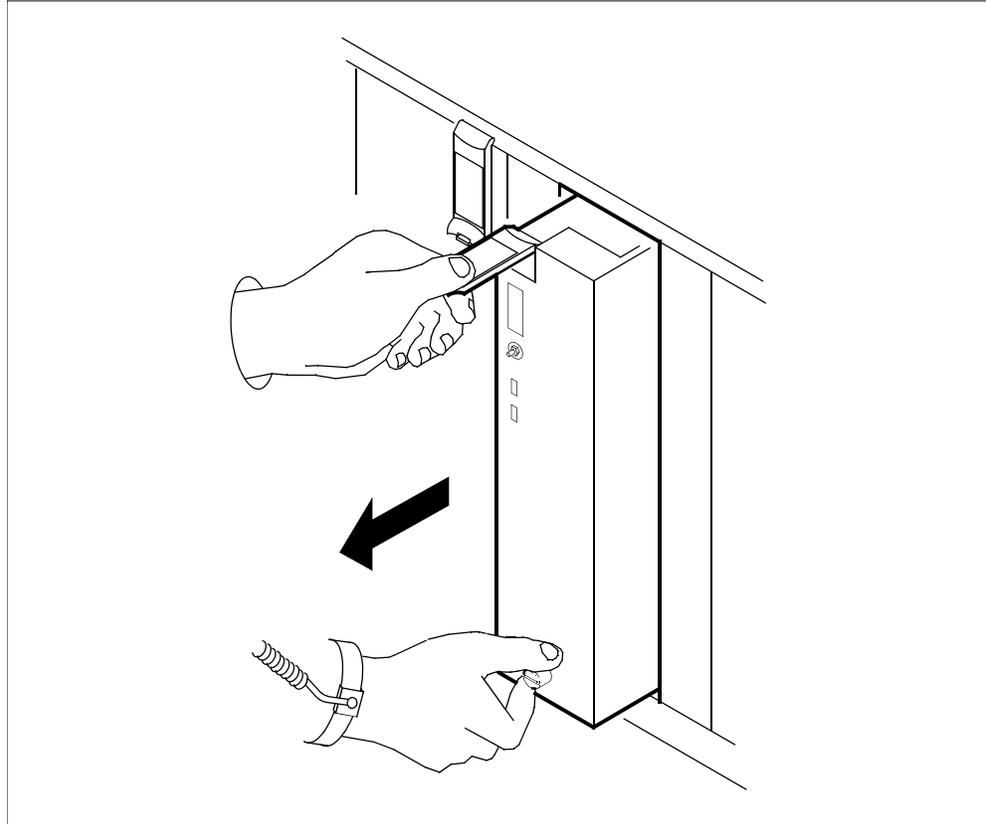
14 Hold the module by the face plate with one hand while supporting the bottom edge with the other hand. Gently pull the module toward you until it clears the shelf.
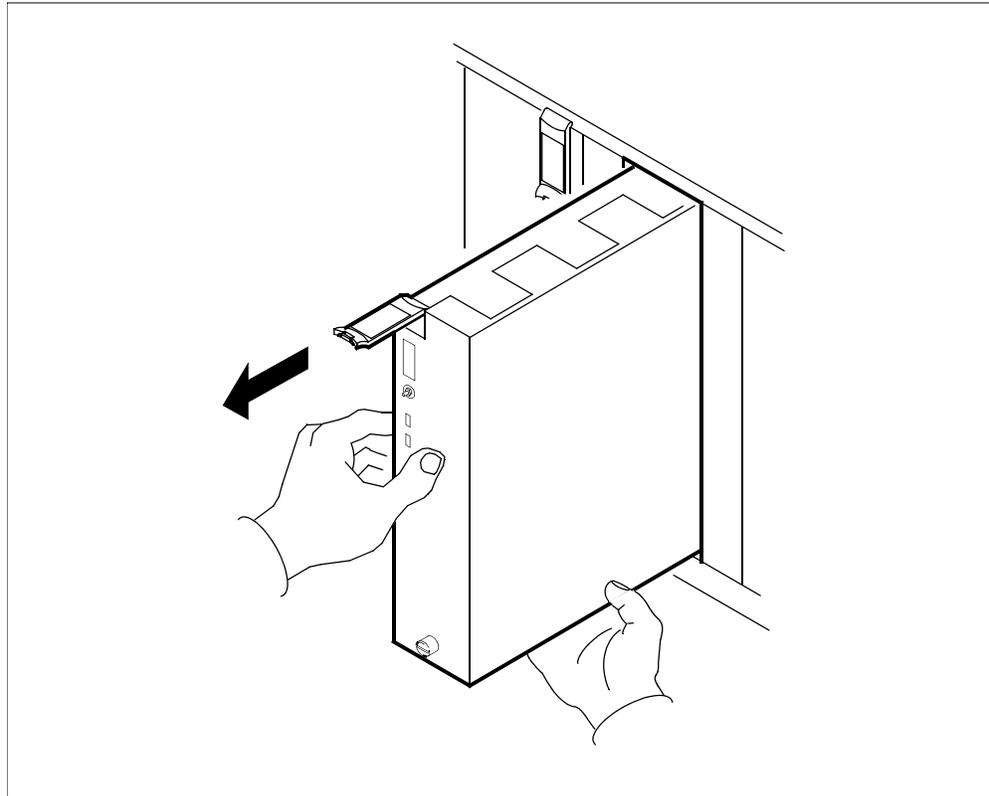
15 Place the module you have removed in an ESD protective container.

16 Repeat steps 10 through 15 for the datavg controller module in domain 1.

At the VT100 console

17 When the data migration is completed, the system displays the following message:

```
Data on expansion chassis has been migrated to
main chassis with no error.
```

18 Perform a system image backup. Use the procedure "Creating system image backup tapes (S-tapes)" in the Security and Administration document.

> *Note:* During the backup procedure, you will be asked if you want to eject the S-tape from the drive. Enter **n** (no). Then, go back to the previous menu by typing **y**, and return to the admin

level by typing **0** (zero). Exit the maintenance interface by typing **`quit all`** and pressing the Enter key.

At the MAP terminal

19 Access the SDM level of the MAP display:

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

20 Busy the CS 2000 Core Manager:

> **`bsy`**

21 Confirm the busy request:

> **`y`**

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

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

At the VT100 console

23 Disable the autoboot attribute for CPU 0 and CPU 1:

`# autoboot -c 0 -o vb=n`

`# autoboot -c 2 -o vb=n`

24 Shut down the CS 2000 Core Manager:

`# shutdown now`

At the modular supervisory panel (MSP)

25 Interrupt power to the CS 2000 Core Manager by turning off all four MSP breakers. The MSP breakers, located at the front of the MSP, supply power to the CS 2000 Core Manager.

At the back of the CS 2000 Core Manager

26

> **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.

27 Disconnect the power cables from the interconnect module (ICM) 0 and ICM 1 on both chassis.

> *Note:* Remove and store the power cables from the expansion chassis.
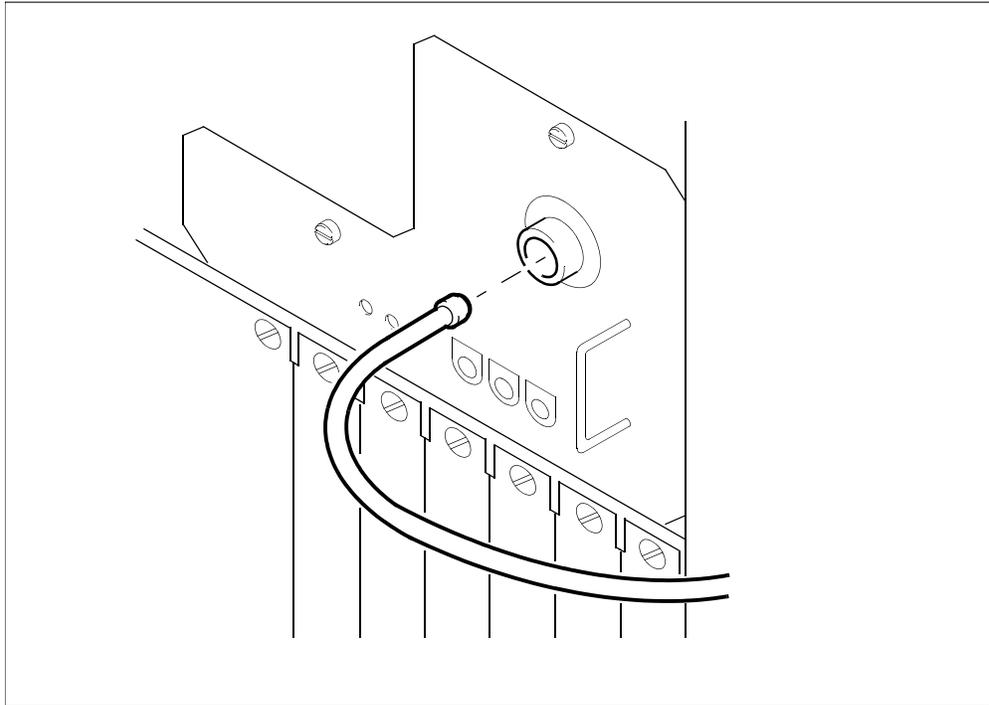
28   If there are any alarm cables connected to the I/O expansion
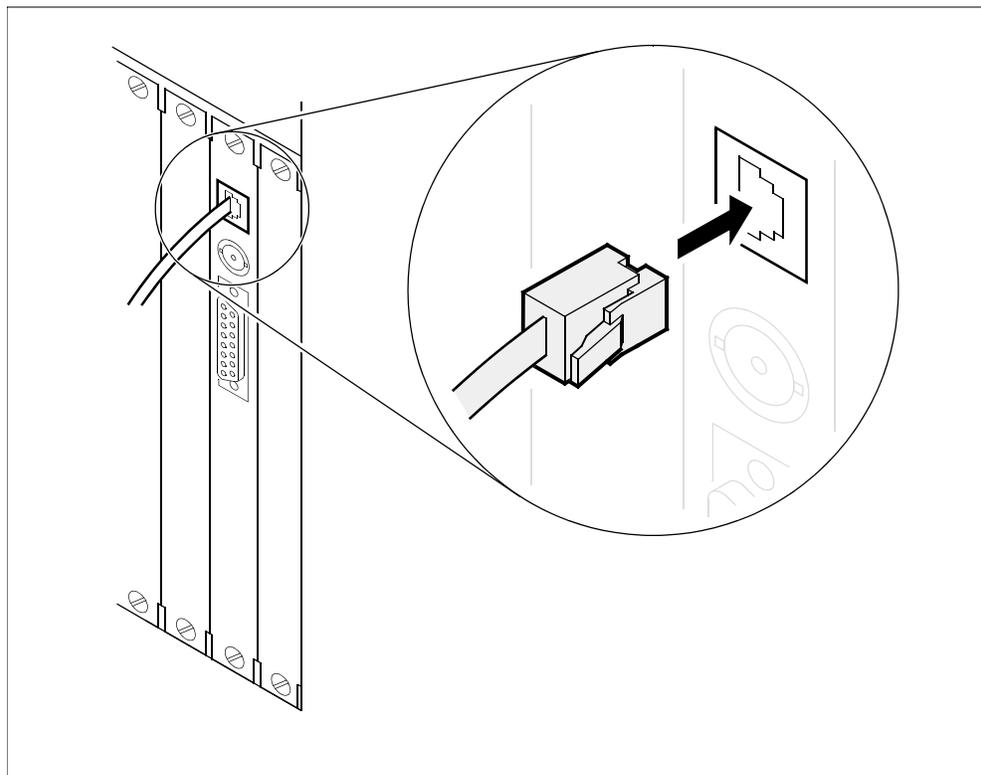   chassis, disconnect them.
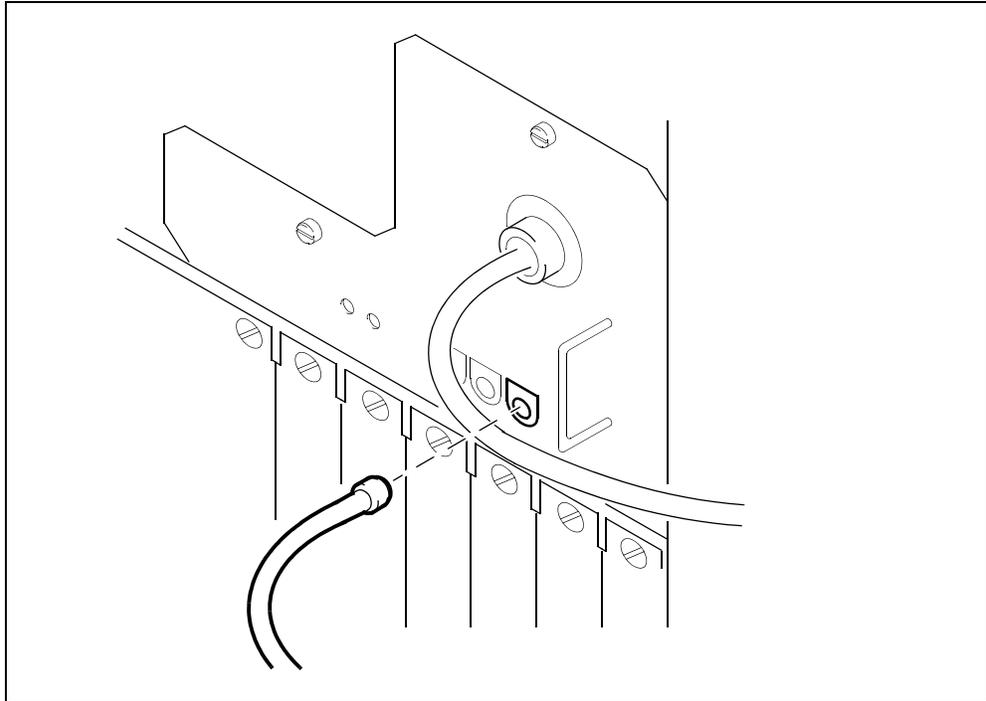
29

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 from both DS512
personality modules (on the main shelf) by pressing the fiber
cable in, and turning it a quarter-turn to the left.

30   Disconnect the 10BASE-T cables from both LAN personality
         modules on the main shelf.
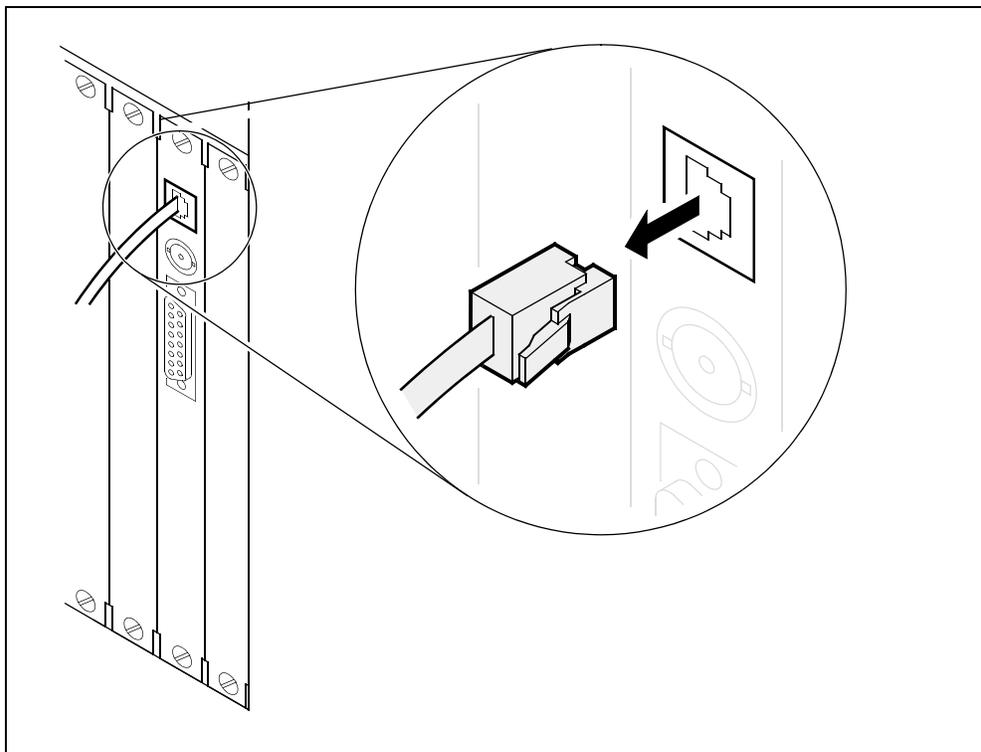
31   To gain access to the flex cable, remove all personality modules
         and filler plates located in slots 1, 2, 3, 14, 15, and 16 on both
         chassis. Complete steps 32 through 34 for each personality
         module that you need to remove.

         Note: Record the slot number of each personality module
         and each filler plate that you are removing from the main shelf.

