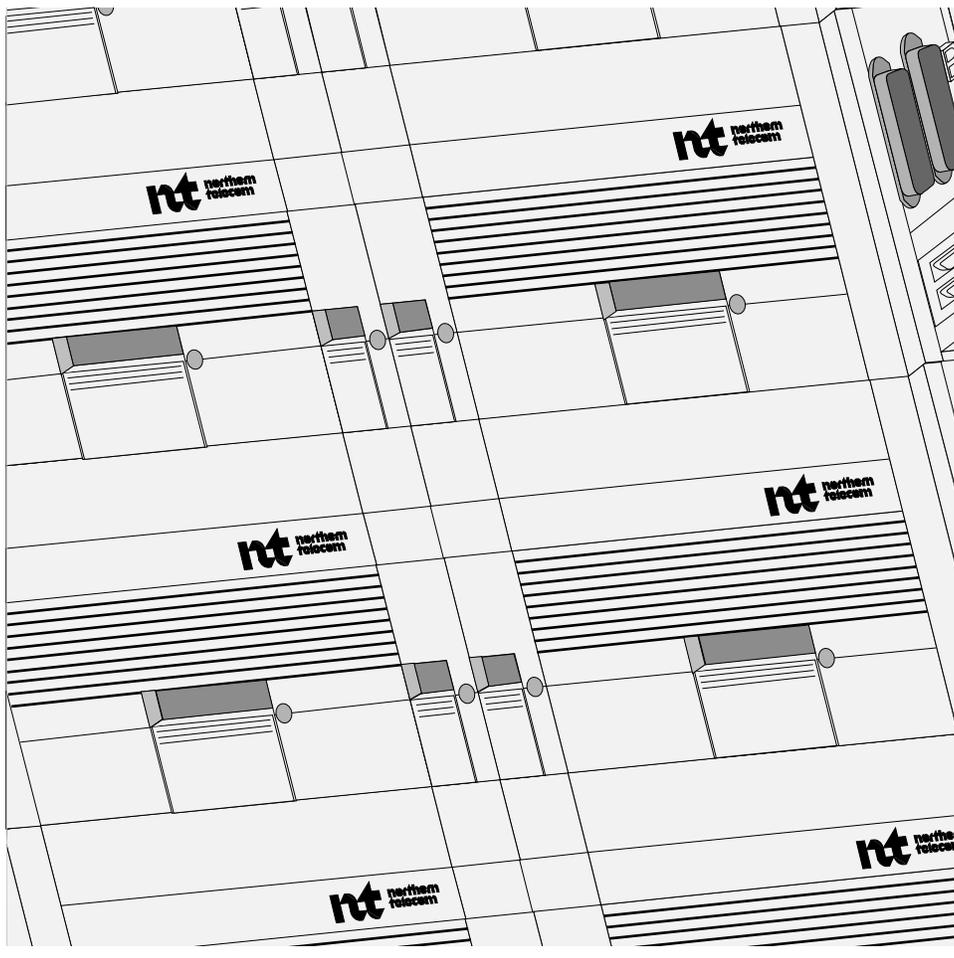


SONET Products

AccessNode

MCOT to ABM Commissioning Reference Guide

Issue 1.0 June 1999



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MCOT to ABM Commissioning Reference Guide

Document release: Issue 1.0

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About this document

This reference guide summarizes the tasks you perform when commissioning an AccessNode MCOT to ABM system.

Who should use this guide

It is intended for personnel who are familiar with AccessNode equipment and its interfaces.

How this guide is organized

The procedures in this guide are grouped according to the tasks you must perform when commissioning the system. The tasks, and the procedures within each task, appear in the order in which they are to be performed.

This guide provides commissioning and provisioning for the MCOT (OC-3) and the Single Ended AccessNode (SEAN).

If you want to	refer to
Commission and provision the MCOT (OC-3)	Chapter 1
Plan to set up the SEAN system	Chapter 2
Power up the SEAN equipment	Chapter 3
Commission and provision the SEAN	Chapter 4
Common SEAN commissioning procedures	Appendix A
Miscellaneous SEAN procedures	Appendix B

MCOT commissioning and provisioning

Commissioning overview

The procedures contain the information required to perform each action, but without the level of detail found in the AccessNode documentation volume.

Note: If a procedure within a task appears in a different document, the NTP name and number is included for reference, such as, *Setting Up Your System: Single-Ended*, 323-3001-245, in *Commissioning and Testing*, AccessNode Volume 3.

Prerequisites

To perform these procedures, you need:

- a VT-100-compatible terminal or laptop computer with a VT-100 emulation package
- the PC GUI program (admin, admin)
- the NE user ID and password for the admin security level, for each network element (NE) to be commissioned

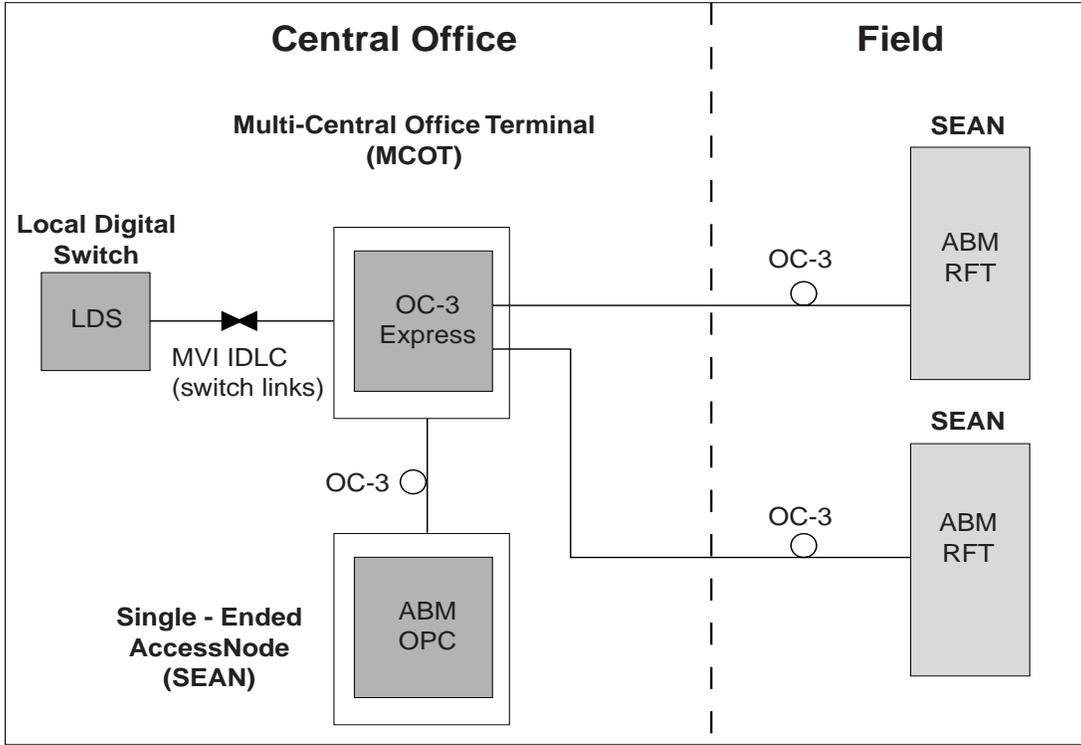
This document is a complement to *Setting Up Your System: Single-Ended*, 323-3001-245, in *Commissioning and Testing*, AccessNode Volume 3.

Before beginning

Before proceeding with the commissioning of the AccessNode MCOT to ABM, review Figure 1-1 on page 1-2 which provides a brief description of the AccessNode MCOT to ABM network configuration.

Figure 1-1
AccessNode MCOT to ABM - network configuration

AN-1001



Basic MCOT (OC-3) commissioning and provisioning

The procedures in this chapter are used to commission and provision the MCOT (OC-3) portion of the MCOT to ABM (SEAN) configuration.

Chapter contents

For	Go to
Installing core circuit packs	Procedure 1-1
Installing OC-3 interface circuit packs	Procedure 1-2
Installing DS1, PSC, and PSX circuit packs	Procedure 1-3
Routing the fiber-optic cable	Procedure 1-4
Verifying circuit pack seating	Procedure 1-5
Daisy-chaining network processors or LANs	Procedure 1-6
Connecting a terminal or modem to the MCOT shelf	Procedure 1-7

—continued—

For	Go to
Inserting or removing a circuit pack	Procedure 1-8
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DS1 default group to VT1.5 cross-connects	Procedure 1-21
Modifying section data communications channel (SDCC) parameters	Procedure 1-22

—end—

Procedure 1-1 Installing core circuit packs



CAUTION

Risk of autoprovisioning failure

Ensure the first circuit pack installed in the system is the shelf processor and the second circuit pack is a VTX module. Inserting circuit packs in the incorrect order may cause the circuit pack autoprovision to fail.

Use this procedure to install or replace OC-3 Express network element core circuit packs:

- the shelf processor (SP or SPe)
- the virtual tributary cross-connect (VTX, VTX+, or VTXe)
- the network processor (NP)
- the intershelf LAN (LAN)

Note: The NP and LAN circuit packs are optional. You may equip the MCOT shelf with either the NP or the LAN circuit pack.



CAUTION

Risk of circuit pack damage

Avoid touching any components on the printed circuit board. Electrostatic-sensitive devices can be damaged by your personal electrostatic discharge. Always ground yourself before handling any circuit pack.



CAUTION

Risk of circuit pack damage

Do not force any circuit pack all the way to the back of its slot if it resists insertion. Before installing any of the circuit packs, make sure you are familiar with the detailed procedure for insertion of circuit packs.

—continued—

 Procedure 1-1 (continued)
Installing core circuit packs

**CAUTION****Risk of improper installation**

Ensure the circuit pack lock/eject levers are locked in place. If the lock covers are not locked, the latch sensors on VTX circuit packs will not allow the MCOT shelf to recognize the circuit pack, and will not allow the circuit pack to autoprovision.

Action

Step Action

Installing the first core circuit pack (shelf processor)

- 1 On the LEX, set the major alarm disable switch to the ON position. Use a pen (or some other pointed object) to move the switch to the right-most position. This inhibits audible and visual alarms during the circuit pack installation process.
- 2 Remove the shelf processor (SP or SPe) card from its box and install it in slot 15. See Figure 1-2 on page 1-8 and Procedure 1-8 on page 1-26. Upon insertion, the status LED turns red and the Active LED turns green. This indicates the MCOT shelf processor software is initializing. Software initialization is complete when the status LED extinguishes. The Active LED should be green. If the status LED remains red, the shelf processor is defective and should be returned to Nortel Networks. Do not proceed to the next step until shelf processor software initialization is complete.

Note: Any MCOT shelf with linear add-drop functionality requires an SPe shelf processor. The only shelf modality supported by an SP processor is an end-point in a point-to-point or linear system.

—continued—

Procedure 1-1 (continued)

Installing core circuit packs

Step	Action
-------------	---------------

Starting a PAA session

- | | |
|----------|---|
| 3 | Connect the PC to the shelf processor; refer to Procedure 1-7 on page 1-23. |
| 4 | Launch the PAA application. |
| 5 | Set the PC communications parameters. <ul style="list-style-type: none">• Click Configure Comms in the Comms menu to open the Configure Comms dialog box.• Click Direct under Type.• Set the Comm Port Number to the PC port connected to the MCOT shelf.• Select a baud rate of 9600.• Click Save. Click OK. |
| 6 | Log into the network element using “admin” for the account name and the password. <ul style="list-style-type: none">• Click Login to open the Login to NE dialog box.• Type the user name and password. Click OK.• From the Available NE(s) list in Network View, select NORTELOC3.• To open the Shelf View, select the network element from the Connected NE(s) list and click Shelf. |

This “admin” account has a level 4 user privilege code (UPC).

You can now monitor the MCOT shelf from the Shelf view as circuit packs are installed.

Installing the remaining core circuit packs

Note: Refer to Figure 1-2 on page 1-8 and Procedure 1-8 on page 1-26.

- | | |
|----------|--|
| 7 | Remove one of the VTXs from its box and install it in slot 13. All of the LEDs on the VTX light up when it is inserted. The top status LED turns red and the bottom status LED turns green. The primary and secondary reference LEDs turn orange. This indicates that the VTX software is initializing. Software initialization is complete when the bottom status LED turns green. If the top status LED remains red, the VTX is defective and should be returned to Nortel Networks. |
|----------|--|

Do not proceed to the next step until slot 13 VTX software initialization is complete.

Note: VTX circuit packs are available in three versions; NTN410AA, NTN410BA, and NTN410CA. Do not install different versions of VTX circuit pack in the same shelf. See Table 1-1 on page 1-8 for the features supported by each circuit pack.

—continued—

 Procedure 1-1 (continued)
Installing core circuit packs

Step	Action						
8	<p>Remove the remaining VTX from its box and install it in slot 14. Check to make sure that it is the same version of VTX you inserted in slot 13.</p> <p>All of the LEDs on the VTX light up when the circuit pack is inserted. The top status LED turns red, the bottom status LED turns green and the primary and secondary reference LEDs turn yellow. This indicates the VTX software is initializing and the VTX is synchronizing to the slot 13 VTX. Software initialization and VTX synchronization are complete when the bottom status LED turns green. If the status LED remains red, the VTX is defective and should be returned to Nortel Networks.</p> <p>Do not proceed to the next step until slot 14 VTX software initialization is complete.</p>						
9	<p>Determine what circuit pack you will be installing:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If you are installing a</th> <th style="text-align: left;">Then go to</th> </tr> </thead> <tbody> <tr> <td>network processor</td> <td>step 10</td> </tr> <tr> <td>intershelf LAN</td> <td>step 11</td> </tr> </tbody> </table>	If you are installing a	Then go to	network processor	step 10	intershelf LAN	step 11
If you are installing a	Then go to						
network processor	step 10						
intershelf LAN	step 11						
10	<p>Remove the network processor (NP) card from its box and install it in slot 16.</p> <p>Upon insertion, the status LED turns red and the Active LED turns green. This indicates the network processor software is initializing. The status turns orange and then extinguishes.</p> <p>Software initialization is complete when the status LED extinguishes. The Active LED should be green. If the status LED remains red, the network processor is defective and should be returned to Nortel Networks.</p> <p>Do not proceed to the next step until network processor software initialization is complete.</p> <p>Note: You have the option of installing the NP circuit pack at a later time. Tributary circuit packs can be provisioned without the presence of an NP circuit pack.</p>						
11	<p>Remove the intershelf LAN (LAN) card from its box and install it in slot 16.</p> <p>Upon insertion, the status LED turns red and the Active LED turns green. This indicates the network processor software is initializing.</p> <p>Software initialization is complete when the status LED extinguishes. The Active LED should be green. If the status LED remains red, the network processor is defective and should be returned to Nortel Networks.</p> <p>Do not proceed to the next step until LAN software initialization is complete.</p> <p>Note: You have the option of installing the LAN circuit pack at a later time. Tributary circuit packs can be provisioned without the presence of an LAN circuit pack.</p>						

—continued—

1-8 MCOT commissioning and provisioning

Procedure 1-1 (continued)
Installing core circuit packs

Step	Action
12	On the LEX, set the major alarm disable switch to the OFF position. Use a pen (or some other pointed object) to move the switch to the left-most position.

Figure 1-2
Core circuit pack positions in the shelf

AN-1004

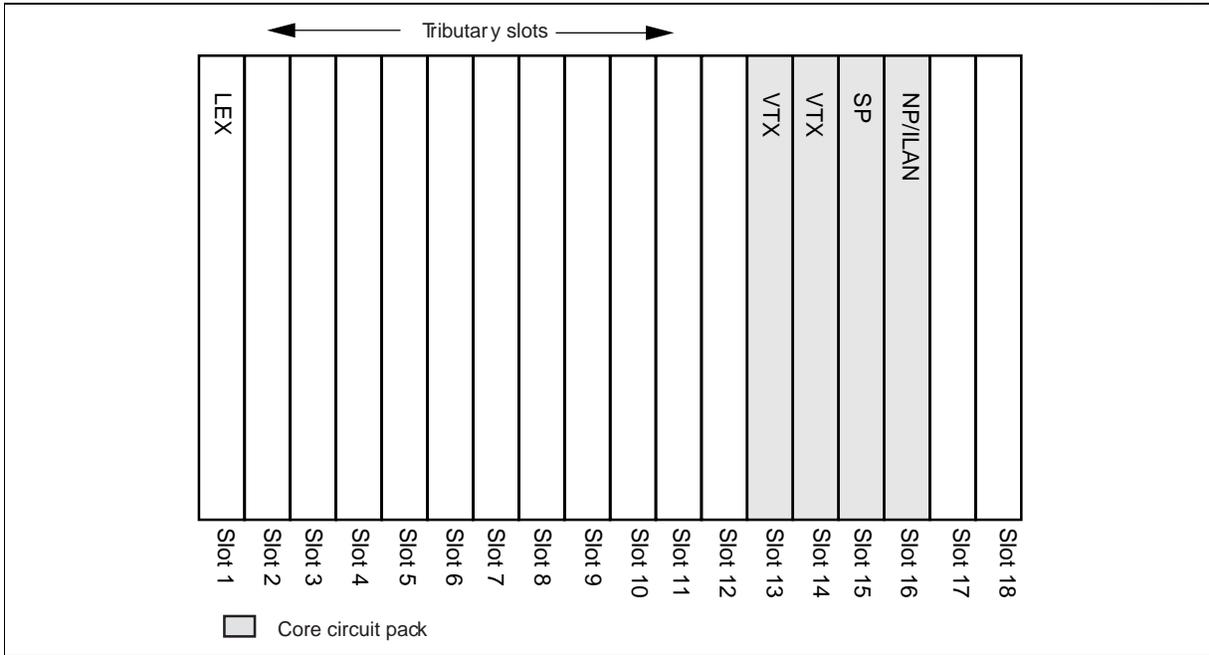


Table 1-1
VTX features according to circuit pack version

VTX module	Features		
	Split Synch	BITS	Stratum 3 clock
VTX (NTN410AA)	X		
VTX+ (NTN410BA)	X	X	
VTXe (NTN410CA)	X	X	X

Note: See *GUI Network Element Description*, 323-1051-101G for a description of VTX features.

—end—

Procedure 1-2

Installing OC-3 interface circuit packs

Use this procedure to install, or to replace the OC-3 interface circuit packs. The OC-3 interface can be installed in any of slots 3 to 12.



CAUTION

Risk of circuit pack damage

Avoid touching any components on the printed circuit board. Electrostatic-sensitive devices can be damaged by your personal electrostatic discharge. Always ground yourself before handling any circuit pack.



CAUTION

Risk of circuit pack damage

Do not force any circuit pack all the way to the back of its slot if it resists insertion. Before installing any of the circuit packs, make sure you are familiar with the detailed procedure for insertion of circuit packs.



CAUTION

Risk of improper installation

Make certain that the circuit pack lock/eject levers are locked in place. If the lock/eject levers are not locked, the circuit pack fails to autoprovision.

Action

Step	Action
------	--------

- | | |
|---|---|
| 1 | Determine the OC-3 interface requirements according to the shelf node type. See Table 1-2 on page 1-11. |
|---|---|



DANGER

Risk of personal injury

When inserted in a shelf slot, the OC-3 interface circuit pack emits laser light which can blind. Keep all optical connectors on the OC-3 interface circuit packs capped when they are not connected to fiber-optic cables.

—continued—

Procedure 1-2 (continued)

Installing OC-3 interface circuit packs

Step	Action
2	<p>Install the OC-3 interface circuit pack in any of slots 3 to 12. See Procedure 1-8 on page 1-26.</p> <p>All the LEDs on the OC-3 interface light up when it is inserted. The top status LED turns red and the bottom status LED turns green. This indicates the OC-3 interface software is initializing. Software initialization is complete when the top status LED is no longer red and the bottom status LED is no longer green. If the top status LED remains red, the OC-3 interface is defective and should be returned to Nortel Networks.</p> <p>Note: If the LOS LED lights orange, the circuit pack is not receiving a valid OC-3 signal.</p>
3	<p>Repeat steps 1 and 2 for additional OC-3 circuit packs.</p> <p>Do not install the next OC-3 interface circuit pack until software initialization is complete.</p>
4	<p>Repeat step 2 for each remaining OC-3 interface circuit pack.</p>

—end—

Table 1-2
OC-3 equipment requirements according to shelf functionality

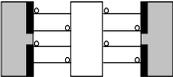
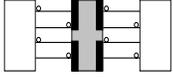
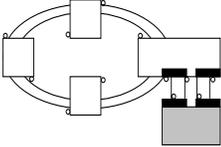
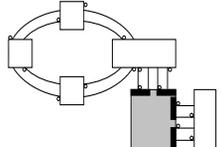
Configuration	Node type	OC-3 interface circuit packs
Linear protected	Type 8: End-point 	Requires two OC-3 interface circuit packs. The OC-3 interface circuit packs must be installed in adjacent 1+1 protected slots. See Table 1-3 for slot position details.
	Type 9: Add-drop multiplexer 	Requires four OC-3 interface circuit packs. The OC-3 interface circuit packs must be installed as two pairs of 1+1 protected circuit packs. See Table 1-3 for slot position details.
	Type 10: Stand-alone spur 	Requires two OC-3 interface circuit packs. The OC-3 interface circuit packs must be installed in adjacent protected slots. See Table 1-3 for slot position details.
	Type 11: Spur in a linear system 	Requires four OC-3 interface circuit packs. The OC-3 interface circuit packs must be installed as two pairs of 1+1 protected circuit packs. See Table 1-3 for slot position details.
—continued—		

Table 1-2 (continued)
OC-3 equipment requirements according to shelf functionality

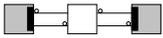
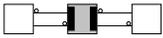
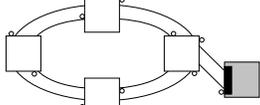
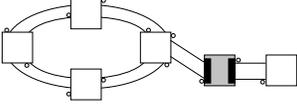
Configuration	Node type	OC-3 interface circuit packs
Linear unprotected	Type 12: End-point 	Requires one OC-3 interface circuit pack. Each OC-3 interface circuit pack can be installed in any slot between slots 3 and 12 (including slots 3 and 12).
	Type 13: Add-drop multiplexer 	Requires two OC-3 interface circuit packs. Each OC-3 interface circuit pack can be installed in any slot between slots 3 and 12 (including slots 3 and 12).
	Type 14: Stand-alone spur 	Requires one OC-3 interface circuit pack. The OC-3 interface circuit pack can be installed in any slot between slots 3 and 12 (including slots 3 and 12).
	Type 15: Spur in a linear system 	Requires two OC-3 interface circuit packs. Each OC-3 interface circuit pack can be installed in any slot between slots 3 and 12 (including slots 3 and 12).
—end—		

Table 1-3
OC-3 interface protected 1+1 slot pairs

Working OC-3 slot	Corresponding protection OC-3 slot
11	12
9	10
7	8
5	6
3	4

Procedure 1-3 Installing DS1, PSC, and PSX circuit packs

Use this procedure to install or replace DS1, Protection Switch Controller (PSC) and Protection Switch Extender (PSX) circuit packs.

DS1 mappers have a capacity of 12 DS1s on each card for a total of 84 DS1s on each shelf (if the shelf contains 7 working DS1 mappers). Insert the working DS1 mappers in slots 4 through 10 as needed. The DS1 mapper in slot 3 serves as a protection mapper for the working mappers.

Each slot on the shelf corresponds to a particular range of facilities from either the LIO or the RIO.

Table 1-4
DS1 facilities

DS1 facilities	Source	Working slot number
1 to 12	LIO (J4)	4
13 to 24	LIO (J4)	5
25 to 28	LIO (J4)	6
29 to 36	RIO (J1)	6
37 to 48	RIO (J1)	7
49 to 60	RIO (J1/J3)	8
61 to 72	RIO (J3)	9
73 to 84	RIO (J3)	10

—continued—

Procedure 1-3 (continued)

Installing DS1, PSC, and PSX circuit packs

The Protection Switch Controller (PSC) is installed in slot 2 and acts as a DS1 1:N protection controller for 28 DS1 signals (1 through 28). The Protection Switch Extender (PSX) is installed in slot 17 and acts as a DS1 1:N protection controller for 56 DS1 signals (29 through 84).



CAUTION

Risk of traffic loss

The PSX must be present on the MCOT shelf for DS1 signals 29 through 84 to be protected.



CAUTION

Risk of circuit pack damage

Avoid touching any components on the printed circuit board. Electrostatic-sensitive devices can be damaged by your personal electrostatic discharge. Always ground yourself before handling any circuit pack.



CAUTION

Risk of circuit pack damage

Do not force any circuit pack all the way to the back of its slot if it resists insertion. Before installing any of the circuit packs, make sure you are familiar with the detailed procedure for insertion of circuit packs.



CAUTION

Risk of improper installation

Make certain that the circuit pack lock/eject levers are locked in place. If the lock/eject levers are not locked, the circuit pack fails to autoprovision.

—continued—

 Procedure 1-3 (continued)

Installing DS1, PSC, and PSX circuit packs

Action

Step	Action						
1	Determine whether DS1 equipment is to be installed in the MCOT shelf. <table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">If</td> <td style="width: 50%;">Then go to</td> </tr> <tr> <td>DS1 equipment is required in the shelf</td> <td>step 2</td> </tr> <tr> <td>DS1 equipment is not required in the shelf</td> <td>Procedure 1-4</td> </tr> </table>	If	Then go to	DS1 equipment is required in the shelf	step 2	DS1 equipment is not required in the shelf	Procedure 1-4
If	Then go to						
DS1 equipment is required in the shelf	step 2						
DS1 equipment is not required in the shelf	Procedure 1-4						

Installing the protection switch controller and DS1 mappers

Note: Refer to Figure 1-3 on page 1-16 and Procedure 1-8 on page 1-26.

- | | |
|---|--|
| 2 | <p>Remove the protection switch controller (PSC) from its box and install it in slot 2.</p> <p>All of the LEDs on the PSC light up when the circuit pack is inserted. The top status LED turns red and the bottom status LED turns green. This indicates the PSC software is initializing. Software initialization is complete when the top and bottom LEDs extinguish. If the top status LED remains red, the PSC is defective and should be returned to Nortel Networks.</p> <p>Do not proceed to the next step until the PSC software initialization is complete.</p> |
| 3 | <p>If the MCOT shelf will be equipped with more than 28 DS1 facilities, remove the protection switch extender (PSX) from its box and install it in slot 17.</p> <p>All of the LEDs on the PSX light up when it is inserted. The top status LED turns red and the bottom status LED turns green. This indicates the PSX software is initializing. Software initialization is complete when the top and bottom LEDs extinguish. If the top status LED remains red, the PSX is defective and should be returned to Nortel Networks.</p> <p>Do not proceed to the next step until the PSX software initialization is complete.</p> |
| 4 | <p>Remove a DS1 mapper from its box and install it in slot 3.</p> <p>All of the LEDs on the DS1 mapper light up when it is inserted. The top status LED turns red and the bottom status LED turns green. This indicates the DS1 mapper software is initializing. Software initialization is complete when the top and bottom LEDs extinguish. If the top status LED remains red, the DS1 mapper is defective and should be returned to Nortel Networks.</p> <p>Do not proceed to the next step until the DS1 mapper software initialization is complete.</p> |

—continued—

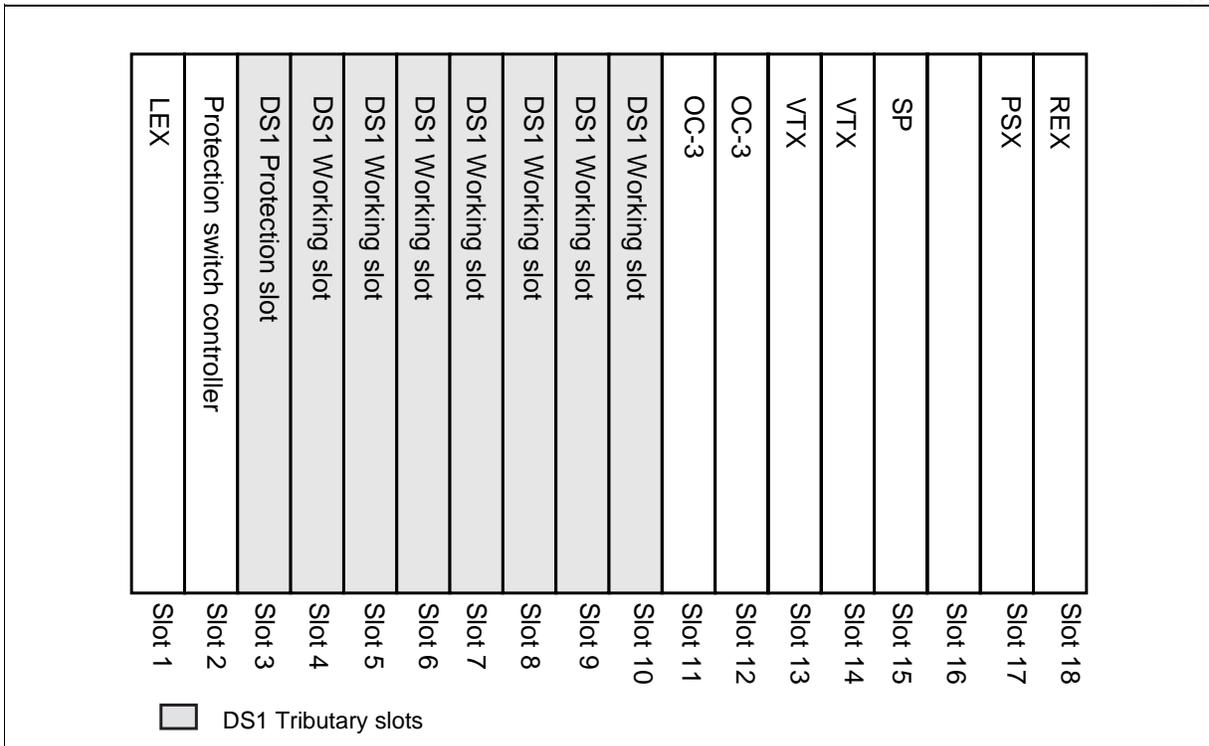
Procedure 1-3 (continued)

Installing DS1, PSC, and PSX circuit packs

- | Step | Action |
|------|---|
| 5 | <p>Remove a DS1 mapper from its box and install it in an interface slot (slots 4 to 10).</p> <p>Note: Do not install a DS1 mapper in the protection slot of a protected pair of slots if the working slot (of the pair) will contain an unprotected DS3 or EC-1 mapper.</p> <p>All of the LEDs on the DS1 mapper light up when it is inserted. The top status LED turns red and the bottom status LED turns green. This indicates the DS1 mapper software is initializing. Software initialization is complete when the top and bottom LEDs extinguish. If the top status LED remains red, the DS1 mapper is defective and should be returned to Nortel Networks.</p> <p>Do not proceed to the next step until the DS1 mapper software initialization is complete.</p> |
| 6 | Perform step 5 for each remaining DS1 mapper. |

Figure 1-3
DS1 circuit pack positions

AN-1005



—end—

Procedure 1-4

Routing the fiber-optic cable

Use this procedure to route fiber-optic cable to the OC-3 Express shelf.

Note: Do not connect the office fiber-optic cable to the OC-3 circuit packs. This task is described in a different procedure.



CAUTION

Risk of fiber-optic cable damage

The minimum bend radius for fiber-optic cable is 1.5 in. Observe this limit at all times. Failure to do so may result in impaired fiber-optic cable performance or breakage.

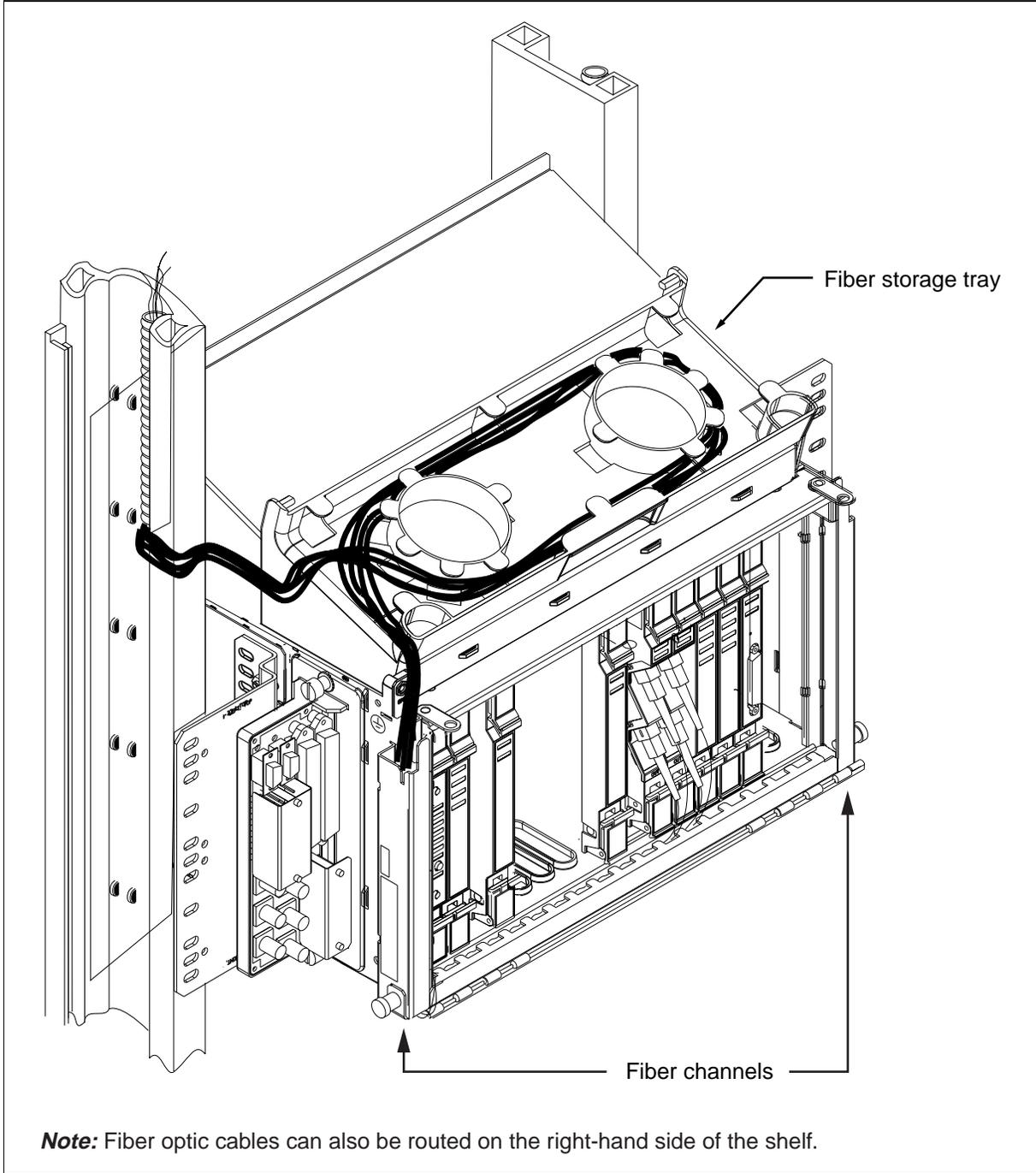
Action

Step	Action
1	Slip a static-protection strap on your wrist in order to protect the circuit packs from damage. Connect the cord to the ESD jack located on the front panel of the shelf. See Figure 1-8 on page 1-28.
2	Route the fiber-optic cable through the fiber channels and store the excess fiber in the fiber storage tray; see Figure 1-4 on page 1-18. <i>Note 1:</i> The fiber channels can hold up to 20 fibers per side. <i>Note 2:</i> Fiber-optic cable should be routed in such a manner that the bulk of excess fiber is stored in a customer-provided fiber storage panel. Do not attempt to connect the fibers to the OC-3 circuit packs.