32   Loosen the two thumbscrews located at the top and bottom of
         the personality module.

         Note: The thumbscrews are the captive type, and cannot be
         removed from the module.

33   While grasping the thumbscrews, carefully pull the personality
         module out of the CS 2000 Core Manager shelf.
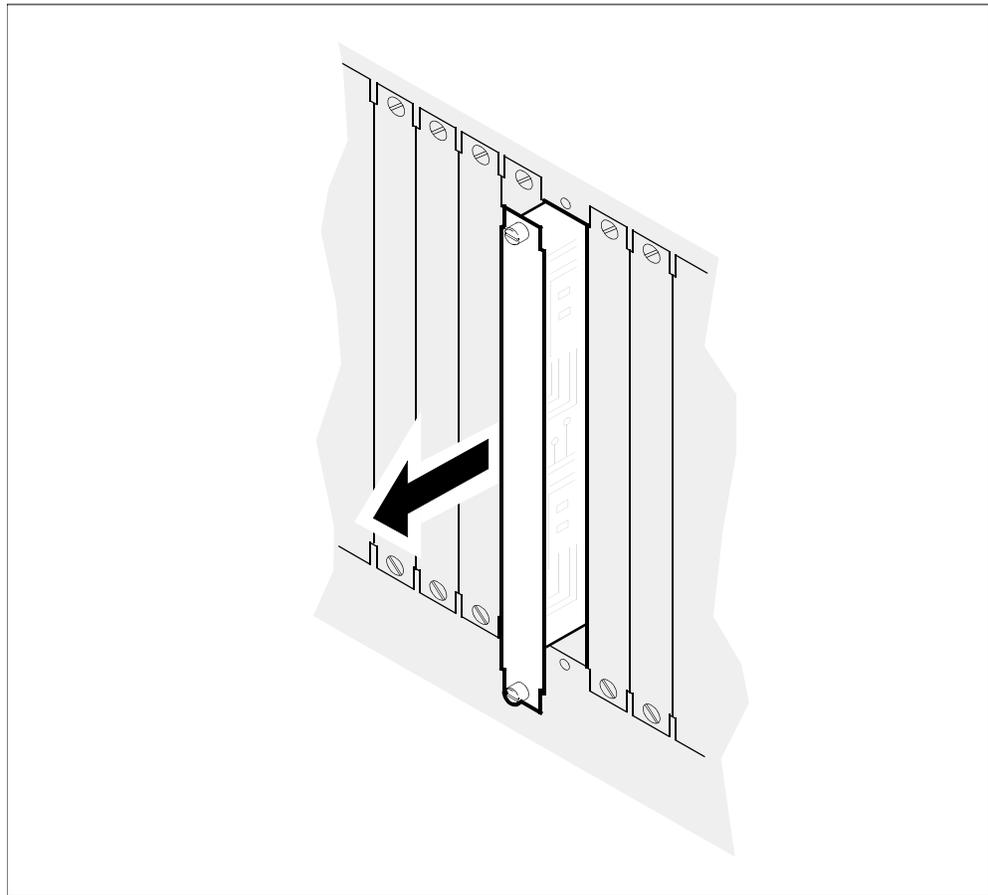
34 Place the personality module you have removed in an ESD protective container.

35 Remove the domain 0 and domain 1 flex covers that run from the outside of the main and I/O expansion chassis.

36 Disconnect and remove the domain 0 flex cable (NTRX5088) from the I/O expansion chassis backplane side 0 and from the main chassis backplane side 0. Through the empty slots, reach the ends of the flex cable and pull them towards you. Once

disconnected from both chassis, remove the cable through the side opening.

Repeat the same operation on domain 1.

Domain 0 of I/O expansion chassis backplane

Domain 0 flex cable

Domain 0 of main chassis backplane
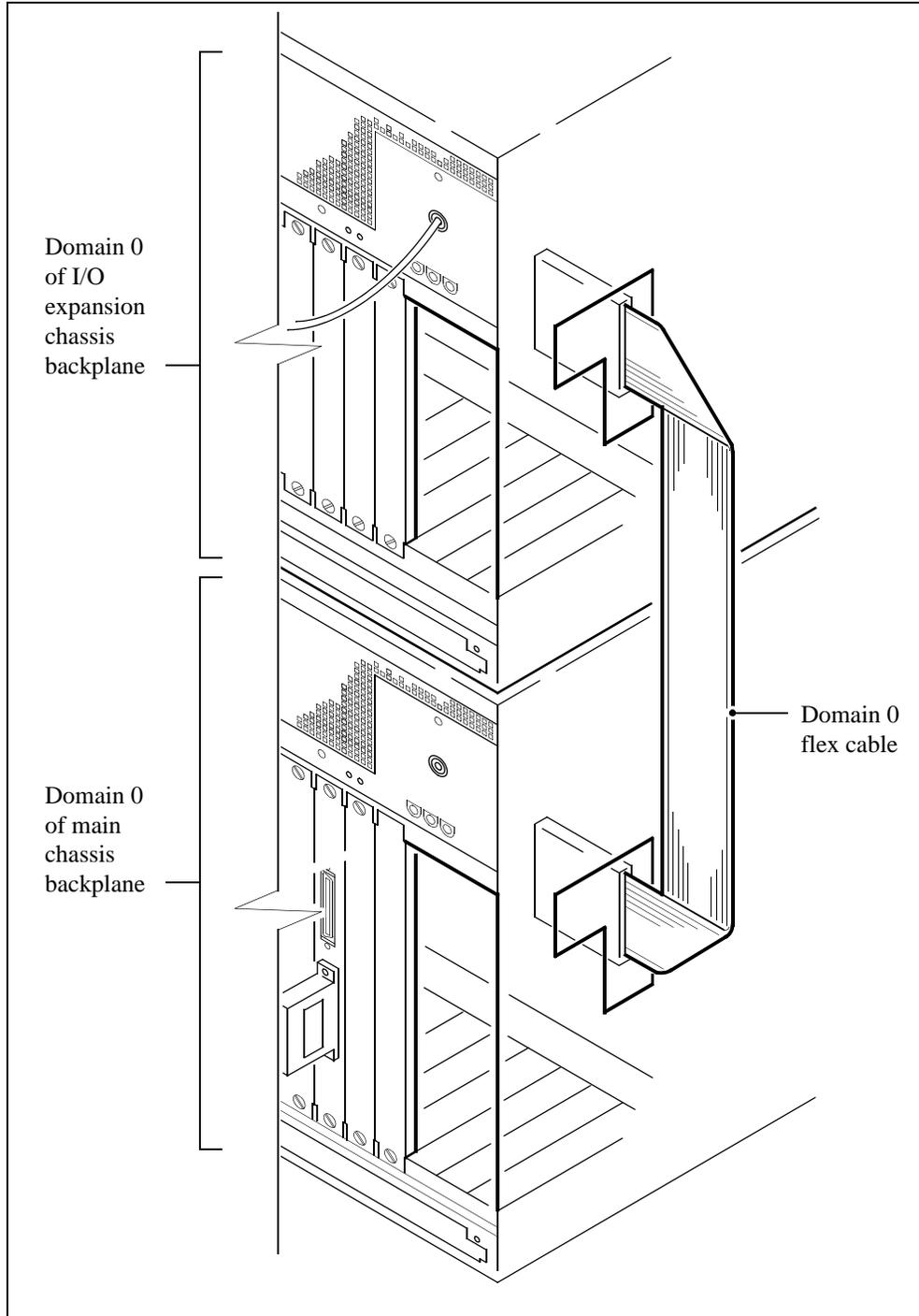
37 Reinstall all personality modules and filler plates (on the main chassis only) that you removed in step 31.

> ***Note 1:*** Use your records from step 31 to make sure that you are placing each module in the same slot from which it was removed.

> ***Note 2:*** Reinstall all modules and filler plates in domain 0 first. Start from slot 2, and continue to the right. Repeat the same process on domain 1, starting from slot 16, and continuing to the left.

Complete steps 38 and 39 for each personality module that you need to reinstall.

38 Carefully slide the personality module into the appropriate slot until it is fully inserted.
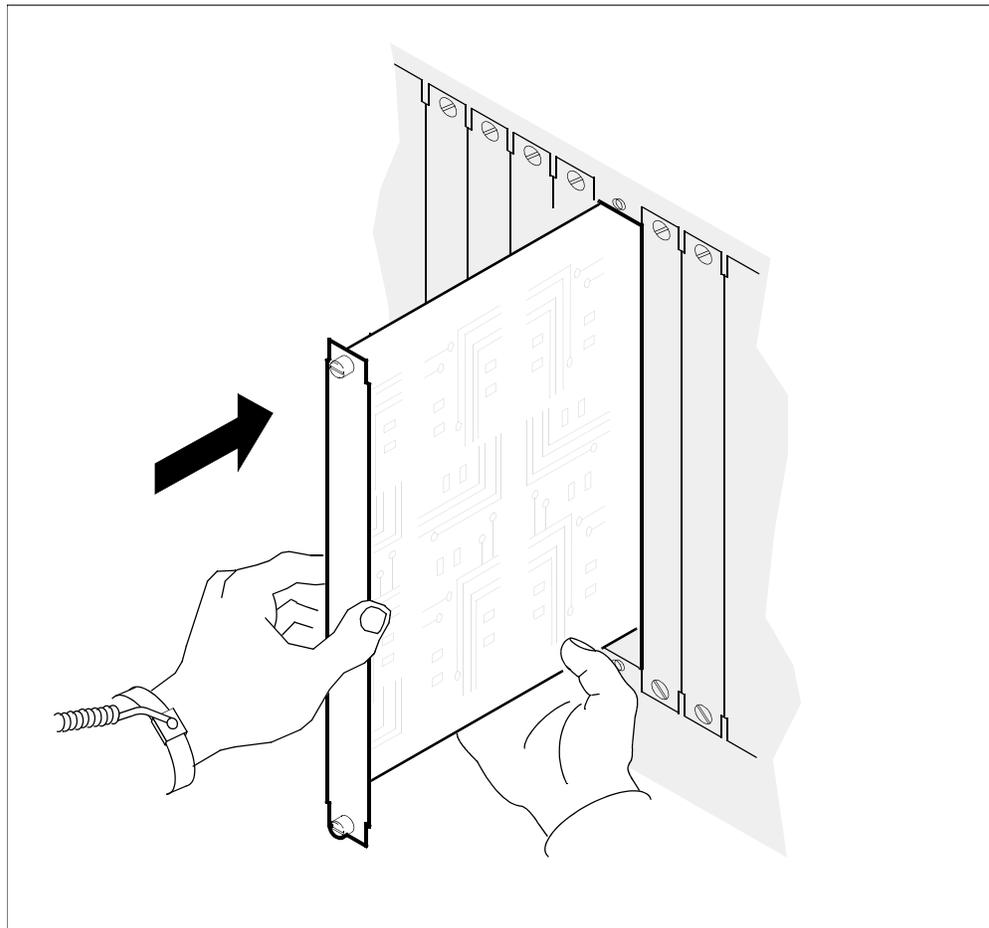
39 Tighten the thumbscrews at the top and bottom of the personality module.

Upgrading the CS 2000 Core Manager

40

> ⚠ **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 (on both domains) by pressing the fiber
cable in, and turning it a quarter-turn to the right.

41 Reconnect the 10BASE-T cable to the LAN personality module
(on both domains).

42 Reconnect the power cables to ICM 0 and ICM 1 in the main
chassis.

At the modular supervisory panel (MSP)

43   Restore power to the CS 2000 Core Manager by turning on the top two MSP breakers.

At the VT100 console

44   Perform a full restore of the CS 2000 Core Manager software load from the system image backup tape (S-tape) that you created in step 18. Use the procedure "Performing a full restore of the software from S-tape" in the Fault Management document (starting with step 13).

At the MAP terminal

45   Access the SDM level of the MAP display:

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

46   Return the CS 2000 Core Manager to service:

```
> rts
```

   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.

47   Verify that the CS 2000 Core Manager status is InSv (in-service) or ISTb (in-service trouble).

48   Verify that all billing stream are either in-service or in recovery by posting and querying each of your billing streams:

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

At the VT100 terminal

49   Enable the autoboot attribute for CPU 0 and CPU 1:

```
# autoboot -c 0 -o vb=y
```

```
# autoboot -c 2 -o vb=y
```

50   Perform a system image backup. Use the procedure "Creating system image backup tapes (S-tapes)" in the Security and Administration document.

51   You have completed this procedure.

Migrating from a rootvg system to a rootvg/datavg system

Purpose

> **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.

Task flow diagram

The following task flow diagram provides an overview of the process. Use the instructions in the procedure that follows the flowchart to perform the task.

Task flow for migrating from a rootvg system to a rootvg/datavg system

```
Busy the CS
2000 Core Man-
ager.
        │
        ▼
Disable telnet
from the
maintenance
interface
        │
        ▼
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 )


      ( 1 )
        │
        ▼
Enable telnet
from the
maintenance
interface
        │
        ▼
End
```
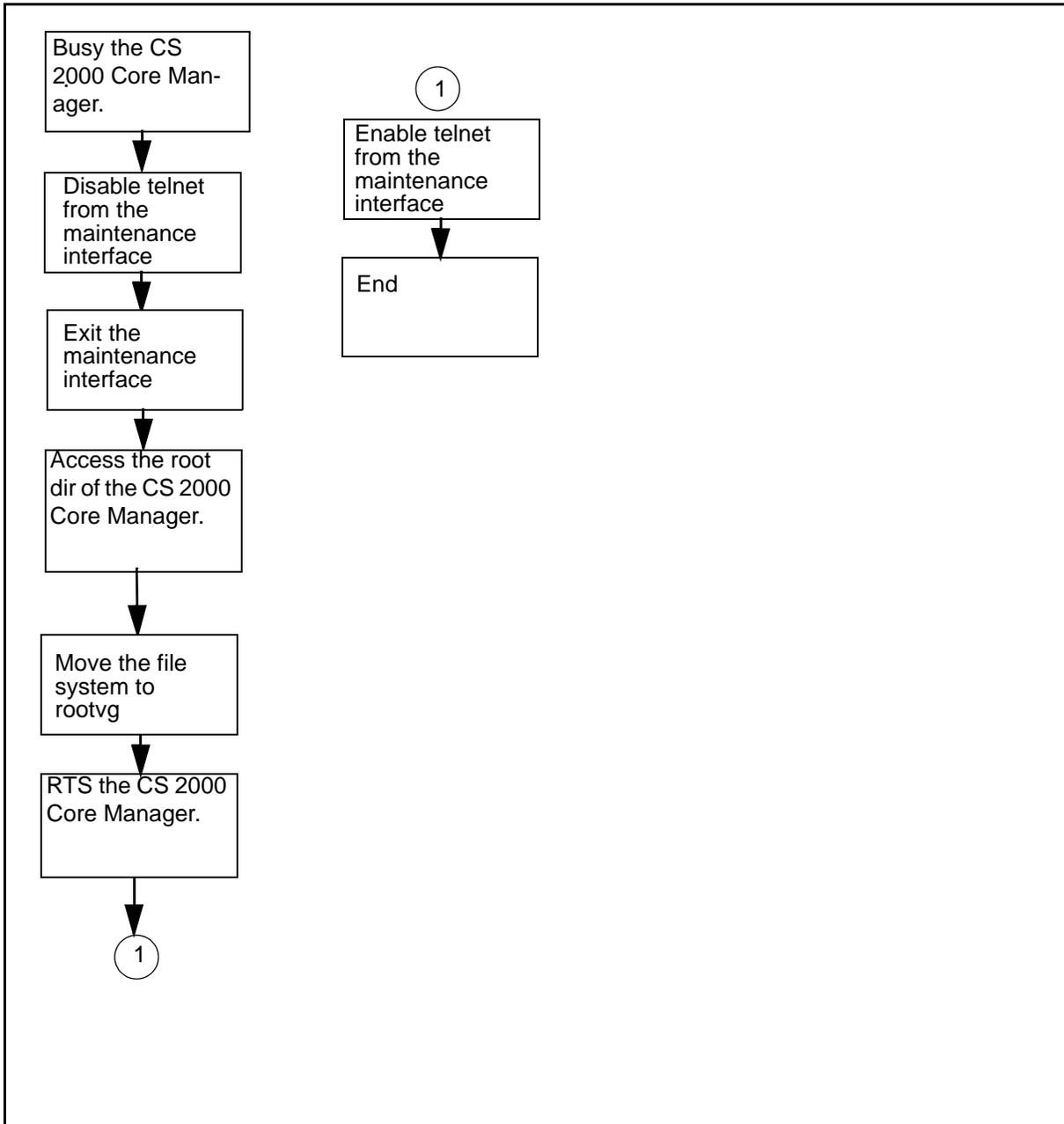
Procedure

Creating a data volume group

At the SDM level of the MAP display

1   Busy the CS 2000 Core Manager:

> **bsy**

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:

> **admin**

4   Access the Access level:

> **access**

The CS 2000 Core Manager displays the state of the telnet service. If telnet is already disabled, proceed to step .