—end—

Figure 1-4
Optical fiber routing

AN-1006



Procedure 1-5

Verifying circuit pack seating

Use this procedure to determine that all of the circuit packs are seated in the shelf back plane.

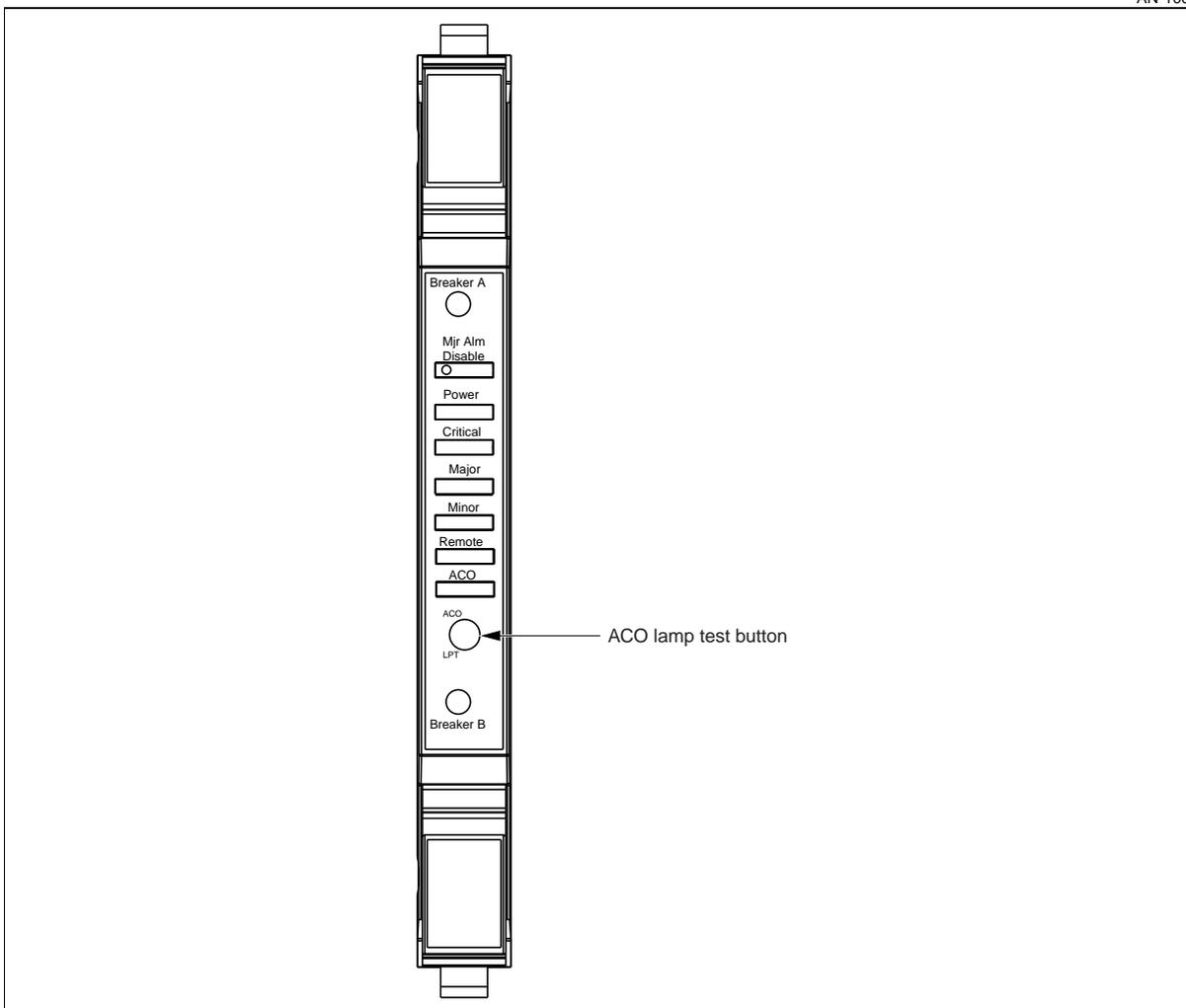
Action

Step	Action
1	Press the lamp test button on the left input/output circuit pack. All of the LEDs on all of the circuit packs in the shelf should turn on and remain on for a few seconds. The ACO LED turns green and remains green until an alarm is raised or cleared. See Figure 1-5 on page 1-20.
2	If the testing and commissioning of the shelf will take place now, leave the shelf powered-up and the front panel open. If the commissioning and testing are to take place at a later time, turn off the breakers on the left input/output circuit pack, and close the shelf front panel.

—end—

Figure 1-5
Location of lamp test button and battery breakers on the LEX circuit pack

AN-1003



Procedure 1-6

Daisy-chaining network processors or LANs

Use this procedure to daisy-chain co-located network processors (NP) or inter-shelf LANs (LAN). A maximum of 16 NPs or LANs may be daisy-chained.

Note 1: There are two LAN ports on the right input/output (RIO) that are controlled by the network processor. The ports must be provisioned. The LAN ports use RJ45 connectors.

Note 2: A shelf processor (SP) can be in the span of control (SOC) of a maximum of two NPs. The SOC of an NP can contain a maximum of 16 network elements.

Note 3: The LAN does not provide any of the networking features available on the NP.

Note 4: For an unpowered shelf, pull the circuit pack (NP or LAN) in slot 16 to maintain LAN communications through the rest of the LAN chain.

Requirements

To perform this procedure you must have:

- one NP or LAN on each shelf to be daisy-chained. Each NP or LAN must be commissioned and have a unique TID.
- flipped Ethernet cable, a total of 100 m maximum between all NPs or LANs
- an account with level 3 user privilege code (UPC)

Action

Step	Action
1	Put on an antistatic strap and plug the end of the cord into an ESD jack. See Figure 1-8 on page 1-28.
2	On the RIO, connect one end of the flipped Ethernet cable to either LAN1 or LAN2.
3	On the RIO of the shelf to be daisy-chained, connect the other end of the flipped Ethernet cable to either LAN1 or LAN2.
4	Repeat steps 2 and 3 for each network element in the chain.

—continued—

Procedure 1-6 (continued)

Daisy-chaining network processors or LANs

Step	Action
5	<p>Provision the LAN:</p> <ul style="list-style-type: none">• Ensure you are logged into the NP. Highlight the NP in the Connected NE(s) list and click NP.• Under Facilities, select LAN1 or LAN2 from the Type list.• Click Add. Click OK in the confirmation dialog box.• Click Close. <p>Note 1: If both LAN1 and LAN2 are used, provision both ports.</p> <p>Note 2: Provisioning an LAN port enables diagnostics on that port. When a problem is detected on the port, a corresponding alarm is raised. Deprovisioning an LAN port disables diagnostic capabilities on that port and clears the associated alarms.</p>
6	<p>Repeat step 5 for all NPs or LANs in the chain.</p>
7	<p>Provision the span of control (SOC) on the NPs from which you are doing surveillance:</p> <ul style="list-style-type: none">• Ensure you are logged into the NP. Highlight the NP in the Connected NE(s) list and click NP.• Click Span of Control.• Select the network element to be added to the SOC from the NE list.• Click Add. Click OK in the confirmation dialog box.• Enter the user identifier and password of the NE being added to the SOC.• Click OK.• Click Close. <p>Note: The LAN does not provide the SOC feature available on the NP.</p>
8	<p>Provision either the X25 or COLAN. Refer to GUI <i>Network Surveillance</i>, 323-1051-520G, in <i>GUI Planning and Operations</i>, Volume 1.</p>

—end—

Procedure 1-7

Connecting a terminal or modem to the MCOT shelf

Use this procedure to connect a terminal or a modem to the MCOT shelf.

Action

Step	Action						
1	Determine which cable you want to connect to the MCOT shelf.						
	<table border="1"> <thead> <tr> <th>If the device is</th> <th>Then go to</th> </tr> </thead> <tbody> <tr> <td>a VT100 (or VT100 emulating) terminal</td> <td>step 2</td> </tr> <tr> <td>modem</td> <td>step 6</td> </tr> </tbody> </table>	If the device is	Then go to	a VT100 (or VT100 emulating) terminal	step 2	modem	step 6
If the device is	Then go to						
a VT100 (or VT100 emulating) terminal	step 2						
modem	step 6						
Connecting a terminal							
2	Connect the DCE end of the terminal cable to the shelf processor. See Figure 1-6 on page 1-25.						
3	Run the cable along the equipment frame to the terminal, securing the cable according to local office practices.						
4	Connect the DTE end of the null terminal cable to the VT100 terminal (or VT100 terminal emulating equipment).						
5	At the VT100 (or terminal emulating equipment), set the terminal communications parameters to the following values: Baud Rate = 9600 Bits/Parity = 8 Parity = No Stop bits = 1 You have completed this procedure.						
Programming the modem							
6	Connect your modem to your personal computer. See the modem supplier instructions.						
7	Power up your personal computer and modem.						
8	Invoke the terminal-emulation program at the personal computer.						
9	Configure the modem using the terminal-emulation program on your personal computer. See Table 1-5 on page 1-24 and the modem supplier instructions.						
10	Program the modem to save this configuration.						
11	Disconnect the modem from the personal computer.						

—continued—

Procedure 1-7 (continued)

Connecting a terminal or modem to the MCOT shelf

Step Action

Connecting the modem to the MCOT shelf

- 12 Connect the DTE end of the modem cable to the RS-232 connector on the LIO. See Figure 1-7 on page 1-25.
- 13 Connect DCE end of the modem cable to the modem. The network element can now support a remote modem-based TL1 session.
- 14 Connect a phone line to the modem. See the modem supplier instructions.

Modifying the modem initialization sequence

- 15 Launch the PCGUI application.
- 16 Select Configure Comms in the Comms menu.
- 17 Click Modem under Type.
- 18 Enter your modem's initialization sequence under Modem Initialization Sequence. Refer to your modem's user manual for the initialization sequence.
- 19 Click Save. Click OK in the confirmation dialog box.
- 20 Click OK.

**Table 1-5
Modem configuration**

Parameter	Setting
Transfer rate	9600 BPS
Auto-answer	yes
Flow control	bidirectional hardware (RTS/CTS)
Answer mode result code	Off (disabled)

—continued—

Procedure 1-7 (continued)
Connecting a terminal or modem to the MCOT shelf

Step	Action
------	--------

Figure 1-6
Connecting terminal cable

AN-1018

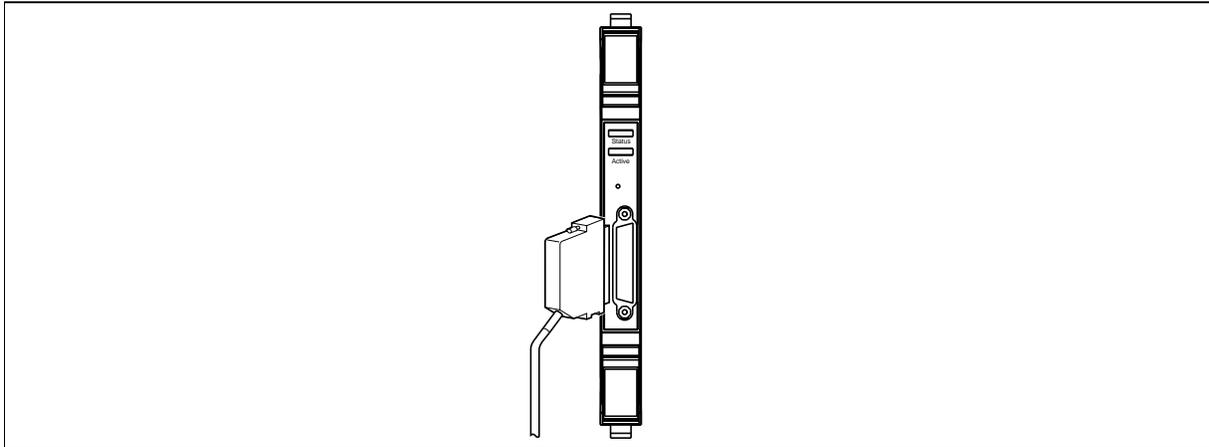
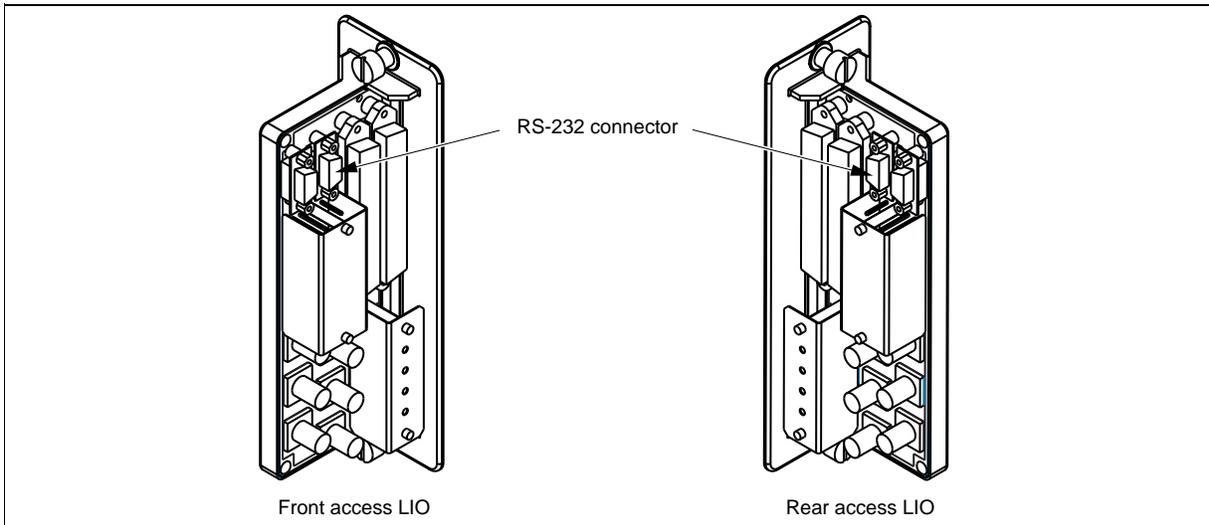


Figure 1-7
Connecting modem cable

AN-1007



—end—

Procedure 1-8 Inserting or removing a circuit pack

Use this procedure to insert any circuit pack, or to remove any circuit pack except the LEX (or REX) from the OC-3 Express shelf. Use procedure Procedure 1-9 on page 1-30 to remove of a REX or LEX.



CAUTION

Risk of circuit pack damage

Avoid touching any components on the printed circuit board. Electrostatic-sensitive devices can be damaged by your personal electrostatic discharge. Always ground yourself before handling any circuit pack.



CAUTION

Risk of circuit pack damage

Do not force any circuit pack all the way to the back of its slot if it resists insertion.

Note: OC-3 Express circuit packs are keyed to fit only in certain slots. The procedure that calls up this detailed procedure identifies the slots that can be used for the circuit pack in question. Refer to the shelf diagram on the inner surface of the shelf cover for circuit pack placement information.

Action

Step	Action						
1	Put a static-protection strap on your wrist in order to protect the circuit packs from damage. Connect the cord to the ESD jack located on the front panel of the shelf. See Figure 1-8 on page 1-28.						
2	Determine the task you want to perform. <table border="1"> <thead> <tr> <th>If you want to</th> <th>Then go to</th> </tr> </thead> <tbody> <tr> <td>insert a circuit pack</td> <td>step 3</td> </tr> <tr> <td>remove a circuit pack</td> <td>step 9</td> </tr> </tbody> </table>	If you want to	Then go to	insert a circuit pack	step 3	remove a circuit pack	step 9
If you want to	Then go to						
insert a circuit pack	step 3						
remove a circuit pack	step 9						
3	Inserting a circuit pack in a slot Check the shelf configuration guide (shelf cover) to make sure that your circuit pack can be installed in the slot you have selected. Circuit packs are keyed to fit only in specific slots.						

—continued—

Procedure 1-8 (continued)

Inserting or removing a circuit pack

Step	Action
4	Pick up the circuit pack by the edges of the faceplate. See Figure 1-9 on page 1-29.
5	<p>With the circuit pack right side up, gently guide the back end of the circuit pack into the desired slot, making sure that the top and bottom edges of the circuit pack enter the slot guide rails.</p> <p>Push the circuit pack into the shelf until three-quarters of the length of the circuit pack is in the shelf.</p>
6	Grasp the lock/eject levers at the top and bottom of the circuit pack faceplate and pull them to their fully extended positions.
7	<p>Push the circuit pack towards the back of the shelf. The lock/eject levers will slip into the grooves at the top and bottom edges of the slot frame.</p> <p>At the same time, gently push the top and bottom lock/eject levers towards the circuit pack faceplate. This causes the connector at the back of the circuit pack to mate with the back plane.</p> <p>You should feel the latch snap into the locked position as the circuit pack mates with the shelf backplane. The lock/eject levers then snap towards the faceplate. (Top lever snaps down and bottom lever snaps up.)</p> <p>The levers are now locked in place and will hold the circuit pack securely in the shelf.</p> <p>Note: Do not use excessive force when pushing the lock/eject levers towards the faceplates. If the levers do not want to lock into place, remove the circuit pack and examine the connector at the rear of the circuit pack. Refer to the shelf diagram on the inner surface of the shelf cover for circuit pack placement information.</p>
<div style="border: 1px solid black; padding: 5px; display: inline-block;">  <p>CAUTION Risk of improper installation Make certain that the circuit pack lock/eject levers are locked in place. If the lock/eject levers are not locked the circuit pack will not autoprovision.</p> </div>	
8	Return to the procedure that sent you here.
Removing a circuit pack from a slot	
9	<p>Grasp the lock/eject levers at the top and bottom of the circuit pack faceplate and pull them to their fully extended positions. See Figure 1-9 on page 1-29.</p> <p>This action causes the circuit pack connector to disengage from the backplane.</p>
10	Pull the circuit pack out of the slot. The circuit pack will slide out of the slot with no resistance.

—end—

Figure 1-8
ESD jacks on the OC-3 Express shelf

AN-1008

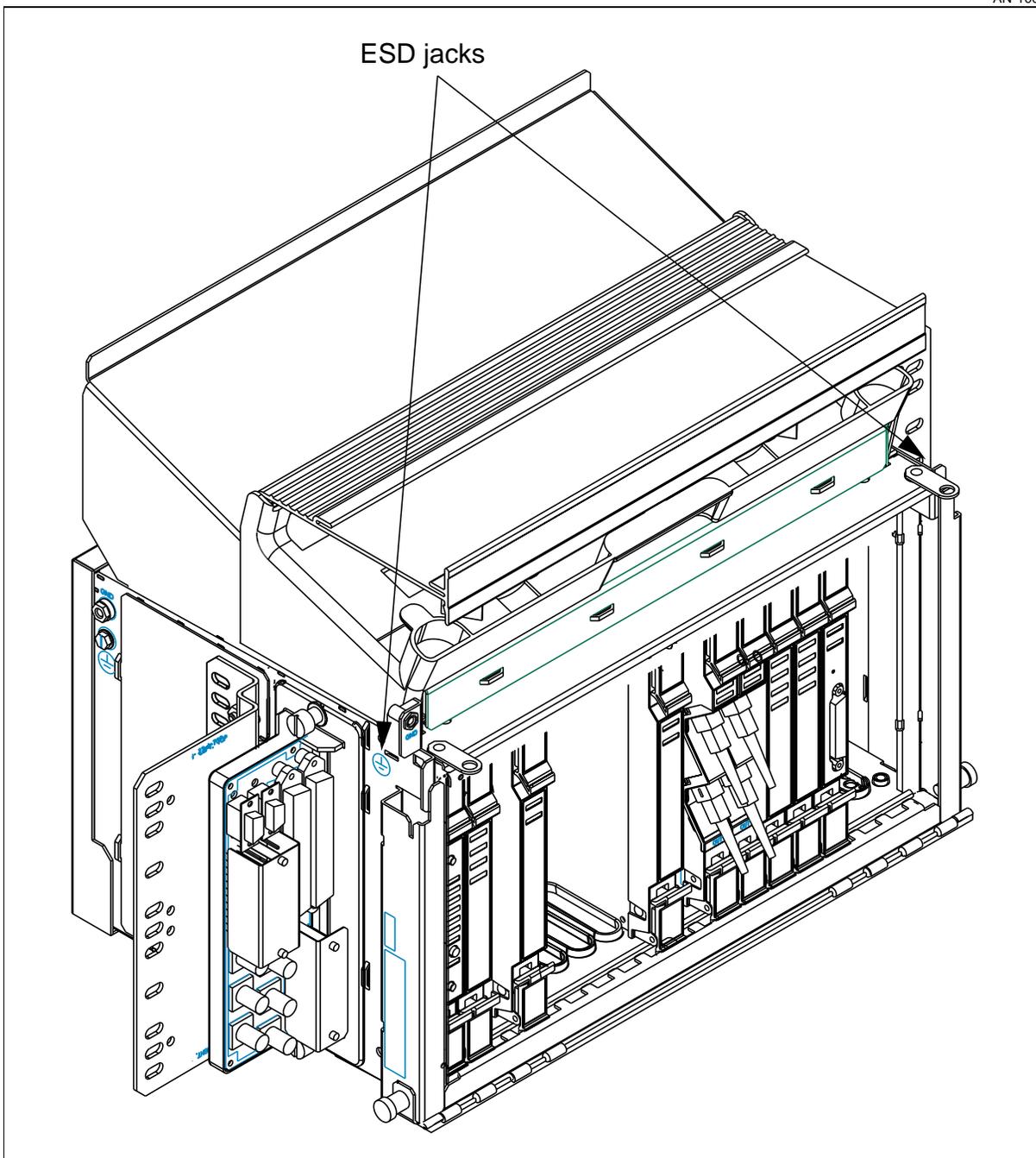
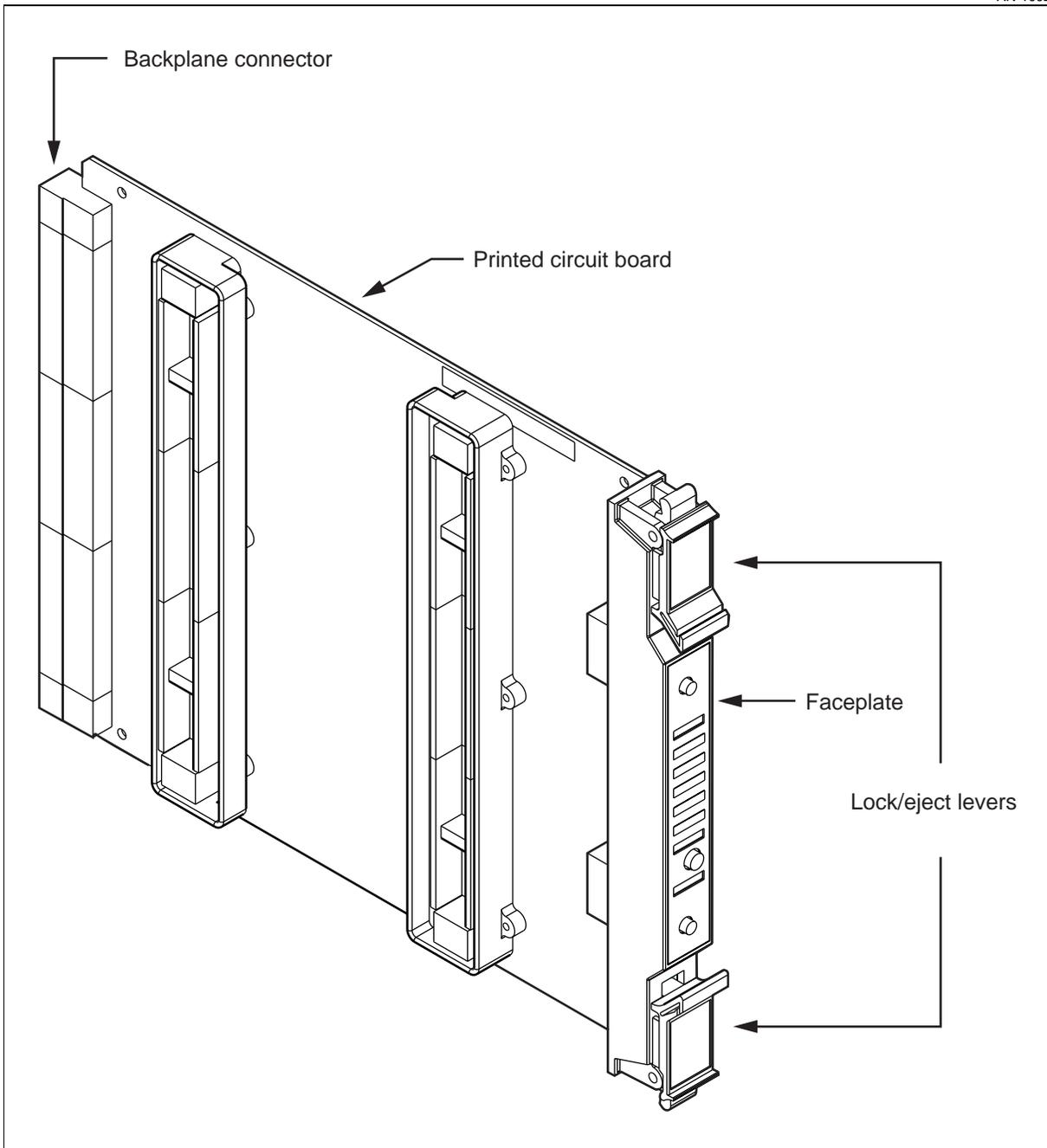


Figure 1-9
Example of an OC-3 Express circuit pack: LEX

AN-1002



Procedure 1-9 Removing the LIO, LEX, RIO, or REX

Use this procedure when removing the LIO, LEX, RIO, or REX.



DANGER

Risk of electrocution

As long as B power is supplied to the MCOT shelf through the LIO B power connections, the B power connectors on the RIO are energized. Similarly, when B power is supplied to the MCOT shelf through the RIO B power connections, the B power connectors on the LIO are energized. Bodily contact with these connectors can result in electrocution. If possible, disconnect MCOT shelf power at the power distribution panel before attempting to remove the LIO or RIO.

When removing the LIO or RIO, handle the input/output adapter only by the card edges.



CAUTION

Risk of traffic loss

Removing the LIO from the LEX causes a complete shutdown of the MCOT shelf if both the A and B MCOT shelf power connections are on the LIO. If the B power connections are on the REX, the MCOT shelf remains powered up. However, the following connections to the MCOT shelf are broken:

- DS1 ports 1 through 28 (complete loss of traffic)
- DS3 ports 1 through 3 (complete loss of traffic)
- office alarms and environmental I/O
- modem

Removing the RIO from the REX breaks the following connections to the MCOT shelf:

- DS1 ports 29 through 84 (complete loss of traffic)
- DS3 port 4 (complete loss of traffic)

—continued—

Procedure 1-9 (continued)
Removing the LIO, LEX, RIO, or REX

	<p>CAUTION Risk of shelf damage</p> <p>Do not attempt to remove the LEX without first removing the LIO. Do not attempt to remove the REX without first removing the RIO.</p>
---	---

Action

Step	Action						
1	<p>With all of the LIO (RIO) cabling attached to the LIO (RIO), loosen the two thumb screws at the top and bottom of the LIO (RIO) until they completely disengage from the side of the shelf. See Figure 1-10 on page 1-32 for location of the LIO and LEX.</p> <p>Note: Only the front access LIO and RIO appear in the figure. The location of the rear access LIO and RIO is the same.</p>						
2	<p>Carefully pull the LIO (RIO) away from the shelf until it disengages from the LEX. See Figure 1-11 on page 1-32 for location of the RIO and REX.</p> <p>Note: Only the front access LIO and RIO appear in the figure. The location of the rear access LIO and RIO is the same.</p>						
3	<p>Determine what to do next.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; border-bottom: 1px solid black;">If</th> <th style="text-align: left; border-bottom: 1px solid black;">Then</th> </tr> </thead> <tbody> <tr> <td style="border-right: 1px solid black;">you do not want to remove the LEX (REX)</td> <td>you have completed this procedure</td> </tr> <tr> <td style="border-right: 1px solid black;">you want to remove the LEX (REX)</td> <td>go to step 4</td> </tr> </tbody> </table>	If	Then	you do not want to remove the LEX (REX)	you have completed this procedure	you want to remove the LEX (REX)	go to step 4
If	Then						
you do not want to remove the LEX (REX)	you have completed this procedure						
you want to remove the LEX (REX)	go to step 4						
4	<p>Remove the LEX (REX) circuit pack from the shelf.</p>						

—end—

Figure 1-10
Removing the LIO (and LEX)

AN-1009

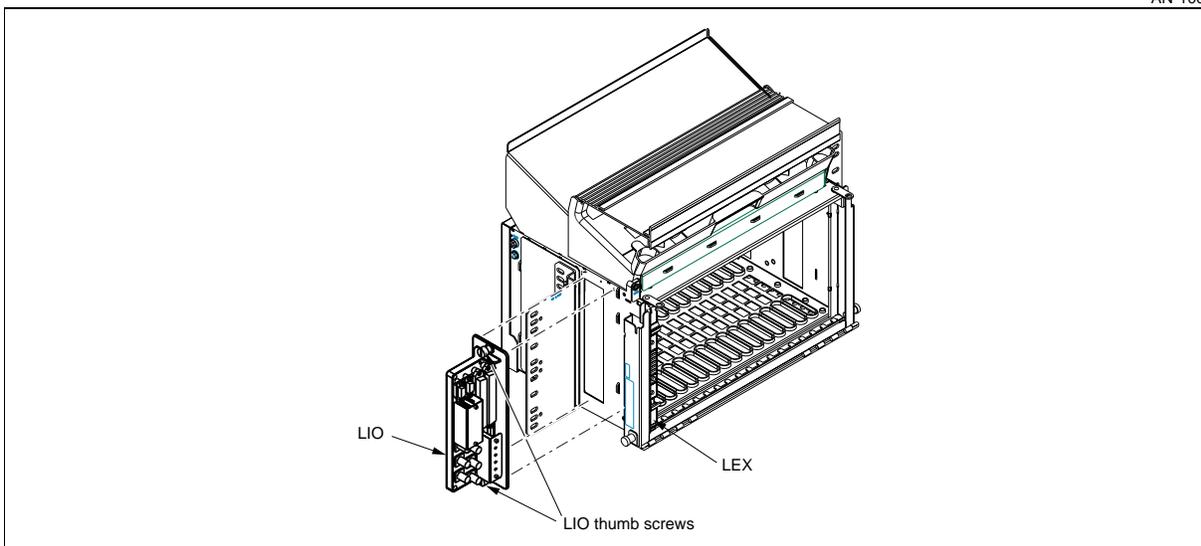
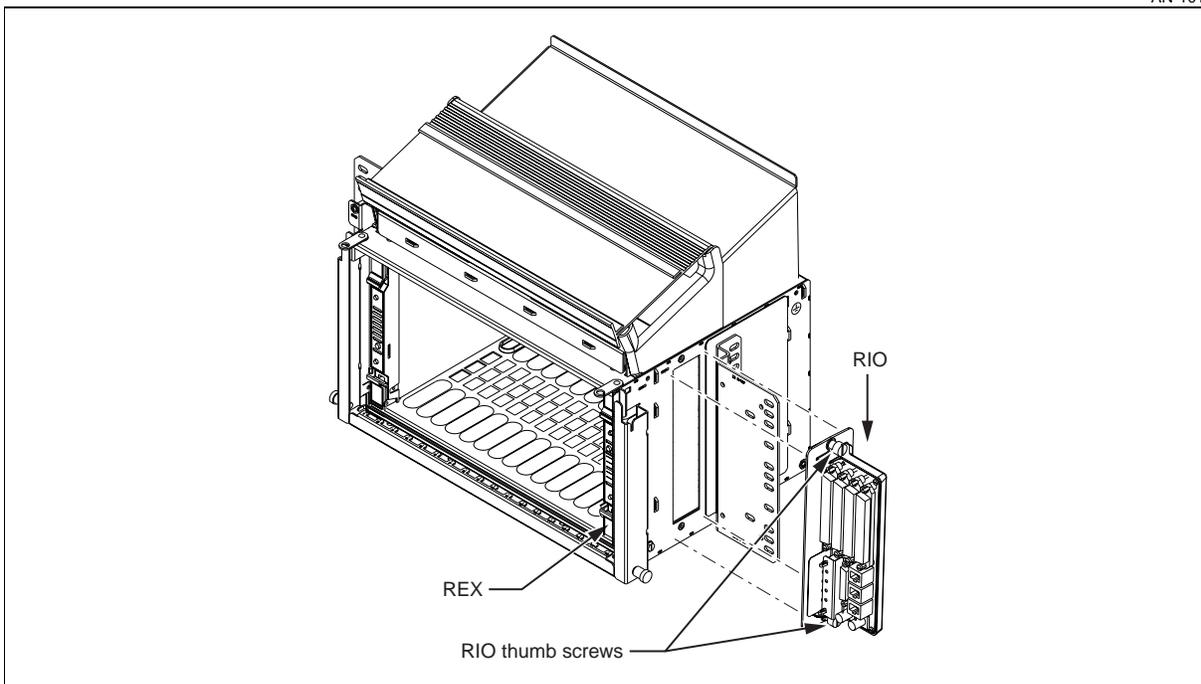


Figure 1-11
Removing the RIO (and REX)

AN-1010



Procedure 1-10 Connecting or disconnecting the fiber-optic cables from the OC-3 interface circuit pack

Use this procedure to connect or disconnect fiber-optic cables from the OC-3 interface circuit pack.



DANGER

Risk of personal injury

When inserted in a shelf slot, the OC-3 interface circuit packs emit laser light which can blind. Keep all optical connectors on the OC-3 interface circuit packs capped when they are not connected to fiber-optic cables.

Action

Step	Action						
1	Select the desired task:						
	<table border="1"> <thead> <tr> <th>If you want to</th> <th>Then go to</th> </tr> </thead> <tbody> <tr> <td>connect fiber-optic cables to an OC-3 interface circuit pack</td> <td>step 2</td> </tr> <tr> <td>disconnect fiber-optic cables from an OC-3 interface circuit pack</td> <td>step 8</td> </tr> </tbody> </table>	If you want to	Then go to	connect fiber-optic cables to an OC-3 interface circuit pack	step 2	disconnect fiber-optic cables from an OC-3 interface circuit pack	step 8
If you want to	Then go to						
connect fiber-optic cables to an OC-3 interface circuit pack	step 2						
disconnect fiber-optic cables from an OC-3 interface circuit pack	step 8						
	Connecting fiber-optic cables to an OC-3 interface						
2	Disengage the OC-3 interface from the backplane by pulling on the circuit pack lock/eject levers.						
3	Slide the OC-3 interface out two inches.						
4	Insert the fiber plugs in the optical connectors. See Figure 1-12 on page 1-35.						
5	Tighten the retaining rings on the fiber plugs by pushing the fiber plug up and turning the rings clockwise.						

—continued—

Procedure 1-10 (continued)

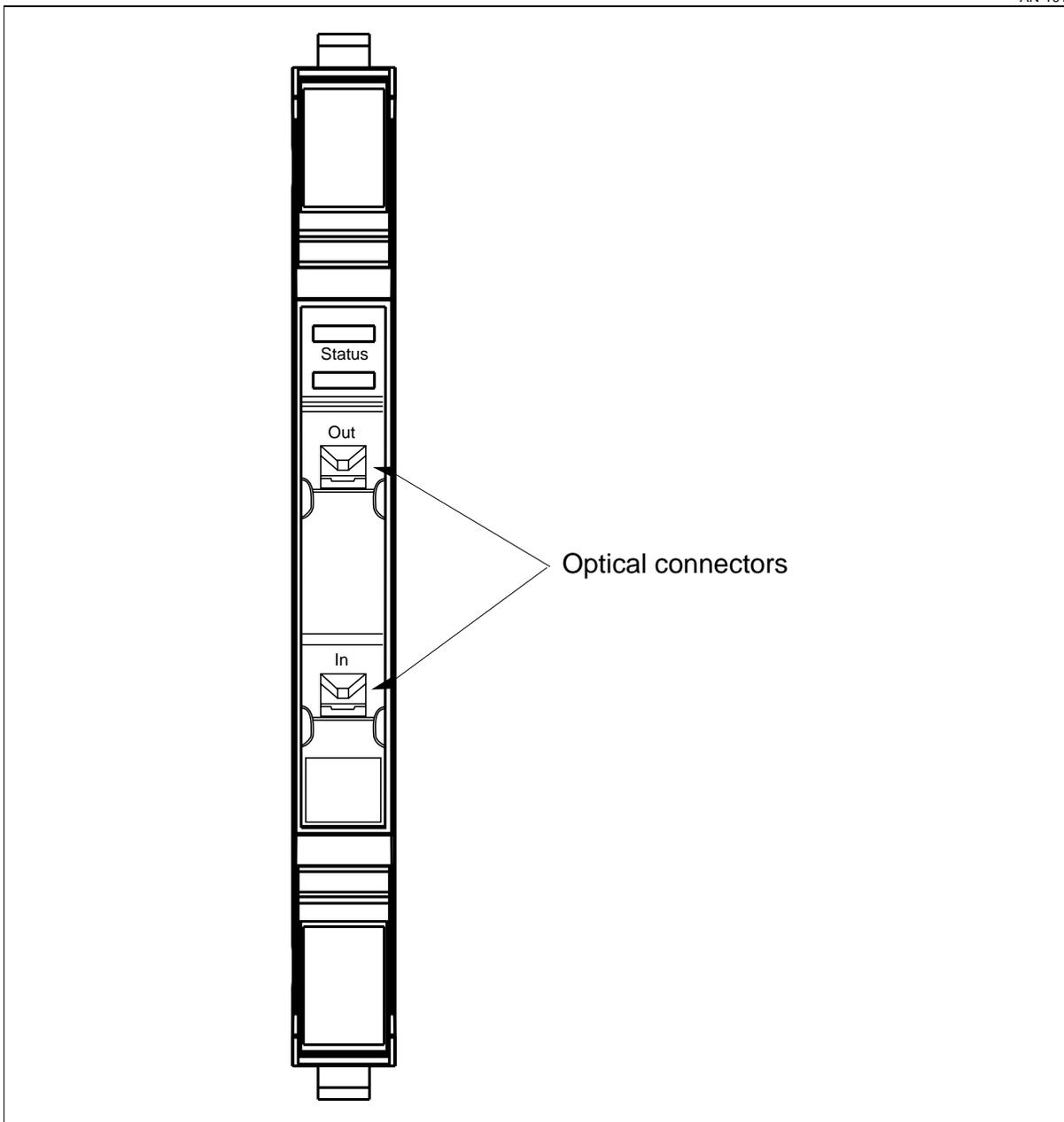
Connecting or disconnecting the fiber-optic cables from the OC-3 interface circuit pack

Step	Action
6	Carefully push the OC-3 interface towards the back of the slot and lock it in place using the lock/eject levers.
7	Being careful not to violate the optical fiber minimum bend radius, place any slack fiber-optic cable in the fiber channel along the bottom of the shelf. You have completed this procedure.
Disconnecting fiber-optic cables from an OC-3 interface	
8	Disengage the OC-3 interface from the backplane by pulling on the circuit pack lock/eject levers. Do not remove the circuit pack from the slot.
9	Being careful not to violate the minimum bend radius on the optical fibers (connected to the circuit pack), move the OC-3 interface forward an inch or two.
10	Loosen the retaining rings on the fiber plugs by pushing the fiber plugs up and turning the rings counterclockwise. See Figure 1-12 on page 1-35.
11	Disengage the optical plug by pulling down on the plug. The plug should disengage from the connector with little or no resistance.

—end—

Figure 1-12
Location of optical connector on the OC-3 interface circuit pack

AN-1017



Site commissioning a new MCOT shelf network element

The following procedures describe how to commission a newly installed MCOT shelf network element. The commissioning tasks in this chapter are stand-alone operations. That is, they can be performed without the network element being connected to the remainder of the network.

Site-commissioning occurs at two levels: shelf processor (SP or SPe) and network processor (NP). The shelf processor must be commissioned before set testing commences.

If an NP is not present in the shelf, omit the NP commissioning procedure. Even if an NP is present, the procedure does not have to be performed at this time since NP commissioning is not a prerequisite for site testing.

SP commissioning

Shelf processor commissioning prepares a network element for site testing and accomplishes the following:

- naming the network element
- creating secure user accounts for the network element
- setting the time and date
- setting the system type (if the network element is equipped with an enhanced shelf processor)

NP commissioning

Site commissioning an NP accomplishes the following:

- naming the NP
- creating secure user accounts for the NP
- setting the time and date

Note: The NP continuously retrieves date and time from the shelf processor (SP) and updates the NP date and time if the difference is more than two minutes. It is recommended that date and time be changed on the SP if NP date and time changes are required.

Procedure task list

The procedures required for network element commissioning are listed in the following table:

Commissioning a new shelf processor	Procedure 1-11
Commissioning a new network processor	Procedure 1-12

Preparation required

To do these procedures, you must:

- ensure that the network element is site commissioned before site commissioning the NP

Procedure 1-11 Commissioning a new shelf processor

Use this procedure to commission a new network element prior to network element testing.

Note: This procedure must be performed at the network element site, for each network element in the system.



CAUTION

Risk of loss of functionality

Ensure that every network element and network processor (NP) has a unique system identifier (SID). If you are changing the name of a network element or NP, ensure that the new name is unique.

Action

Step	Action
1	If the shelf is not powered up, apply power to the shelf by turning on the A and B breakers on the left extender circuit pack in slot 1.
2	Connect the PC to the shelf processor RS-232 connector.
3	Set the PC communications parameters: <ul style="list-style-type: none">• Click Configure Comms in the Comms menu. The Configure Comms dialog box opens.• Click Direct under Type.• Set the Comm Port Number to the PC port connected to the shelf.• Select a baud rate of 9600.• Click Save.• Click OK.

—continued—

 Procedure 1-11 (continued)

Commissioning a new shelf processor

Step	Action
4	<p>Log in to the network element using “admin” for the account name and the password:</p> <ul style="list-style-type: none"> • From the Available NE(s) list in Network View, select NORTELOC3. • Click Login to open the Login to NE dialog box. • Type the user name and password. • Click OK. • To open the Shelf window, select the network element from the Connected NE(s) list and click Shelf. <p>Note: This “admin” account has a level 4 user privilege code (UPC).</p>
5	<p>Secure the network element by changing the NORTELOC3 account password:</p> <ul style="list-style-type: none"> • Select the network element in the Connected NE(s) list in Network View. • Choose Change Password from the Admin menu to open the Change Password dialog box. • Type the required information in the text fields. • Click Set. Click OK in the confirmation dialog box. • Click Close <p>Note: User passwords must be no more than 10 characters in length. Names may consist of alphabetic and numeric characters as well as the following: <code>! # \$ % ` () * + - . / < = > @ [] ^ _ ' { } .</code> Passwords cannot be omitted. The minimum number of characters in a password is one. You cannot use spaces in a password. Record the new password in the commissioning data table; see Table 1-6 on page 1-41.</p>

—continued—

Procedure 1-11 (continued)

Commissioning a new shelf processor

Step	Action
6	<p>Change the network element name:</p> <ul style="list-style-type: none">• Select System on the main menu while you are in the Shelf View of the network element.• Select Set NE Name to open the Set NE Name dialog.• Type in the new name in the Change To field.• Click OK. Click OK in the confirmation dialog box.• Click Close. <p>Record the new network element name in the commissioning data table; see Table 1-6 on page 1-41.</p>
7	<p>Set the network element type:</p> <ul style="list-style-type: none">• Select System on main menu while you are in the Shelf view of the network element.• Select System Type to open the System Type dialog box.• Select the system type from the NE Type drop-down list.• Click OK. Click OK in the confirmation dialog box.• Click Close.
8	<p>Set the network element date and time:</p> <ul style="list-style-type: none">• Select the network element or NP in the Connected NE(s) list in Network View.• Choose Change Date and Time from the Admin menu to open the Change NE Date and Time dialog box.• If required, change the date in the New Date text field using the year-month-day format (YY-MM-DD).• If required, change the time in the New Time text field using the hour-minute-second format (YY-MM-DD).• Click Set. Click OK in the confirmation dialog box.• Click Close.
9	<p>Select the network element in the Network View dialog box.</p>
10	<p>Click Shelf. The Shelf view dialog box opens. Make sure the required circuit packs are in the shelf.</p>
11	<p>Log out of the network element:</p> <ul style="list-style-type: none">• Close all open dialog boxes.• If you are in the Shelf view, click Logout. If you are in Network View, select the network element to log out from and click Logout.• Click OK in the confirmation dialog box.

—continued—

Procedure 1-11 (continued)

Commissioning a new shelf processor

Step Action

**Table 1-6
Network element commissioning data**

Network element number and location	New TID	New password

—end—

Procedure 1-12

Commissioning a new network processor

Use this procedure to commission a new network processor (NP).

Requirements

This procedure must be performed at the network element, before network element testing. To perform this procedure, you must ensure that the shelf processor in the network element where the NP is located has been site commissioned. See Procedure 1-11 on page 1-38.



CAUTION

Risk of loss of functionality

Ensure that every network element and network processor (NP) has a unique system identifier (SID). If you are changing the name of a network element or NP, ensure that the new name is unique.

Action

Step	Action
1	<p>Log in to the NP using “admin” for the account name and the password:</p> <ul style="list-style-type: none">• From the Available NE(s) list in Network View, select NORTELOC3NP.• Click Login to open the Login to NE dialog box.• Type the user name and password.• Click OK.• To open the NP Provisioning dialog box, select the NP from the Connected NE(s) list and click NP. <p>This “admin” account has a level 4 user privilege code (UPC).</p>
2	<p>Secure the network element by changing the NORTELOC3NP account password:</p> <ul style="list-style-type: none">• Select the NP in the Connected NE(s) list in Network View.• Choose Change Password from the Admin menu to open the Change Password dialog box.

—continued—

 Procedure 1-12 (continued)

Commissioning a new network processor

Step	Action
	<ul style="list-style-type: none"> • Type the required information in the text fields. • Click Set. Click OK in the confirmation dialog box. <p>Note: User password identifiers (PIDs) must be no more than 10 characters in length. Names may consist of alphabetic and numeric characters as well as the following: ! # \$ % ` () * + - . / < = > @ [] ^ _ ' { } . Passwords can not be omitted. The minimum number of characters in a password is one. You cannot use spaces in a password.</p>
3	<p>If required, change the userid and password for the default surveillance account (level 5 UPC):</p> <ul style="list-style-type: none"> • Select the NP in the Connected NE(s) list in Network View. • Choose User Profile from the Admin menu to open the User Profile dialog box. • Select the account you want to change from the list. • Click Edit to open the Edit User dialog box. The dialog box displays data of the selected account. • Type the desired user ID and password in the text fields. • If required, change the user privilege code (UPC) in the Privilege Code list. • Select the desired Timeout value. <p>Note 1: Refer to Table 1-7 on page 1-44 for parameter values.</p> <ul style="list-style-type: none"> • Click OK. Click OK in the confirmation dialog box. • Click Close.
4	<p>Change the network processor name:</p> <ul style="list-style-type: none"> • Select the NP in the Map by clicking on its icon. • In the System menu, select Set NE Name. • Type the new NP name in the Change To field. • Click OK. • A confirmation dialog box opens asking if you want to update the map. Either wait 5 minutes and click OK or press Cancel and update the map after 5 minutes. Attempting to update the map without waiting 5 minutes results in an error message. • In the File menu, select Close. <p>Note: If the default NP name has been changed, an error message will display.</p>

—continued—

Procedure 1-12 (continued)

Commissioning a new network processor

Step	Action
5	<p>Retrieve the network processor date and time:</p> <ul style="list-style-type: none"> Select the NP in the Connected NE(s) list in Network View. Select Change Date and Time from the Admin menu to open the Change NE Date and Time dialog box. This dialog box displays the NP's date and time. Click Close <p>Note 1: The NP continuously receives date and time from the shelf processor (SP). The NP date and time are updated if the difference between NP and SP time is more than 2 minutes. It is recommended that date and time be changed on the SP if changes are desired on the NP.</p> <p>Note 2: If you detect a difference in date and time between the NP and the SP and wish to change the date and time on the NP. Go to step 6.</p>
6	<p>If required, change the NP date and time:</p> <ul style="list-style-type: none"> Select the NP in the Connected NE(s) list in Network View. Choose Change Date and Time from the Admin menu to open the Change NE Date and Time dialog box. If required, change the date in the New Date text field using the year-month-day format (YY-MM-DD). If required, change the time in the New Time text field using the hour-minute-second format (HH-MM-SS). Click Set. Click OK in the confirmation dialog box. Click Close.
7	<p>Provision the NP facilities if desired. See <i>GUI Network Surveillance</i>, 323-1051-520G.</p>
8	<p>Log out of the network processor:</p> <ul style="list-style-type: none"> Close all open dialog boxes. In Network View, select the NP to log out from and click Logout. Click OK in the confirmation dialog box.

Table 1-7
Parameter descriptions

Parameter	Domain	Description
TMOUTA	Y	Time-out enable
	N	Time-out disable

—end—

Provisioning DS1 equipment and facilities

The following procedures describe the provisioning required to set up DS1 services in linear systems.

DS1 provisioning should take place only after the network elements have been commissioned and tested (*GUI Shelf Setup Guide*). In addition, all user and administration accounts for the system should be provisioned (*GUI Security and Administration*, 323-1051-302G, in *GUI Planning and Operations*, Volume 1), and TBOS facilities (*GUI Network Surveillance*, 323-1051-520G, in *GUI Planning and Operations*, Volume 1) should be provisioned before traffic-related provisioning commences.

DS1 equipment and facilities must be provisioned before any of the bandwidth management procedures can be performed. All bandwidth-related provisioning can be performed from one network element.

The following procedures describe how to provision, delete, retrieve and modify DS1 equipment and facilities. For procedures on managing bandwidth, including provisioning and retrieving cross-connects, see “Managing DS1 bandwidth in a linear system,” on page 1-60.

For procedures on provisioning DS3 services, see *GUI Provisioning DS3 Services*, 323-1051-330G, in *GUI Provisioning*, Volume 2. For procedures on provisioning EC-1 services, see *GUI Provisioning EC-1 Services*, 323-1051-340G, in *GUI Provisioning*, Volume 2. For procedures on provisioning OC-3 interface circuit packs, see *GUI Provisioning OC-3 Equipment and Facilities*, 323-1051-350G, in *GUI Provisioning*, Volume 2. For protection switching procedures, see *GUI Protection Switching*, 323-1051-311G, in *GUI Planning and Operations*, Volume 1.

Procedure task list

Perform the following procedures as required and in any sequence.

Procedure	Number	Page
Logging in to a network element	Procedure 1-14	1-47
Adding or deleting DS1 or optical interface equipment and facilities	Procedure 1-14	1-48
Retrieving or modifying DS1 or optical interface equipment	Procedure 1-15	1-52
Retrieving or modifying a DS1 facility	Procedure 1-16	1-54

Requirements

To perform the procedures in this section, you must log in to the network element using an account with a level 3 user privilege code (UPC). Refer to Procedure 1-13 on page 1-47.

Procedure 1-13

Logging in to a network element

Action

Step	Action
1	From the available NE(s) list in Network View, select the network element you wish to log in to.
2	Click Login to open the Login to NE dialog box.
3	Type the user name and password with the user privilege code (UPC) required to perform your task.
4	Click OK.
5	To open the Shelf view, select the network element from the Connected NE(s) list and click the Shelf button.

—end—

Procedure 1-14

Adding or deleting DS1 or optical interface equipment and facilities

Use this procedure to add or delete DS1 or optical interface equipment and facilities.

This procedure describes how to provision or delete DS1 or optical interface equipment and facilities for the near-end and far-end network elements of a DS1 service.

If you are adding DS1 or optical interface circuit packs and their facilities in to an empty equipment slot, make sure the last equipment that occupied the slot and its related facilities and cross-connects have been deleted. On an OC-3 Express or Express CX shelf, you must also have a protection switch controller (PSC) installed.

If you are deleting DS1 or optical interface equipment or facilities, you must delete the passthrough network element cross-connects and the DS1 or MTX cross-connects, followed by the facility, and then the equipment, if required.

Make sure the DS1 or MTX services are not carrying traffic before you delete them. Deleting a DS1 or MTX service that is carrying traffic causes traffic loss.

Action

Step	Action
1	Ensure that you are logged into the network element. See Procedure 1-13 on page 1-47.
Adding DS1 equipment and facilities	
2	In the Shelf view, determine whether the slot contains a deleted circuit pack or is empty. (A deleted circuit pack appears without a label. An empty slot appears with no circuit pack.)

—continued—

 Procedure 1-14 (continued)

Adding or deleting DS1 or optical interface equipment and facilities

Step	Action												
3	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If you want to</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>provision a DS1 or an optical interface for an empty slot</td> <td>go to step 4</td> </tr> <tr> <td>provision a deleted DS1 or optical interface</td> <td>go to step 5</td> </tr> <tr> <td>add a facility to the DS1 or the MTX</td> <td>go to step 6</td> </tr> <tr> <td>delete a facility from the DS1 or the MTX</td> <td>go to step 10</td> </tr> <tr> <td>delete the DS1</td> <td>go to step 14</td> </tr> </tbody> </table>	If you want to	Then	provision a DS1 or an optical interface for an empty slot	go to step 4	provision a deleted DS1 or optical interface	go to step 5	add a facility to the DS1 or the MTX	go to step 6	delete a facility from the DS1 or the MTX	go to step 10	delete the DS1	go to step 14
If you want to	Then												
provision a DS1 or an optical interface for an empty slot	go to step 4												
provision a deleted DS1 or optical interface	go to step 5												
add a facility to the DS1 or the MTX	go to step 6												
delete a facility from the DS1 or the MTX	go to step 10												
delete the DS1	go to step 14												
4	<p>Provision a DS1 circuit pack or optical interface for an empty slot:</p> <ul style="list-style-type: none"> • Select Add Card from the Equipment menu to open the Add Card dialog box. • Select the type of circuit pack in the Type list. • Select the slot number of the empty slot in the Slot list. • Select the desired equipment state in the State list. The default state is IS. • Click Set. Click OK in the confirmation dialog box. • Click Close. <p>Note: When a DS1 circuit pack or optical interface is inserted in an empty slot, it autoprovisions:</p> <ul style="list-style-type: none"> — the circuit pack is added to the shelf inventory and put in the in-service (IS) state — the facilities are provisioned and put in the IS state — the facility attributes assume default values <p>You have completed this procedure.</p>												
5	<p>Provision a deleted DS1 circuit pack or optical interface.</p> <ul style="list-style-type: none"> • Double click the unlabeled circuit pack in the Shelf view to open the Add Card dialog box. • Select the type of circuit pack in the Type list and the slot number of the deleted circuit pack in the Slot list. • Select the desired equipment state in the State list. The default state is IS. • Click Set. Click OK in the confirmation dialog box. • Click Close. <p>You have completed this procedure.</p>												

—continued—

Procedure 1-14 (continued)

Adding or deleting DS1 or optical interface equipment and facilities

Step	Action
-------------	---------------

Adding a facility to the DS1 or the MTX

- | | |
|----------|--|
| 6 | In the Shelf view, double click the DS1 circuit pack to open the DS1 Status and Provisioning dialog box. |
| 7 | To select a DS1 facility on a DS1 circuit pack select the facility number in the Port list. If you want to select all 12 facilities on a DS1 mapper, scroll up in the Port list and select ALL. (The All value is not initially visible when you click the arrow in the pull-down list.)

To select a DS1 facility on an MTX circuit pack click T1 Facility to open the MTX T1 Facility dialog box then select the facility number in the Port list. If you want to select all eight facilities, scroll up in the Port list and select ALL. (The All value is not initially visible when you click the arrow in the pull-down list.) |
| 8 | Click Add under Facility. Click OK in the confirmation dialog box. |
| 9 | Click Close.

You have completed this procedure. |

Deleting a facility from the DS1 or the MTX

Note: To perform this procedure, you must

- ensure that all cross-connects to the facility are deleted
- ensure that the facility is in the out-of-service (OOS) state

- | | |
|-----------|--|
| 10 | In the Shelf view, double click the DS1 circuit pack to open the DS1 Status and Provisioning dialog box. |
| 11 | To select a DS1 facility on a DS1 circuit pack select the facility number in the Port list. If you want to select all 12 facilities on a DS1 mapper, scroll up in the Port list and select ALL. (The All value is not initially visible when you click the arrow in the pull-down list.)

To select a DS1 facility on an MTX circuit pack click T1 Facility to open the MTX T1 Facility dialog box then select the facility number in the Port list. If you want to select all eight facilities, scroll up in the Port list and select ALL. (The All value is not initially visible when you click the arrow in the pull-down list.) |
| 12 | Click Delete under Facility. Click OK in the confirmation dialog box. |
| 13 | Click Close.

You have completed this procedure. |

—continued—

Procedure 1-14 (continued)

Adding or deleting DS1 or optical interface equipment and facilities

Step	Action
-------------	---------------

Deleting the DS1

Note: To perform this procedure, you must

- ensure that all of the cross-connects to the circuit pack are deleted
- ensure that all of the facilities on the circuit pack are deleted

- | | |
|-----------|---|
| 14 | Ensure that you are logged into the network element. |
| 15 | Double click the circuit pack you want to delete to open the Status and Provisioning dialog box. |
| 16 | Click Delete under Equipment. Click OK in the confirmation dialog box. As long as the circuit pack remains deleted, it will appear without a label in the Shelf view. |
| 17 | Click Close. |

—end—

Procedure 1-15

Retrieving or modifying DS1 or optical interface equipment

Use this procedure to:

- retrieve the service and provisioning states of a DS1 or an optical interface
- change the service state of a DS1 or an optical interface

Action

Step	Action
------	--------

- | | |
|---|---|
| 1 | Ensure that you are logged into the network element. See Procedure 1-13 on page 1-47. |
|---|---|

Retrieving the provisioning and service states of a DS1

- | | |
|---|---|
| 2 | In the Shelf view, double click the circuit pack to open the Status and Provisioning dialog box. (Facility attributes appear only for the currently selected facility. You can select a different facility in the Port list.) |
|---|---|

Note: When the Status and Provisioning dialog box opens, it is a snapshot of the equipment and facility attribute values. Equipment and facility attributes are not automatically updated as they change. Click Update to retrieve the most current attribute values.

Changing a DS1 or optical interface circuit pack to an out-of-service state

Note: To perform this procedure, you must ensure that all the facilities on the circuit pack are in the OOS state.

- | | |
|---|--|
| 3 | In the Shelf view, double click the circuit pack to open the Status and Provisioning dialog box. |
| 4 | Select OOS in the Primary list under Equipment. |
| 5 | Click Set under Equipment. Click OK in the confirmation dialog box. |
| 6 | Click Close. |

—continued—

Procedure 1-15 (continued)

Retrieving or modifying DS1 or optical interface equipment

Step	Action
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Changing a DS1 or optical interface circuit pack to an in-service state

- | | |
|-----------|--|
| 7 | In the Shelf view, double click the circuit pack to open the Status and Provisioning dialog box. |
| 8 | Select IS in the Primary list under Equipment. |
| 9 | Click Set under Equipment. Click OK in the confirmation dialog box. |
| 10 | Click Close. |

—end—

Procedure 1-16 Retrieving or modifying a DS1 facility

Use this procedure to:

- retrieve the provisioning state of a DS1 facility
- retrieve the primary state of a DS1 facility
- modify DS1 facility signal attributes
- modify the auto-in-service parameter of a DS1 facility
- modify the service state of a DS1 facility

Action

Step	Action												
1	Ensure that you are logged into the network element. See Procedure 1-13 on page 1-47.												
2	Select the desired task: <table border="1" style="margin-left: 20px; width: 100%;"> <thead> <tr> <th style="text-align: left;">If you want to</th> <th style="text-align: left;">Then go to</th> </tr> </thead> <tbody> <tr> <td>retrieve the provisioning and service states of a DS1 facility</td> <td>step 3</td> </tr> <tr> <td>modify DS1 facility signal attributes</td> <td>step 4</td> </tr> <tr> <td>modify the auto-in-service parameter of a DS1 facility</td> <td>step 9</td> </tr> <tr> <td>change a facility to an out-of-service state</td> <td>step 15</td> </tr> <tr> <td>change a facility to an in-service state</td> <td>step 21</td> </tr> </tbody> </table>	If you want to	Then go to	retrieve the provisioning and service states of a DS1 facility	step 3	modify DS1 facility signal attributes	step 4	modify the auto-in-service parameter of a DS1 facility	step 9	change a facility to an out-of-service state	step 15	change a facility to an in-service state	step 21
If you want to	Then go to												
retrieve the provisioning and service states of a DS1 facility	step 3												
modify DS1 facility signal attributes	step 4												
modify the auto-in-service parameter of a DS1 facility	step 9												
change a facility to an out-of-service state	step 15												
change a facility to an in-service state	step 21												

Retrieving the provisioning and service states of a DS1 facility

- 3** In the Shelf view, double click the DS1 circuit pack to open the DS1 Status and Provisioning dialog box. (Facility attributes appear only for the currently selected facility. You can select a different facility in the Port list.)

Note: When the Status and Provisioning dialog box opens, it is a snapshot of the equipment and facility attribute values. Equipment and facility attributes are not automatically updated as they change. Click Update to retrieve the most current attribute values.

You have completed this procedure.

Modifying DS1 facility signal attributes

Note: To perform this procedure, you must ensure that the facility is in the out-of-service (OOS) state.

- 4** In the Shelf view, double click the circuit pack to open the Status and Provisioning dialog box.

—continued—

 Procedure 1-16 (continued)

Retrieving or modifying a DS1 facility

Step	Action
5	To select a DS1 facility on a DS1 circuit pack select the facility number in the Port list. If you want to select all 12 facilities on a DS1 mapper, scroll up in the Port list and select ALL. (The All value is not initially visible when you click the arrow in the pull-down list.)
6	Modify the DS1 attributes under DS1 Attributes as required. See Table 1-8 on page 1-57.
7	Click Set under Facility. Click OK in the confirmation dialog box.
8	Click Close. You have completed this procedure.

Modifying the auto-in-service parameter of a DS1 facility

9	To activate or deactivate the auto-in-service secondary state: Note: The default secondary state for a DS1 facility is NULL. That is, when a DS1 facility autoprovisions, the secondary state is neither auto-in-service nor auto-in-service deactivated. The secondary state remains NULL until it is changed. <ul style="list-style-type: none"> • In the Shelf view, double click a DS1 circuit pack to open the DS1 Status and Provisioning dialog box.
10	Put the DS1 facility in the out-of-service state. <ul style="list-style-type: none"> • Select the DS1 port number in the Port list. • Select OOS in the Primary list under Facility. • Click Set under Facility. • Click OK in the warning dialog box. Click OK in the confirmation dialog box.
11	Select AINS (auto-in-service) or AINS-DEA (auto-in-service deactivated) in the Secondary list under Facility. Note: You may modify the AINS default time by entering a new value in the AINS time field. If the start-up time parameter is not entered, it will assume the default start-up time (04-00).
12	Click Set under Facility. Click OK in the confirmation dialog box.
13	Put the DS1 facility back in the in-service state. <ul style="list-style-type: none"> • Select IS in the Primary list under Facility. • Click Set under Facility. • Click OK in the confirmation dialog box.
14	Click Close. You have completed this procedure.

—continued—

Procedure 1-16 (continued)

Retrieving or modifying a DS1 facility

Step	Action
-------------	---------------

Changing a facility to an out-of-service state

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|-----------|--|
| 15 | In the Shelf view, double click the DS1 circuit pack to open the DS1 Status and Provisioning dialog box. |
| 16 | To select a DS1 facility on a DS1 circuit pack select the facility number in the Port list. If you want to select all 12 facilities on a DS1 mapper, scroll up in the Port list and select ALL. (The All value is not initially visible when you click the arrow in the pull-down list.) |
| 17 | Select OOS in the Primary list under Facility. |
| 18 | Click Set under Facility. |
| 19 | Click OK in the warning dialog box. Click OK in the confirmation dialog box. |
| 20 | Click Close. |

You have completed this procedure.

Changing a facility to an in-service state

- | | |
|-----------|--|
| 21 | In the Shelf view, double click the DS1 circuit pack to open the DS1 Status and Provisioning dialog box. |
| 22 | To select a DS1 facility on a DS1 circuit pack select the facility number in the Port list. If you want to select all 12 facilities on a DS1 mapper, scroll up in the Port list and select ALL. (The All value is not initially visible when you click the arrow in the pull-down list.) |
| 23 | Select IS in the Primary list under Facility. |
| 24 | Click Set under Facility. Click OK in the confirmation dialog box. |
| 25 | Click Close. |

—end—

**Table 1-8
DS1 facility signal attributes**

Signal attribute	Attribute description	Domain	Domain description
EQLZ	Cable length connecting T1 to DS1 cross-connect. If the cables for the incoming and outgoing streams are different, add "TX" or "RX" to the domain, for example "1RX" or "2TX". 1, 2 and 3 set the values for both TX and RX cables.	1 1TX 1RX	0-220 ft both directions (default) 0-220 ft transmit 0-220 ft receive
		2 2TX 2RX	220-430 ft both directions 220-430 ft transmit 220-430 ft receive
		3 3TX 3RX	430-655 ft both directions 430-655 ft transmit 430-655 ft receive
FENDNTE		ANSI	Far-end network element supports ANSI standards (default)
		NOTANSI	ANSI standards are not supported
FLMDE	Fault locate mode: checks for faults in the frame format. Use N if DS1 data is unframed.	BOTH	Both incoming and outgoing data streams will have the frame format, as specified by FMT, checked (default)
		INC	Only check incoming data (outgoing can be unframed)
		OC	Only check outgoing data
		N	Do not check the frame format (the DS1 facility can be unframed or used as a clear channel facility)
FMT	Frame format	SF	Superframe format (default)
		ESF	Extended Superframe format
		SF-TR08	Superframe with TR08 extensions
—continued—			

Table 1-8 (continued)
DS1 facility signal attributes

Signal attribute	Attribute description	Domain	Domain description
LINECDE	Line code. If the incoming and outgoing streams are different, add "TX" or "RX" to the domain.	AMI	Alternate mark inversion ("bipolar") both directions (default)
		AMITX	AMI transmit
		AMIRX	AMI receive
		AMIZCS	AMI with zero code suppression (If there are 8 zeros in a byte, the least significant will be changed to a one) both directions
		AMIZCSTX	AMIZCS transmit
			Note: Zero code suppression is not supported in the receive direction.
		B8ZS	Bipolar with 8-zero substitution, both directions
		B8ZSTX	B8ZS transmit
		B8ZSRX	B8ZS receive
			Note: If an EIM facility is cross-connected to a DS1 facility, the DS1 facility line coding must be set to B8ZS.
MAP	The form of mapping for DS1 payloads into VT1.5s. Note: You must enter each MAP parameter in a separate command.	VTASYN	VT1.5 asynchronous mapping (default)
		VTBYTE	VT1.5 byte synchronous mapping
		VTBIT	VT1.5 bit synchronous mapping
		If using VTBYTE mapping, one or both of the following mappings can also be specified:	
		SIGNLIN	Robbed bit signaling bits are transported
		SIGNLOUT	Out slot (S1-S4) signaling bits are transported
OMODE	Output mode	NORM	The outgoing stream is a regular DS1 (default)
		IDLE	The outgoing stream is set to an idle code: repeating 1100
		AZC	The outgoing stream will have any AIS code changed to all zero
—end—			

Table 1-9
Parameter descriptions

Parameter	Valid values	Description
PST (primary state)	IS OOS-MA	In service (default) Out of service maintenance for provisioning memory administration
SST (secondary state)	AINS AINS-DEA	auto-in-service auto-in-service deactivated
HH-MM (hour-minute)	00-01 to 96-00	Amount of time that an error-free signal must be present on the DS1 line in order for the auto-in-service state to clear. If an error-free signal is present for less than this period of time, the DS1 facility remains in an auto-in-service state.
<p>Note: The default secondary state for a DS1 facility is NULL. That is, when a DS1 facility autoprovisions, the secondary state is neither auto-in-service nor auto-in-service deactivated. This state is reported as a blank when you retrieve DS1 facility states.</p> <p>The secondary state remains NULL until it is changed.</p>		

Managing DS1 bandwidth in a linear system

The following procedures describe how to add, delete and retrieve DS1 to VT1.5 cross-connects in a linear system.