5   Disable telnet to ensure that no other user has access to CS 2000 Core Manager during the volume group migration:

> **change**

6   Confirm the command:

> **y**

7   Exit the maintenance interface:

> **quit all**

8   Access the root directory:

cd /

9   Move the file system from rootvg to datavg:

movevg

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:

> **rts**

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:

> **admin**

13   Access the Access level:

> **access**

14   Enable telnet:

> **change**

15   Confirm the command:

> **y**

16   Exit the maintenance interface:

> **quit all**

17   You have completed this procedure.

Refer to the procedure "Adding disks and creating a logical volume in datavg" in the Security and Administration document.

Upgrading from an X.25 SYNC card to a UMFIO X.25 card

Purpose

Use this procedure to move a system from a rootvg-only system with SYNC X25 into a rootvg/datavg system with UMFIO/X25PM.

Task flow diagram

The following task flow diagram provides a summary of the process. To move from a rootvg-only system to a rootvg/datavg with X25, use the instructions in the procedure that follows the flowchart.

Task flow for upgrading from an X.25 SYNC card to a UMFIO X.25 card

```
┌─────────────────────┐          ┌────────────────────────────┐
│ Obtain the UMFIO    │          │ This flowchart summarizes  │
│ and X25PM modules   │          │ the process.               │
│ for rootvg & datavg │          │                            │
└─────────┬───────────┘          │ Use the instructions in the│
          │                      │ procedure that follows this│
          ▼                      │ flowchart to perform the   │
┌─────────────────────┐          │ tasks.                     │
│ Upgrade the         │          └────────────────────────────┘
│ MFIO rootvgs        │
│ into UMFIO/X25PM    │
└─────────┬───────────┘
          │
          ▼
┌─────────────────────┐
│ Add the datavg      │
│ UMFIO and X25PM     │
│ modules.            │
└─────────┬───────────┘
          │
          ▼
┌─────────────────────┐
│ Move from rootvg-   │
│ only system to      │
│ rootvg/datavg.      │
└─────────┬───────────┘
          │
          ▼
┌─────────────────────┐
│ End                 │
│                     │
│                     │
└─────────────────────┘
```
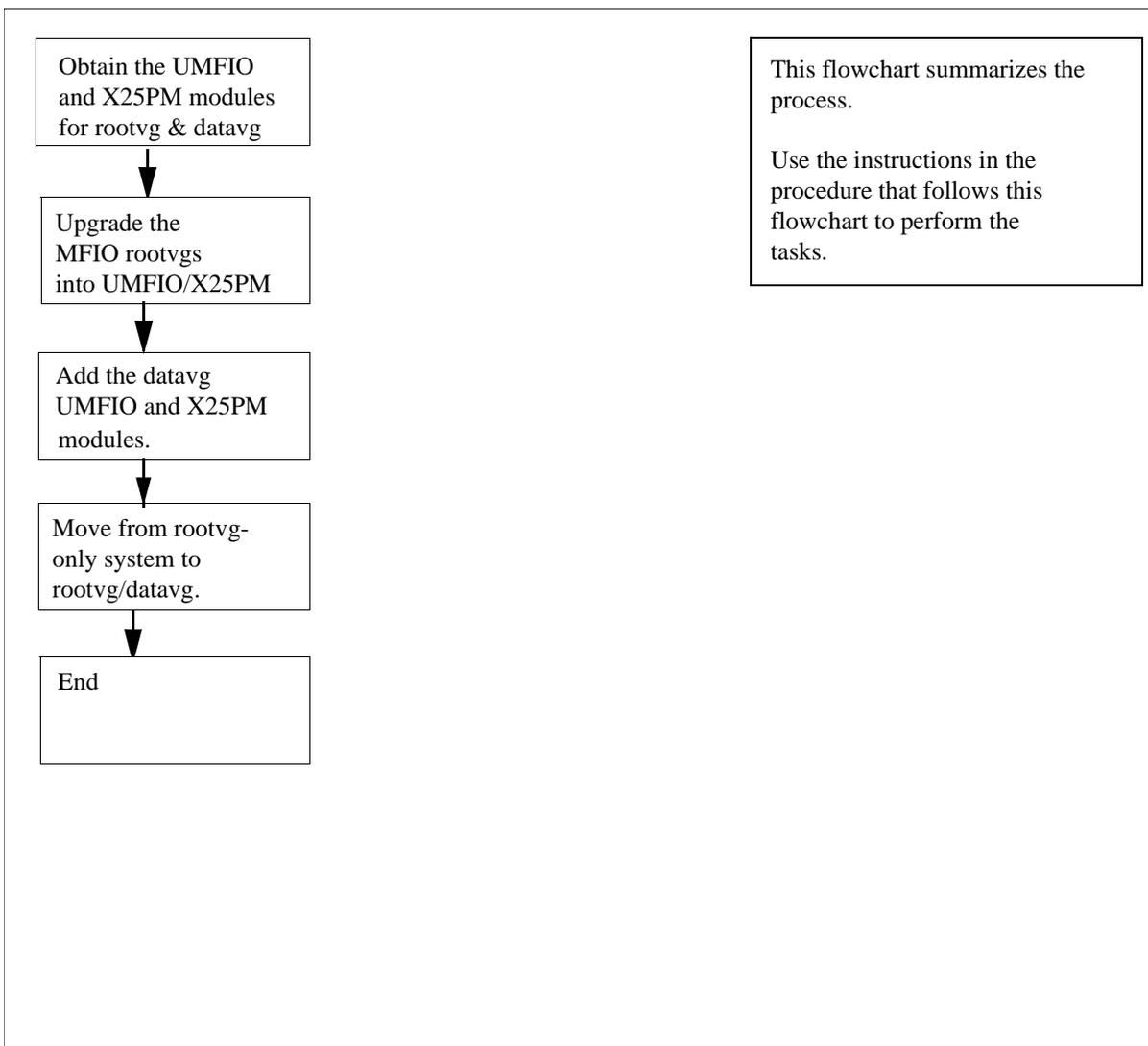
Upgrading from an X.25 SYNC card to a UMFIO X.25 card

At the CS 2000 Core Manager

1   Upgrade from rootvg MFIO with SYNC X.25 to UMFIO/X25PM. 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.

2   Perform the procedure Upgrading the rootvg MFIO to MFIO or UMFIO on page 285, to upgrade from rootvg MFIO with SYNC X25 into rootvg UMFIO/X25PM for both domains.

3   Add the datavg UMFIO and X.25 PM to the system. 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.

4   Perform the procedure Adding I/O controller modules on page 237, to add the datavg UMFIO and X25PM modules for both domains to the system.

5   Perform the procedure Migrating from a rootvg system to a rootvg/datavg system on page 279, to move from a rootvg-only system to a rootvg datavg system.

6   You have completed this procedure.

Upgrading the rootvg MFIO to MFIO or UMFIO

Purpose

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 perform the following tasks:

- upgrade from a 4GB + DAT MFIO module or a 9GB + DAT MFIO module to a 36GB + DAT Ultra-Multifunction Input/Output (UMFIO) module

- upgrade to any other supported combinations. For the list of supported combinations, refer to the table

- 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

---

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

---

Note: As of the 15.2 release, the system allows you to gracefully back out of an MFIO upgrade.

Pre-upgrade requirements

If you are upgrading to UMFIO, you must check your system for UMFIO readiness prior to the upgrade. To check for UMFIO readiness, type the following:

 # umfiocheck

The following example shows the output for a system that is UMFIO ready.

Example
```
1+0 records in.
```

```
1+0 records out.

1+0 records in.

1+0 records out.

This system is UMFIO ready.
```

If the UFMIO is not ready, you must perform a backup and restore. Perform the backup using the procedure "Creating system image backup tapes (S-tapes) manually" in the Security and Administration document. Perform the restore using the procedure "Performing a full restore of the software from S-tape" in the Fault Management document.

Once you have completed the backup and restore, rerun the ufmiocheck command. If your system is still not UMFIO ready, contact your next level of support.

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.

The following table lists the product engineering codes (PEC).

Nortel PEC	Name
NTRX50FS	LAN personality module for MFIO
NTRX50GN	4GB + DAT rootvg MFI

Nortel PEC	Name
NTRX50ND	9GB + DAT rootvg MFIO
Note: Replacements for the NTRX50ND will be filled on a best-effort basis before and after the MD date of 31 December 2004. After 31 December 2004, the NTRX50NM will be the replacement for the NTRX50ND	
NTRX50NK	LAN personality module for UMFIO
NTRX50NN	X25 personality module for UMFIO
NTRX50NM	36GB + DAT rootvg UMFIO

Task flow diagram

The following task flow diagram provides a summary of this process. Use the instructions in the procedure that follows the flowchart to perform the tasks.

Task flow for Upgrading the rootvg MFIO to MFIO or UMFIO

Log into the CS 2000 Core Manager.

Upgrading to UMFIO? — **N** →

Y

Run UMFIO check (See page 285)

UMFIO ready? — **Y**

N

Perform backup and restore.

Re-run UMFIO check

UMFIO ready? — **Y**

N

Contact your next level of support.

This flowchart summarizes the process.

Use the instructions in the procedure that follows this flowchart to perform the tasks.

Check the PEC on the replacement module

Verify if disks are mirrored? — **N** → Contact next level 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

Verify that the correct module was used as a replacement → End

Procedure

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   Check the label on the module that you want to use as a replacement. Make sure that label shows the product engineering code (PEC) that you want to use for your upgrade.

3   Access the storage level:

    # sdmmtc storage

4   Use the following table to determine your next step.

If the State of both volumes is	Do
Mirrored	step 5
not Mirrored	contact your next level of support

5   Access the hardware level under RMI:

    > hw

6   Upgrade the MFIO:

    > **upgrade <chassis> <slot> <pec>**

    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.

7   Use the following table to determine your next step.

If you are	Do
prompted to delete the x25 sync module configuration	step 8
not prompted to delete the x25 sync module configuration	step 9

8   Confirm the deletion of the X25 SYNC module configuration:

```
> y
```

9   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 10
not displayed	step 11

10   Confirm the operation:

> y

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

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
MFIO controller module to be upgraded. The thumbscrews are
the captive type, and cannot be removed from the module.

Note: Make sure the LED of the module you want to upgrade
is either red or off before you remove it.

13 Depress the tip of the locking lever on the face of the MFIO controller module.
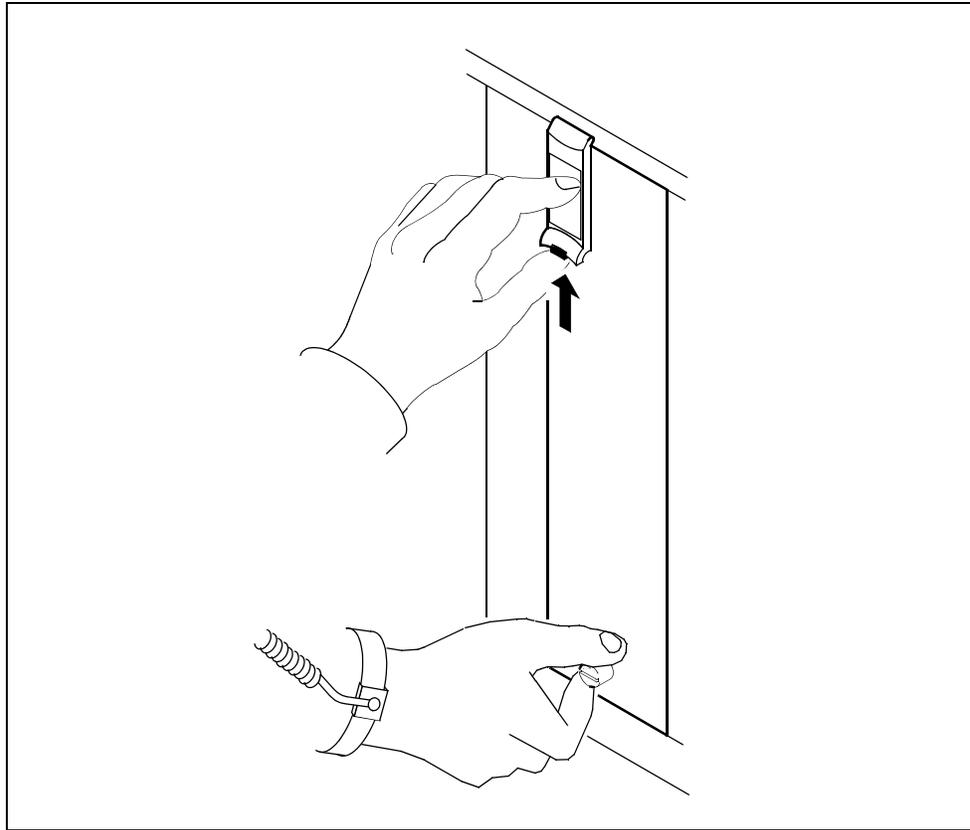
14   Open the locking lever on the face of the module by moving the lever outwards.
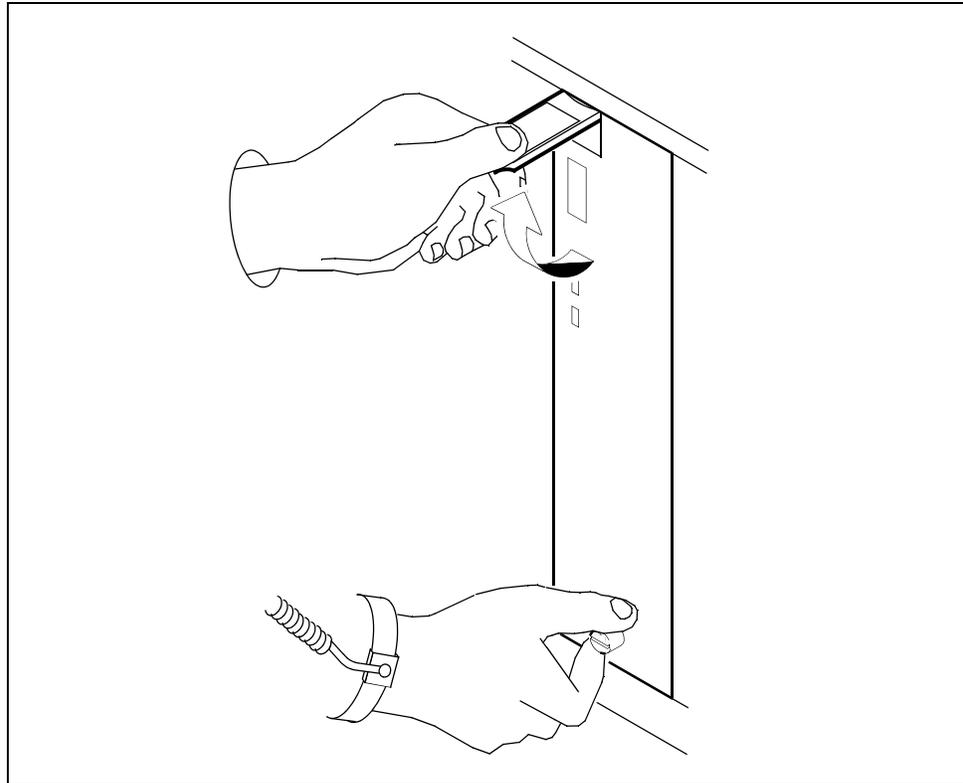
15   While grasping the locking lever, gently pull the module towards you until it protrudes about 2 in. (5 cm) from the CS 2000 Core Manager shelf.
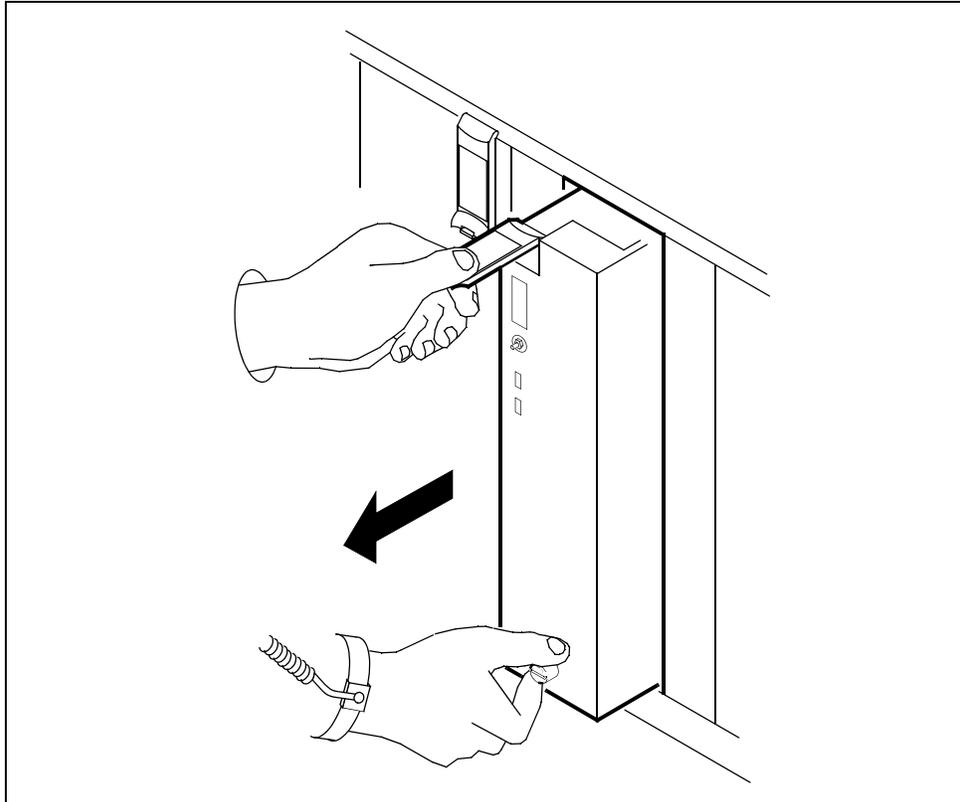
16 Hold the card by the face plate with one hand while supporting the bottom edge with the other hand. Gently pull the module toward you until it clears the shelf.
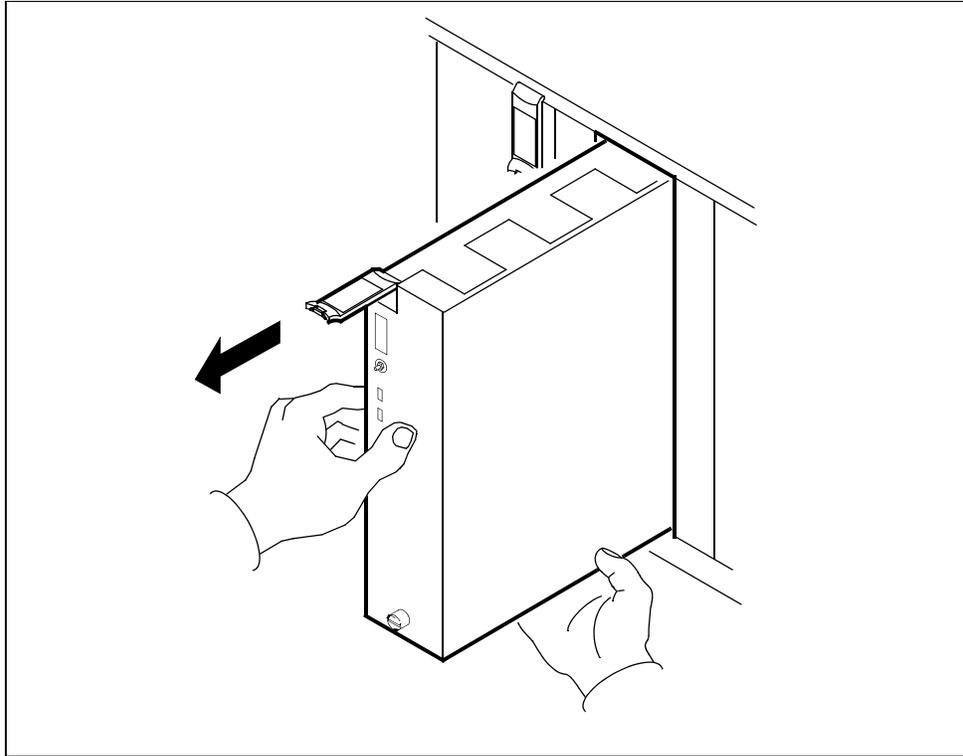
17 Place the module you have removed in an ESD protective container.