For procedures on provisioning DS3 and EC-1 services, see *GUI Provisioning DS3 Services*, 323-1051-330G, and *Provisioning EC-1 Services*, 323-1051-340G, in *GUI Provisioning*, Volume 2. For procedures on provisioning optical interfaces, see *GUI Provisioning OC-3 Equipment and Facilities*, 323-1051-350G, in *GUI Provisioning*, Volume 2. For procedures on provisioning STS-3c services, see *GUI Provisioning STS-3c Services*, 323-1051-360G, *GUI Provisioning*, Volume 2. For protection switching procedures, see *GUI Protection Switching*, 323-1051-311G, in *GUI Planning and Operations*, Volume 1.

Procedure task list

Perform the following procedures as required and in any sequence.

Procedure	Number	Page
Adding a bulk cross-connection	Procedure 1-17	1-61
Provisioning bidirectional cross-connects for a DS1 service	Procedure 1-18	1-62
Provisioning unidirectional cross-connects for a DS1 service	Procedure 1-19	1-67
Provisioning unidirectional drop and continue for a linear service	Procedure 1-20	1-71

Requirements

To perform the following procedures, you must log in to the network element using an account with a level 3 user privilege code (UPC).

Procedure 1-17

Adding a bulk cross-connection

Requirements

To perform this procedure, you must:

- ensure that the equipment and facilities that will be used by the planned cross-connects are provisioned and in service.
- ensure 1+1 protection has been provisioned for the OC-3 facilities, if you are provisioning a 1+1 protected connection. If you need to provision protection for the OC-3 facilities, see the procedure in *GUI Provisioning OC-3 Equipment and Facilities*, 323-1051-350G, in *GUI Provisioning*, Volume 2.
- obtain or create a DS1 traffic map for the system requiring cross-connect provisioning.
- ensure that the correct shelf processor is installed in the shelf. If you are provisioning add-drop or passthrough connections, all add-drop multiplexer (ADM) nodes and passthrough nodes must have an SPe installed.

Action

Step	Action
1	Ensure you are logged into the network element.
2	Go to the Shelf view.
3	Click Cross-Connect to open the Cross-Connect Table dialog box.
4	Click Add to open the Add Cross Connect dialog box.
5	Select the facility from the Facility list under From.
6	To provision a DS1 default group as the From facility, select a DS1-DFLT option.
7	Select the facility from the Facility list under To.
8	To provision a DS1 default group as the To facility, select a DS1-DFLT option.
9	Select the cross-connect type from the Type list.
10	Select the direction from the Direction list.
11	Select the switch mate from the Facility list under Switch Mate if applicable.
12	Click Set. Click OK in the confirmation dialog box.
13	Click OK in the List of new Cross Connections dialog box.

—end—

Procedure 1-18

Provisioning bidirectional cross-connects for a DS1 service

Use this procedure to provision bidirectional cross-connects for a new DS1 service in a linear system.

This procedure describes how to add or delete bidirectional cross-connects for the near-end, passthrough and far-end network elements of a DS1 service.

Make sure the DS1 service is not carrying traffic before you delete it. Deleting a DS1 service that is carrying traffic causes traffic loss.

If you are provisioning a 1+1 protected connection, ensure an FFP is provisioned for the optical interfaces. Then, when you provision the DS1 connection on the working optical interface, the connection is automatically set up on the mate optical interface as well.

Requirements

To perform this procedure, you must:

- ensure the equipment and facilities that will be used by the planned cross-connects are provisioned
- ensure 1+1 protection has been provisioned for the optical facilities, if you are provisioning a 1+1 protected connection. If you need to provision protection for the OC-3 facilities, see the procedure in *GUI Provisioning OC-3 Equipment and Facilities, 323-1051-350G*, in *GUI Provisioning, Volume 2*.
- obtain or create a DS1 traffic map for the linear system requiring cross-connect provisioning
- log in to the network element using an account with a level 3 or higher user privilege code (UPC)

—continued—

 Procedure 1-18 (continued)

Provisioning bidirectional cross-connects for a DS1 service

Action

Step	Action														
1	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If you want to</th> <th style="text-align: left;">Then go to</th> </tr> </thead> <tbody> <tr> <td>delete a cross-connect</td> <td>step 2</td> </tr> <tr> <td>add a cross-connect</td> <td>step 3</td> </tr> <tr> <td>add a 2WAY cross-connect at the near-end network element</td> <td>step 4</td> </tr> <tr> <td>add a 2WAY cross-connect for each passthrough network element</td> <td>step 13</td> </tr> <tr> <td>add a 2WAY cross-connect at the far-end network element</td> <td>step 23</td> </tr> <tr> <td>test fiber-optic continuity</td> <td>step 32</td> </tr> </tbody> </table>	If you want to	Then go to	delete a cross-connect	step 2	add a cross-connect	step 3	add a 2WAY cross-connect at the near-end network element	step 4	add a 2WAY cross-connect for each passthrough network element	step 13	add a 2WAY cross-connect at the far-end network element	step 23	test fiber-optic continuity	step 32
If you want to	Then go to														
delete a cross-connect	step 2														
add a cross-connect	step 3														
add a 2WAY cross-connect at the near-end network element	step 4														
add a 2WAY cross-connect for each passthrough network element	step 13														
add a 2WAY cross-connect at the far-end network element	step 23														
test fiber-optic continuity	step 32														

Deleting a cross-connect

- 2** To delete a cross-connect:
- Select the network element in Network view and click Shelf to open the Shelf view.
 - Click Cross-Connect to open the Cross-Connect Table dialog box.
 - Select the cross-connect to delete and click Delete.
 - Click OK in the confirmation dialog box.
- You have completed this procedure.
- 3** For each network element in your system, find the corresponding network element in the linear bidirectional provisioning diagram. See Figure 1-13 on page 1-66. Determine slot numbers for the DS1 circuit packs. Record this information in a list so you can refer to it throughout the procedure.

Adding a 2WAY cross-connect at the near-end network element

- 4** Ensure that you are logged into the near-end network element (NE).
- 5** Select the near-end NE in the Connected NE(s) list and click Shelf.
- 6** Click Cross-Connect to open the Cross-Connect Table dialog box.
- 7** Click Add to open the Add Cross-Connect dialog box.

—continued—

Procedure 1-18 (continued)

Provisioning bidirectional cross-connects for a DS1 service

Step	Action
8	Add a 2WAY cross-connect for the near-end network element. <ul style="list-style-type: none">• The tributary or the working optical interface in slot A can be the From facility or the To facility.
9	Select the desired cross-connect type from the Type list.
10	Select 2WAY from the Direction list.
11	Click Set. Click OK in the confirmation dialog box.
12	Click Close. You have completed this procedure.
Adding a 2WAY cross-connect for each passthrough network element	
13	Ensure that you are logged into the passthrough network element (NE).
14	Select the passthrough NE in the Connected NE(s) list and click Shelf.
15	Click Cross-Connect to open the Cross-Connect Table dialog box.
16	Click Add to open the Add Cross-Connect dialog box.
17	Add a 2WAY cross-connect for the passthrough network element. <ul style="list-style-type: none">• The working optical interface in slot A or slot C can be the From facility or the To facility.
18	Select the desired cross-connect type from the Type list.
19	Select 2WAY from the Direction list.
20	Click Set.
21	Click OK in the confirmation dialog box.
22	Click Close. You have completed this procedure.
Adding a 2WAY cross-connect at the far-end network element	
23	Ensure that you are logged into the far-end network element (NE). See Procedure 1-13 on page 1-47.
24	Select the far-end NE in the Connected NE(s) list and click Shelf.
25	Click Cross-Connect to open the Cross-Connect Table dialog box.
26	Click Add to open the Add Cross-Connect dialog box.
27	Add a 2WAY cross-connect for the far-end network element. <ul style="list-style-type: none">• The tributary or the working optical interface in slot A can be the From facility or the To facility.
28	Select the desired cross-connect type from the Type list.
29	Select 2WAY from the Direction list.
30	Click Set. Click OK in the confirmation dialog box.

—continued—

Procedure 1-18 (continued)

Provisioning bidirectional cross-connects for a DS1 service

Step	Action
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31	Click Close.
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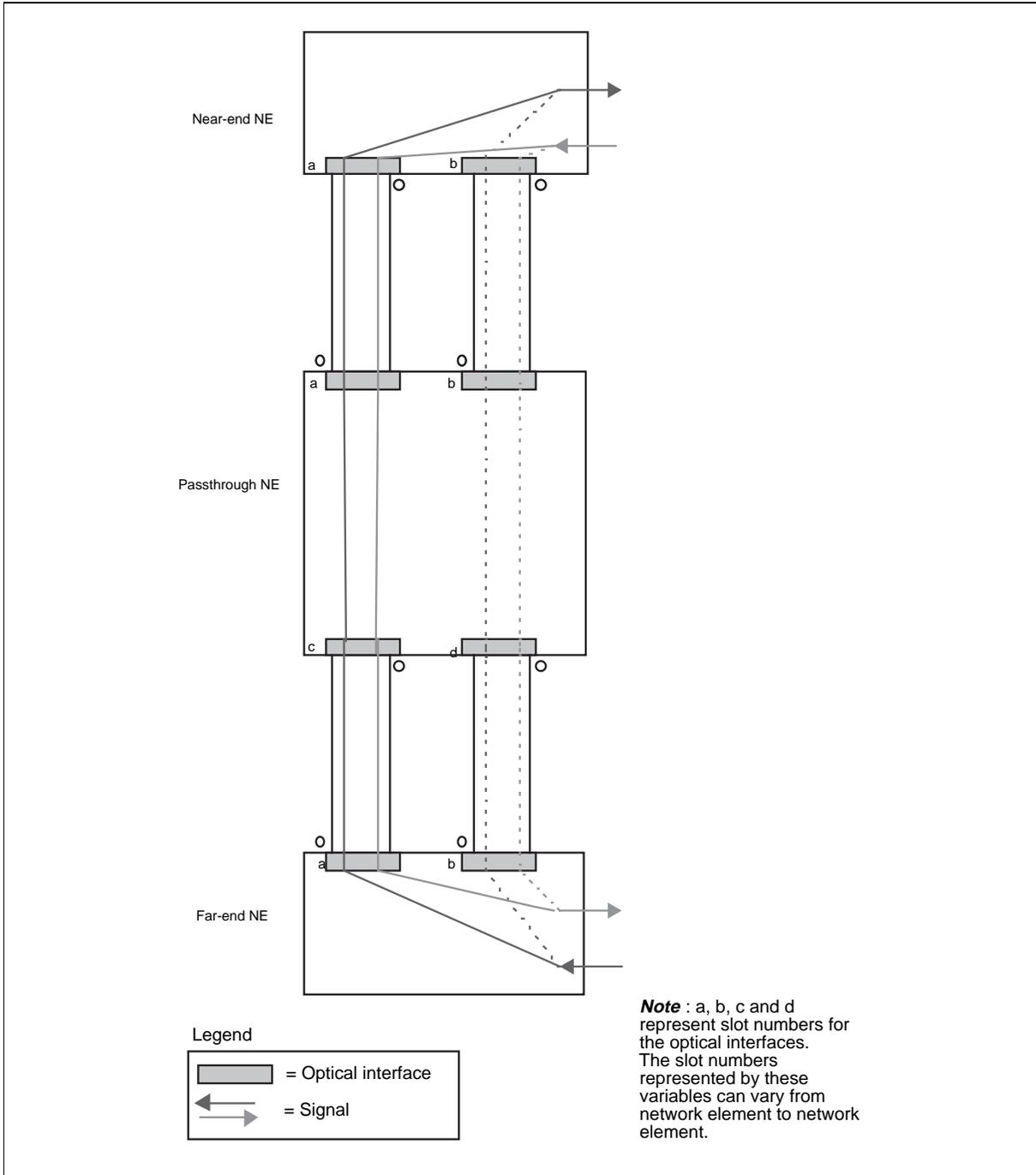
Testing fiber-optic continuity

32	Test signal continuity on both the working and protection paths. Refer to the procedure for testing fiber-optic continuity in <i>GUI System Testing</i> , 323-1051-220G (OC-3 Express) or 323-1053-220G (OC-3 Express CX), in the <i>GUI Shelf Setup Guide</i> .
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—end—

Figure 1-13
Bidirectional cross-connects in a linear DS1 system

AN-1011



Procedure 1-19

Provisioning unidirectional cross-connects for a DS1 service

Use this procedure to provision unidirectional cross-connects for a new DS1 service in a linear system.

This procedure describes how to add or delete unidirectional cross-connects for the near-end, passthrough and far-end network elements of a DS1 service.

Make sure the DS1 service is not carrying traffic before you delete it. Deleting a DS1 service that is carrying traffic causes traffic loss.

If you are provisioning a 1+1 protected connection, ensure an FFP is provisioned for the optical interfaces. Then, when you provision the DS1 connection on the working optical interface, the connection is automatically set up on the mate optical interface as well.

Requirements

To perform this procedure, you must:

- ensure the equipment and facilities that will be used by the planned cross-connects are provisioned and in service
- ensure 1+1 protection has been provisioned for the OC-3 facilities, if you are provisioning a 1+1 protected connection. If you need to provision protection for the OC-3 facilities, see the procedure in *GUI Provisioning OC-3 Equipment and Facilities*, 323-1051-350G.
- obtain or create a DS1 traffic map for the linear system requiring cross-connect provisioning

—continued—

Procedure 1-19 (continued)

Provisioning unidirectional cross-connects for a DS1 service

Action

Step	Action														
1	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If you want to</th> <th style="text-align: left;">Then go to</th> </tr> </thead> <tbody> <tr> <td>delete a cross-connect</td> <td>step 2</td> </tr> <tr> <td>add a cross-connect</td> <td>step 3</td> </tr> <tr> <td>add a 1WAY cross-connect at the near-end network element</td> <td>step 4</td> </tr> <tr> <td>add a 1WAY cross-connect for each passthrough network element</td> <td>step 11</td> </tr> <tr> <td>add a 1WAY cross-connect at the far-end network element</td> <td>step 18</td> </tr> <tr> <td>test fiber-optic continuity</td> <td>step 25</td> </tr> </tbody> </table>	If you want to	Then go to	delete a cross-connect	step 2	add a cross-connect	step 3	add a 1WAY cross-connect at the near-end network element	step 4	add a 1WAY cross-connect for each passthrough network element	step 11	add a 1WAY cross-connect at the far-end network element	step 18	test fiber-optic continuity	step 25
If you want to	Then go to														
delete a cross-connect	step 2														
add a cross-connect	step 3														
add a 1WAY cross-connect at the near-end network element	step 4														
add a 1WAY cross-connect for each passthrough network element	step 11														
add a 1WAY cross-connect at the far-end network element	step 18														
test fiber-optic continuity	step 25														

Deleting a cross-connect

- 2** To delete a cross-connect:
- Select the network element in Network view and click Shelf to open the Shelf view.
 - Click Cross-Connect to open the Cross-Connect Table dialog box.
 - Select the cross-connect to delete and click Delete.
 - Click OK in the confirmation dialog box.
- You have completed this procedure.
- 3** For each network element in your system, find the corresponding network element in the linear unidirectional provisioning diagram. See Figure 1-14 on page 1-70. Determine slot numbers for the DS1 circuit packs. Record this information in a list so you can refer to it throughout the procedure.

Adding a 1WAY cross-connect at the near-end network element

- 4** Ensure that you are logged into the near-end network element (NE). See Procedure 1-13 on page 1-47.
- 5** Select the near-end NE in the Connected NE(s) list and click Shelf.
- 6** Click Cross-Connect to open the Cross-Connect Table dialog box.
- 7** Click Add to open the Add Cross-Connect dialog box.

—continued—

 Procedure 1-19 (continued)

Provisioning unidirectional cross-connects for a DS1 service

- | Step | Action |
|-------------|---|
| 8 | Add a 1WAY cross-connect for the near-end network element. <ul style="list-style-type: none"> • Select the desired cross-connect for the near-end network element. • Select 1WAY from the Direction list. • Make the tributary the From facility. • Make the working optical interface in slot A the To facility. |
| 9 | Click Set. Click OK in the confirmation dialog box. |
| 10 | Click Close.
You have completed this procedure. |

Adding a 1WAY cross-connect for each passthrough network element

- | | |
|-----------|---|
| 11 | Ensure that you are logged into the passthrough network element (NE). |
| 12 | Select the passthrough NE in the Connected NE(s) list and click Shelf. |
| 13 | Click Cross-Connect to open the Cross-Connect Table dialog box. |
| 14 | Click Add to open the Add Cross-Connect dialog box. |
| 15 | Add a 1WAY cross-connect for the passthrough network element. <ul style="list-style-type: none"> • Select the desired cross-connect type from the Type list. • Select 1WAY from the Direction list. • Make the working optical interface in slot A the From facility. • Make the working optical interface in slot C the To facility. |
| 16 | Click Set. Click OK in the confirmation dialog box. |
| 17 | Click Close.
You have completed this procedure. |

Adding a 1WAY cross-connect at the far end network element

- | | |
|-----------|---|
| 18 | Ensure that you are logged into the far-end network element (NE). |
| 19 | Select the far-end NE in the Connected NE(s) list and click Shelf. |
| 20 | Click Cross-Connect to open the Cross-Connect Table dialog box. |
| 21 | Click Add to open the Add Cross-Connect dialog box. |
| 22 | Add a 1WAY cross-connect for the far-end network element. <ul style="list-style-type: none"> • Select the desired cross-connect type from the Type list. • Select 1WAY from the Direction list. • Make the working optical interface in slot A the From facility. • Make the tributary the To facility. |
| 23 | Click Set. Click OK in the confirmation dialog box. |
| 24 | Click Close. |

—continued—

Procedure 1-19 (continued)

Provisioning unidirectional cross-connects for a DS1 service

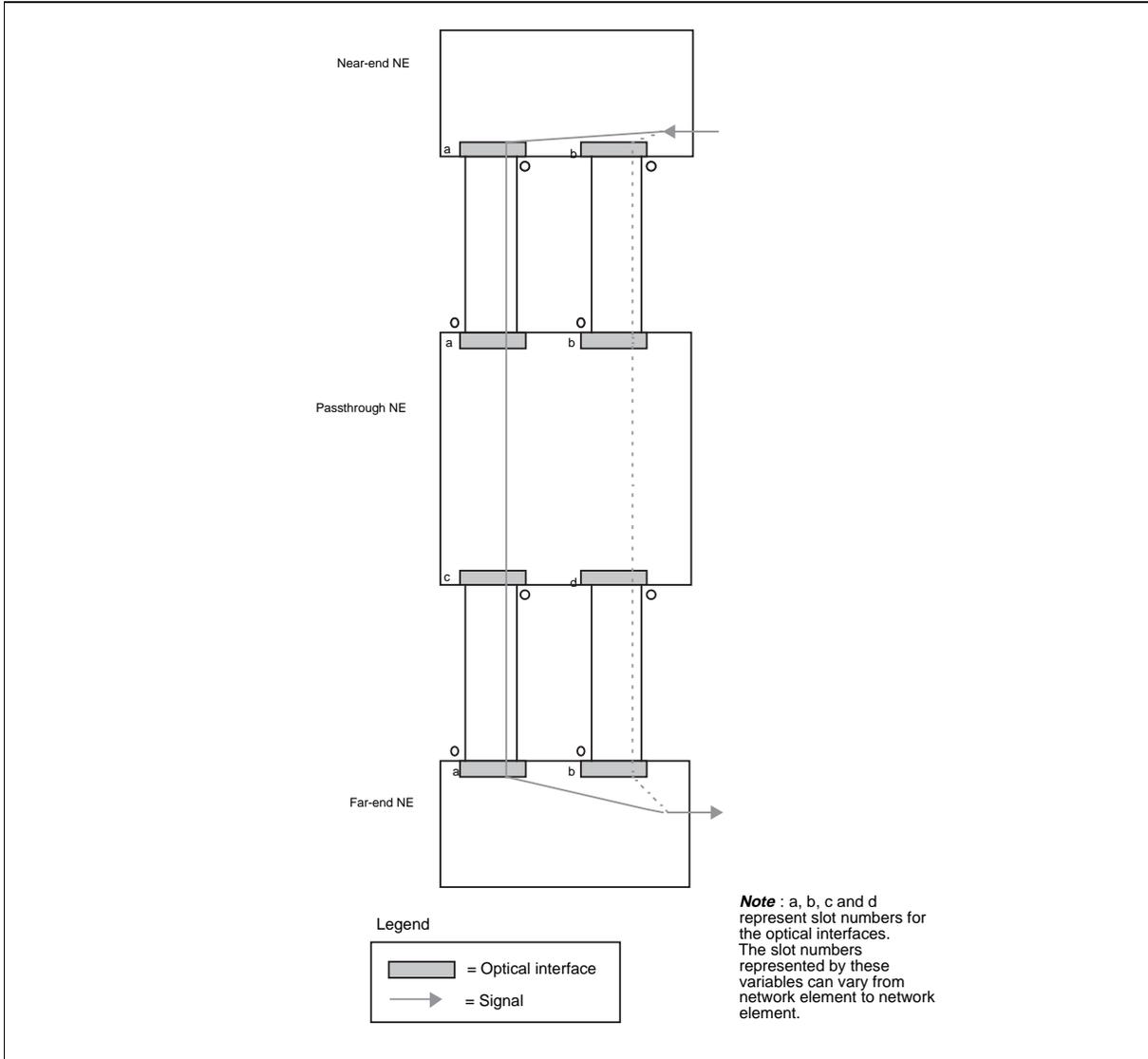
Step Action

Testing fiber-optic continuity

- 25 Test signal continuity on both the working and protection paths. Refer to the procedure for testing fiber-optic continuity in *GUI System Testing*, 323-1051-220G (OC-3 Express) or 323-1053-220G (OC-3 Express CX), in the *GUI Shelf Setup Guide*.

Figure 1-14
Unidirectional cross-connects in a linear DS1 system

AN-1012



—end—

Procedure 1-20

Provisioning unidirectional drop and continue for a linear service

Use this procedure to provision unidirectional drop and continue for a new EC-1 service in a linear system.

This procedure describes how to add or delete unidirectional drop and continue for the near-end, passthrough, and far-end network elements of an EC-1 service.

Make sure the EC-1 service is not carrying traffic before you delete it. Deleting an EC-1 service that is carrying traffic causes traffic loss.

If you are provisioning a 1+1 protected connection, ensure an FFP is provisioned for the optical interfaces. Then, when you provision the STS-1 or VT1.5 connection on the working optical interface, the connection is automatically set up on the mate optical interface as well.

The order of the FromAID and the ToAID is important for a unidirectional connection. The FromAID identifies the circuit pack from which the signal originates. The ToAID identifies the circuit pack to which the signal is going.

Requirements

To perform this procedure, you must

- ensure the equipment and facilities that will be used by the planned cross-connects are provisioned and in service
- ensure 1+1 protection has been provisioned for the OC-3 facilities, if you are provisioning a 1+1 protected connection. If you need to provision protection for the OC-3 facilities, see the procedure in *GUI Provisioning OC-3 Equipment and Facilities*, 323-1051-350G in *GUI Provisioning*, Volume 2.
- obtain or create an EC-1 traffic map for the linear system requiring cross-connect provisioning
- ensure the correct shelf processor is installed in the shelf. If the shelf is an OC-3 Express shelf and you are provisioning add-drop or passthrough connections, you must install an SPe on all add-drop multiplexer (ADM) nodes and passthrough nodes.

—continued—

Procedure 1-20 (continued)

Provisioning unidirectional drop and continue for a linear service

Step	Action	Then go to
1	If you want to	
	delete a cross-connect	step 2
	add a cross-connect	step 3
	add a 1WAY cross-connect at the near-end network element	step 4
	add a 1WAY cross-connect for each passthrough network element	step 11
	add a 1WAY cross-connect for the continuing signal at the far-end 1 network element	step 18
	add a 1WAY cross-connect for the dropping signal at the far-end 1 network element	step 25
	add a 1WAY cross-connect at the far-end 2 network element	step 32
	test fiber-optic continuity	step 39

Deleting a cross-connect

- 2** To delete a cross-connect:
- Select the network element in Network view and click Shelf to open the Shelf view.
 - Click Cross-Connect to open the Cross-Connect Table dialog box.
 - Select the cross-connect to delete and click Delete.
 - Click OK in the confirmation dialog box.

You have completed this procedure.

- 3** For each network element in your system, find the corresponding network element in the drop-and-continue linear system diagram (see Figure 1-15 on page 1-75) and determine slot numbers for the optical interface circuit packs. Record this information in a list so you can refer to it throughout the procedure.

Adding a 1WAY cross-connect at the near-end network element

- 4** Ensure that you are logged into the near-end network element (NE).
- 5** Select the near-end NE in the Connected NE(s) list and click Shelf.
- 6** Click Cross-Connect to open the Cross-Connect Table dialog box.
- 7** Click Add to open the Add Cross Connect dialog box.

—continued—

 Procedure 1-20 (continued)

Provisioning unidirectional drop and continue for a linear service

Step	Action
8	Add a 1WAY cross-connect for the near-end network element. <ul style="list-style-type: none"> • Select the desired cross-connect type from the Type list. • Select 1WAY from the Direction list. • Make the tributary the From facility. • Make the working optical interface in slot A the To facility.
9	Click Set. Click OK in the confirmation dialog box.
10	Click Close. You have completed this procedure.

Adding a 1WAY cross-connect for each passthrough network element

11	Ensure that you are logged into the passthrough network element (NE).
12	Select the passthrough NE in the Connected NE(s) list and click Shelf.
13	Click Cross-Connect to open the Cross-Connect Table dialog box.
14	Click Add to open the Add Cross Connect dialog box.
15	Add a 1WAY cross-connect for the passthrough network element. <ul style="list-style-type: none"> • Select the desired cross-connect type from the Type list. • Select 1WAY from the Direction list. • Make the working optical interface in slot A the From facility. • Make the working optical interface in slot C the To facility.
16	Click Set. Click OK in the confirmation dialog box.
17	Click Close. You have completed this procedure.

Adding a 1WAY cross-connect for the continuing signal at the far-end 1 network element

18	Ensure that you are logged into the passthrough network element (NE).
19	Select the passthrough NE in the Connected NE(s) list and click Shelf.
20	Click Cross-Connect to open the Cross-Connect Table dialog box.
21	Click Add to open the Add Cross Connect dialog box.
22	Add a 1WAY cross-connect for the passthrough network element. <ul style="list-style-type: none"> • Select the desired cross-connect type from the Type list. • Select 1WAY from the Direction list. • Make the working optical interface in slot A the From facility. • Make the working optical interface in slot C the To facility.
23	Click Set. Click OK in the confirmation dialog box.

—continued—

Procedure 1-20 (continued)

Provisioning unidirectional drop and continue for a linear service

Step	Action
-------------	---------------

- | | |
|-----------|--|
| 24 | Click Close.
You have completed this procedure. |
|-----------|--|

Adding a 1WAY cross-connect for the dropping signal at the far-end 1 network element

- | | |
|-----------|--|
| 25 | Ensure that you are logged into the far-end network element (NE). |
| 26 | Select the far-end NE in the Connected NE(s) list and click Shelf. |
| 27 | Click Cross-Connect to open the Cross-Connect Table dialog box. |
| 28 | Click Add to open the Add Cross Connect dialog box. |
| 29 | Add a 1WAY cross-connect for the far-end network element. <ul style="list-style-type: none">• Select the desired cross-connect type from the Type list.• Select 1WAY from the Direction list.• Make the working optical interface in slot A the From facility.• Make the tributary the To facility. |
| 30 | Click Set. Click OK in the confirmation dialog box. |
| 31 | Click Close.
You have completed this procedure. |

Adding a 1WAY cross-connect at the far-end 2 network element

- | | |
|-----------|--|
| 32 | Ensure that you are logged into the far-end network element (NE). |
| 33 | Select the far-end NE in the Connected NE(s) list and click Shelf. |
| 34 | Click Cross-Connect to open the Cross-Connect Table dialog box. |
| 35 | Click Add to open the Add Cross Connect dialog box. |
| 36 | Add a 1WAY cross-connect for the far-end network element. <ul style="list-style-type: none">• Select the desired cross-connect type from the Type list.• Select 1WAY from the Direction list.• Make the working optical interface in slot A the From facility.• Make the tributary the To facility. |
| 37 | Click Set. Click OK in the confirmation dialog box. |
| 38 | Click Close. |

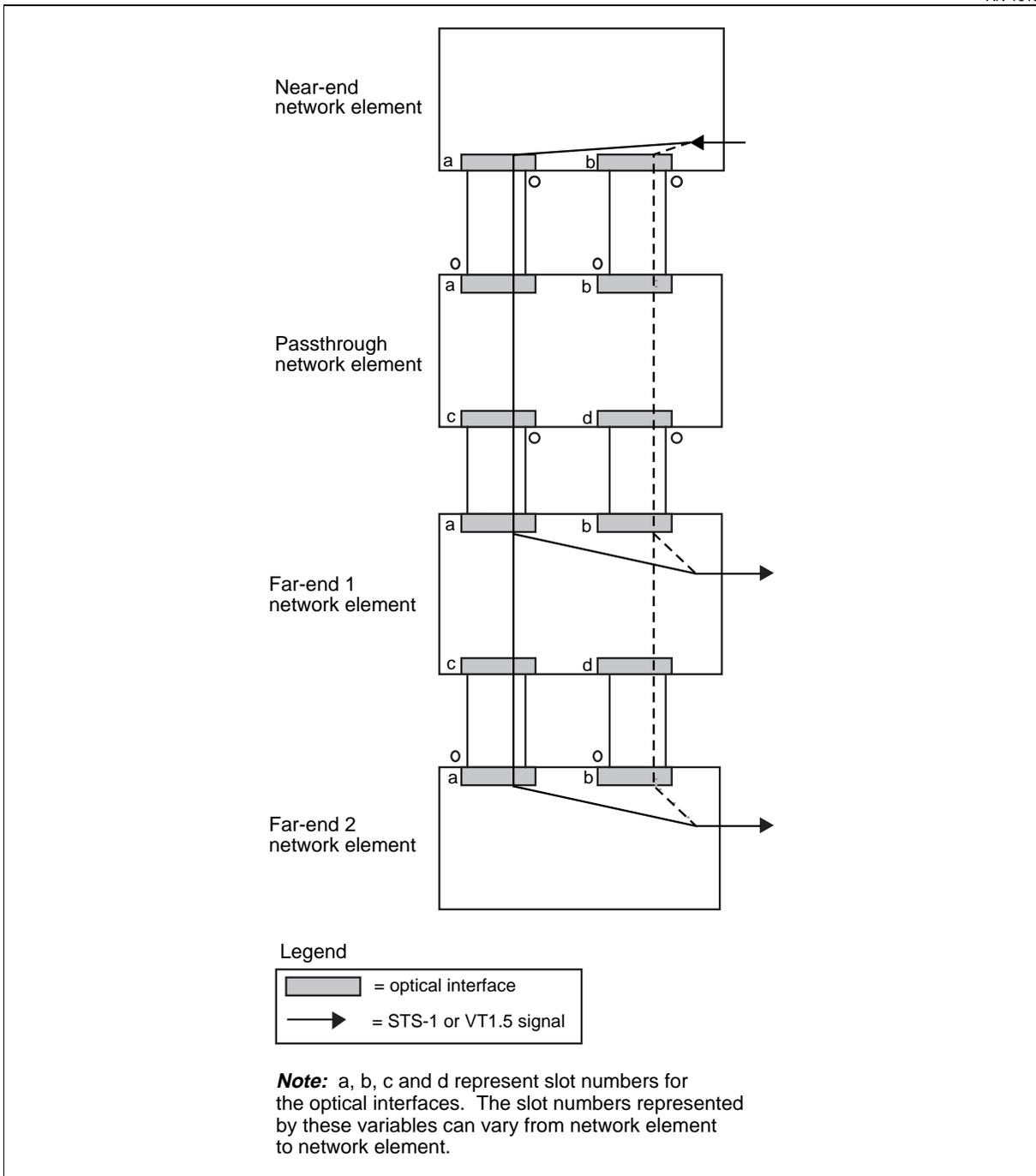
Testing fiber-optic continuity

- | | |
|-----------|--|
| 39 | Test signal continuity on both the working and protection paths. Refer to the procedure for testing fiber-optic continuity in <i>GUI System Testing</i> , 323-1051-220G (OC-3 Express) or 323-1053-220G (OC-3 Express CX), in the <i>GUI Shelf Setup Guide</i> . |
|-----------|--|

—end—

Figure 1-15
Unidirectional drop and continue in a linear system

AN-1016



Procedure 1-21 DS1 default group to VT1.5 cross-connects

This procedure describes how DS1 ports are cross-connected to VT1.5s within an STS-1 when the default group (DFLT-#) is used when adding a new cross-connect. For each possible DFLT-# value, a specific set of 28 ports is cross-connected to an STS-1. Table 1-10 lists the diagram that details the corresponding port-to-VT1.5 cross-connects for each DFLT-#.

Table 1-10
DFLT-# values

DFLT-#	Diagram
1	Figure 1-16
2	Figure 1-17
3	Figure 1-18

When a default group DFLT-# is selected, one of three sets of 28 DS1s can be connected to any of the STS-1s. For example, the DFLT-2 set of DS1 ports can be mapped to STS1-3. This causes DS1 ports 29 through 56 to be cross-connected to STS1-3.

When using the same DFLT-# at both the near-end and far-end network elements of an end-to-end path, the same STS-1 must be used for the cross-connects.