At the back of the CS 2000 Core Manager

18 Use the following table to determine your next step.

If you are	Do
upgrading to the UMFIO	step 19
not upgrading to the UMFIO	step 30

19 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.

20 Label the Ethernet cable connected to the LAN personality module you wish to replace.

21 Disconnect the Ethernet cable, as shown in the following diagram.
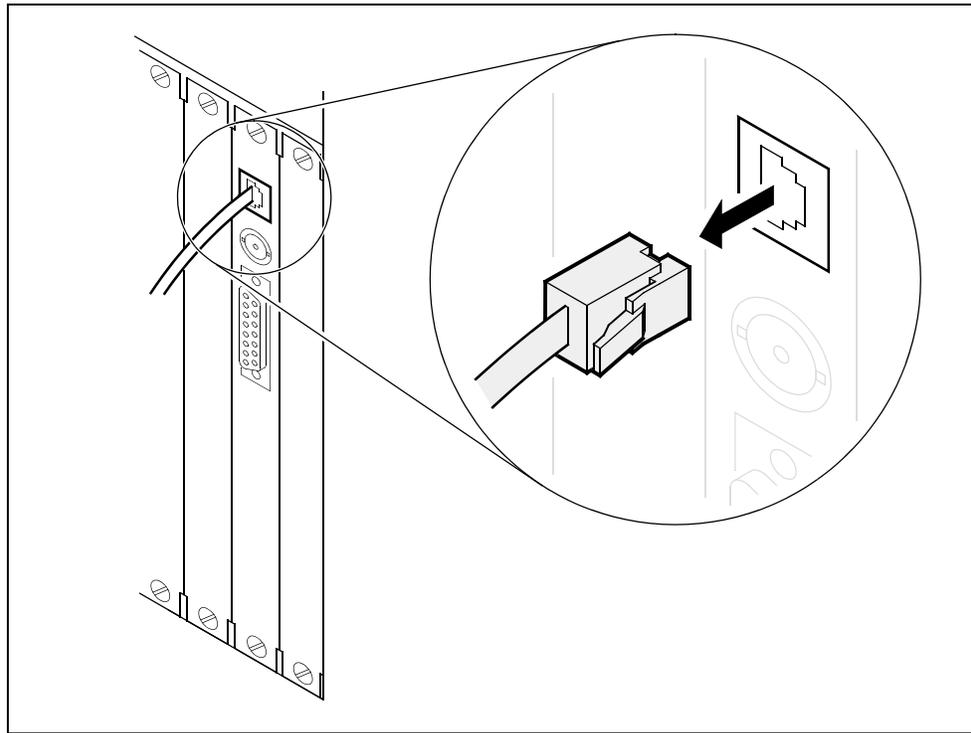
22 Loosen the two thumbscrews located at the top and the bottom of the LAN personality module. The thumbscrews are the captive type, and cannot be removed from the module.

23 While grasping the thumbscrews, gently pull the LAN personality module towards you until it protrudes about 2 in. (5 cm) from the CS 2000 Core Manager shelf.
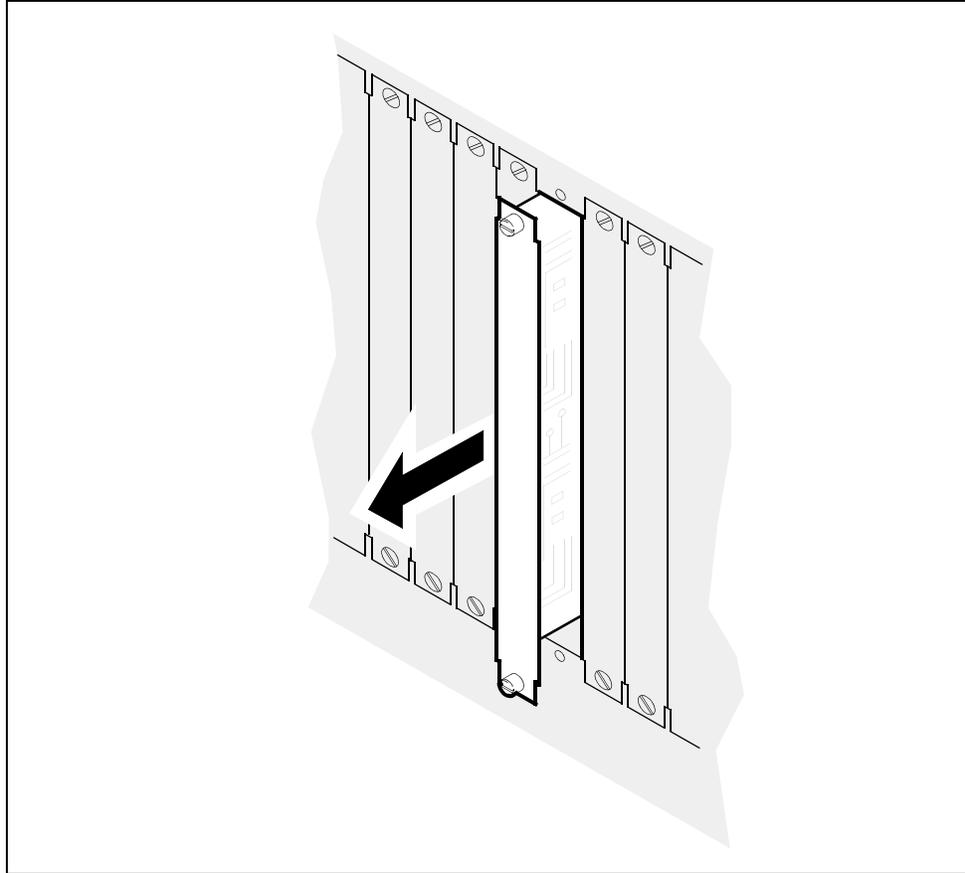
24 Hold the LAN personality module by the face plate with one hand while supporting the bottom edge with the other hand. Gently pull the module toward you until it clears the shelf.
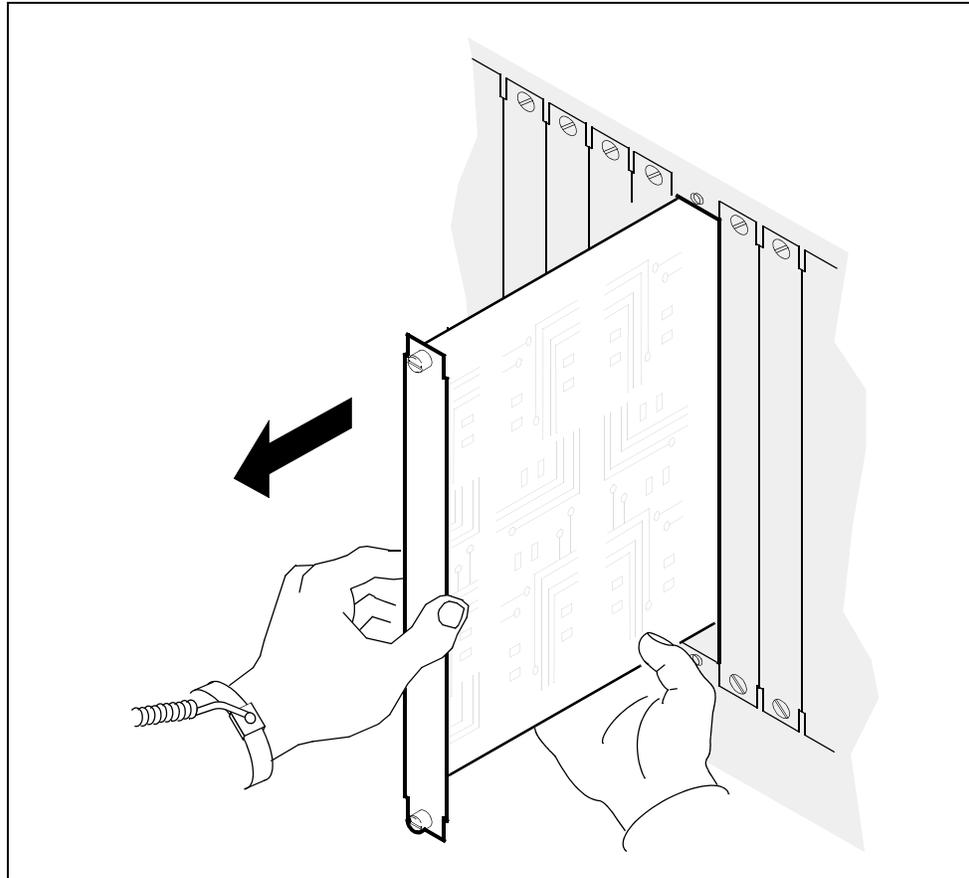
25 Place the LAN personality module you have removed in an ESD protective container.

26 Insert the new personality module (NTRX50NK or NTRX50NN) into the CS 2000 Core Manager shelf.

27   Gently slide the LAN personality module into the shelf until it is fully inserted.
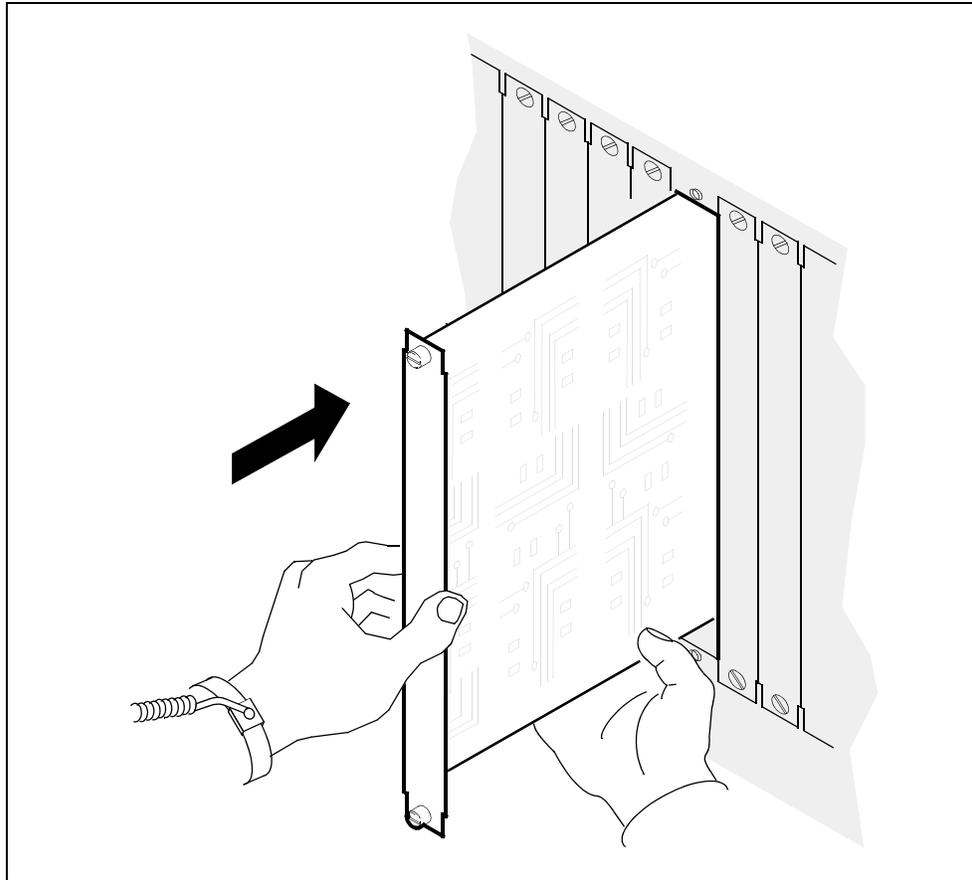
28   Tighten the thumbscrews at the top and the bottom of the LAN personality module.