—end—

Figure 1-16
DS1 port to VT1.5 cross-connects for DFLT-1

AN-1030

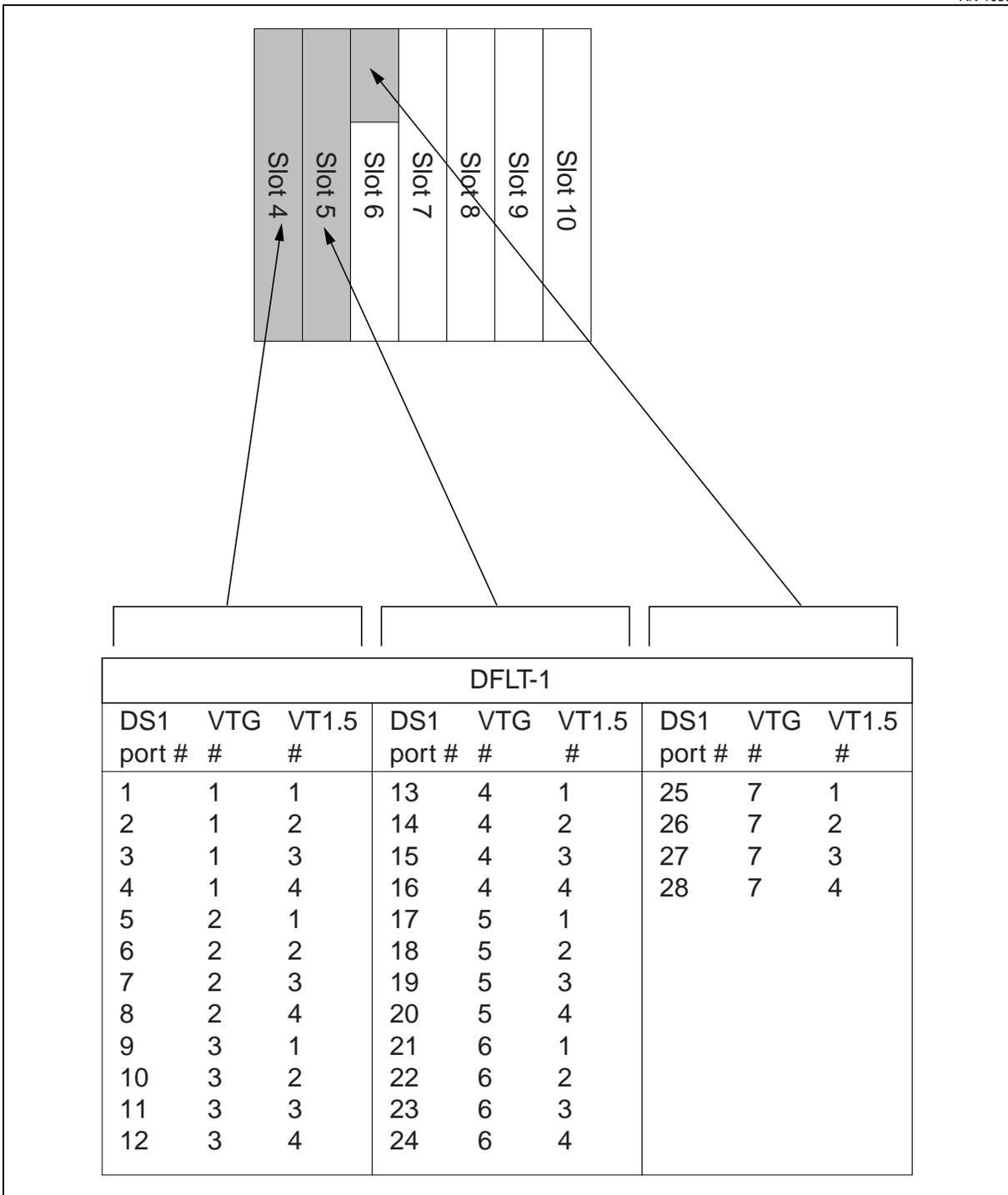


Figure 1-17
DS1 port to VT1.5 cross-connects for DFLT-2

AN-1031

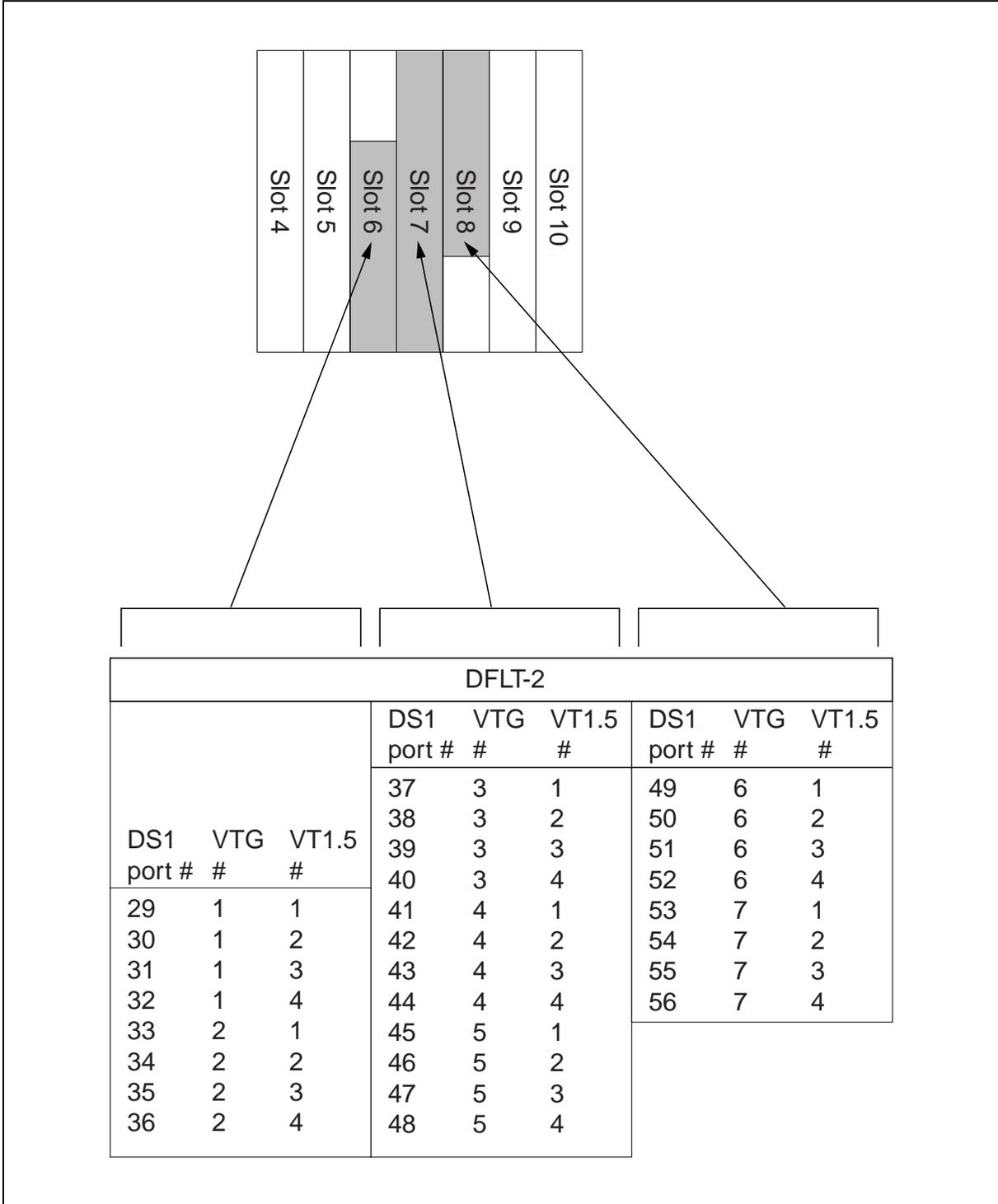
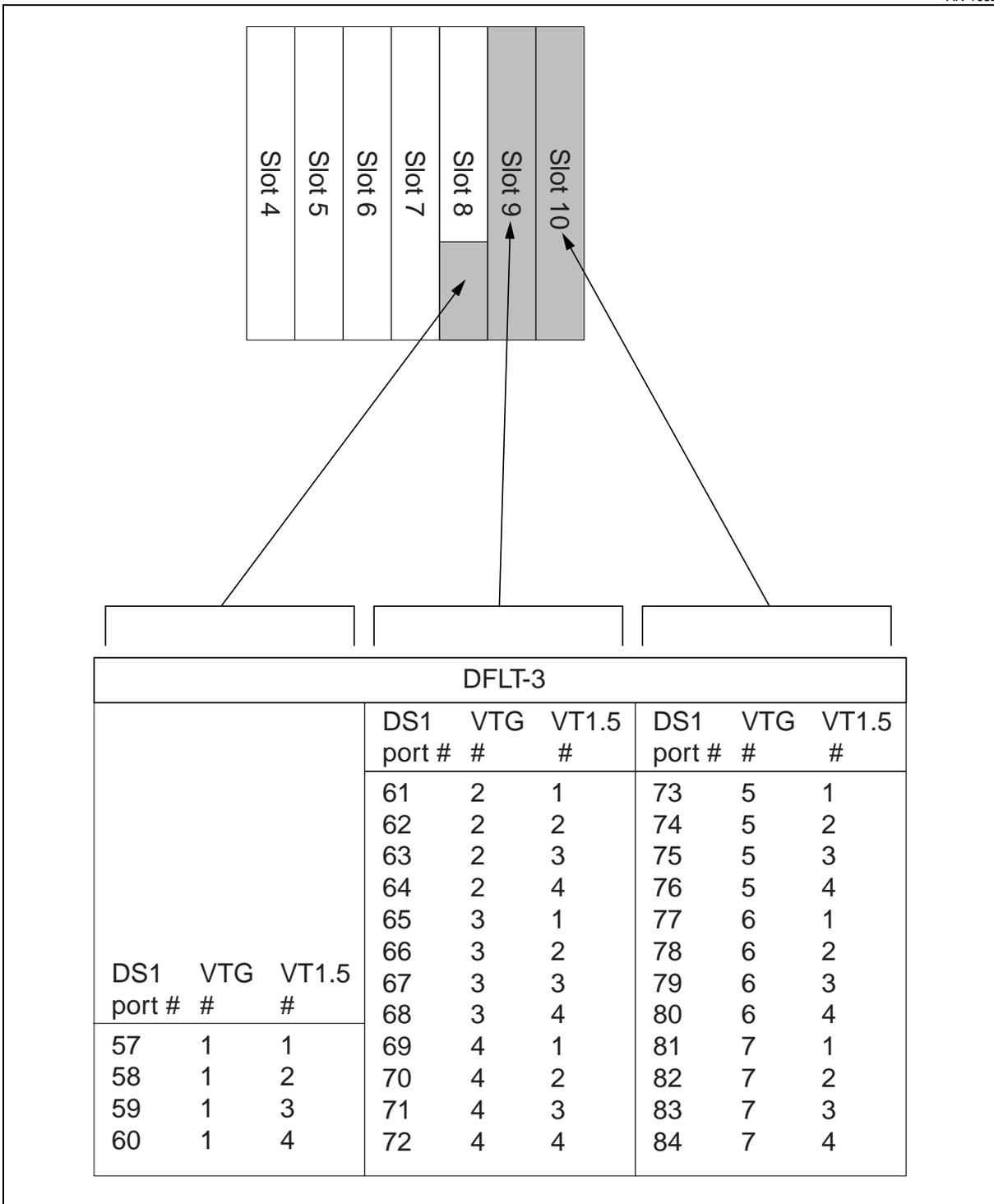


Figure 1-18
DS1 port to VT1.5 cross-connects for DFLT-3

AN-1032



Procedure 1-22 Modifying section data communications channel (SDCC) parameters

Use this procedure to modify SDCC parameters for a MCOT to ABM System.

SDCCs are carried in the overhead of the traffic carrying SONET links. They are automatically provisioned when an OC-3 interface circuit pack autoprovisions.

You can provision an SDCC link for each pair of OC-3 circuit packs on the OC-3 shelf.

You must delete the SDCC link before you can delete the OC-3 circuit pack the link was provisioned on.

SDCC links can be provisioned at the lower layers (layers 1 and 2) for the OC-3 circuit packs and the upper layers (layers 3 to 7) for the shelf.

For the MCOT to ABM configuration you must provision the lower layer SDCC links. Perform the following steps to add lower layer SDCC link information.

Action

Step	Action
------	--------

Adding SDCC links in the OC-3 circuit packs:

- 1 In the Shelf view, double click an OC-3 circuit pack to open the Status and Provisioning dialog box.
Note: If the OC-3 circuit pack is a member of a 1+1 protected pair, you must choose the working circuit pack. If the circuit pack is a member of a path-protected pair, you may choose either circuit pack.
- 2 Click Layers under SDCC to open the SDCC Info dialog box.
- 3 Click Add under Lower to turn on the SDCC link. Click OK in the confirmation dialog box.
- 4 Click close.

Note: The lower layer SDCC is provisioned with default values.

—end—

Planning to set up a SEAN system

Major processes in setting up a SEAN system

There are three major processes in setting up a new DS1-fed, single-ended AccessNode (SEAN) system:

- 1 Powering up the equipment
- 2 Commissioning and provisioning the equipment
- 3 Miscellaneous procedures

Each major process consists of a set of procedures that must be performed in a specific order.

Terms

The following terms are used in this document:

- *Network* refers to the broad collection of multi-vendor products that are used to service a given administrative region.
- *System* refers to the cluster of Nortel Networks network elements (NEs) that are controlled by a single operations controller (OPC). System is also known as a *span of control*.

Prerequisites

Before you begin setting up a new SEAN system, you should do the following:

- Make sure you have all the equipment you need. Equipment for commissioning is listed in “Equipment requirements” on page 2-3.
- Plan the network element IDs (NEID) you are assigning to the network elements in the system. All NEIDs must be unique within the network. See “Planning network elements” on page 2-2.
- Obtain the OPC user identification (user ID) and password for the system line-up and test (SLAT) security level. The default user ID is “root” with password “root.”
- Have the admin security level network element (NE) login user ID and password for each NE to be commissioned. The default user ID is “admin” with password “admin.”

- Obtain a tape or tapes with the correct OPC software load and NE software loads.
- Make a copy or copies of your mapper planning worksheets from “Appendix A: Worksheets” in the *Mapper Layouts Planning Guide*, 323-3001-154, in *Engineering, Configuration, and Ordering Guide*, Volume 1.
- The network administrator must fill out the System Setup Forms at the end of this chapter. Once completed, these forms list all the information needed for a technician to bring up a new system.

Control Network requirements

A CNet termination plug must terminate any unused CNet port on an access bandwidth manager shelf. There are two CNet ports on a shelf, CNet out and CNet in.

An OPC span of control can have no more than 16 network elements, and a CNet LAN can have up to 10 network elements daisy-chained by CNet cable. A CNet configuration also cannot have multiple paths (loops) in the control network. The configuration must have only one path from the operations controller (OPC) to each network element.

You must carefully engineer a control network if it interconnects several systems.

The total length of the CNet LAN bus (cables and backplane tracking) must not exceed 120 meters (400 feet). To calculate bus lengths, use the following formula. Lengths are in feet.

$$\text{total bus length} = \text{total cable length} + (4 \text{ feet} \times \text{the number of shelves connected by a CNet LAN})$$

Planning network elements

After you assign an NE number during commissioning, you cannot change it without affecting all integrated, universal, and DS1 tandem services. Therefore, it is very important for the NE numbers to be assigned according to a specific numbering plan. The numbering plan must adhere to the following rules:

- All NEs in an OPC’s span of control must have unique numbers. The numbers can run from 1 to 9999.
- All NEs connecting to the same DMS-100 SuperNode must have unique NE numbers.
- All NEs across the Network Manager’s span of control must have unique NE numbers.

- The fiber central office terminal (FCOT) and remote fiber terminal (RFT) in a system must have unique NE numbers.

Nortel Networks recommends that you develop a regional numbering scheme that is larger than the OPC span of control to which the NE belongs. This will minimize NE renumbering if NEs are later transferred to another OPC's span of control, or if that OPC's spans of control are later consolidated.

Equipment requirements

The following list contains the equipment required to commission, provision, and test an NE. All tools should be approved for use in the equipment area. You will need the following things:

- an operations controller module, NT7E24, placed in slots 5 to 8 of the host shelf that will support the span of control
- either a VT100-compatible terminal with a 9-pin female to 9-pin male RS-232 cable and VT100 emulation software or a personal computer used as a VT100 terminal emulator. The personal computer must have an RS232 cable (25-pin D-sub miniature male to 9-pin D-sub male).
- a user terminal, Digital Equipment Corporation VT100 or equivalent, with an RS-232 cable with a 25-pin D-subminiature male connector at each end
- two blank tapes for data backup
- two control network terminator plugs to terminate the unused CNET ports
- a digital multimeter, Fluke 85 or digital voltmeter (DVM)
- an electrically safe stepladder or step stool
- a work light
- a small flat-head screwdriver 0.10 inch wide
- a control network (CNET) cable, 9-pin D-subminiature (male)

Required circuit packs

The following list contains the circuit packs that must be installed in the access bandwidth manager (ABM) you are commissioning. It also lists circuit packs that are optional.

SEAN RFT

The following is a list of the modules that can be placed in the ABM shelf in a DS1-fed SEAN system:

- two processor cards (Proc), NT4K52.
Note: Use NT4K52FB, or NT4K52GB for all applications, including DMS Access.
- one maintenance interface card (MIC), NT4K53

- working and protection DS1/VT mapper circuit packs, NT7E04. The quantity depends on your system configuration.
- two DS1 protection bridge cards, NT4K31
- two timing cross-connect cards (OC-3)
- DS1 input and output (I/O) cards, NT4K32 and NT4K33
- two transport interface cards (TICs), NT4K56
- two access interface cards (AICs), NT4K55
- one test access card (TAC), NT4K54
- one operations controller module (OPC), NT7E24 (SEAN OPC shelf sites only). This unit is optional depending on your configuration. The unit can be housed in a CServer.
- one integrated remote test unit (IRTU), NT4K57, optional

CServer

The following is a list of the modules required in the ABM shelf that is configured as a CServer:

- one OPC, NT7E24
- one processor, NT4K52
- one MIC, NT4K53
- two DS1 mappers, NT7E04
- two DS1 protection bridge cards, NT4K31
- two DS1 input and output cards, NT4K32 and NT4K33
- two timing cross-connect (OC-3) cards (NT7E01). Only one is required by the SEAN OPC shelf.
- if the network element carries TR-08 services, you must have the DS1/VT mapper type NT7E04CA or NT7E04EA and the NT4D56AC TIC card.
Note: The protection mapper must be the same type as the DS1/VT mapper, NT7E04CA or NT7E04EA, or a circuit pack mismatch alarm is generated.
- blank faceplates, which are used to improve airflow. All unused slots must have blank faceplates.

CDS modules

The following modules should be inserted, but not engaged, in each copper distribution shelf (CDS):

- two CDS power (CDSP) cards, NT4K62
- two metallic test access cards (MTACs), NT4K73
- four line interface cards (LICs), NT4K70

Circuit packs on the ABM BIP

The following circuit packs should be placed in the ABM breaker interface panel (BIP):

- one alarm relay card (NT4K64).
- one talk battery filter card (NT4K61).

Circuits

The following information applies to circuits:

- DS1 tandem circuits are non-locally switched or non-switched DS0s terminated on line cards at the RFT. They are mapped to DS1 channels at the RFT-fed systems.
- GR-303 DMS/MVI circuits require a DS1/VT mapper at the SEAN. GR-303 DMS/MVI and DS1 tandem circuits can use the same mapper. These circuits terminate on line cards. GR-303 circuits are:
 - GR-303 DMS, which are circuits that terminate at a Nortel Networks DMS switch
 - GR-303 MVI, which are circuits that meet the multi-vendor interface standard
 - TR-08, which are GR-303 DMS circuits that meet the TR-08 interface standard. TR-08 circuits require a specific DS1/VT mapper, either NT7E04CA or NT7E04EA.

Using a laptop computer to emulate a VT100 terminal

In this document, it is assumed that you will use a laptop computer to emulate the VT100 terminal. The laptop should be configured for use as a VT terminal as described in *Network Element User Interface Description*, 323-3001-300, and *OPC User Interface Description*, 323-3001-301, in *Operations, Administration, and Provisioning*, Volume 4A.

The laptop must have a null modem 9-pin (male) to 9-pin (female) RS-232 cable with the following pin connections:

Table 2-1
Laptop computer pin connections

OPC-to-VT100 cable	
9-pin male (OPC)	25-pin female (VT100)
1	4
2	2
—continued—	

OPC-to-laptop cable	
9-pin male (OPC)	9-pin female (laptop)
1,6	4
2	3
—continued—	

Table 2-1 (continued)
Laptop computer pin connections

OPC-to-VT100 cable		OPC-to-laptop cable	
9-pin male (OPC)	25-pin female (VT100)	9-pin male (OPC)	9-pin female (laptop)
3	3	3	2
4	5,6	4	1,6
5	7	5	5
7	8	7	8
6, 8	20	8	7
—end—		—end—	

RS-232 signals

All VT100-compatible terminals used with the OPC should support the following RS-232 signals:

- carrier detect (CD)
- transmit data (TxD)
- receive data (RxD)
- clear to send (CTS)
- data set ready (DSR)
- data terminal ready (DTR)
- request to send (RTS)

If you are using a North American DEC VT320 or VT420 terminal, connect pin 4 (DTR) to pin 1 (CD) at the OPC end of the NT7E44 cable; that is, at the 9-pin (male) connector.

SEAN shelf configurations

In SEAN systems, you can configure the access bandwidth manager (ABM) shelf as either a SEAN or a CServer.

- The ABM shelf supports a SEAN configuration that can transport DS1 and terminate DS0 circuits on line cards installed in copper distribution shelves (CDSs). It can be installed as a FCOT or a remote fiber terminal (RFT).
- The CServer is an ABM shelf that supports the OPC and provides operation, maintenance, and control (OMC) to remote SEANs. This shelf is used when a SEAN is not required at the host office.

Processor requirements for ABM shelves

Before you begin commissioning the system, verify that you have the correct AccessNode processor card for the ABM shelf.

Table 2-2
Processor requirements

If you are commissioning this shelf	Then you must use this processor	And the system automatically loads the software with this number
ABM	NT4K52FB (64Mb)	ACDL
ABM DMS-X	NT4K52GB (64 Mb for DMS Access or DMS-X interface to APC-100)	ACCL
<p>Note 1: Use NT4K52FB for all applications except DMS Access. Use NT4K52GB for all applications including DMS Access and DMS-X interface to APC-100.</p> <p>Note 2: You can use the optional NT4K58LA serial I/O card in the upper part of the common equipment shelf, which allows access to the DMSTerm tool.</p>		

Equipment cautions and warnings

This section describes the warnings and precautions for personal safety and for proper handling and operation of equipment.

Radio-frequency emissions notice

The following regulatory notice applies to the equipment:

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area may cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Static electricity

It is usual for static electrical charges to build up on the body if a person walks a short distance. This buildup of static electricity is sufficient to damage some circuit packs if it is not properly discharged first. Circuit packs that are sensitive to damage by static electricity should be packaged in antistatic material. The following precautions are recommended.



CAUTION

Risk of equipment damage

Wear a grounded antistatic wrist strap or equivalent protection when handling circuit packs, to avoid damaging electronic parts.

Handling circuit packs

Units that are sensitive to static electricity are marked in their antistatic shipping bags with the following symbol:

ATTENTION

OBSERVER LES PRECAUTIONS
POUR LA MANIPULATION DES
DISPOSITIFS SENSIBLES AUX
CHARGES STATIQUES



ATTENTION

OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
SENSITIVE DEVICES

To avoid static electrical damage when handling circuit packs, follow these rules:

- Do not remove circuit packs from their antistatic packages unless you are using antistatic protection, such as wearing an antistatic wrist strap. The wrist strap is attached to a long cord, which must terminate at a good ground source, so that static buildup is harmlessly discharged. Alternative antistatic methods include conductive carpet, conductive shoes, or heel grounders. Use the equipment recommended by your company.
- Handle each circuit pack by the faceplate or stiffener. Do not touch electrical connections, pins, or soldered surfaces.

Storing and transporting circuit packs

When storing and transporting circuit packs, follow these rules:

- Never transport, stack, or store circuit packs without first replacing them in their antistatic material and original shipping package. This avoids physical damage and accumulation of dirt or dust on goldplated contacts. Be careful not to damage any parts when inserting the circuit pack into its packaging.
- Avoid storage in areas where the relative humidity can exceed 95% and where the temperature can exceed 70° C, because boards can warp or corrode.

Equipment warning label

The equipment label is located in the top left corner of the back cover. It reads as follows:

To be installed only in restricted access areas (dedicated equipment rooms, equipment closets, or the like) in accordance with articles 110-16, 110-17, and 110-18 of the National Electrical Code, ANSI/NFPA No. 70.

DS1 parameters

To provision a new system, you have to set the appropriate DS1 parameters. The DS1 parameters are:

- facility identifier
- line coding
- line build-out
- frame format
- alarm encoding
- synchronization mode
- performance monitoring

Facility identifier

The identifier for the facility.

Line coding

Line coding is a binary format that allows regenerative repeaters to distinguish valid input from line noise. You set the line coding parameter with one of three values:

- ami (alternate mark inversion)
- amizcs (ami zero code suppression)
- b8zs (bipolar 8-bit zero code)

ami (alternate mark inversion)

Alternate mark inversion (AMI) is a format whereby the binary value of 1, represented by a square wave (pulse), alternates between positive and negative polarity.

A DS1 signal that uses AMI line coding and appears at a DS1 interface is required to meet specific ones density standards. These standards require that at least one pulse be transmitted within any 8-bit sequence.

Since AMI does not provide any form of pulse density assurance, use the AMI line code with applications guaranteed to meet the standards.

For example, voice applications meet ones density requirements because of the consistent bit patterns that represent speech. However, computer data applications are not always guaranteed to meet ones density requirements because computer data is highly variable in size and content.

amizcs (ami zero code suppression)

AMI zero code suppression (amizcs) accommodates the ones density requirements. AMI zero code suppression requires inserting (at the DS1 source) a “1” in bit 7 of any all-zeros DS0 byte.

b8zs (bipolar 8-bit zero code)

Bipolar 8-bit zero code substitution (b8zs) accommodates the ones density requirements. This substitution requires inserting two intentional bipolar violations (BPVs) to break up long string of zeros. Use b8zs for most applications, unless connected to network elements (NEs) that do not support that line code.

Line build-out

Line build-out can be set to any of the following three values:

- short: 0 to 46 m (0 to 150 feet)
- medium: 47 to 137 m (151 to 450 feet)
- long: 138 to 200 m (451 to 655 feet)

Frame format

Framing provides the orderly organization of the bits in the 1.544 Mb/s DS1 signal. The format for framing can be set to any of the following four values:

- superframe
- extended superframe
- digital loop carrier
- null

superframe

A superframe contains 12 DS1 frames, with the 193rd bit in each frame used as a control bit, which supplies frame and signal management.

extended superframe

The extended superframe (extended) contains 24 DS1 frames, with the 193rd bit in each frame used as a control bit. Of the 24 control bits, 18 bits are reserved for the evaluation of circuit performance, and 6 bits provide frame and signal management.

digital loop carrier

The digital loop carrier (dlc) setting is used mainly with TR-08 DS1s associated with span A.

null

The null setting ensures that no framing bits are added.

Alarm encoding

When an all ones signal is received, the facility output can be provisioned to send an all ones or an all zeros signal on the output port.

Synchronization mode

In a synchronous systems, all clocks are locked onto a reference frequency; the elements of the system are synchronized to this external clock. Synchronous systems allow single-state multiplexing and demultiplexing. The result is direct payload visibility. A byte-synchronous setting maps a DS1 into the payload capacity of a VT1.5 SPS so that downstream SONET NEs can identify and access (DS0 visibility) the carried 24 DS0 channels.

Asynchronous systems require bit stuffing because the bit rates vary from equipment to equipment. Therefore, an asynchronous setting has no direct payload visibility.

Performance monitoring

This parameter enables or disables performance monitoring on DS1 facilities.

System setup forms

This section contains setup forms that are designed to provide the technician with the information needed to complete the procedures in this document.

Before a technician begins the process of bringing up a new system, a network administrator should fill out these form with the information the technician will need to bring up the system. To prepare the information, make copies of the blank forms provided in this section.

Forms provided

Seven forms have been provided. They are:

Form	Purpose	Page
OPC Setup Form	To provide information for commissioning an OPC.	2-19
CNet Tracking Form	To record CNet connections in a system.	2-20
Host Provisioning Setup Form	To provide information for provisioning hosts in a system.	2-21
Circuit Packs Setup Forms	To indicate the circuit packs that must be inserted into a copper distribution shelf, the slots where the packs should be placed, and the related I/O cards for each pack.	2-22
CDS Shelf Setup Form	To indicate the PEC codes for the line cards that must be inserted into a CDS shelf and the slots for those cards.	2-25
Network Elements Setup Form	To provide information needed to commission the network elements in a system.	2-26
DS1 Assignments Setup Form	To provide information needed to set up all DS1 assignments in a system.	2-27

Data definitions

Table 2-3 lists the data fields on the setup forms in alphabetical order and gives a brief description of each field.

**Table 2-3
Data definitions**

Data field	Description
Alarm encoding	Specifies whether the output of a facility is provisioned to send all 1s (ones) or all 0s (zeros) on the output port. Use 1s. Alphanumeric; 5 characters. The menu command is alarmenc.
Backup OPC alias (optional)	Use the OPC name followed by the letter B. Alphanumeric; 7 characters.
Backup OPC location (optional)	The location of the shelf in which the backup OPC resides.
Backup OPC name (optional)	The name of the backup OPC. The name must be unique to the network.
Backup OPC serial number (optional)	The serial number for the backup OPC.
Backup OPC time zone (optional)	The time zone code for the backup OPC.
Facil. ID (optional)	The identifier for the facility. Alphanumeric; 38 characters maximum. The menu command is facid.
Frame format	Specifies the organization of the framing bits in the 1.544 mb/s DS1 signal. Use extended superframe. Alphanumeric; 10 characters. The menu command is framefmt.
Group	Identifier for a circuit pack group. A group contains a DS1/VT mapper in the lower level of the common equipment shelf and has two associated input/output cards in the upper level of the common equipment shelf.
Host name	The common language location identifier (CLLI) for the host office.
Host interface	Your options are: GR-303 DMS or GR-303 MVI.
IDT	Integrated digital terminal. Get this information from your switching administrator.
IG number	Interface group for integrated GR-303 links (1 to 5 values). Numeric; 1 character.
—continued—	

Table 2-3 (continued)
Data definitions

Data field	Description
IP address	Internet protocol address, which is the network address associated with the OPC.
LBO	Line build out. Distance from the DS1 cross-connect. You have three options: - short (0-150 feet), - medium (150-450 feet), or - long (450-655 feet). Alphanumeric; 6 characters maximum. The menu command is lbo.
Line coding	You have three options: B8ZS, AMI, or AMIZCS. The menu command is lcoding.
Link No.	Link number within the interface group.
NE location	The geographic location of the network element.
NE name	A unique network element name. The first character must be alpha, not numeric. 32 characters alphanumeric.
NE number	The identifier for the network element, which can be a number from 1 to 9999. This number must be unique to your network.
OPC present	Indicates whether an OPC will reside in this network element. Your options are: - No OPC, - Primary OPC, or - Backup OPC.
OPC span of control	A group of up to 16 network elements that are controlled by a primary OPC.
OPC span of control system name	The name of the group of up to 16 network elements that are controlled by a primary OPC.
Perf. mon.	Performance monitoring, which enables or disables performance monitoring statistics on the network element facilities. The default is enable; disable is the other option. Alphanumeric; 7 characters. The menu command is prmprov.
Primary OPC alias	Use the OPC name followed by the letter P. Eight alphanumeric characters.
Primary OPC location	The network element in which the OPC resides.
—continued—	

Table 2-3 (continued)
Data definitions

Data field	Description
Primary OPC name	The name of the primary OPC. Format is "OPCxxxx," where xxxx is the OPC number. The name must be unique to your network. Alphanumeric; 7 characters.
Primary OPC serial number	The serial number for the primary OPC.
Primary OPC time zone	The time zone code for the primary OPC.
Port	The DS1 port on mapper 1 through 14.
Service assignment	The service that is to go to the facility. Your options are: Tandem, GR-303-DMS, GR-303 MVI, TR-08, VLCM, Data Direct, or unassigned.
Shelf serial number	The serial number for the shelf. The number is located in the upper right corner of the common equipment shelf.
Software version	The version of the software (AN15.12).
System name (optional)	The name of the OPC span of control system. 32 characters, alphanumeric.
TIC port	Transport interface card (TIC) ports 1 through 28 on the terminated TIC.
TID	Terminal identifier, which is the name of the network element that is the target of a TL1 message. 20 characters, starting with alphanumeric.
Transmission rate	Transmission rate. Use DS1.
—end—	

Time zone codes

Table 2-4 lists time zones and the codes for those time zones.

**Table 2-4
Time zones and codes**

Time zone	Time zone code
Hawaiian Standard Time Hawaiian Daylight Time	HST10
Aleutian Standard Time Aleutian Daylight Time	AST10ADT
Yukon Standard Time Yukon Daylight Time	YST9YDT
Pacific Standard Time Pacific Daylight Time	PST8PDT#Canada
Pacific Standard Time Pacific Daylight Time	PST8PDT
Mountain Standard Time Mountain Daylight Time	MST7MDT#Canada
Mountain Standard Time Mountain Daylight Time	MST7MDT
Mountain Standard Time Mountain Daylight Time	MST7
Central Standard Time Central Daylight Time	CST6CDT#Canada
Central Standard Time Central Daylight Time	CST6CDT
Central Standard Time Central Daylight Time	EST5CDT
Eastern Standard Time Eastern Daylight Time	EST5EDT#Canada
Eastern Standard Time Eastern Daylight Time	EST5EDT
—continued—	

Table 2-4 (continued)
Time zones and codes

Time zone	Time zone code
Atlantic Standard Time Atlantic Daylight Time	AST4ADT
Newfoundland Standard Time Newfoundland Daylight Time	NST3:30NDT
Western European Time Western European Daylight Time	WETOWETDST
Portuguese Winter Time Portuguese Summer Time	PWTOPST
Middle European Time Middle European Daylight Time	MET-1METDST
South Africa Standard Time South Africa Daylight Time	SAST-2SADT
Japan Standard Time	JST-9
Australian Western Standard Time	WST-8:00
Australian Central Standard Time	CST-9:30
Australian Eastern Standard Time	EST-10
Australian Central Standard Time Australian Central Daylight Time	CST-9:30CDT
Australian Eastern Standard Time Australian Eastern Daylight Time	EDT-10EDT
—end—	

OPC Setup Form

Date: _____

Network name: _____ System name: _____

System type: _____ IP address: _____

Software version: _____ IP netmask: _____

OPC span of control name: _____ Terminal identifier (TID): _____

Default gateway: _____

OPC information		
	Primary OPC	Backup OPC
Name:		
Serial number:		
Alias:		
Time zone:		
Location:		

CNet Tracking Form

The CNet Tracking Form allows you to record the CNet connections on a system. To use the form, enter the network element number into the appropriate box, and draw lines to connect the In and Out ports.