29   Reconnect the Ethernet cable to the LAN personality module. You may remove the label that you put on the cable in step 20.
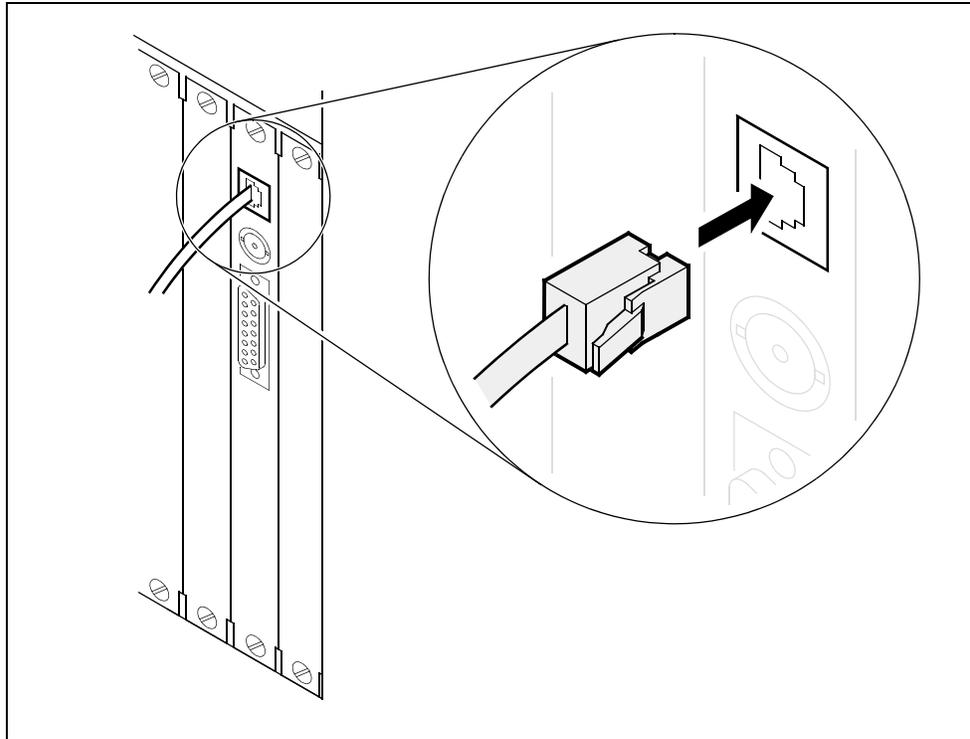
At the front of the CS 2000 Core Manager

30   Insert the PEC MFIO or PEC UMFIO module into the CS 2000 Core Manager shelf.

31   Gently slide the module into the shelf until it is fully inserted.
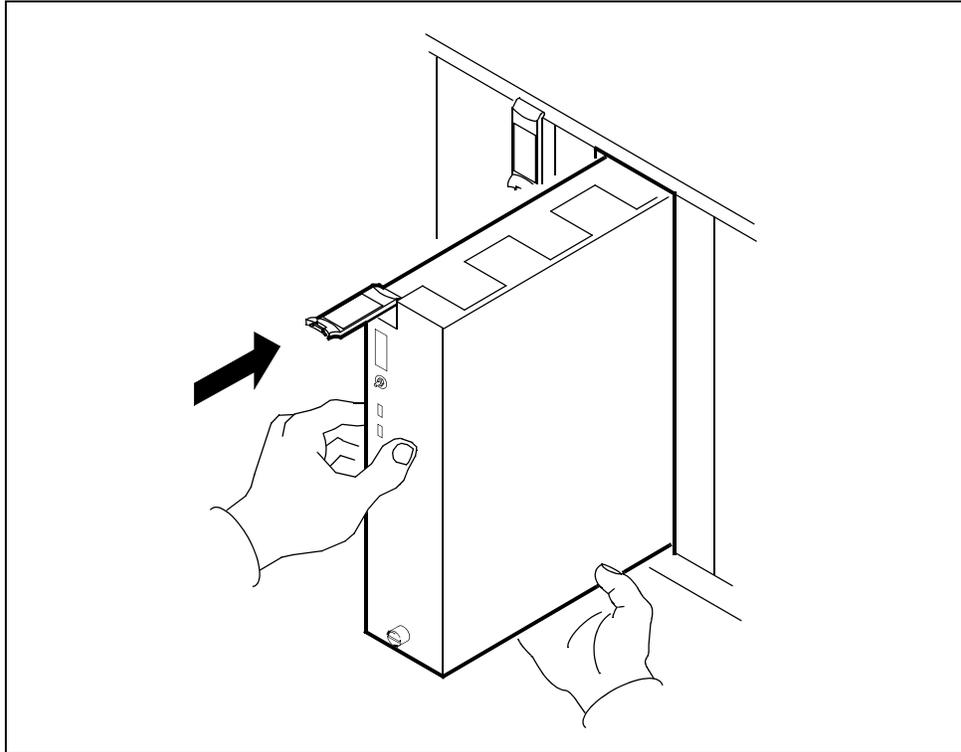
32   Close the locking lever to secure the module. Ensure that the top micro switch is lined up with the locking lever to properly seat the module.

Micro switch
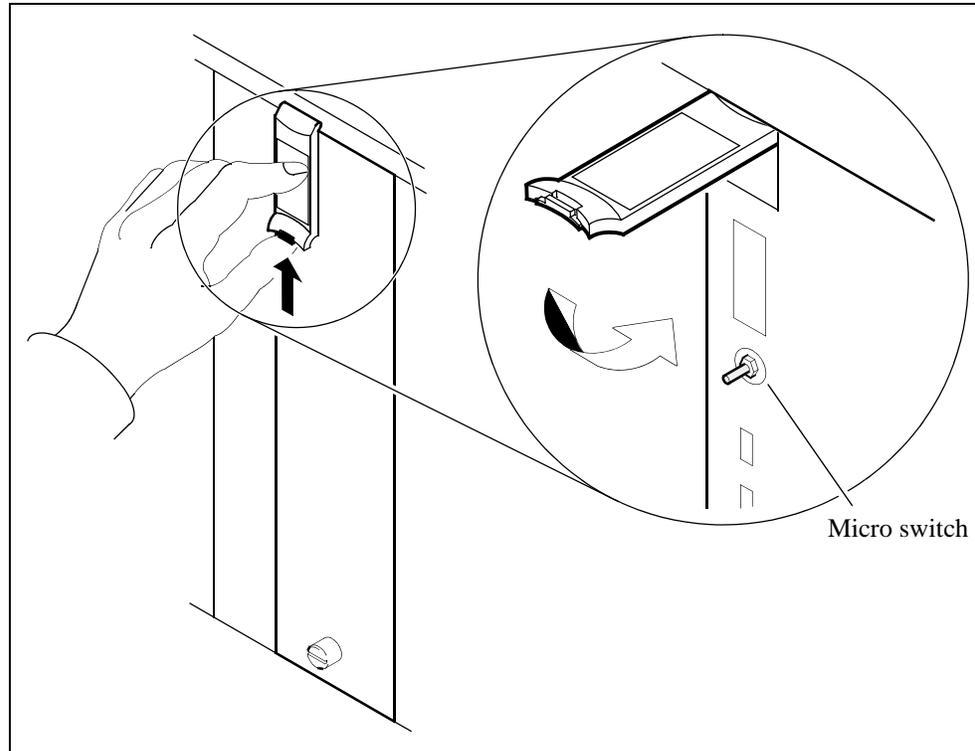
33   Tighten the thumbscrews on the module.

34   Continue the upgrade:

> **1**

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
>
```

35   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 36

If the system	Do
does not prompt you to remove the X25 SYNC module from slot <n>	step 38

36   Remove the X25 SYNC module from the slot indicated in the display.

Example response

```
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"):
```

37   Once you have removed the X25 SYNC module, continue the upgrade:

> **1**

38   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 the procedure Commissioning X.25 connectivity on page 173.

Once the system completes the reintegration, the status of the volume group changes to Mirrored.

39   Verify that the correct module was used as a replacement:

> **locate**

The system displays a list of hardware. Confirm that the correct PEC is listed for the newly upgraded module.

40   Upgrade the MFIO /UMFIO module in the other domain by repeating steps 4 through 39.

41   You have completed this procedure.

Upgrading a datavg MFIO to MFIO or UMFIO

Purpose

> **⚠ CAUTION**
> **Possible loss of intercept service**
> If the MFIO to be upgraded supports lawful intercept through an X.25 interface, this procedure removes lawful intercept from service for a short period of time. After you complete the upgrade procedure, you must restart the lawful intercept application.

Use this procedure to perform the following Multifunction Input/Output (MFIO) to MFIO or Ultra-Multifunction Input/Output (UMFIO) upgrades:

- 4GB + 4GB MFIO to 9GB + 9GB MFIO
- 4GB + 4GB MFIO to 36GB + 36GB UMFIO
- 9GB + 9GB MFIO to 36GB + 36GB UMFIO

> *Note 1:* You can also use this procedure to upgrade to any other supported combinations. For the list of supported combinations, refer to the table Supported MFIO and UMFIO, datavg and rootvg configurations on page 7.

> *Note 2:* 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 3:* 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

Nortel PEC	Name
NTRX50NC (front) *Note:* Replacements for the NTRX50NC will be filled on a best-effort basis before and after the MD date of 31 December 2004. After 31 December 2004 the NTRX50NL will be the replacement for the NTRX50NC.	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, you do not need to install the NTRX50NK.
NTRX50NN (back)	X25 personality module for UMFIO
NTRX50NL (front)	36GB + 36GB datavg UMFIO

Prerequisites and guidelines

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

Upgrading a mirrored pair of MFIOs can require a full maintenance window to complete. If an expansion chassis is provisioned, the upgrade of additional mirrored pairs of MFIOs may require multiple maintenance windows.

ATTENTION

You must have root user access to the CS 2000 Core Manager to perform this procedure.

ATTENTION

A UMFIO upgrade requires the UMFIO LAN personality module (NTRX50NK) or the X25 personality module (NTRX50NN).

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 CS2E0004), it is not possible to upgrade regular MFIOs to UMFIOs, or to upgrade to CS2E0004 without first contacting a Nortel-qualified craftsperson. Operating a CS 2000 Core Manager with more than 2 MFIOs (called large volume support) is possible but not supported in CS2E0004. Additionally, Nortel Networks 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 CS2E0004, you must contact Nortel Networks before attempting to upgrade to CS2E0004.

Nortel Networks recommends that the MFIOs in the main chassis be upgraded first, starting with domain 1 and ending with domain 0. After upgrading the main chassis, proceed to upgrade the expansion

chassis, if there is one. Datavg modules must be upgraded in pairs. For example, if you upgrade the MFIO in slot 4 of the main chassis, 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

Task flow diagram

The task flow diagram that follows provides a summary of this process. Use the instructions in the procedure that follows the flowchart to perform the tasks.

Task flow for Upgrading a datavg MFIO to MFIO or UMFIO (datavg)
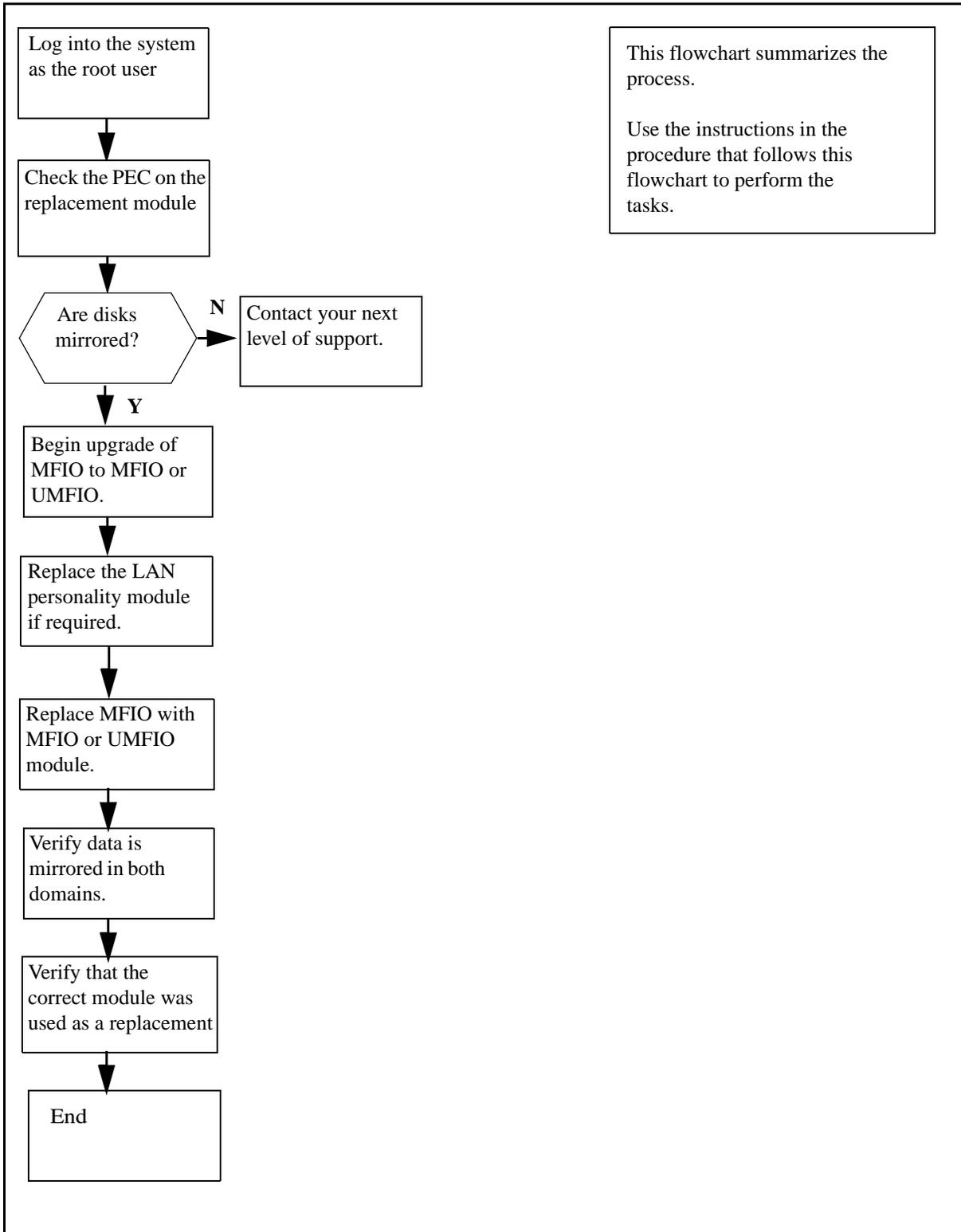
Log into the system
as the root user

↓

Check the PEC on the
replacement module

↓

⬡ Are disks
mirrored? ⬡ — **N** → 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.

↓

Verify that the
correct module was
used as a replacement

↓

End

This flowchart summarizes the
process.

Use the instructions in the
procedure that follows this
flowchart to perform the
tasks.

Procedure

Upgrading a datavg MFIO to MFIO or UMFIO

At the VT100 console

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

2   Check the label on the module that you want to use as a replacement. Make sure that label shows the product engineering code (PEC) that you want to use for your upgrade.

3   Determine the physical location of the hard disk drives:

```
# locate
```

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

4   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).

Note: Replacements for the NTRX50NC will be filled on a best-effort basis before and after the MD date of 31 December 2004. After 31 December 2004, the NTRX50NL will be the replacement for the NTRX50NC.

5 Ensure that the datavg logical volumes are in sync:

```
# lsvg -l datavg
```

From the output, confirm 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 6
not all logical volumes show LV State as "open/syncd" or PVs as "2"	contact your next level of support

6 Access the storage level:

```
# sdmmtc storage
```

7 Use the following table to determine your next step.

If the status of the datavg disks is	Do
mirrored	step 8
not mirrored	contact your next level of support

8 Access the hardware level:

```
> hw
```

9   Upgrade the MFIO:

> upgrade <chassis> <slot> <pec>

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

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".

pec
is the product engineering code for the MFIO or the UMFIO controller module you want to add (either NTRX50NC or NTRX50NL)

Note: Replacements for the NTRX50NC will be filled on a best-effort basis before and after the MD date of 31 December 2004. After 31 December 2004, the NTRX50NL will be the replacement for the NTRX50NC.

Example
> upgrade sdmm 4 NTRX50NL

This example indicates an upgrade to the 36GB + 36GB UMFIO in slot 4 of the main chassis.

If you are	Do
prompted to delete an X.25 interface	step 10
not prompted to deleted an X.25 interface	step 15

10   Confirm the deletion of the X.25 interface:

> y

11

> **ATTENTION**
> If you wish to continue the upgrade, do not enter 1 at this step of the procedure. Follow the procedure and enter 1 after you have replaced the MFIO.

Wait for the system to generate the following response:

Example of 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:
```

If you want to	Do
exit the upgrade	step 12
continue the upgrade	step 13

12   Exit the upgrade:

> `> 99`

Response

The system gracefully backs you out of the upgrade procedure.

13   Begin the replacement of the MFIO. During the upgrade process you may receive the following response:

```
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 you	Do
receive the response	step 14
do not receive the response	step 15

14　　Confirm the operation:

> y

Example of 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

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.

Put on an electrostatic discharge grounding wrist strap.

16　　Undo the thumbscrews located on the top and the bottom of the MFIO controller module to be upgraded. The thumbscrews are the captive type, and cannot be removed from the module.

Note: Make sure the LED of the module you want to upgrade is either red or off before you remove it.

17 Depress the tip of the locking lever on the face of the MFIO controller module.
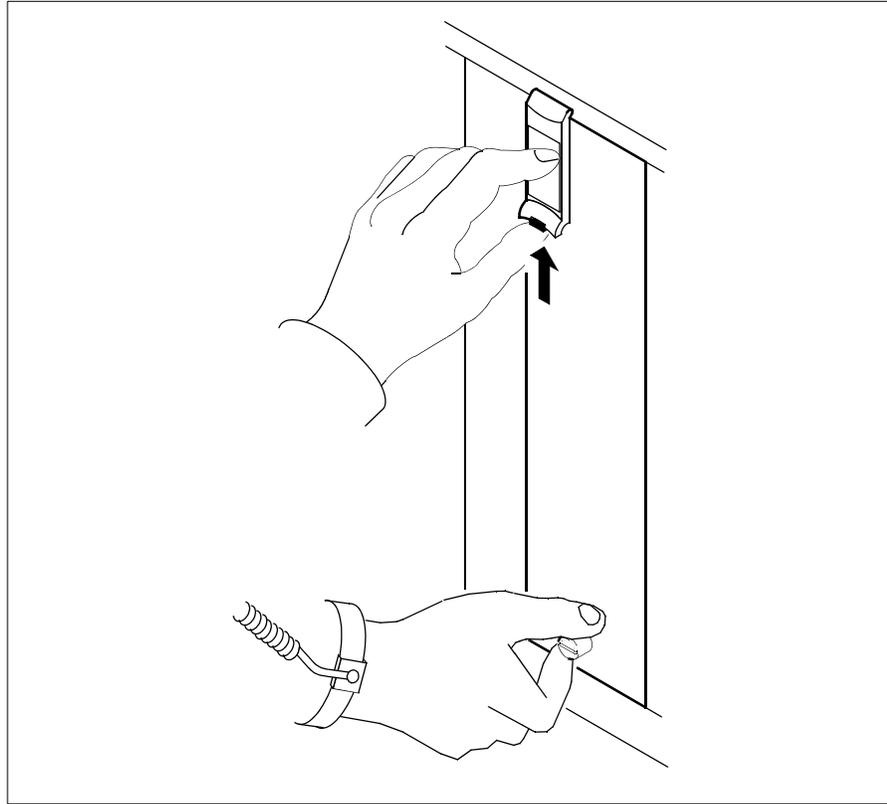
18 Open the locking lever on the face of the module by moving the lever outwards.
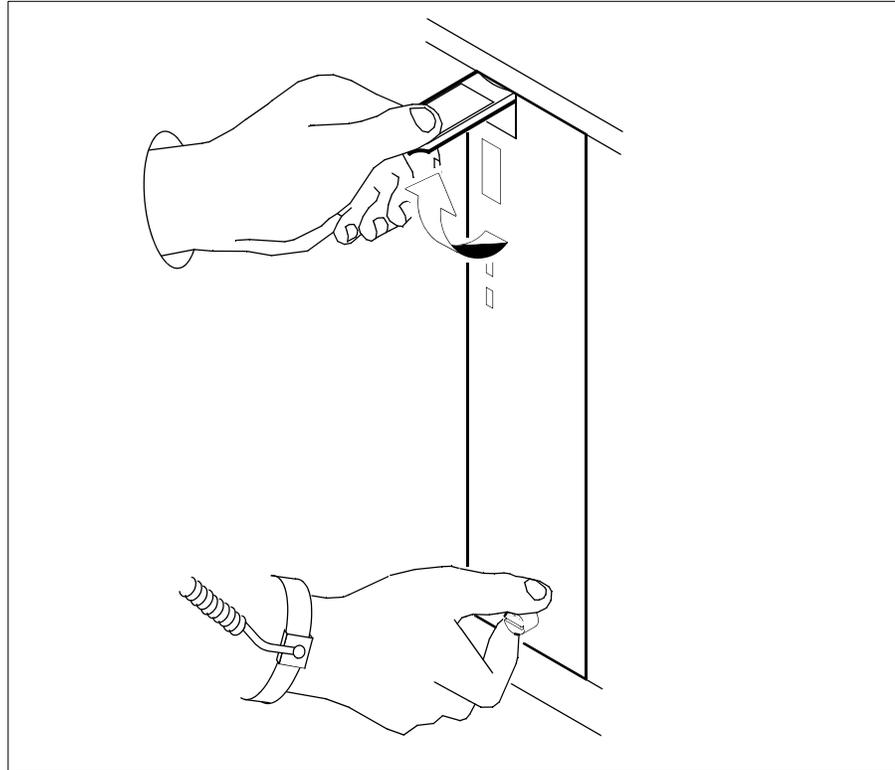
19 While grasping the locking lever, gently pull the module towards you until it protrudes about 2 in. (5 cm) from the shelf.
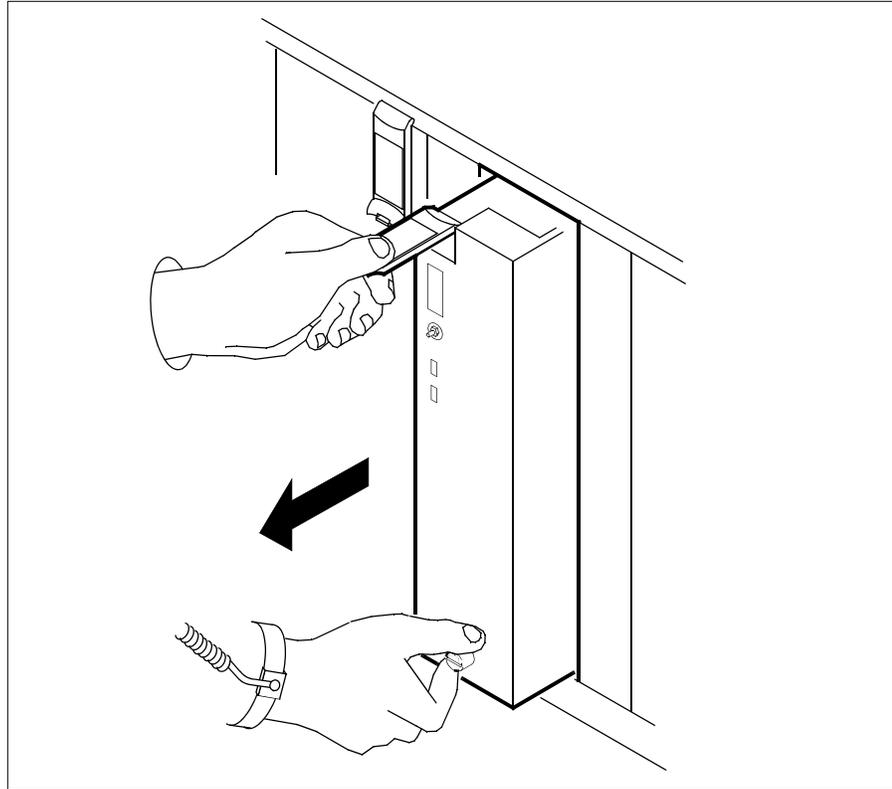
20   Hold the card by the face plate with one hand while supporting the bottom edge with the other hand. Gently pull the module toward you until it clears the shelf.
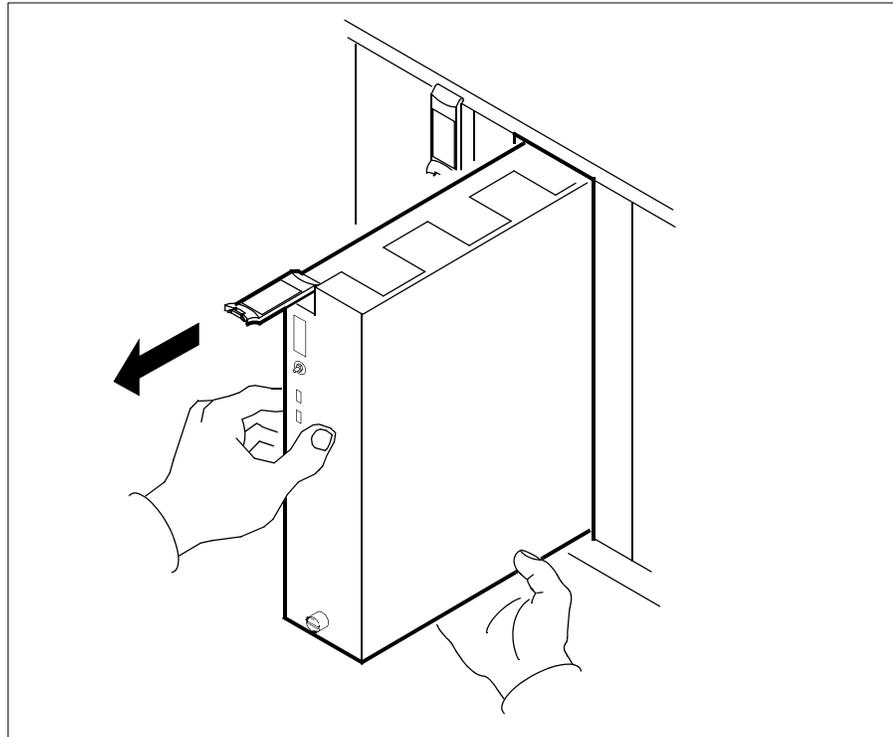
21   Place the module you have removed in an ESD protective container.

At the back of the CS 2000 Core Manager

22   Use the table below to determine your next step.

If you are	Do
upgrading to UMFIO	step 23
not upgrading to UMFIO	step 34

23   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.

24   Label the Ethernet cable connected to the LAN personality module you want to replace.

25   Identify the correct LAN module (slot and PEC code) you wish to remove and disconnect the Ethernet cable, as shown in the following diagram.
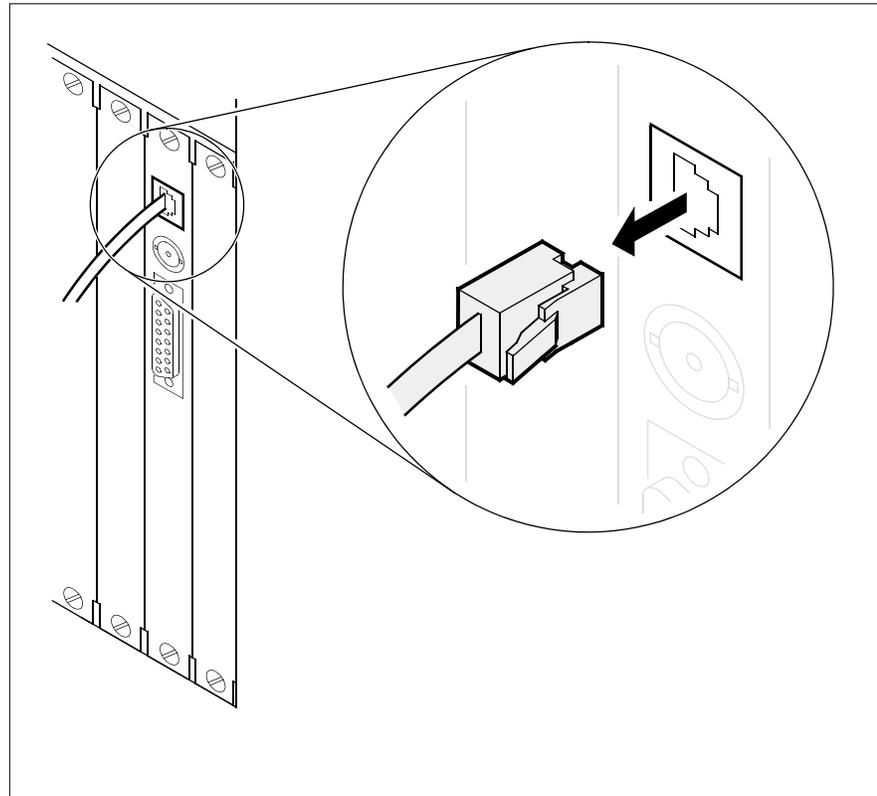

26   Loosen the two thumbscrews located at the top and the bottom of the LAN personality module. The thumbscrews are the captive type, and cannot be removed from the module.

27   While grasping the thumbscrews, gently pull the LAN personality module towards you until it protrudes about 2 in. (5 cm) from the shelf.
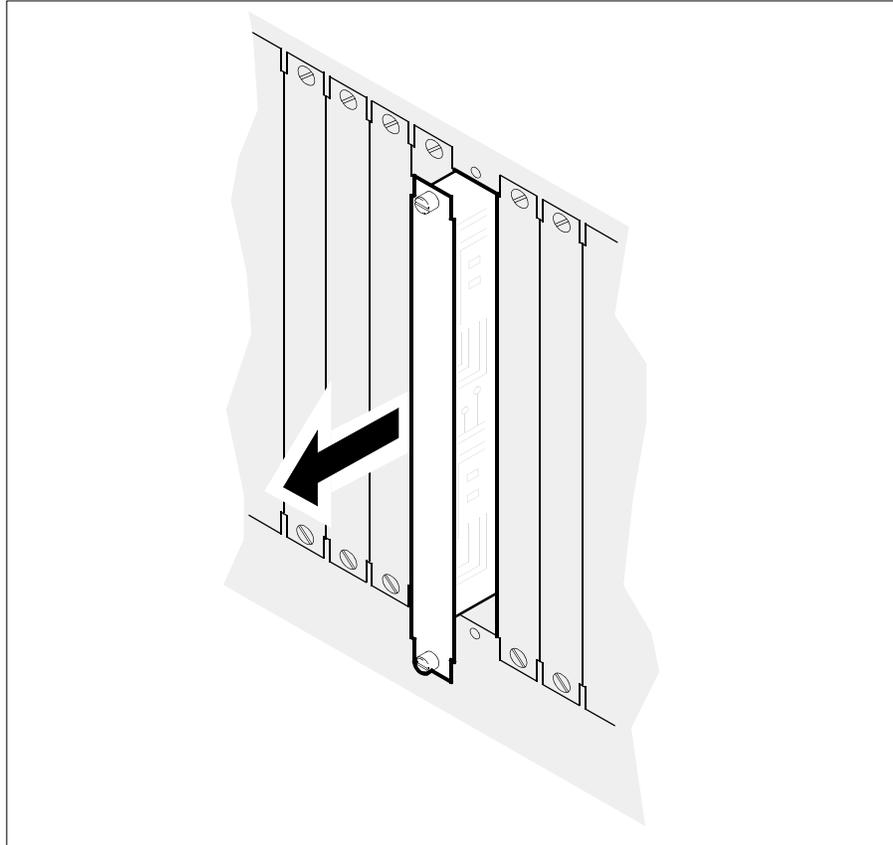
28　　Hold the LAN personality module by the face plate with one hand while supporting the bottom edge with the other hand. Gently pull the module toward you until it clears the shelf.
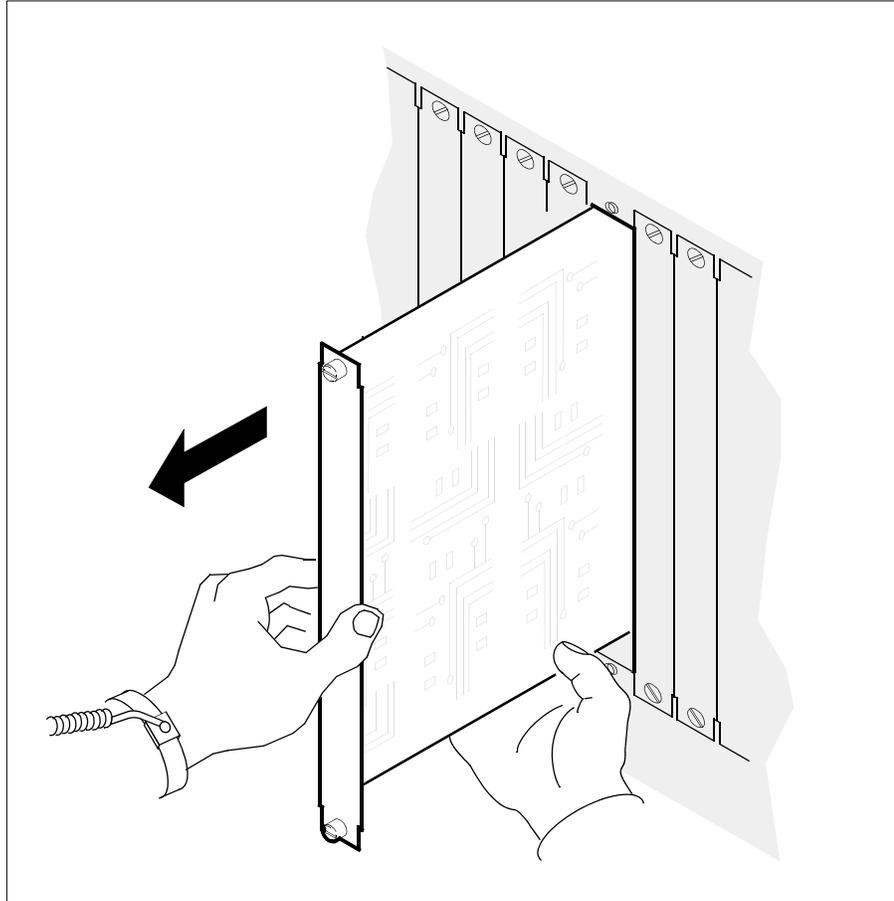

29　　Place the LAN personality module you have removed in an ESD protective container.

30　　Insert the new LAN personality module (NTRX50NK or NTRX50NN) into the shelf.

31   Gently slide the LAN personality module into the shelf until it is fully inserted.
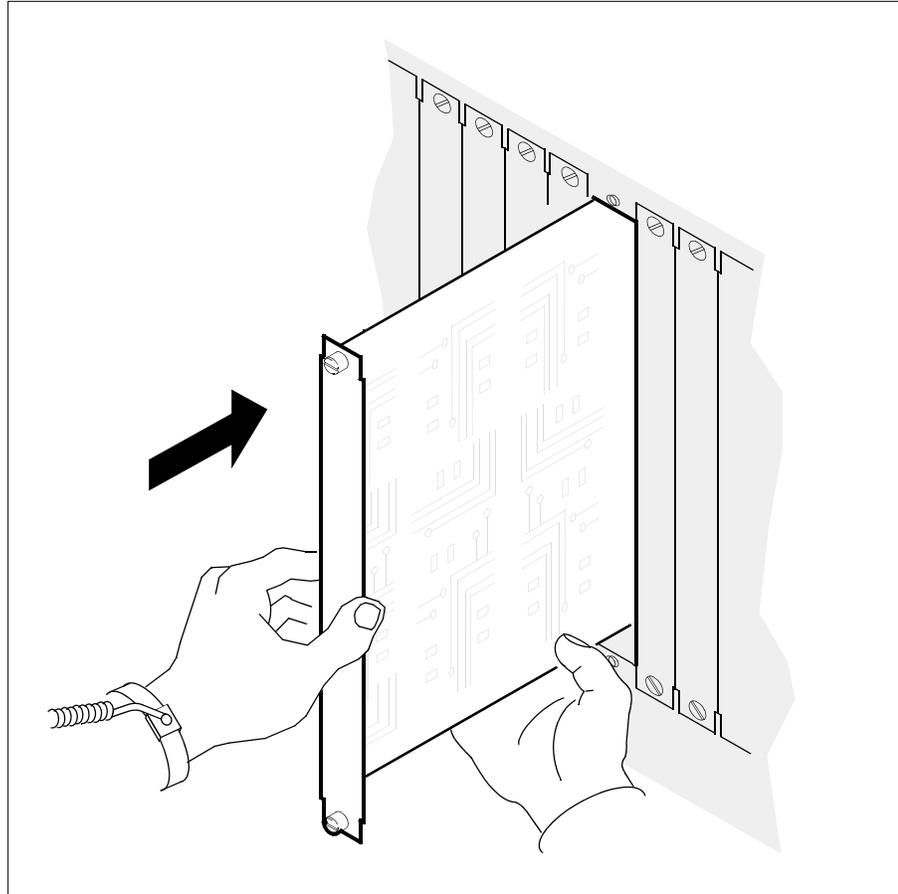
32   Tighten the thumbscrews at the top and the bottom of the LAN personality module.

33 Reconnect the Ethernet cable to the LAN personality module. You may remove the label you put on the cable in step 24.
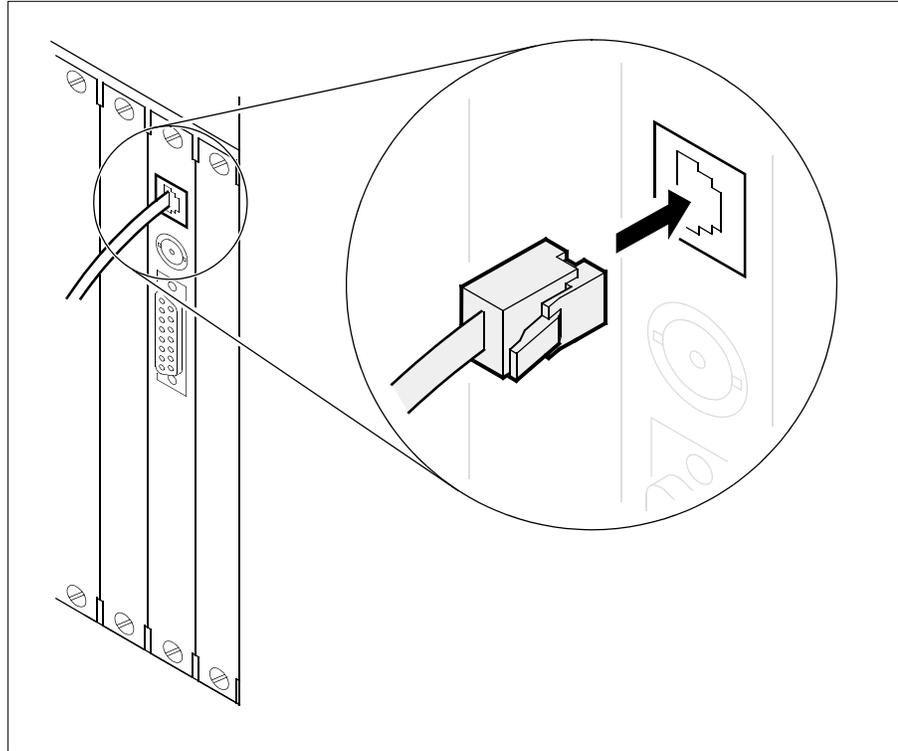

At the front of the CS 2000 Core Manager

34 Insert the NTRX50NC MFIO / NTRX50NL UMFIO module into the shelf.

> *Note:* Replacements for the NTRX50NC will be filled on a best-effort basis before and after the MD date of 31 December 2004. After 31 December 2004, the NTRX50NL will be the replacement for the NTRX50NC.

35 Gently slide the module into the shelf until it is fully inserted.
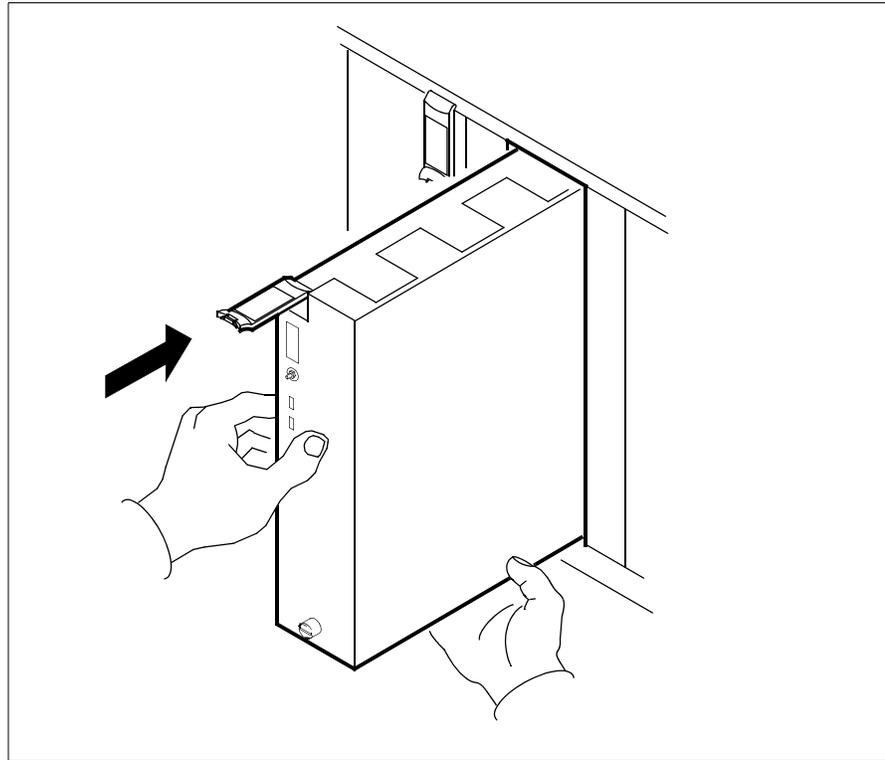
36 Close the locking lever to secure the module. Ensure that the top micro switch is lined up with the locking lever to properly seat the module.

Micro switch
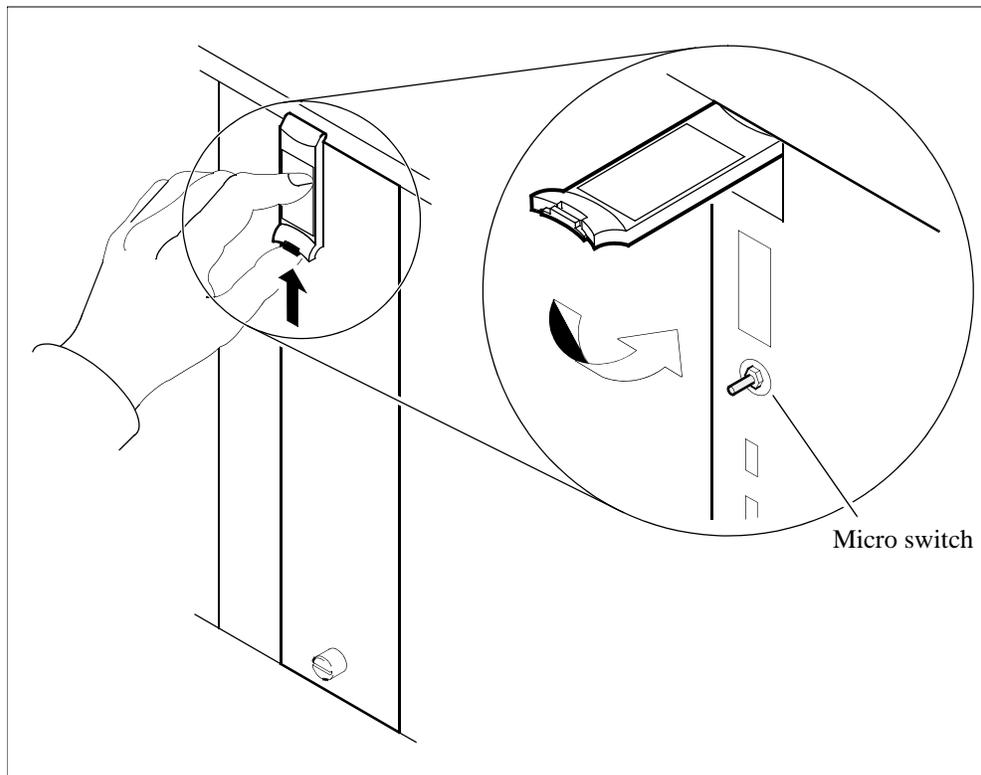
37 Tighten the thumbscrews on the module.

38 Continue the upgrade:

> **1**

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
>
```