CNet Tracking Form

<input type="checkbox"/> In NE # _____ <input type="checkbox"/> Out Primary OPC	<input type="checkbox"/> In NE # _____ <input type="checkbox"/> Out
<input type="checkbox"/> In NE # _____ <input type="checkbox"/> Out	<input type="checkbox"/> In NE # _____ <input type="checkbox"/> Out
<input type="checkbox"/> In NE # _____ <input type="checkbox"/> Out	<input type="checkbox"/> In NE # _____ <input type="checkbox"/> Out
<input type="checkbox"/> In NE # _____ <input type="checkbox"/> Out	<input type="checkbox"/> In NE # _____ <input type="checkbox"/> Out
<input type="checkbox"/> In NE # _____ <input type="checkbox"/> Out	<input type="checkbox"/> In NE # _____ <input type="checkbox"/> Out

T = Termination plug

Host Provisioning Setup Form

Host name	Host type	Integrated digital terminal (IDT) number	Interface group (IG) number
	- GR-303 DMS - GR-303 MVI		
	- GR-303 DMS - GR-303 MVI		
	- GR-303 DMS - GR-303 MVI		
	- GR-303 DMS - GR-303 MVI		
	- GR-303 DMS - GR-303 MVI		
	- GR-303 DMS - GR-303 MVI		
	- GR-303 DMS - GR-303 MVI		
	- GR-303 DMS - GR-303 MVI		
	- GR-303 DMS - GR-303 MVI		
	- GR-303 DMS - GR-303 MVI		

Circuit packs setup forms

There are two Circuit Packs Setup Forms, one for the required circuit packs in a SEAN network element and one for the optional circuit packs. To provide the technician with information about the circuit packs you want installed in the system, give the technician the appropriate forms.

Required circuit packs form

The Required Circuit Packs Form lists all the required circuit packs and the slots in which they must be installed. Some circuit packs have associated input/output cards that must also be installed in the appropriate input/output slots. This form has all the necessary information for a technician to install the circuit packs and the related I/O cards. The form does not require any preparation.

Optional circuit packs form

The Optional Circuit Packs Form lists all the optional circuit packs and the slots in which they can be installed. Some circuit packs have associated input/output cards that must also be installed in the appropriate input/output slots.

If you want one of the optional circuit packs to be installed, put a check mark in the “Install this card” column.

Required Circuit Packs Form

Slot	Required circuit pack	PEC code	Associated input/output cards	PEC code	Input/output slot
1	DS1 mapper	NT7E04	DS1 In	NT4K32	30
			DS1 Out	NT4K33	32
3	Protection DS1 mapper	NT7E04	Protection DS1 In	NT4K32	34
			Protection DS1 In	NT4K32	36
9	Timing and cross-connect (G1)	NT7E01	Not applicable	Not applicable	Not applicable
10	Timing and cross-connect (G2)	NT7E01	Not applicable	Not applicable	Not applicable
11	Transport interface card (A)	NT4K56	Not applicable	Not applicable	Not applicable
13	Access interface card (A)	NT4K55	Not applicable	Not applicable	Not applicable
14	Transport interface card (B)	NT4K56	Not applicable	Not applicable	Not applicable
16	Access interface card (B)	NT4K55	Not applicable	Not applicable	Not applicable
17	Processor card (A)	NT4K52	Not applicable	Not applicable	Not applicable
18	Processor card (B)	NT4K52	Not applicable	Not applicable	Not applicable
19	Maintenance interface card	NT4K53	Not applicable	Not applicable	Not applicable
20	Test access card	NT4K54	Not applicable	Not applicable	Not applicable

Optional Circuit Packs Form

Install this card	Slot	Circuit pack	PEC code	Associated input/output cards	PEC code	Input/output slot
	2	DS1 mapper	NT7E04	DS1 In	NT4K32	31
				DS1 Out	NT4K33	33
	4	DS1 mapper	NT7E04	DS1 In	NT4K32	35
				DS1 Out	NT4K33	37
	5	DS1 mapper or OPC Note: If an OPC is used, it occupies slots 5 through 8.	NT7E04 or NT7E24	Not applicable	Not applicable	Not applicable
	6	DS1 mapper or OPC Note: If an OPC is used, it occupies slots 5 through 8.	NT7E04 or NT7E24	Not applicable	Not applicable	Not applicable
	7	DS1 mapper or OPC Note: If an OPC is used, it occupies slots 5 through 8.	NT7E04 or NT7E24	Not applicable	Not applicable	Not applicable
	8	DS1 mapper or OPC Note: If an OPC is used, it occupies slots 5 through 8.	NT7E04 or NT7E24	Not applicable	Not applicable	Not applicable
	12	This slot is not used.	Not applicable	Not applicable	Not applicable	Not applicable
	15	This slot is not used.	Not applicable	Not applicable	Not applicable	Not applicable
	21	Integrated remote test unit	NT4K57	Not applicable	Not applicable	Not applicable

CDS Shelf Setup Form

Complete this form by filling in the code for the card that will occupy each slot; for example, E2WS (Epsilon) or O4WS (four-wire Omega).

Back of shelf									
Bottom		Top				Bottom		Top	
1			2	47			48		
3			4	45			46		
5			6	43			44		
7			8	41			42		
9			10	39			40		
11			12	37			38		
13			14	35			36		
15			16	33			34		
17			18	31			32		
19			20	29			30		
21			22	27			28		
23			24	25			26		
Bottom		Top				Bottom		Top	
Front of shelf									

Left drawer

Back of shelf									
Bottom		Top				Bottom		Top	
49			50	95			96		
51			52	93			94		
53			54	91			92		
55			56	89			90		
57			58	87			88		
59			60	85			86		
61			62	83			84		
63			64	81			82		
65			66	79			80		
67			68	77			78		
69			70	75			76		
71			72	73			74		
Bottom		Top				Bottom		Top	
Front of shelf									

Right drawer

Network Elements Setup Form

NE number	NE name	NE location	Shelf serial number	Software version	Transmission Rate	Is an OPC present?
						- No OPC - Primary OPC - Backup OPC
						- No OPC - Primary OPC - Backup OPC
						- No OPC - Primary OPC - Backup OPC
						- No OPC - Primary OPC - Backup OPC
						- No OPC - Primary OPC - Backup OPC
						- No OPC - Primary OPC - Backup OPC
						- No OPC - Primary OPC - Backup OPC
						- No OPC - Primary OPC - Backup OPC
						- No OPC - Primary OPC - Backup OPC

DS1 Assignments Setup Form

NE number: _____

NE name: _____

NE location: _____

Group (1 or 2)	Port	TIC port	Facil. ID	Link No.	Line Coding	Frame Format	Alarm Encoding	Synch. mode	Line build out	Perf. mon.	Service assignment
1	1	1									
1	2	2									
1	3	3									
1	4	4									
1	5	5									
1	6	6									
1	7	7									
1	8	8									
1	9	9									
1	10	10									
1	11	11									
1	12	12									
1	13	13									
1	14	14									

Group (1 or 2)	Port	TIC port	Facil. ID	Link No.	Line Coding	Frame Format	Alarm Encoding	Synch. mode	Line build out	Perf. mon.	Service assignment
2	1	15									
2	2	16									
2	3	17									
2	4	18									
2	5	19									
2	6	20									
2	7	21									
2	8	22									
2	9	23									
2	10	24									
2	11	25									
2	12	26									
2	13	27									
2	14	28									

Powering up the equipment

Use the procedures in this chapter to inspect new network elements and power up the equipment in preparation for commissioning.

Procedures in powering up the equipment

To power up the equipment, you must do the following procedures in the order in which they are listed.

Procedure	Page
3-1 Inspecting the network element	3-2
3-2 Verifying power at the ABM BIP	3-7
3-3 Equipping the ABM common equipment and CDS shelves with circuit packs	3-10
3-4 Powering up the ABM common equipment shelf	3-21

Procedure 3-1 Inspecting the network element

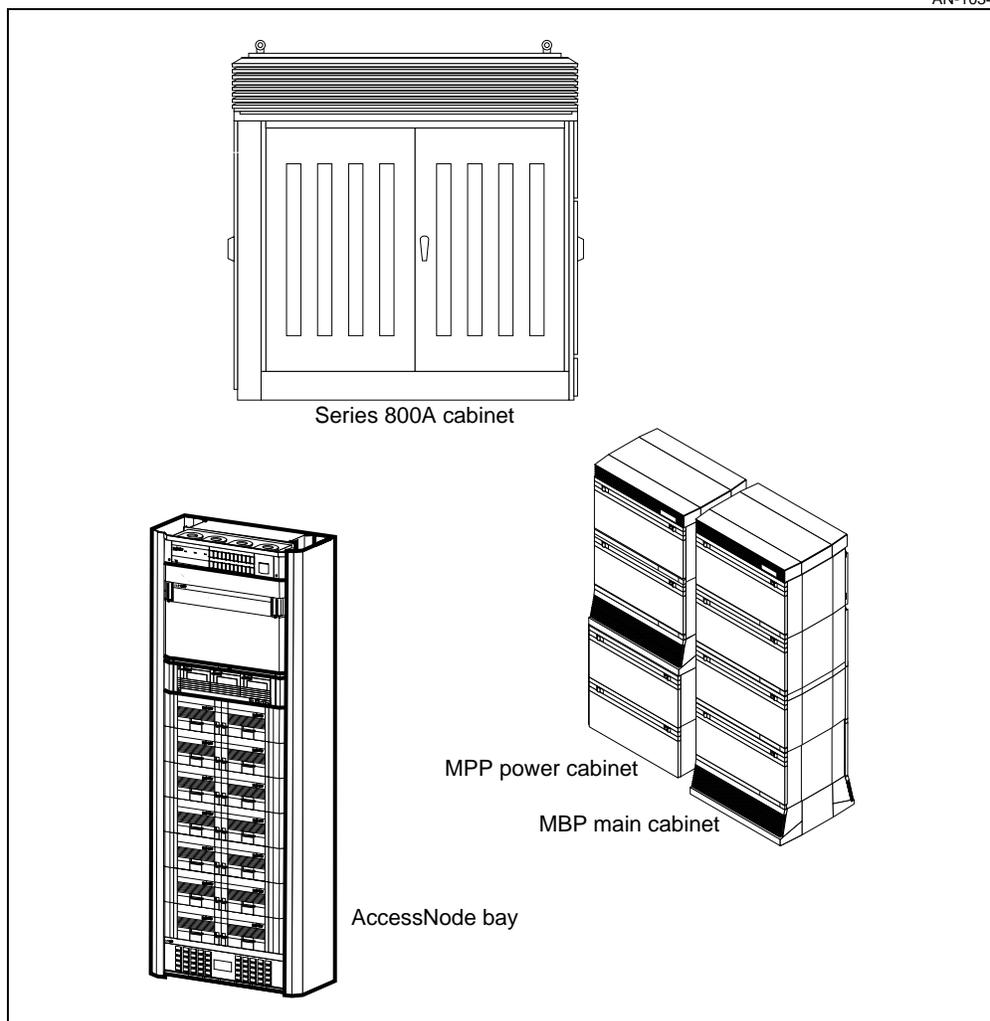
Use this procedure to visually inspect the network element.

Note: For proper electromagnetic interference (EMI) protection, you must replace the shelf cover after you have finished the inspection.

View of the cabinets

Figure 3-1
View of the cabinets

AN-1034



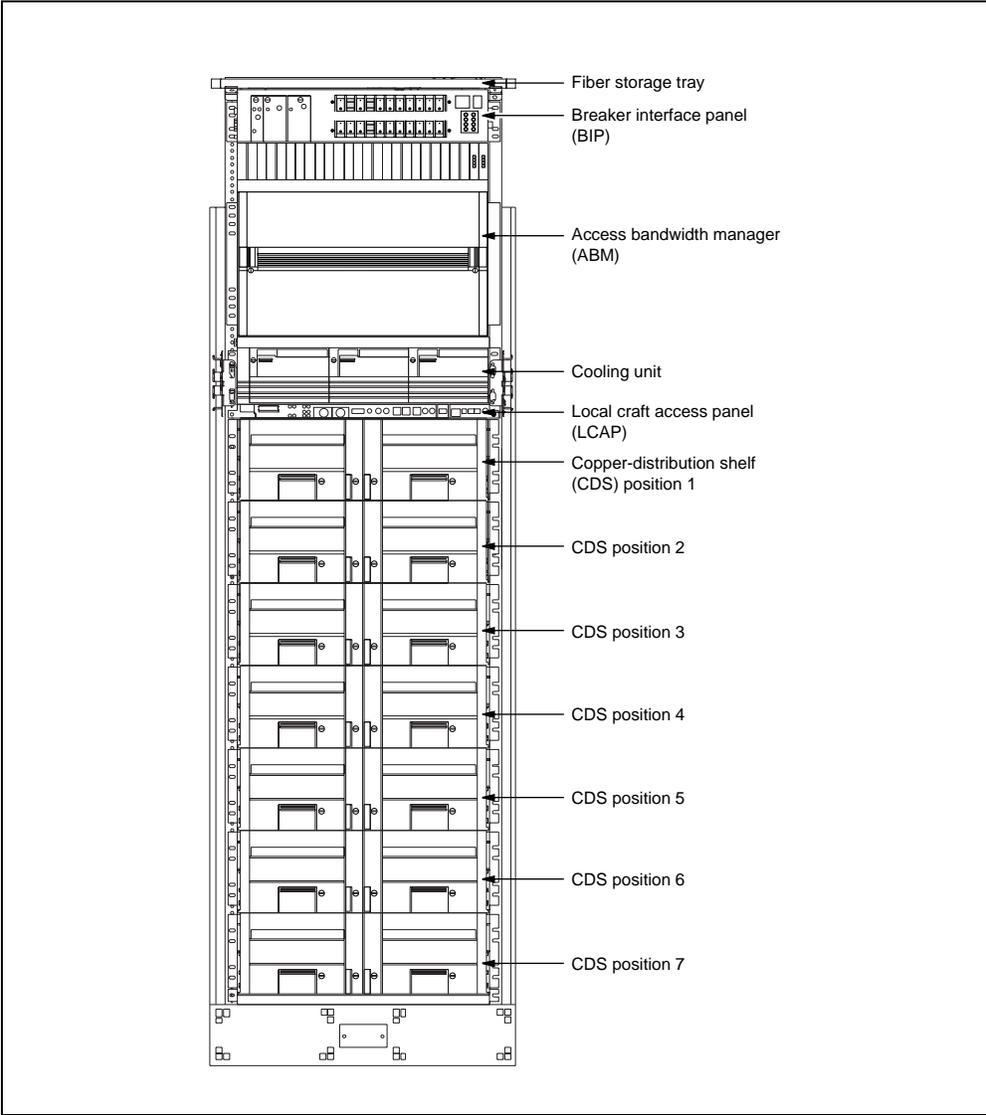
—continued—

Procedure 3-1 (continued)
Inspecting the network element

View of the network element

Figure 3-2
View of the network element

AN-1039



—continued—

3-4 Powering up the equipment

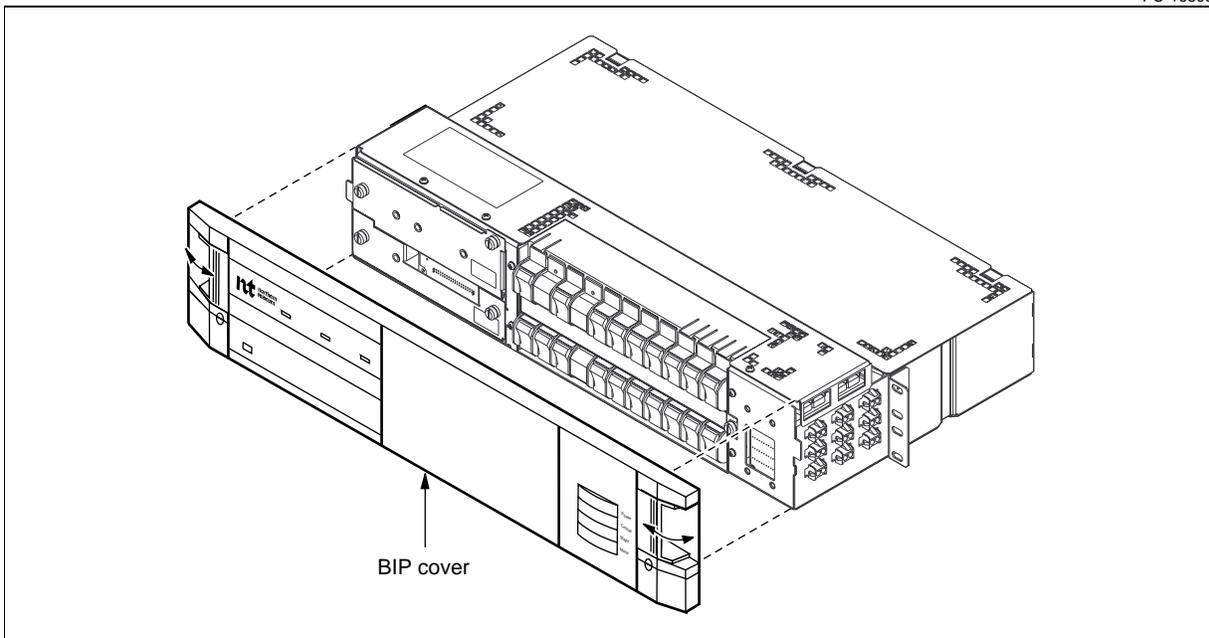
Procedure 3-1 (continued) Inspecting the network element

Action

Step	Action
1	Remove the breaker interface panel (BIP) cover.

Figure 3-3
Breaker interface panel (BIP) cover

PC-16505



- 2 Set all the breakers on the BIP to the 0 position. See Figure 3-4 on page 3-5.
The white power LED at the BIP is off and all circuit breakers are in the 0 (zero) position.

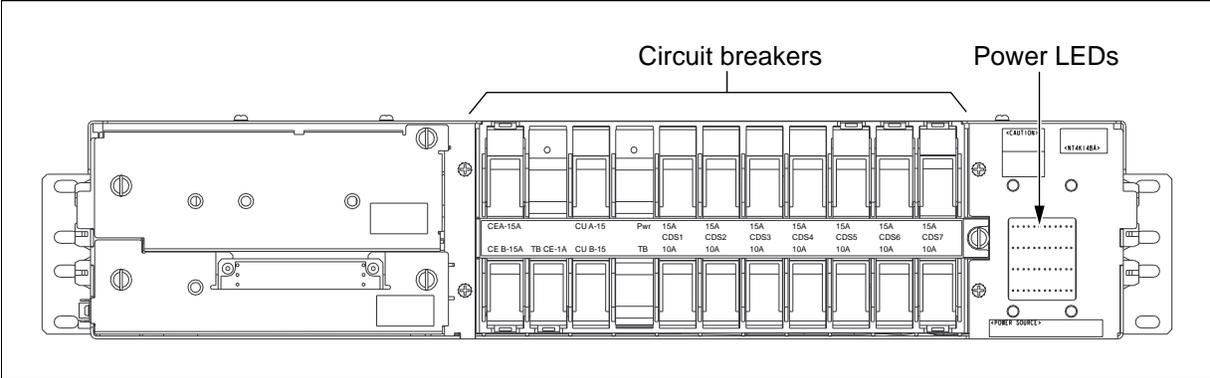
—continued—

Procedure 3-1 (continued)
Inspecting the network element

Step Action

Figure 3-4
BIP for the ABM shelf

PC-16498



3 Remove the remaining cover (or covers).

If this is a	Then
bay configuration	remove the cover of the common-equipment shelf according to the procedure “Removing the common-equipment shelf cover” in <i>Routine Maintenance Procedures</i> , 323-3001-546, in <i>Maintenance</i> , Volume 5C.
MBP or MPP	remove the cabinet covers, pedestal grilles, and cover of the common-equipment shelf, according to the procedures “Removing the MBP cabinet covers” and “Removing the common-equipment shelf cover” in <i>Modular Business Package Installation Manual</i> , 323-3001-206.
Series 800A outside plant cabinet	open the cabinet doors and remove the cover of the common-equipment shelf, according to the procedures “Opening the doors of the Series 800A outside plant cabinet” and “Removing the common-equipment shelf cover” in <i>Series 800A Outside Plant Cabinet Installation Manual</i> , 323-3001-210.

—continued—

3-6 Powering up the equipment

Procedure 3-1 (continued) Inspecting the network element

Step	Action
------	--------

- | | |
|---|--|
| 4 | Examine all shelf backplanes (inside and outside) for warping, cracking, or bent pins. |
|---|--|

Note: If you are inspecting a network element (NE) with an access bandwidth manager (ABM) shelf and copper distribution shelves (CDSs), verify that the equipment side remains disconnected from the outside plant subscriber loops (at the protection modules).



CAUTION

Risk of equipment damage

During initial setup of the system, Nortel Networks recommends that the equipment side remains disconnected from the outside plant subscriber loops (at the protection modules) until the line cards are installed and powered up. For example, when using five-pin protector modules, pull the modules out slightly, to the first detent position.

- | | |
|---|--|
| 5 | Check that all the cables connected to the left and right sides in the AccessNode, and ensure that they are properly seated. The following is a list of the connections you need to check: |
|---|--|

- breaker interface panel (BIP)
- common-equipment shelf, including both the main shelf and upper shelf having the input/output (I/O) cards
- cooling unit (bay configuration), blower unit (MBP/MPP) or cooling fans (Series 800A outside plant cabinet)
- all CDSs (if installed)
- Local craft access panel (LCAP)
- air filter
- alarm leads (to office alarms, if required)
- ground connections from the AccessNode bay to the office ground system are installed according to the chapter that describes power and ground distribution, in *Site Installation Planning and Engineering*, 323-3001-200, in the *Engineering, Configuration, and Ordering Guide*, Volume 1.



CAUTION

Risk of processor reboot failure

Make sure the I/O cards are correctly installed to prevent processor reboot failure.

- | | |
|---|---|
| 6 | Finish repairs before going on to the next procedure. |
|---|---|

—end—

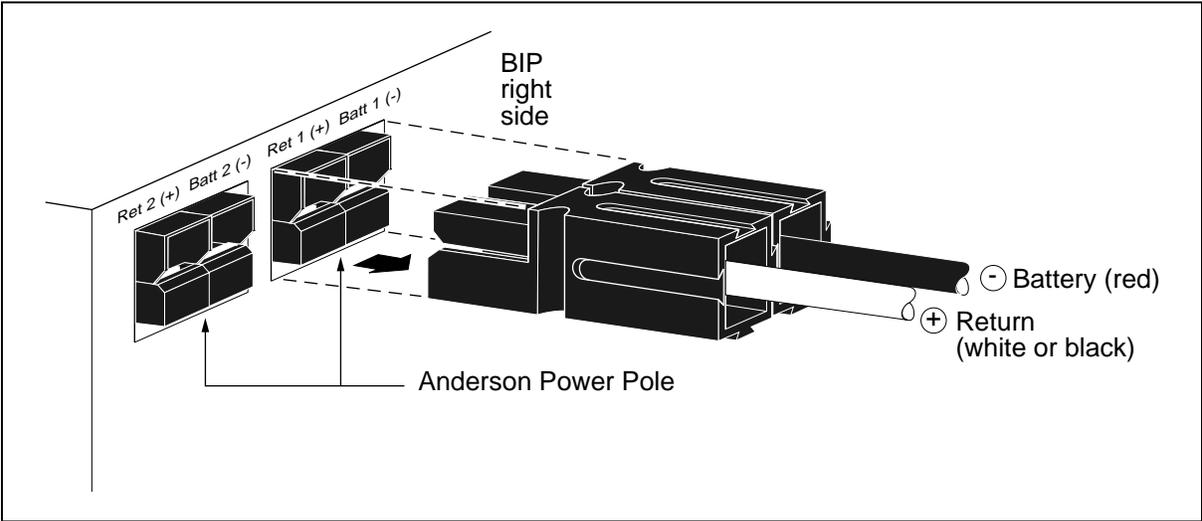
Procedure 3-2 Verifying power at the ABM BIP

Precautions

	<p>DANGER Risk of injury or damage Read the warnings and precautions in Chapter 1 to minimize any risk to personnel and equipment.</p>
---	---

Action

Step	Action
1	Make sure all circuit breakers at the breaker distribution fuse board (BDFB) and the breaker interface panel (BIP) are in the off (0) position, and make sure that the power indicator lamp on the BIP is off.
2	Remove the power cable from the Batt1/Ret1 connector at the right side of the BIP as shown below.



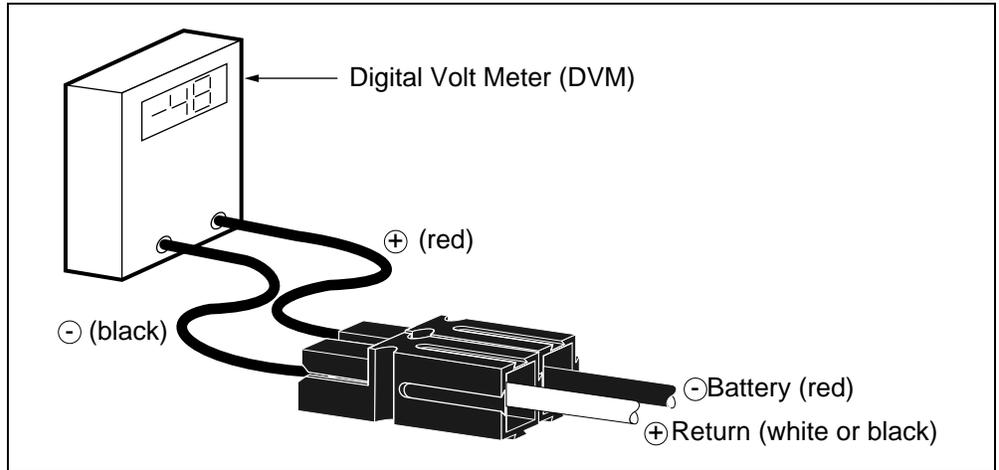
- 3 Connect a digital volt meter across the power cable connector as shown in the following figure.

—continued—

3-8 Powering up the equipment

Procedure 3-2 (continued)
Verifying power at the ABM BIP

Step Action



- 4 Apply power to the battery/return pair (Batt1/Ret1) at the dc power source (BDFB) by inserting the fuse or by switching the breaker to the on (1) position.
- 5 Measure the voltage and record the result on the System Setup Form. The voltage required between the battery and the return is -48 V dc and -56 V dc.
- 6 Remove power to the battery/return pair (Batt1/Ret1) at the dc power source (BDFB) by removing the fuse or by switching the breaker to the off (0) position.
- 7 Reinsert the power cable in the Batt1/Ret1 connector, matching the red wire to the Batt(-) and the white or black wire to the Ret (+) on the left side of the BIP.
- 8 Repeat steps 2 through 7 for Batt2/Ret2 on the left side of the BIP and for Batt3/Ret3 and Batt4/Ret4 on the right side of the BIP.
- 9 Do one of the following:

If this NE	Then go to
is equipped with CDSs	step 10
is not equipped with CDSs	step 17

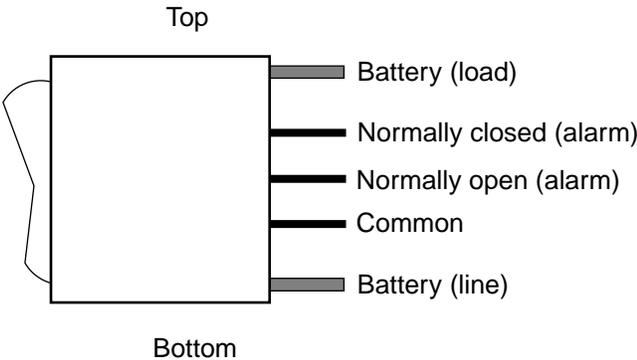
- 10 Remove the breaker retaining bar between the two rows of breakers by loosening the captive screw on the right side of the bar. Swing the bar up from the right side until the left side disengages.
- 11 Remove the Pwr breaker associated with the unequipped shelf by lifting out of the way the retaining tabs that hold the breaker. Use a flathead screwdriver to lift the tab on the bottom of the top breakers and the tab on the top of the bottom breakers.

—continued—

Procedure 3-2 (continued)
Verifying power at the ABM BIP

Step	Action
12	With the retaining tabs out of the way, pull the breaker out until you gain access to the wire connectors at the back of the breaker.
13	Using a pair of electrician's insulated needle-nose pliers, transfer the connector from the 'Normally closed (alarm)' position to the 'Normally open (alarm)' position.

Circuit breaker: side view



- 14 Insert the circuit breaker back into its slot until it snaps into place under the retaining tab.
- 15 Repeat steps 11 through 14 for the TB breaker for the same CDS.
- 16 Repeat steps 11 through 15 for the breakers associated with each additional unequipped CDS.
- 17 Replace the breaker retaining bar by hooking the left side of the bar into place and moving the right side down until the captive screw aligns with the screw hole.
- 18 Use a flathead screwdriver to fasten the captive screw on the retaining bar in place.
- 19 Apply power to Batt1/Ret1, Batt2/Ret2, Batt3/Ret3/, and Batt4/Ret4 at the BDFB by inserting the fuses or by switching the breakers to the on (1) position.

—end—

Procedure 3-3 Equipping the ABM common equipment and CDS shelves with circuit packs

Use this procedure to install common equipment circuit packs in the ABM shelf, the BIP, and the CDSs.

Requirements

The following requirements must be met before performing this procedure.

- Make sure all circuit breakers on the BIP are in the 0 (off) position.
- Make sure that cabinets or bays and shelves are installed and inspected for damage.
- Make sure that all cables are installed, except for the OPC Ethernet cable (NT4K86L series).
- Make sure that all necessary cards are installed in the DS1 I/O slots at the top of the common equipment shelf, according to the Circuit Packs Setup Form.

Setup form

To install the circuit packs into the shelves, refer to the Circuit Packs Setup Forms prepared by your system administrator.

Circuit pack layout

Determine if you are equipping shelves at a CServer or a remote fiber terminal (RFT), then refer to the following diagrams showing the circuit pack layout in SEAN systems.

If this is	then refer to
a CServer	Figure 3-7 on page 3-14
an RFT	Figure 3-8 on page 3-15

—continued—

 Procedure 3-3 (continued)

Equipping the ABM common equipment and CDS shelves with circuit packs

Circuit packs

The following table lists the circuit packs that can be used in an ABM shelf. It also lists the product engineering codes (PECs) for the circuit packs, the slot positions that each kind of circuit pack can occupy, and the label that appears on each kind of circuit pack.

Circuit pack	PEC	Slots	Label
Access interface card	NT4K55	13, 16	Access IF
Common equipment power card (CEP)	NT4K58MA	54, 55	CE PWR
DS1 input card	NT4K32	30, 31, 35, 38, 39, 42, 44	DS1 IN
DS1 output card	NT4K33	32, 33, 37, 40, 41, 43, 45	DS1 OUT
DS1 protection bridge card	NT4K31	34, 36	DS1 Prot Bridge
DS1 mapper	NT7E04	1–8	DS1 Sync VT Mapper
Integrated remote test unit (IRTU)	NT4K57	21	Integ Remote Test
Maintenance interface card (MIC)	NT4K53	19	Maint IF
Operations controller Module (OPC)	NT7E24	5	OPC Module
Processor	NT4K52	17, 18	Proc
Serial I/O card	NT4K58LA	38, 40	Serial I/O
Test access card (TAC)	NT4K54	20	Test Access
Test access path card	NT4K58KA	53	TAP I/O
Transport interface card (TIC)	NT4K56	11, 14	Trans IF
Timing and cross-connect (OC-3) card	NT7E01	9, 10	Timing and cross-connect

—continued—

3-12 Powering up the equipment

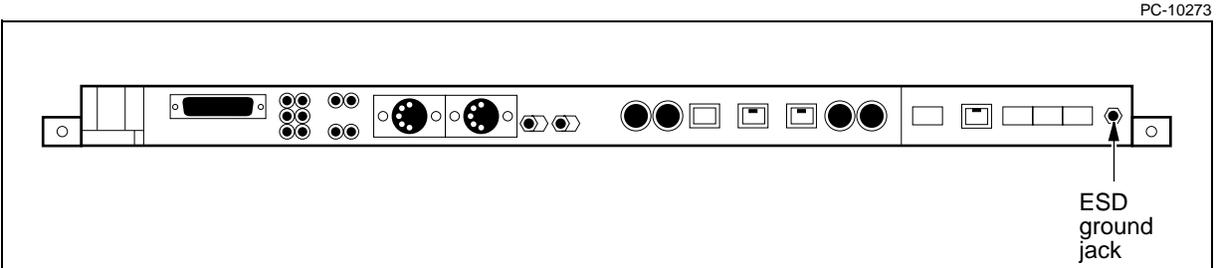
Procedure 3-3 (continued)

Equipping the ABM common equipment and CDS shelves with circuit packs

Action

Step	Action
1	Put on the antistatic wrist strap. Make sure it is correctly grounded to the electrostatic discharge (ESD) jack on the LCAP as shown in Figure 3-5.

Figure 3-5
LCAP for the access bandwidth manager shelf



- 2 Carefully unwrap the circuit packs and check them for physical damage. If any circuit pack is damaged, replace it.
- 3 With the top and bottom ejector latches in the closed position, carefully place the circuit packs into the appropriate slots in the ABM common equipment shelf as shown in Figure 3-7 or Figure 3-8, as appropriate, but leave the circuit pack(s) disengaged.

Note: A circuit pack is in the disengaged position when the latches are closed and prevent full insertion of the circuit pack. Do not force a disengaged circuit pack when you insert it. Push it only as far as the closed latches will allow it to go.

To disengage a circuit pack, push up on the top latch and down on the bottom latch. Then swing the latches out, and pull the circuit pack out slightly. Refer to Figure 3-6 on page 3-13.