39   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  F C E E  D D D D D D 5
 3                    C C  A A  P T T  S  S  S S S  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  >
```

40   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  >
```

41   Verify that the correct module was used as a replacement:

> locate

The system displays a list of hardware. Confirm that the correct PEC is listed for the newly upgraded module.

42   Upgrade the MFIO / UMFIO module in the other domain by repeating steps 1, 2, and 4 through 43 inclusive.

43   You have completed this procedure.

Upgrading the DS512 controller module from NTRX50GA to GX

Purpose

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.

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.

Prerequisites

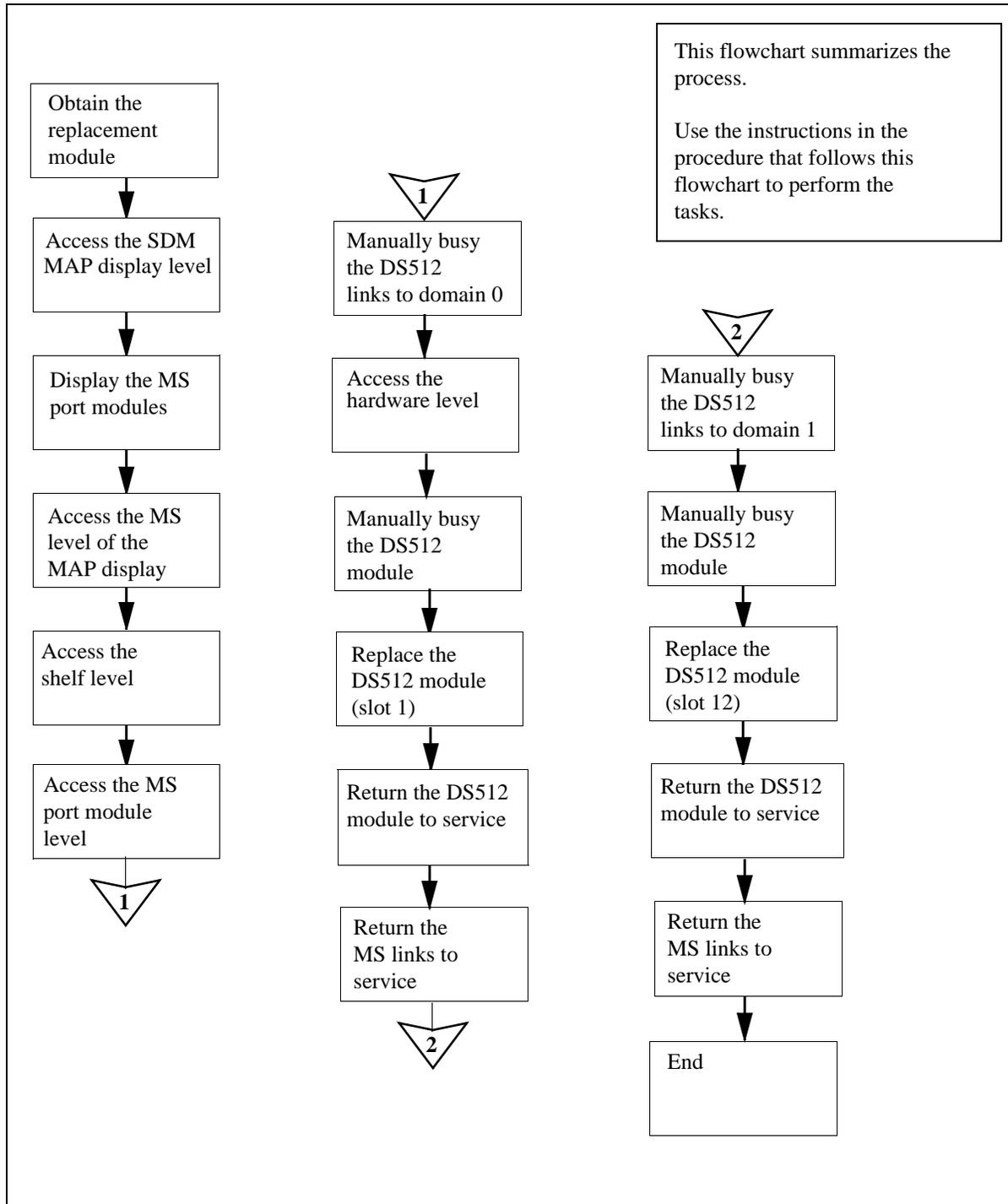The NTRX50GX DS512 controller module requires software version SDMN0010 (or higher).

Before you begin this procedure, you must have:

- two NTRX50GX controller modules
- packaging material in which to return the two NTRX50GA controller modules
- login capability for both the DMS MAP and CS 2000 Core Manager

Task flow diagram

The following task flow diagram provides a summary of the process. To upgrade the DS512 controller module, use the instructions in the procedure that follows the flowchart.

Task flow for 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

This flowchart summarizes the process.

Use the instructions in the procedure that follows this flowchart to perform the tasks.

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

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

Upgrading 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:

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

3 Display the card numbers that provide the DS512 links to the CS 2000 Core Manager:

> **trnsl**

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:

> **ms**

6 Access the shelf level:

> **shelf**

7 Access the card number level that is associated with the CS 2000 Core Manager DS512 links:

> **chain <card_number>**

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:

> **bsy 0 link 0**

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:

> **bsy 1 link** *0*

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:

> **# sdmmtc**

12 Access the hardware (Hw) level:

> **> hw**

13 Busy the DS512 controller module:

> **> bsy 0 512**

If you are	Do
prompted to confirm the busy command	step 14
not prompted to confirm the busy command	step 16

14 Confirm the busy command:

> **> y**

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.

Put on an electrostatic discharge (ESD) grounding wrist strap.