	<p>CAUTION Risk of equipment damage Do not install the shelf cover with the circuit packs in the disengaged position, as damage to circuit packs can result.</p>
--	--

—continued—

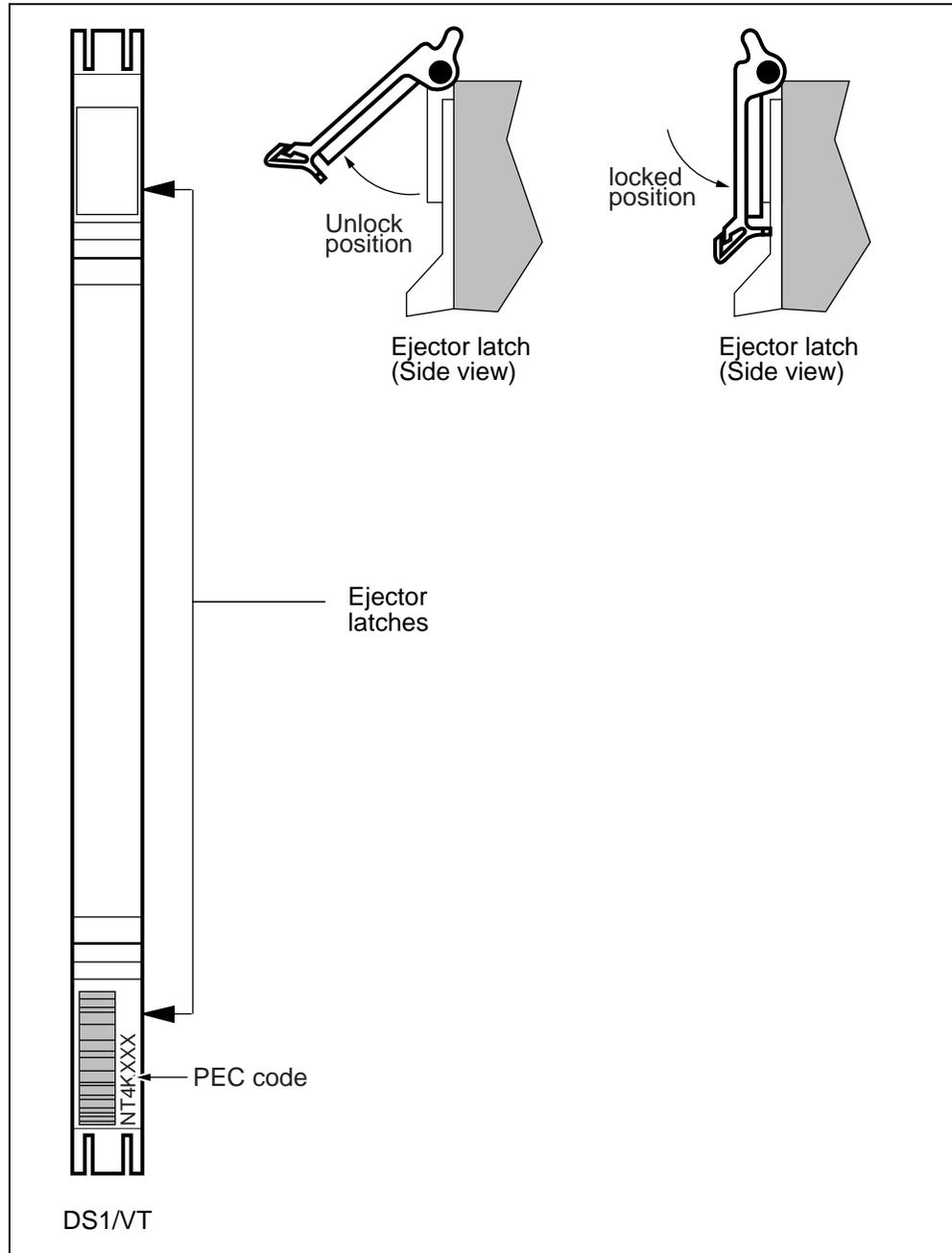
Procedure 3-3 (continued)

Equipping the ABM common equipment and CDS shelves with circuit packs

Step Action

**Figure 3-6
Circuit pack latches**

PC-16561



—continued—

3-14 Powering up the equipment

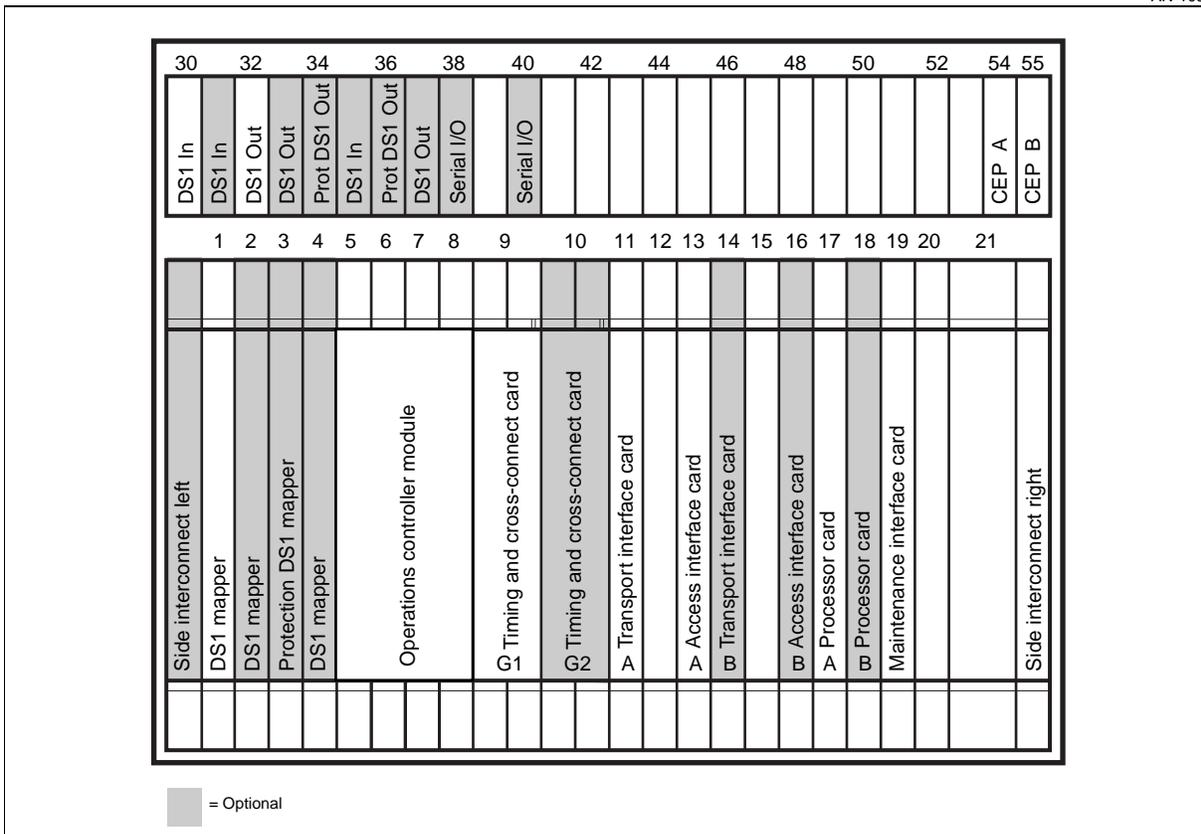
Procedure 3-3 (continued)

Equipping the ABM common equipment and CDS shelves with circuit packs

Step Action

Figure 3-7
ABM circuit pack layout of the CServer in SEAN systems

AN-1036



—continued—

3-16 Powering up the equipment

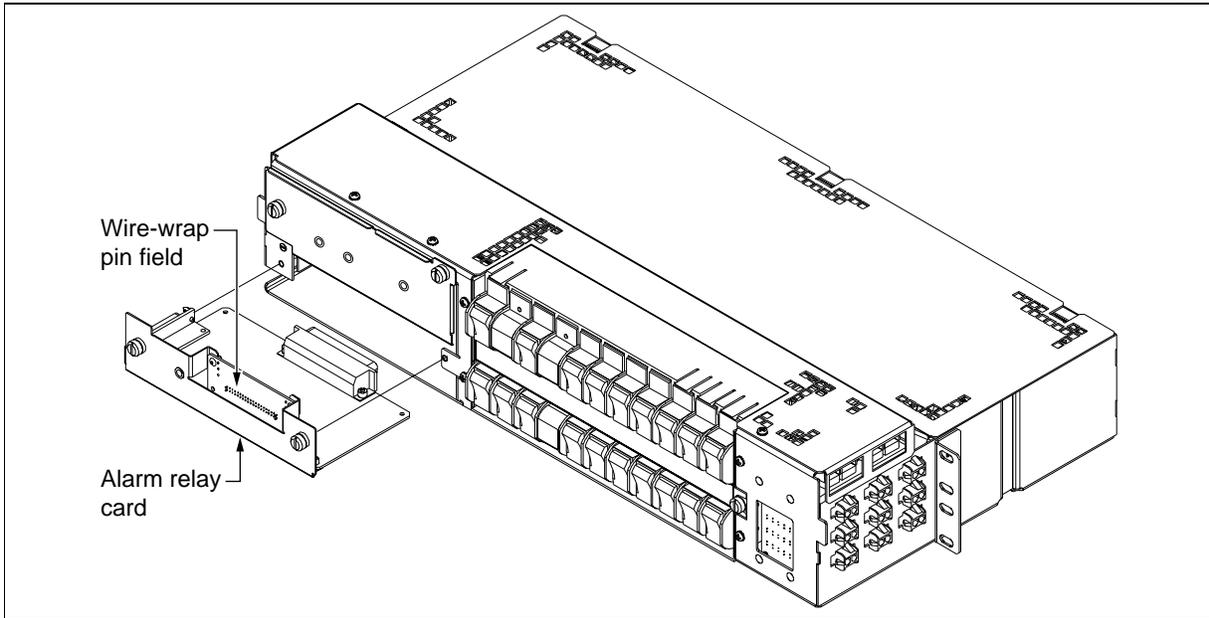
Procedure 3-3 (continued)

Equipping the ABM common equipment and CDS shelves with circuit packs

Step	Action
4	If this network element contains an OPC, read the OPC serial number from the motherboard of the OPC, and record it on the OPC Setup Form.
5	Insert the alarm relay card. Push the card in until it clicks and is flush with the adjacent cards. See Figure 3-9 below.
6	Tighten the screw-in knobs on the front of the alarm relay card.
7	If the bay is equipped with CDSs, engage the talk battery filter card into the shelf. Refer to Figure 3-10 on page 3-17 for an example of the talk battery filter card.

Figure 3-9
Alarm relay card on the ABM BIP

PC-16500



—continued—

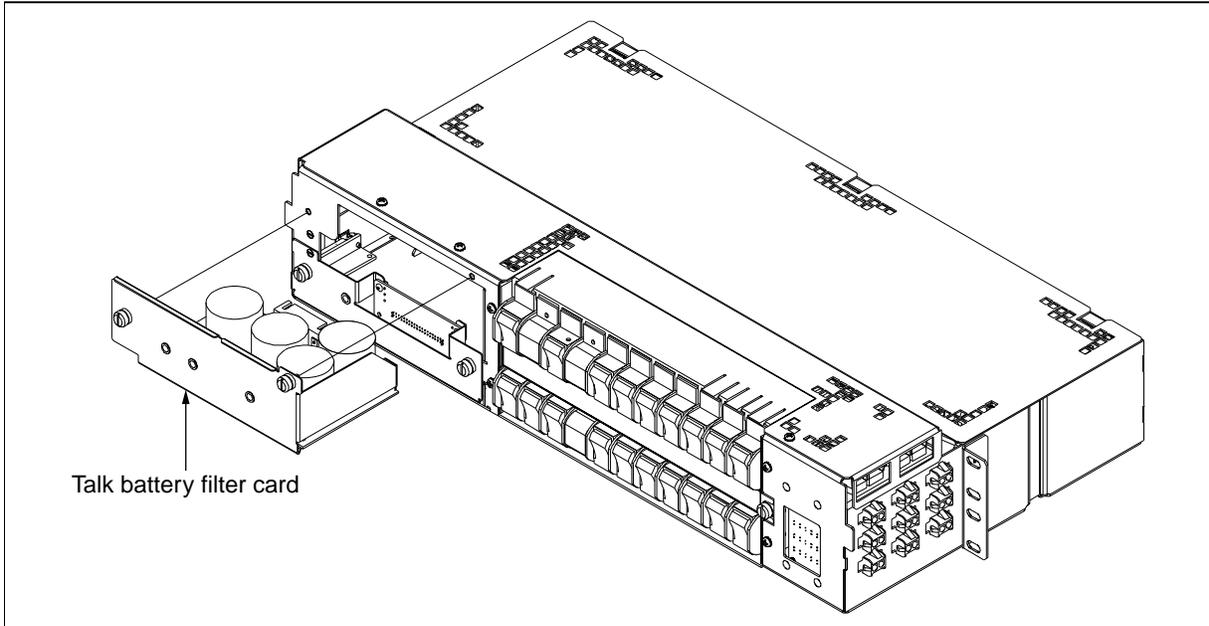
Procedure 3-3 (continued)

Equipping the ABM common equipment and CDS shelves with circuit packs

Step Action

Figure 3-10
Talk battery filter card on the ABM BIP

PC-16499



- 8** Update the utility card, located in the ABM shelf cover between the two handles. Record information pertinent to your organization's methods and operations.

If this NE is	Then go to
equipped with CDSs	step 9
not equipped with CDSs	step 19

Inserting circuit packs into the CDS shelves

- 9** Unlock the left drawer of the first CDS (CDS 1), using a small screwdriver to turn the locking knob one-quarter turn to the left. Grasp the handle and pull open the drawer.
- 10** Insert the metallic test access card (MTA) in the slot labeled MTA A (see Figure 3-11 on page 3-18). Make sure the MTA is engaged.
- 11** Insert the two narrowband line interface cards (NLICs) in slots LIC A and LIC B. Refer to Figure 3-11 on page 3-18. Make sure the NLICs are engaged.

Note: The MTA and NLIC are full-height cards.

—continued—

3-18 Powering up the equipment

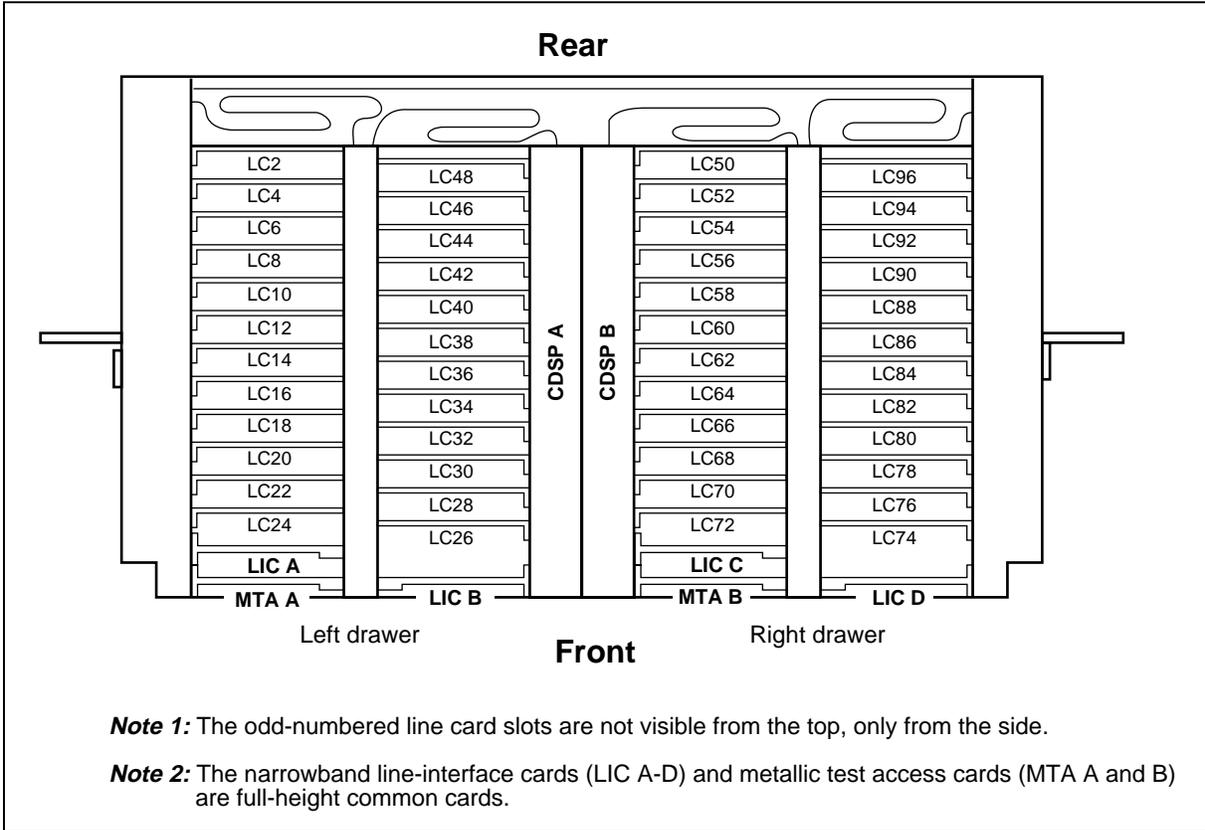
Procedure 3-3 (continued)

Equipping the ABM common equipment and CDS shelves with circuit packs

Step Action

Figure 3-11
Top view of the copper-distribution shelf

PC-10750



Note 1: The odd-numbered line card slots are not visible from the top, only from the side.

Note 2: The narrowband line-interface cards (LIC A-D) and metallic test access cards (MTA A and B) are full-height common cards.

- 12 Close the left drawer.
- 13 Unlock the right drawer as you did the left drawer in step 9 and open the right drawer.
- 14 Insert the MTA in slot MTA B. Make sure the MTA is fully engaged.
- 15 Insert the two NLICs in slots LIC C and LIC D. Make sure the NLICs are fully engaged.

—continued—

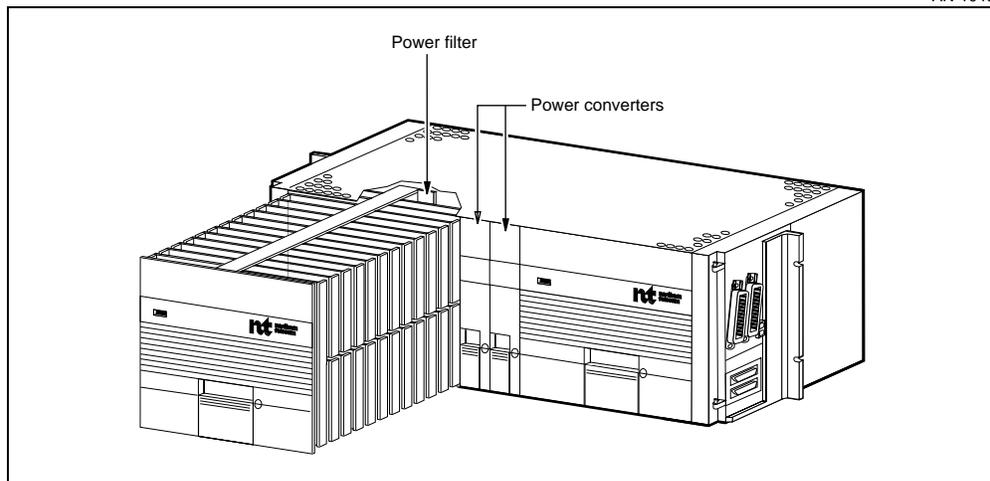
Procedure 3-3 (continued)

Equipping the ABM common equipment and CDS shelves with circuit packs

Step	Action
16	Close the right drawer.
17	Insert the CDS power converter cards in slots CDSP A and CDSP B located between the two line card drawers. To lock each power card in position, use a small screwdriver to turn the locking knob one-quarter turn or until the dots are aligned.

Figure 3-12
Power converters on the copper-distribution shelf

AN-1040



—continued—

3-20 Powering up the equipment

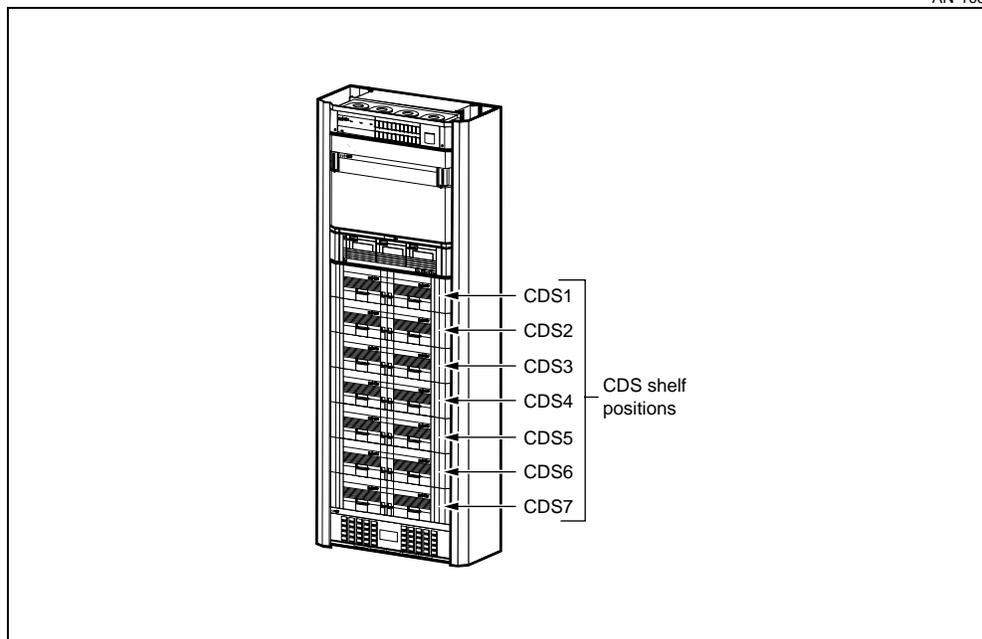
Procedure 3-3 (continued)

Equipping the ABM common equipment and CDS shelves with circuit packs

Step	Action
18	Repeat steps 9 through 17 for CDS 2 to CDS 7, if the shelves are present. Figure 3-13 shows the location of CDS 2 to CDS 7.

Figure 3-13
CDS shelf positions on the ABM

AN-1038



- 19 Make sure all other circuit packs are installed, but not engaged, in the appropriate shelves.
- 20 Remove the antistatic wrist strap you are wearing.

—end—

Procedure 3-4 Powering up the ABM common equipment shelf

Use this procedure when powering up the ABM common equipment shelf to verify the following:

- the operation of each circuit breaker before applying power to all of the common equipment and cooling to the power units
- power connections from the two power feeds to the common-equipment shelf are not reversed, and the Processor (Proc) cards and maintenance interface card (MIC) are powered from both power feeds

Requirements

Before you start this procedure, make sure that the circuit packs for this configuration are installed in the ABM shelf but not engaged according to Procedure 3-3 on page 3-10.

	<p>CAUTION Risk of equipment damage</p> <p>If the common-equipment shelf contains an OPC module and you power it down without first performing the OPC shutdown procedure, then the OPC disk drive can be damaged.</p>
--	--

Action

Step	Action
1	Put on the antistatic wrist strap. Make sure it is properly grounded to the ESD jack on the local craft access panel LCAP as shown in Figure 3-5 on page 3-12.
2	On the new ABM common-equipment shelf, fully engage the processor circuit packs as follows: <ol style="list-style-type: none">a. Pull open the top and bottom latches on the circuit pack.

—continued—

3-22 Powering up the equipment

Procedure 3-4 (continued)

Powering up the ABM common equipment shelf

Step Action

- b. Close the latches to rotate the tabs into the shelf grooves and firmly seat the circuit pack on the backplane connector.



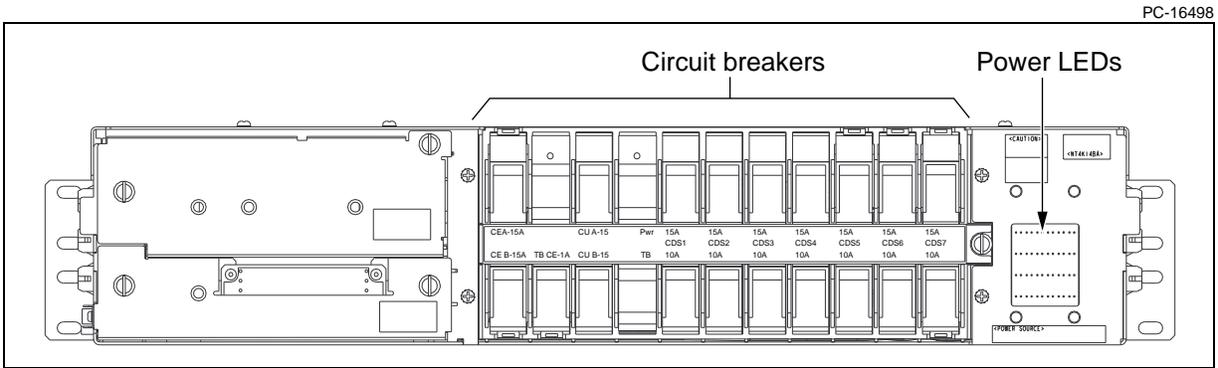
CAUTION
Risk of equipment damage
 When seating the circuit pack on the backplane pins, do not force the circuit pack, as that can damage the pins. If you have trouble seating the circuit pack, check that it is in the right slot. If it is in the right slot, pull the circuit pack back out, then try again to seat it, pressing gently.



CAUTION
Risk of equipment damage
 Once the processor is engaged, it undergoes an initialization process. This could take up to 25 minutes. Do not remove the processor during this time. It could affect the operation of the circuit pack.

- 3 Disconnect the B modular power connector on the common-equipment power (CEP) I/O card in slot 55 of the ABM shelf. Refer to Figure 3-7 on page 3-14 or Figure 3-8 on page 3-15, depending upon the system configuration.
- 4 Fully engage the maintenance interface card (MIC) circuit pack in slot 19 of the ABM shelf.

Figure 3-14
BIP for the ABM shelf



—continued—

 Procedure 3-4 (continued)

Powering up the ABM common equipment shelf

Step Action

- 5** Set the CE_A circuit breaker to the 1 position. Verify that power is being supplied to the shelf by observing the MIC and processor LED activity. Make sure the power LEDs on the BIP light up.

Note: It is not the intent of this procedure to make sure specific LEDs light up, but to verify that power is being supplied to the shelf. In fact, the actual LED indicator(s) should be ignored since the system is not yet commissioned.

- 6** After verifying the MIC and processor LEDs, set the CE_A circuit breaker to the 0 position.

If	Then go to
there was no LED lamp activity	step 7
at least one LED lamp lit up	step 8

- 7** Make sure the CEP I/O card in slot 54 is connected to the CE_A breaker and that the CEP I/O card in slot 55 is connected to the CE_B breaker. Then, repeat steps 5 and 6.

- 8** Reconnect any disconnected CEP I/O card power connectors in slot 55.

- 9** Disconnect the A modular power connector on the CEP I/O card in slot 54 of the ABM shelf.

- 10** Set the CE_B circuit breaker associated with the shelf position to the 1 position. Verify that power is being supplied to the shelf by observing the MIC and processor LED activity.

Note: It is not the intent of this procedure to make sure specific LEDs light up, but to verify that power is being supplied to the shelf. In fact, the actual LED indicator(s) should be ignored since the system is not commissioned.

- 11** After verifying the MIC and processor LEDs, set the CE_B circuit breaker to the 0 position.

If	Then go to
there was no LED lamp activity	step 12
at least one LED lamp lit up	step 13

—continued—

3-24 Powering up the equipment

Procedure 3-4 (continued)

Powering up the ABM common equipment shelf

Step	Action
12	Make sure the CEP I/O card in slot 54 is connected to the CE_A breaker and that the CEP I/O card in slot 55 is connected to the CE_B breaker. Then repeat steps 10 and 11.
13	Reconnect the disconnected A CEP I/O card power connector in slot 54.
14	Set the CE_A circuit breaker on the shelf to the 1 position. Wait ten seconds and then set the CE_B circuit breaker to the 1 position.
15	Fully engage all remaining circuit packs, one at a time, on the common-equipment shelf. Wait ten seconds between engaging circuit packs.



CAUTION

Risk of equipment damage

When seating the circuit pack on the backplane pins do not force the circuit pack. Forcing the circuit pack can damage the pins. If you have trouble seating the circuit pack, check that it is in the right slot. If it is in the right slot, pull the circuit pack out of its slot and try to seat it again, pressing gently.

—continued—

Procedure 3-4 (continued)

Powering up the ABM common equipment shelf

Step Action

16 Proceed according to the following tasks:

If the NE is	Then
<p>an RFT mounted in a Series 800A outside plant cabinet</p>	<ul style="list-style-type: none"> a. close both circuit breakers CU A and CU B on the BIP. b. remove the cover of the thermostat and write down the thermostat setting. The thermostat is located on the inside right wall of the cabinet when accessed from the front. c. turn down the thermostat until all fans start operating. If the fans fail to operate, check the wiring. If you cannot identify the problem, call your Nortel Networks representative. d. turn the thermostat to its original setting and reinstall the thermostat cover.
<p>in an ABM bay</p>	<ul style="list-style-type: none"> a. on the ABM BIP, close only the CU A circuit breaker by moving it to the 1 position. <i>The fans in the cooling unit should start to operate. If the fans do not operate, check that there is power coming from the power source and check the power supply cable for correct polarity.</i> b. open the CU A circuit breaker by moving it to the 0 position. <i>The fans in the cooling unit shut off.</i> c. on the ABM BIP close only the CU B circuit breaker by moving it to the 1 position. <i>The fans in the cooling unit should start to operate. If the fans do not operate, check that there is power coming from the power source and check the power supply cable for correct polarity.</i> d. open the CU B circuit breaker by moving it to the 0 position. <i>The fans in the cooling unit shut off.</i> e. close the CU A circuit breaker by moving it to the 1 position. <i>The fans in the cooling unit turn on.</i> f. close the CU B circuit breaker by moving it to the 1 position.
<p>—continued—</p>	

—continued—

3-26 Powering up the equipment

Procedure 3-4 (continued)

Powering up the ABM common equipment shelf

Step Action

If the NE is	Then
in an MBP	<p>a. turn on the CB1 circuit breaker located on the faceplate of the blower unit on each MBP cabinet. Circuit breaker CB2 is not used. To access the blower unit, remove the front pedestal cover. Refer to the procedure for removing MBP covers in <i>Modular Business Package Installation Manual</i>, 323-3001-206.</p> <p><i>The fans in the cooling unit should start to operate. If the fans do not operate, check that there is power coming from the power source and check the power supply cable for correct polarity.</i></p> <p>b. turn off the CB1 circuit breaker located on the faceplate of the blower unit on each MBP cabinet.</p> <p><i>The fans in the cooling unit shut off.</i></p> <p>c. turn on the CB1 circuit breaker located on the faceplate of the blower unit on each MBP cabinet.</p> <p><i>The fans in the cooling unit should start to operate. If the fans do not operate, check that there is power coming from the power source and check the power supply cable for correct polarity.</i></p> <p>d. turn off the CB1 circuit breaker located on the faceplate of the blower unit on each MBP cabinet.</p> <p><i>The fans in the cooling unit shut off</i></p>
—end—	

- 17** Make sure the fans on the cooling unit are operating and that airflow through the equipment is not obstructed.

—continued—

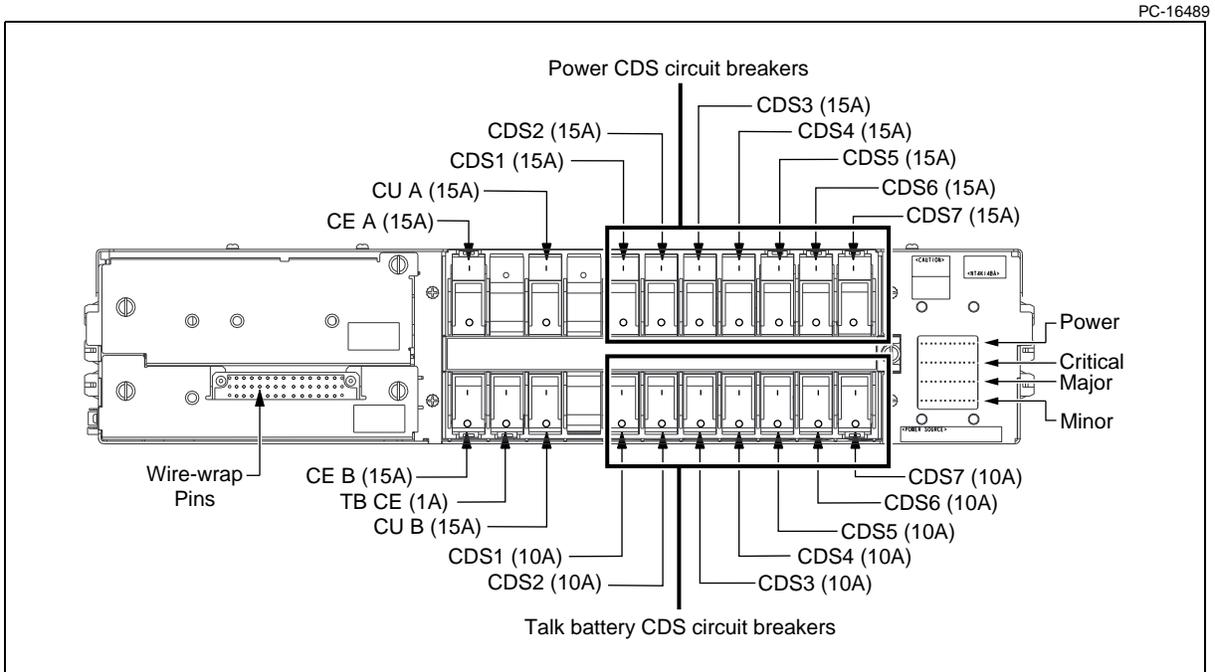
Procedure 3-4 (continued)

Powering up the ABM common equipment shelf

Step Action

- 18 On the breaker interface panel (BIP), set the circuit breaker labeled TBCE-1A to the 1 position (the talk battery power to the test access card). The breaker interface panel (BIP) is shown in Figure 3-15.

**Figure 3-15
Breaker interface panel (BIP)**



- 19 Set the circuit breaker labeled Power CDS 1 to the 1 position. This circuit breaker provides shelf power to the copper-distribution shelf 1 (CDS 1).
- 20 Close the circuit breaker labeled TB CDS1, which provides talk battery to copper-distribution shelf 1 (CDS 1).
- 21 Repeat steps 19 and 20 for each equipped CDS shelf, CDS 2 through CDS 7.
- 22 Do one of the following:

If the NE is	Then
an RFT mounted in a Series 800A outside plant cabinet	go to step 23.
in an MBP cabinet	go to step 26.
in an ABM bay	this procedure is complete. Go to Procedure 4-1, "Verifying the OPC software version."

—continued—

3-28 Powering up the equipment

Procedure 3-4 (continued)

Powering up the ABM common equipment shelf

- | Step | Action |
|------|--|
| 23 | <p>Check all rectifiers for the ON/RFA LED conditions.</p> <p>If any rectifier ON/RFA LED is red, slowly adjust its FLT potentiometer slightly clockwise until the ON/RFA LED turns green.</p> <p>Note: When the adjusted output voltage of a rectifier is lower than that of the other rectifiers, its ON/RFA LED is red because its output current drops below 0.1 A.</p> |
| 24 | <p>Check the ammeters of all rectifiers and balance the amperage supplied by all rectifiers.</p> <p>Note: Balanced load sharing among all rectifiers is difficult to achieve if one or more rectifiers have open sensing leads.</p> |

	<p>CAUTION Risk of equipment damage If the rectifier voltage is adjusted higher than -56.0 V dc, the powered equipment can be damaged. For example, a rectifier voltage of -58.0 V dc can damage that equipment.</p>
---	--

on any rectifier with a higher current	slowly adjust its FLT potentiometer counterclockwise to decrease its ammeter value toward the average value of all ammeters.
on any rectifier with a lower current	slowly adjust its FLT potentiometer clockwise to increase its ammeter value toward the average value of all ammeters.