**16**   Locate the NTGX50GA card in slot 1.

17

> ⚠ **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 on the top and bottom of the
DS512 controller module. The thumbscrews are the captive
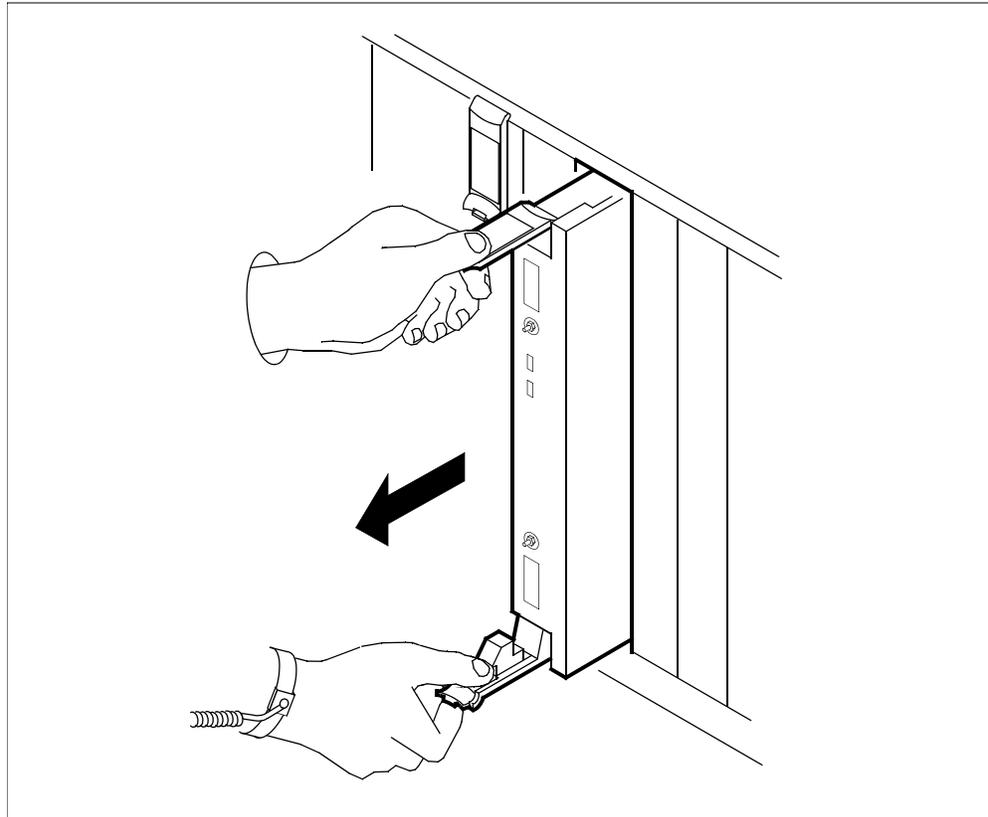type, and cannot be removed from the module.

18   Depress the tips of the locking levers on the face of the DS512
controller module.

334
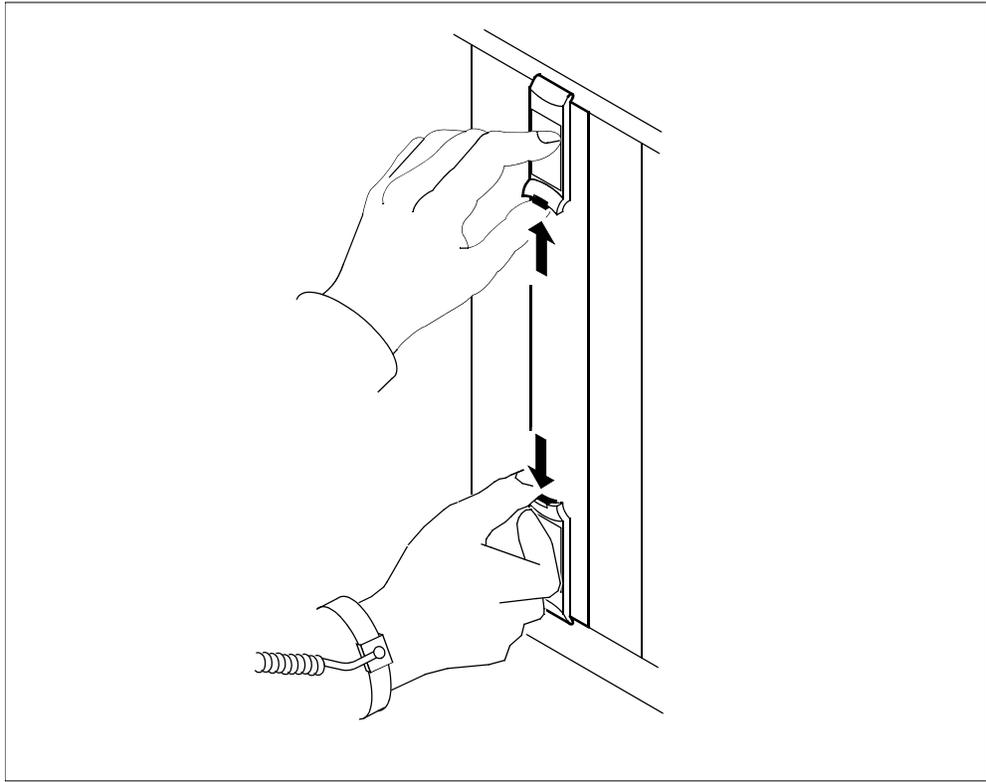
19 Open the locking levers on the face of the module by moving the levers outwards.
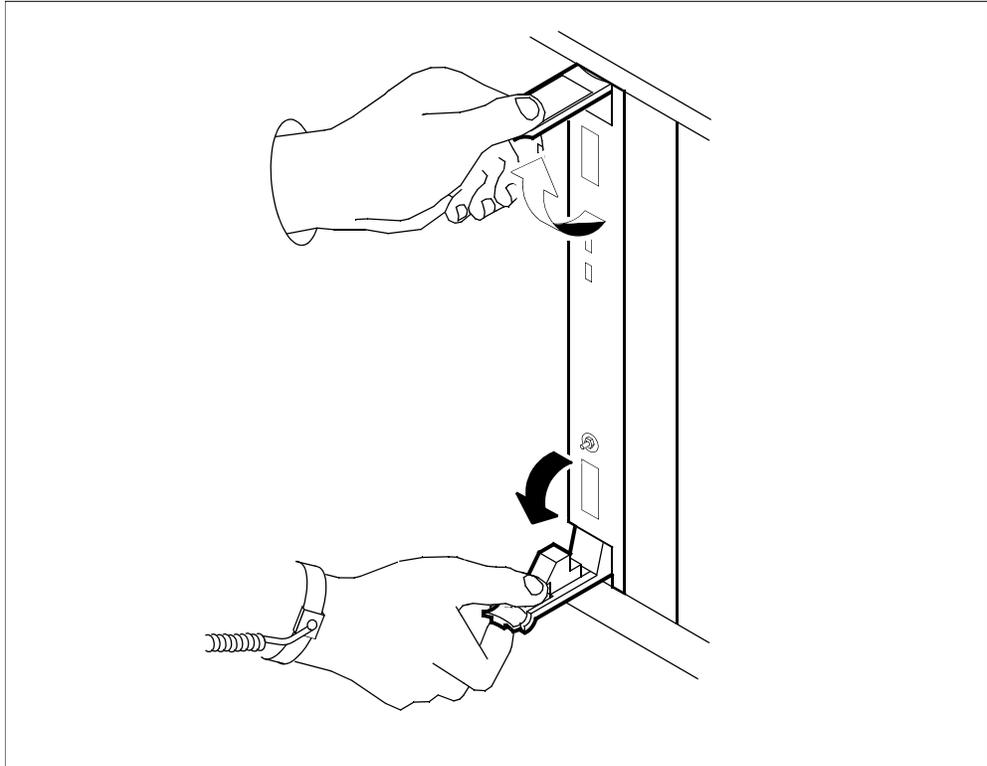
20 While grasping the locking levers, gently pull the module towards you until it protrudes about 2 in. (5 cm) from the CS 2000 Core Manager shelf.

21 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.
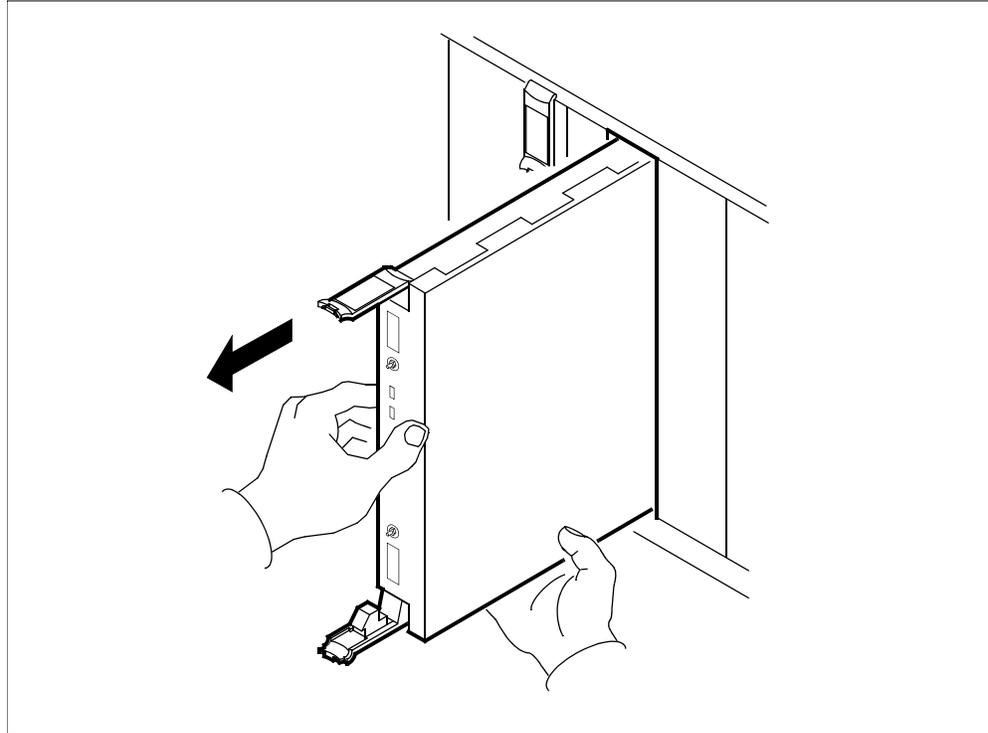
22 Place the module you have removed in an ESD protective container.

At the local or remote VT100 console

23 Exit the maintenance interface:

> **quit all**

24 For the DS512 module you have removed, delete the information from the CS 2000 Core Manager configuration database:

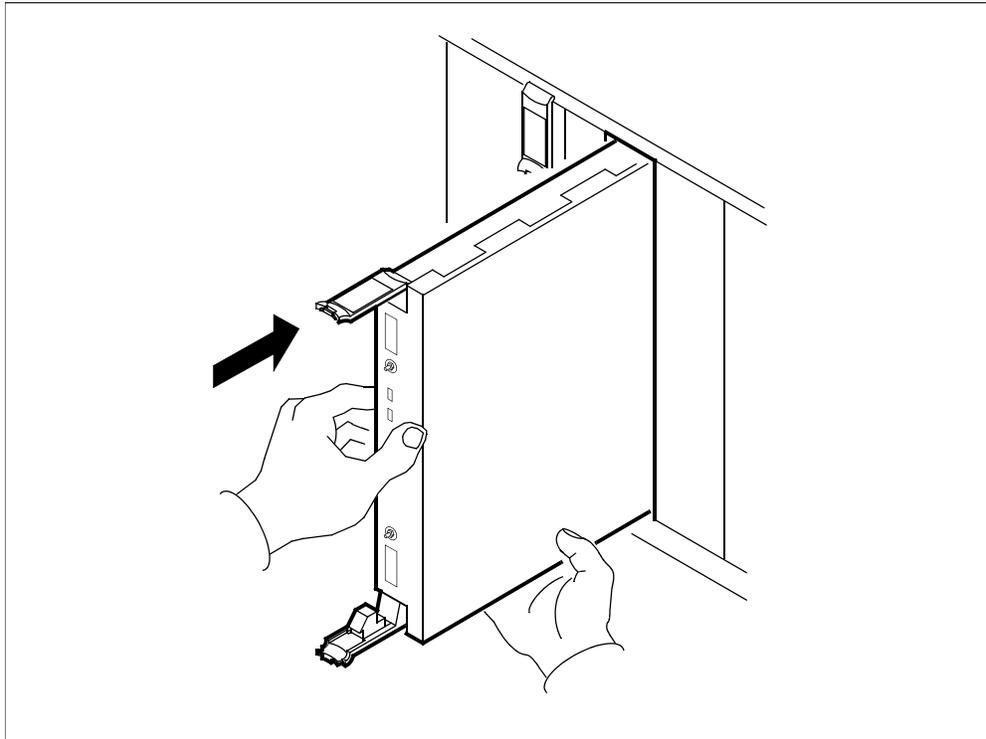**# ftds512clean *<n>***

where

> ***<n>***
> is 0 if the removed module was in domain 0, and 1 for a module that was in domain 1.
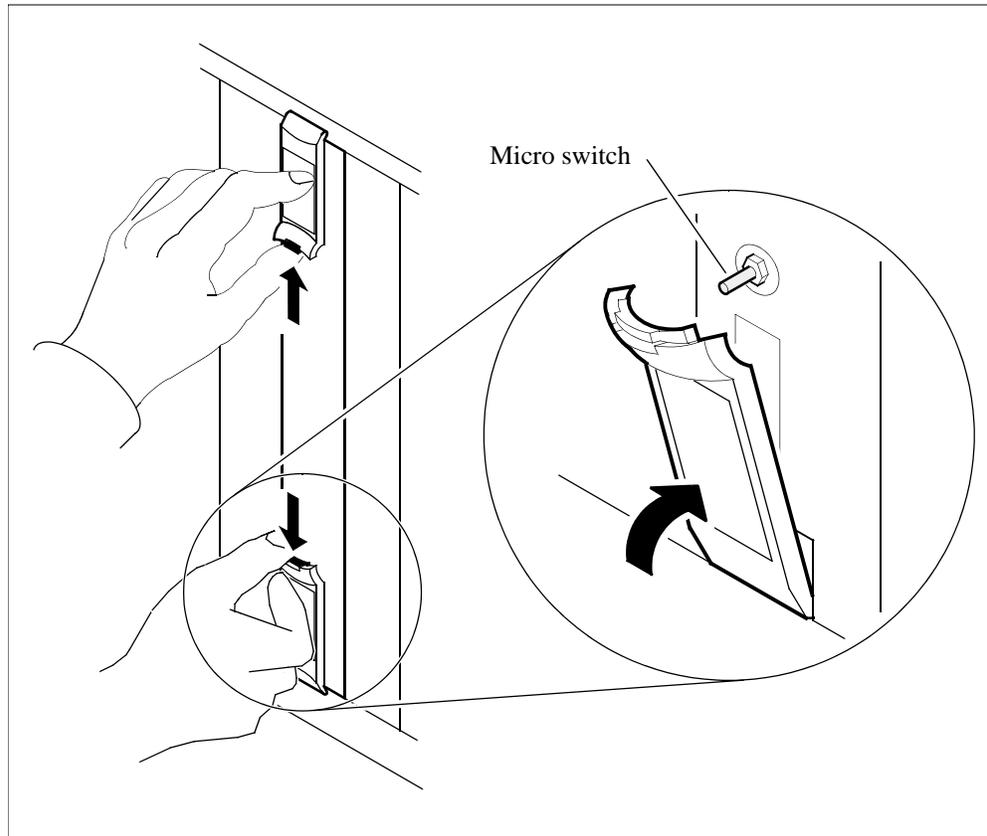
At the front of the CS 2000 Core Manager

25 Insert the replacement module into the CS 2000 Core Manager shelf.

26 Gently slide the module into the shelf until it is fully inserted.

27 To seat the module properly, make sure that both the top and bottom micro switches are lined up with the levers. Close the locking levers to secure the module.

28 Tighten the thumbscrews (if present) on the module. If you are replacing domain 0, proceed to step 29. If you are replacing domain 1, proceed to step 41.

At the local or remote VT100 console

29 Access the maintenance interface:

 # sdmmtc

30 Access the hardware (Hw) level:

> hw

31 Return the DS512 controller module to service:

> rts 0 512

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 to *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

32   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:

> **> rts 0 link 0**

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 the DS512 link changes to a "P".

33   Return to service the DS512 link between MS plane 1 and the DS512 controller module you replaced:

> **> rts 1 link 0**

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 the DS512 link changes to a "P".

34   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:

> **bsy 0 link 1**

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.

35   Busy the DS512 link between MS plane 1 and the CS 2000 Core Manager DS512 controller module you wish to replace:

> **bsy 1 link 1**

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

36   Busy the DS512 controller module:

> **bsy 0 512**

If you are	Do
prompted to confirm the busy command	step 37
not prompted to confirm the busy command	step 39

37   Confirm the busy command:

> **y**

At the front of the CS 2000 Core Manager

38

> **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 (ESD) grounding wrist strap.

39   Locate the NTRX50GA card in slot 12.

40   Replace the NTRX50GA module in slot 12 with the NTRX50GX module. To replace the module in slot 12, use steps 17 to 28, then continue with step 41.

At the local or remote VT100 console

41   At the hardware level, return the DS512 controller module to service:

```
> rts 1 512
```

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 to *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

42   Access the MS port module level of the MAP display (accessed in step 7).

43   Return to service the DS512 link between MS plane 1 and the DS512 controller module you replaced:

> **rts 0 link 1**

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".

44   Return to service the DS512 link between MS plane 1 and the DS512 controller module you replaced:

> **rts 1 link 1**

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

45   Exit the maintenance interface:

> **quit all**

46   Confirm that the new cards are properly installed:

> **locate**

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

47   Exit the MAP session:

> **quit all**

48   You have completed this procedure.