- | | |
|----|--|
| 25 | <p>Repeat steps 23 and 24 until all rectifier ammeters display approximately the same current level and until all rectifier ON/RFA LEDs are green.</p> <p><i>The digital meter on the faceplate of the dc distribution shelf displays the value of float voltage from all rectifiers.</i></p> |
| 26 | <p>If this is an MBP site equipped with an external battery string, verify that the battery string does the following:</p> <ul style="list-style-type: none"> • supplies uninterrupted power to the MBP cabinets when the commercial ac power source fails, according to the manufacturer's recommended procedures. • recharges from the rectifiers, according to the manufacturer's recommended procedures. |

—end—

Commissioning and provisioning the equipment

Use the procedures in this chapter to commission and provision the common equipment in the access bandwidth manager (ABM) shelf.

Procedures in commissioning and provisioning the equipment

To commission and provision the equipment, you must do the following procedures in the order in which they are listed.

If you are adding a network element to an existing OPC span of control, then skip procedures 4-1 through 4-4, and go directly to procedure 4-5.

Procedure	Page
4-1 Verifying the OPC software version	4-3
4-2 Removing the software from the OPC	4-6
4-3 Installing software on a local OPC and NE from tape	4-9
4-4 Commissioning the OPC	4-11
4-5 Commissioning a network element	4-13
4-6 Monitoring the loading of software to a network element	4-17
4-7 Adding a new host to an RFT	4-20
4-8 Provisioning default connections	4-22
4-9 Provisioning DS1 facility assignments	4-24
4-10 Setting the time zone, date, and time at the OPC	4-30
4-11 Setting the time zone at the network element	4-37
—continued—	

4-2 Commissioning and provisioning the equipment

Procedure	Page
4-12 Setting the network synchronization	4-39
4-13 Setting the network element name	4-40
4-14 Disabling TIC alarms and TIC Ports	4-41
4-15 Provisioning DS1 facility parameters	4-43
4-16 Diagnosing failed circuit packs	4-47
4-17 Verifying redundant common-equipment cards	4-52
4-18 Performing a manual NE database backup	4-63
4-19 Saving OPC data to tape	4-64
4-20 Clearing alarms	4-68
—end—	

Procedure 4-1

Verifying the OPC software version

Use this procedure to verify the OPC software version on an OPC. This procedure applies to any new or spare OPC that is currently not in use.

If OPC software exists but it is NOT the correct version, then you can use this procedure to remove the incorrect OPC software. The OPC database that has all of the commissioning data is NOT saved by this operation; therefore, this procedure should only be performed on a spare or stored OPC that requires an “initial” software load. Do not use this procedure as part of the process for upgrading the software in an in-service OPC.

When no software exists on the OPC, go to Procedure 4-3, “Installing software on a local OPC and NE from tape.”



CAUTION

Enter UNIX commands carefully

If you enter a UNIX command incorrectly, it may be difficult to recover from the error. Read this procedure carefully, to distinguish between similar symbols, such as !, |, and /; or - and =. Commands shown in lower case must be entered in lower case. Contact Nortel Networks if support is required.

Setup form

To do this procedure, refer to the OPC Setup Form prepared by your system administrator.

Action

Step	Action
1	Connect the terminal to the OPC port on the left side of the common equipment shelf using a 9-pin connector. <i>A login prompt appears.</i>
2	Enter the User ID by entering: root

—continued—

4-4 Commissioning and provisioning the equipment

Procedure 4-1 (continued)

Verifying the OPC software version

Step Action

- 3 Enter the password by entering:
root
The TERM = vt100 prompt is displayed.
Press the Return key (↵) to select the VT100 terminal mode.
The opc> prompt is displayed.

- 4 Do one of the following:

If you are	Then
adding an NE to an existing OPC	this procedure is completed. Go to Procedure 4-6, "Monitoring the loading of software to a network element" on page 4-17.
not adding an NE to an existing OPC	go to step 5.

- 5 Determine whether the OPC has a software load on it by entering the following command:

opcui ↵

If the	Then the
screen displays the following message: <i>"command not found"</i>	OPC software is NOT loaded. You are finished with this procedure. <ul style="list-style-type: none">• Log out of the OPC.• Go to Procedure 4-3, "Installing software on a local OPC and NE from tape" on page 4-9.
User Session Manager is displayed	OPC software is loaded. Go to step 6.

- 6 Check the OPC software version. Press **Ctrl_T**, and then press the number **2**.
The OPC status screen appears.

—continued—

 Procedure 4-1 (continued)

Verifying the OPC software version

Step Action

- 7 Examine the contents of the SW Version field. The SW Version field identifies the software version currently running in this OPC and must match the version recorded on the OPC Setup Form.

If the OPC	Then
does not have the correct software	<ul style="list-style-type: none"> • press Ctrl_T 0 to return to the User Session Manager. • tab to the Logout button and press Ctrl_A. • tab to the Logout button on the displayed screen and press Ctrl_A. The opc prompt is displayed. • go to Procedure 4-2, "Removing the software from the OPC" on page 4-6.
does have the correct software	<ul style="list-style-type: none"> • Return to the User Session Manager main window by pressing Ctrl_T 0. • go to Procedure 4-4, "Commissioning the OPC" on page 4-11."

—end—

Procedure 4-2 Removing the software from the OPC

Action

Step	Action
------	--------

- 1 Carefully insert the tape with the correct OPC software load into the OPC tape drive, as shown in Figure 4-1 on page 4-8. This tape contains the RMOPCLD script, which is required to remove existing OPC software from an OPC.



CAUTION

Risk of equipment damage

Forcing the tape into the tape drive can damage the drive and you may not be able to remove the tape. If you cannot insert the tape easily, it could be oriented the wrong way. Refer to Figure 4-1 page 4-8 for the correct orientation of the tape.

- 2 Extract the RMOPCLD file from tape by typing the following two commands:

cd /tmp ↵

The "opc>" prompt appears.

dd if=/dev/rdt/tape2 bs=20b | tar xf - ↵

Either the message Broken pipe appears or a message similar to the following appears (the numbers may vary).

439+4 blocks in

439+4 blocks out

The "opc>" prompt appears.

- 3 Execute the RMOPCLD script by typing the following two commands:

cd /tmp/install ↵

The "opc>" prompt appears.

rmopcl ↵

A warning message appears with a prompt to confirm the removal of the OPC load:

You are about to wipe out the OPC load. Please confirm (Y/N).

—continued—

Procedure 4-2 (continued)

Removing the software from the OPC

Step	Action
4	Type y ↵ to continue. <i>OPC processes are stopped. A message appears which gives you the option of aborting the removal of the OPC load.</i>
5	Type c and press Enter to continue. <i>The script removes the existing software version. The OPC reboots automatically.</i>
6	Wait until the login prompt appears on the screen. When the OPC has rebooted, log in again, using the root user ID. <i>"TERM=(VT100)" appears.</i> Press the Return key. <i>The "opc>" prompt appears.</i>

—continued—

4-8 Commissioning and provisioning the equipment

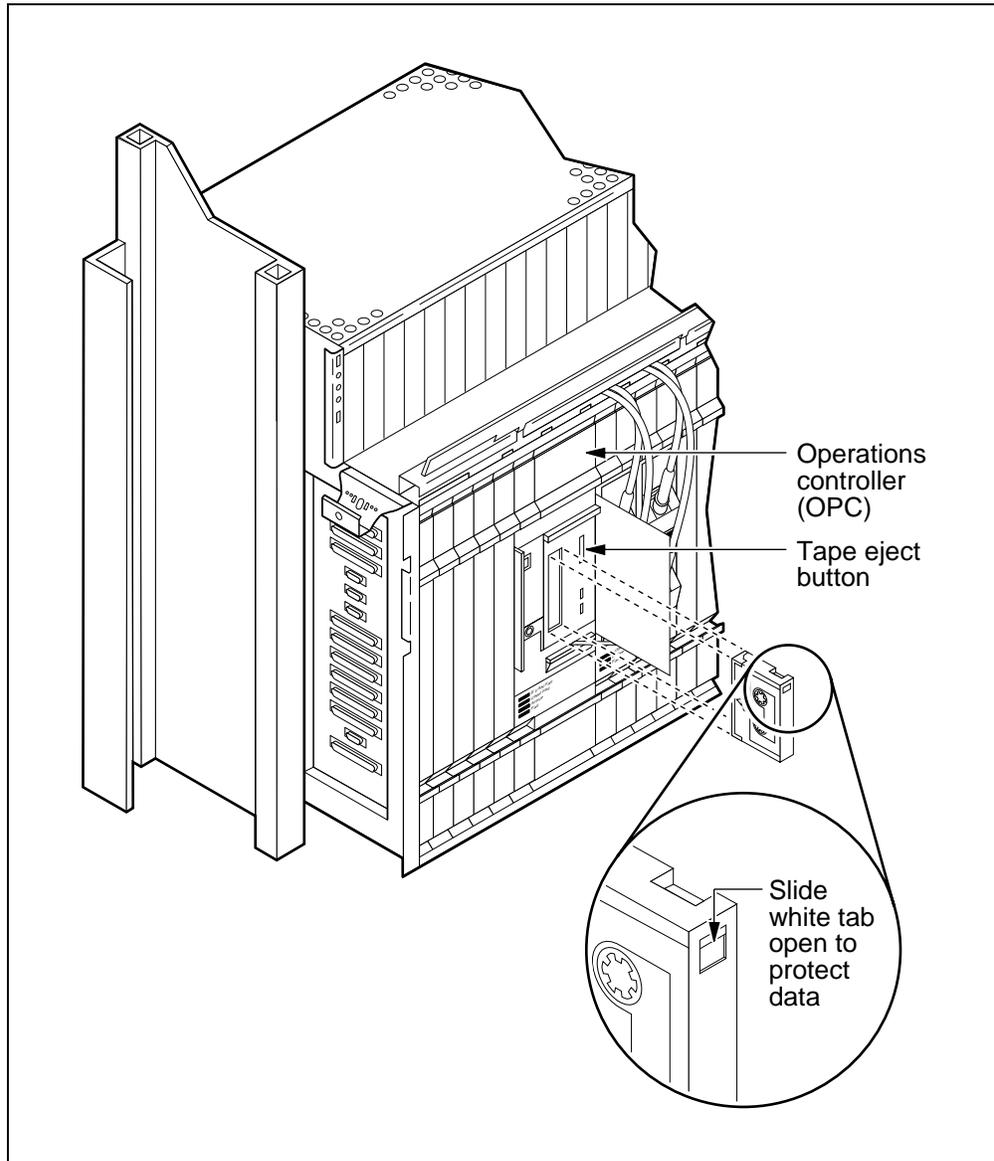
Procedure 4-2 (continued)

Removing the software from the OPC

Step Action

Figure 4-1
Inserting and ejecting the tape in an OPC (NT7E24BA)

PC-10864



—end—

Procedure 4-3

Installing software on a local OPC and NE from tape

Use this procedure to perform the initial transfer of OPC software and NE software from tape to a local OPC, before you commission a system and its NEs.

Do not use this procedure as part of the process for upgrading the software in an in-service OPC. This procedure applies to a new or spare OPC that is currently not in use, including modular (shelf) primary and backup OPCs.

Do not perform this procedure if you are adding a network element to an existing span of control.

Action

Step	Action
------	--------

- 1 Make sure the correct software tape is inserted into the OPC tape drive, as shown in Figure 4-1 on page 4-8.



CAUTION

Risk of equipment damage

If you force the tape into the tape drive, you can damage the drive and you may not be able to remove the tape. If you cannot easily insert the tape, it may be oriented the wrong way.

Refer to Figure 4-1 on page 4-8 for the correct orientation of the tape.



CAUTION

Enter UNIX commands carefully

If you enter a UNIX command incorrectly, it can be difficult to recover from the error. Be sure to read this procedure carefully, to distinguish between similar symbols, such as !, |, and /; or - and =. Commands shown in lower case must be entered in lower case. Contact Nortel Networks if you need support.

Installing the OPC software

- 2 To begin the installation of the AccessNode software into the OPC, at the `opc` prompt enter:

```
cd /tmp ↵
```

The "opc>" prompt appears.

—continued—

4-10 Commissioning and provisioning the equipment

Procedure 4-3 (continued)

Installing software on a local OPC and NE from tape

Step	Action
3	Enter: dd if=/dev/rdt/tape2 bs=20b tar xvf - ↵ <i>Either the message Broken pipe appears or a message similar to the following appears (the numbers may vary).</i> 439+4 blocks in 439+4 blocks out <i>The “opc>” prompt appears.</i>
4	Enter: cd /tmp/install ↵ <i>The “opc>” prompt appears.</i>
5	Enter: install_release -f ↵ <i>The system displays a message saying that it is installing the software, and as the installation proceeds, it displays the percentage of software installation completed. The installation takes approximately one hour.</i> a. When the application software has been loaded, the OPC automatically reboots.
6	When the login prompt appears, log back in to the OPC, using the root user ID and password.
7	At the opc prompt, type opcui . <i>The system displays the User Session Manager main window.</i>
8	Remove the tape from the OPC.

—end—

Procedure 4-4

Commissioning the OPC

Setup form

To enter the information required in this procedure, refer to the OPC Setup Form prepared by your system administrator.

Action

Step	Action
1	On the User Session Manager main window, tab to the Available Tools menu.
2	Press the down arrow to scroll to the Commissioning Manager.
3	Select the Commissioning Manager by pressing Ctrl_A . <i>The screen displays the Commissioning Manager main window.</i>
4	Check the OPC serial number displayed in the upper right corner of the screen, and make sure it matches the OPC serial number recorded on the OPC Setup Form. If the serial numbers do not match, change the number on the form.
5	Select the Commission new system button by pressing Ctrl_A . <i>The System Commissioning Data dialog appears and the cursor is placed in the Network name field.</i> Note: The Network number and System ID fields are automatically filled with a default value of 1 and cannot be changed.
6	Optional step. To specify a network name, enter a unique name, up to 32 alphanumeric characters long (for example, "SouthwestRegion01").
7	Optional step. To specify a system name, tab to the System name field and enter a unique name, up to 32 alphanumeric characters long (for example, "CentralBankHeadquarters").
8	Tab to the OPC name field. Note: The System type field is autofilled with the name AccessNode and cannot be changed in this dialog.
9	At the OPC name field, enter a node name for the primary/backup OPC pair. OPC node names must be unique within the system and have the following format: OPC <xxxx> where <xxxx> integers from 0 to 9 or letters from A to Z. (Example: OPCM011)

—continued—

4-12 Commissioning and provisioning the equipment

Procedure 4-4 (continued)
Commissioning the OPC

- | Step | Action | | | | |
|---|---|----|------|--|---|
| 10 | Tab to the Primary OPC serial number field.
<i>The serial number of the OPC you are logged into appears in this field by default. The serial number of the OPC you are logged into also is displayed in the upper right corner of the Commissioning Manager main window.</i> | | | | |
| 11 | Optional step. To specify an alias for the primary OPC, tab to the Primary OPC alias field and enter a name up to 8 alphanumeric characters long. The default alias is the OPC name followed by P (for primary). | | | | |
| 12 | Record the data from the System Commissioning Data dialog on the OPC Setup Form. | | | | |
| 13 | Tab to the OK button and select it by pressing Ctrl_A .
<i>When you select the OK button and the information is entered correctly, the System Commissioning Data dialog is removed and the name of the system being commissioned is displayed on the first line of the Commissioning Manager main window. The arrow (=>) indicator in the Commissioning Manager main window moves to Commission new network element.</i> | | | | |
| <table border="1"><thead><tr><th>If</th><th>Then</th></tr></thead><tbody><tr><td>any essential data is missing or entered incorrectly</td><td><ul style="list-style-type: none">• an error dialog explaining the nature of the problem is displayed.• the System Commissioning Data dialog remains displayed and fields with missing or erroneous data are marked with an "X."</td></tr></tbody></table> | | If | Then | any essential data is missing or entered incorrectly | <ul style="list-style-type: none">• an error dialog explaining the nature of the problem is displayed.• the System Commissioning Data dialog remains displayed and fields with missing or erroneous data are marked with an "X." |
| If | Then | | | | |
| any essential data is missing or entered incorrectly | <ul style="list-style-type: none">• an error dialog explaining the nature of the problem is displayed.• the System Commissioning Data dialog remains displayed and fields with missing or erroneous data are marked with an "X." | | | | |
| 14 | Close the Commissioning Manager main window by pressing Ctrl_L W .
<i>The Exit command appears.</i> | | | | |
| 15 | Select Exit by pressing the space bar .
<i>The User Session Manager main window appears.</i> | | | | |

—end—

Procedure 4-5

Commissioning a network element

Use this procedure to begin the commissioning of an NE. This procedure should be performed prior to transferring the NE software to the OPC, and should be repeated for every NE in the span of control. The order in which the NEs are commissioned is not critical.

Setup form

To enter the information required in this procedure, refer to the Network Elements Setup Form prepared by your system administrator.

Action

Step	Action
1	From the User Session Manager, tab to the Available Tools list. Press the down arrow to go to the Commissioning Manager. Open the Commissioning Manager by pressing Ctrl_A . <i>The Commissioning Manager main window appears.</i>
2	Select the Commission new network element from the Commissioning Manager main window by pressing Ctrl_A . <i>The Network Element Commissioning Data dialog is displayed.</i>
3	The cursor should be at the start of the Network element number field (NEID). At this field, enter a number (1 to 9999) that is unique within this system. This number should be assigned according to the NE numbering plan for this system that is recorded on the Network Elements Setup Form.
4	Record the NE number on a write-on label. Place the write-on label in the area marked "place NE label here" on the label plate of the common equipment shelf.
5	Enter data into the data fields listed in the following table. To enter the data, do steps 5a and 5b:

If you have	Shelf type is	Shelf function is	Transmission rate is	Software release is
a CServer	ABM	FCOT	None	as displayed
an RFT	ABM	RFT	DS1	as displayed

- a. Tab to the data field. Press **Ctrl_L** and a forward slash (/) to display the chooser menu.

A chooser menu appears.

—continued—

4-14 Commissioning and provisioning the equipment

Procedure 4-5 (continued)

Commissioning a network element

- | Step | Action | | | | | | |
|---|---|--------------------------------|------|--|--|---|-------------------------|
| | b. Press the arrow keys to move to the appropriate selection and select it by pressing the space bar . | | | | | | |
| 6 | Tab to the Shelf Serial Number field. Read the serial number on the upper right corner of the equipment shelf, and enter it into the Shelf Serial Number field. See Figure 4-2 on page 4-16. | | | | | | |
| 7 | Tab to the area of the screen named "This network element contains."
<i>The cursor moves to the "No OPC" selection.</i> | | | | | | |
| 8 | To choose a selection other than "No OPC," use the arrow key to move the cursor. | | | | | | |
| 9 | Press Ctrl_A . | | | | | | |
| 10 | Tab to the OK_Return button, and press Ctrl_A to select it.
<i>The Commissioning Manager main window is displayed, showing the network element that was commissioned.</i> | | | | | | |
| 11 | Do one of the following: <table border="1"><thead><tr><th>If</th><th>Then</th></tr></thead><tbody><tr><td>you want to commission another network element</td><td>repeat this procedure beginning at step 2.</td></tr><tr><td>you do not want to commission another network element</td><td>go to step 12.</td></tr></tbody></table> | If | Then | you want to commission another network element | repeat this procedure beginning at step 2. | you do not want to commission another network element | go to step 12. |
| If | Then | | | | | | |
| you want to commission another network element | repeat this procedure beginning at step 2. | | | | | | |
| you do not want to commission another network element | go to step 12. | | | | | | |
| 12 | Do one of the following: <table border="1"><thead><tr><th>If you are commissioning an NE</th><th>Then</th></tr></thead><tbody><tr><td>in a new OPC span of control</td><td>do steps 13 through 19.</td></tr><tr><td>in an existing OPC span of control</td><td>do steps 20 through 23.</td></tr></tbody></table> | If you are commissioning an NE | Then | in a new OPC span of control | do steps 13 through 19. | in an existing OPC span of control | do steps 20 through 23. |
| If you are commissioning an NE | Then | | | | | | |
| in a new OPC span of control | do steps 13 through 19. | | | | | | |
| in an existing OPC span of control | do steps 20 through 23. | | | | | | |
| 13 | Close the Commissioning Manager by entering Ctrl_L W . | | | | | | |
| 14 | Select Exit from the displayed menu by pressing the space bar .
<i>The User Session Manager appears.</i> | | | | | | |
| 15 | Enter Ctrl_T 3 ↵
<i>The OPC prompt appears.</i> | | | | | | |
| 16 | Enter cd /tmp ↵ | | | | | | |

—continued—

Procedure 4-5 (continued)

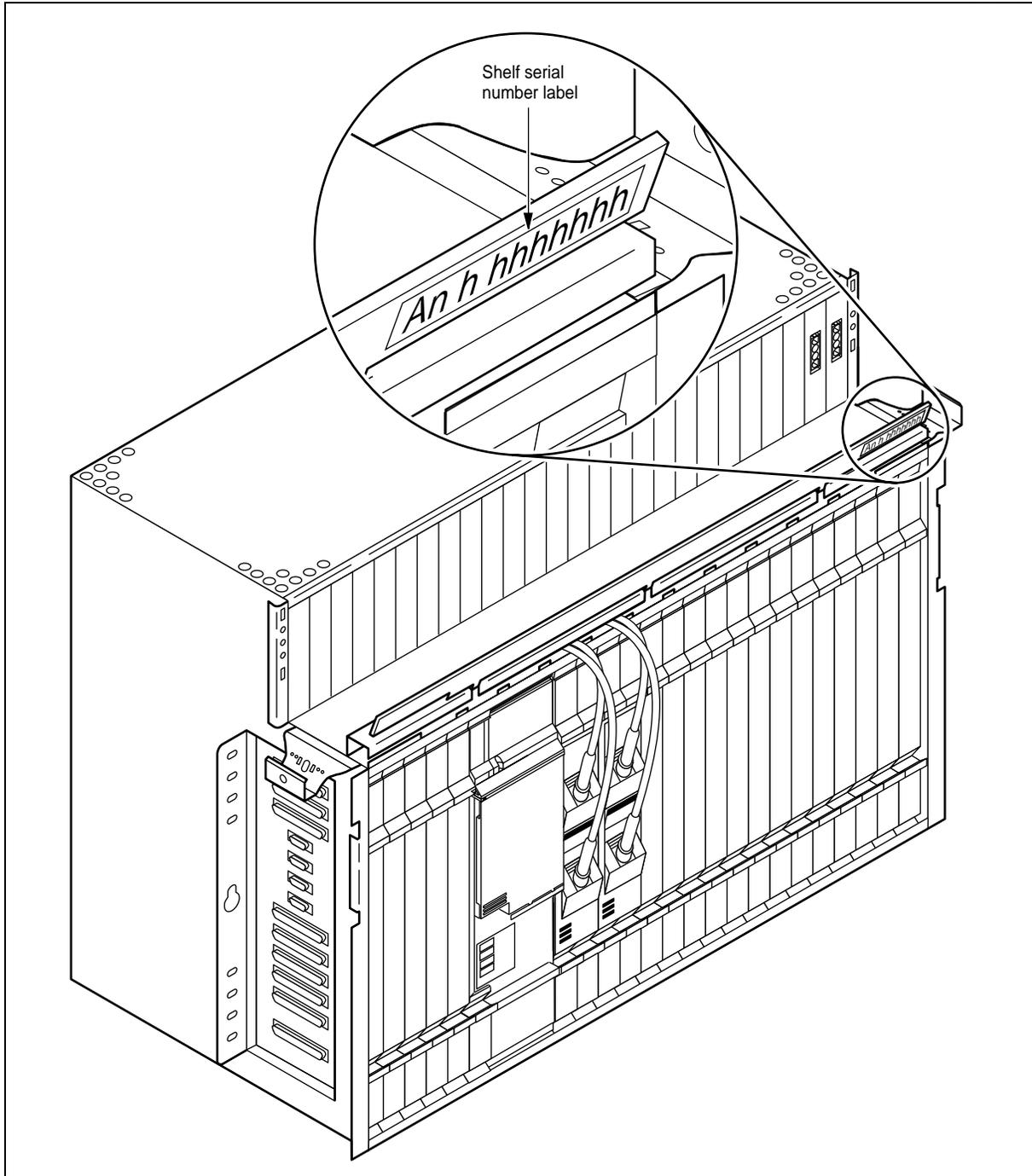
Commissioning a network element

Step	Action
17	Enter setmbr ↵ <i>The system displays messages saying that it is setting the software release, followed by a message that the set OPC release was successful. The system then displays the OPC prompt.</i>
18	Enter Ctrl_T 0 ↵ <i>The User Session Manager main window is displayed.</i>
19	This procedure is complete. Go to the next procedure.
20	Enter Ctrl_T 3 ↵ <i>The OPC prompt is displayed.</i>
21	Enter cd /tmp ↵ <i>The OPC prompt is displayed.</i>
22	Enter the following command lomui -p ACCESS -r REL_<release number> -n <NE number> ↵ where <release number> the release number of the software you are using <NE number> the NE number of the network element <i>The OPC prompt is displayed.</i>
23	Enter Ctrl_T 0 ↵ <i>The User Session Manager is displayed.</i>

—end—

Figure 4-2
Shelf serial number label on the Common Equipment (ABM) shelf

PC-11472



Procedure 4-6

Monitoring the loading of software to a network element

Use this procedure to monitor the downloading of software from the commissioning OPC to an NE.

The software download automatically begins when all of the following are completed:

- The processors are installed in the shelf.
- The system and NE commissioning data are loaded on the OPC.
- The OPC is connected to the NE by using a CNet connection or by installing the OPC in the shelf.

When software is downloading, the Reboot Load Manager tool can be used to monitor, but not control, the download.



CAUTION

Risk of incorrect default connections

After you finish with this procedure, you must wait 30 minutes before proceeding with the next procedure; otherwise, the default connections may not be provisioned correctly.

Action

Step	Action
1	From the User Session Manager, press the arrow key to move to the Available Tools list. Open the Reboot/Load Manager tool by pressing Ctrl_A . <i>The Reboot/Load Manager main window appears.</i>



CAUTION

Risk of equipment damage

The following steps involve the handling of circuit packs. Use an antistatic strap (or other static protection device) to protect against damage due to electrostatic discharge.

2	The OPC with system and NE commissioning data begins downloading software when the OPC is engaged or connected to the shelf and a processor circuit pack is installed.
---	--

—continued—

4-18 Commissioning and provisioning the equipment

Procedure 4-6 (continued)

Monitoring the loading of software to a network element

- | Step | Action |
|------|---|
| 3 | <p>Review the download progress using the OPC Reboot/Load Manager tool.</p> <p><i>The download starts. The yellow initialization (Init) LED lights up on the maintenance interface card (MIC) while the processor card is loading software.</i></p> <p><i>As the download progresses, the system displays a message that it is loading each processor. The download process takes 15 to 20 minutes per network element. While the download process continues, a question mark is displayed in front of the NE number on the screen.</i></p> |
| 4 | <p>Wait for the question mark to disappear, then go to step 5. If you are commissioning more than one NE, wait for the question marks to disappear before all the NEs you are commissioning.</p> |
| 5 | <p>Close the Reboot/Load Manager tool.</p> <p>a. Display the Window menu by pressing Ctrl_L W.</p> <p><i>The Window menu is displayed.</i></p> <p>b. Select the Exit command by pressing the space bar.</p> <p><i>The User Session Manager screen appears.</i></p> |
| 6 | <p>Do one of the following:</p> |

If	Then
the OPC is in an RFT	Wait 30 minutes, and then go to Procedure 4-9, "Provisioning DS1 facility assignments" on page 4-24.
the OPC is in a CServer	Go to step 7.

Downloading software to the network element at a remote SEAN

- 7 At the User Session Manager, open the OPC shutdown tool in the Available Tools menu. To open the OPC shutdown tool, position the cursor on the tool name, and press **Ctrl_A**.
- The following message is displayed:*
- Press the shutdown button to proceed, or close this tool by selecting exit.
- 8 Position the cursor on the shutdown button and press **Ctrl_A**.
- A warning message is displayed.*
- 9 Tab to Proceed, and press **Ctrl_A**.
- An information screen is displayed.*
- 10 Position the cursor on OK, and press **Ctrl_A**.
- The system displays a message that the OPC is shutting down.*

—continued—

 Procedure 4-6 (continued)

Monitoring the loading of software to a network element

Step	Action
11	Position the cursor on OK, and press Ctrl_A . <i>An in-progress message is displayed, followed by a message that the OPC is out of service.</i>
12	Position the cursor on Done, and press Ctrl_A . <i>The OPC prompt is displayed.</i>
13	Wait for the Active LED on the OPC to go out.
14	Remove the OPC from the shelf. You must remove the OPC within two minutes or it will return to service.
15	Carry the OPC to the remote SEAN.
16	Attach a PC or a VT100 terminal to the OPC port on the left-side interconnect card.
17	Insert the OPC into slot 5 of the remote SEAN. <i>The PC or VT100 terminal boots up.</i>
18	Wait for the logon prompt to be displayed on the PC or VT100 terminal.
19	Log in to the OPC with the root user ID and password. <i>The prompt "Term = (VT100)" is displayed.</i>
20	Press Enter . <i>The opc prompt is displayed.</i>
21	Type opcui at the opc prompt. <i>The User Session Manager main window is displayed.</i>
22	Repeat steps 1 through 5.
23	On the User Session Manager, open the NE Login Manager from the Available Tools menu. <i>The NE Login Manager main window is displayed.</i>
24	Type the network element number into the Network Element field.
25	Tab to the Login button, and press Ctrl_A .
26	Enter admin into the User Name and Password fields. <i>A warning message is displayed.</i>
27	Press Enter . <i>The Network Element Status screen is displayed.</i>
28	At the command line, enter Quit All . <i>The command interface (CI) prompt is displayed.</i>
29	Wait 30 minutes before going on to the next procedure.

—end—

Procedure 4-7

Adding a new host to an RFT

Use this procedure to add a new host switch or a new interface group (IG) to a specific RFT. Two kinds of host switches are supported: GR-303 MVI hosts and GR-303 DMS hosts. Each RFT can have a maximum of five hosts. After five hosts are added, the Add button is disabled.

If there are no GR-303 DMS or GR-303 MVI links to assign, skip this procedure, and go to Procedure 4-9 on page 4-24.

Setup form

To enter the data required in this procedure, refer to the Host Provisioning Setup Form prepared by your system administrator.

Action

Step	Action
1	On the User Session Manager main window, tab to the Available Tools menu.
2	Position the cursor on the Host Provisioning Manager, and press Ctrl_A . <i>The Host Provisioning Manager main window is displayed.</i>
3	To display the chooser menu, press Ctrl_L / . <i>The chooser menu appears showing the RFTs that are in the OPC span of control.</i>
4	Use the arrow keys to move to the RFT you want to add a host to, then press the space bar .
5	Tab to the Add button, and press Ctrl_A . <i>The Add Interface Group Information dialog appears.</i> Note: You can add up to five hosts to an RFT. Therefore, if you have already added five hosts to the selected RFT, the Add button is disabled, and you cannot add any more hosts to this RFT.
6	In the Host name field, enter the name of the host you want to add, then enter the value of the IDT that will be used for the new interface in the IDT field.



CAUTION

The Host Provisioning Manager does not verify the accuracy of the host name or the IDT, but these two names must be correct.

Be careful in entering the names. The names have to be exact; for example, do not substitute a letter o for the number 0.

—continued—

 Procedure 4-7 (continued)
Adding a new host to an RFT

Step Action

If you make an incorrect entry while provisioning a	Then
GR-303 DMS interface	you cannot establish an association between the intended DMS host and the AccessNode, even though the physical connections are in place.
GR-303 MVI interface	you can establish an association between the intended MVI host and the AccessNode as long as the physical connections are in place.

- 7** Tab to the button (**GR-303 DMS** or **GR-303 MVI**) that applies to the type of host interface you are adding, then press **Ctrl_A**.

The selected interface type is marked by a solid diamond.

- 8** Tab to the **OK** button, then press **Ctrl_A**.

The new Host CLLI appears in the provisioned hosts list on the Host Provisioning Manager screen.

- 9** Do one of the following:

If	Then
you want to assign hosts to other RFTs	repeat this procedure for each RFT beginning at step 2.
you do not want to assign hosts to other RFTs	close the Host Provisioning Manager tool. To close the tool, enter Ctrl_L and the letter W . Then choose exit from the displayed menu by pressing the space bar . <i>The screen displays the User Session Manager main window.</i>
add another host to the same RFT	repeat steps 5 through 8.

—end—

Procedure 4-8 Provisioning default connections

Use this procedure to provision nodal default connections for network elements.

Action

Step	Action
1	On the User Session Manager main window, tab to the Available Tools menu. <i>The Connection Manager main window appears.</i>
2	Position the cursor on the Connection Manager, and select it by pressing Ctrl_A .
3	Press Ctrl_L G . <i>The Global menu appears.</i>
4	Position the cursor on the Options choice by pressing the up arrow. <i>The system displays the Options menu.</i>
5	Press the left arrow to move to Manage default/STS-1 cross connects , and press the space bar . <i>The Manage Default/STS-1 Cross Connects dialog appears.</i>
6	In the Network Element field, press Ctrl_L / to display the chooser menu. <i>The chooser menu appears, listing the available NEs.</i>
7	Use the down arrow key to move to the NE you want, then press the space bar . <i>The NE ID appears in the Network Element field. The Shelf Function and Transmission Rate fields are automatically filled in for the selected NE.</i>
8	Tab to the Provision Nodal Default Connections button at the bottom of the screen, then press Ctrl_A . <i>A confirmation dialog appears.</i>
9	Tab to the Yes button, then press Ctrl_A . <i>The system displays a message saying that connections are being provisioned followed by a message that the connections were provisioned successfully.</i>

—continued—

Procedure 4-8 (continued)

Provisioning default connections

Step	Action
10	Press Ctrl_A . <i>The Manage Default/STS-1 Cross Connects dialog appears listing the default connections.</i>
11	Tab to the Done button, then press Ctrl_A . <i>The Connection Manager main window appears.</i>

—end—

Procedure 4-9

Provisioning DS1 facility assignments

Use this procedure to add, view, and change the facility assignments of DS1s connected to TIC port 1 of an RFT in DS1-fed AccessNode systems. The TIC port 1 terminates up to 28 DS1 facilities.

Each DS1 facility assignment contains the following information:

- the facility endpoints or virtual tributary number within the AccessNode
- the type of external termination (TR-08, GR-303 DMS/MVI, DS1 tandem, virtual line concentrating module (VLCM), or Data Direct)
 - TR-08 and GR-303 are Bellcore standards describing generic interfaces to switches.
 - GR-303 MVI is the Nortel Networks feature on AccessNode that supports the GR-303 (and any GR-303 compliant LDS) multivendor interface to other vendors' switches (for example, Lucent 5ESS and Siemen's EWSD).
 - GR-303 DMS is the Nortel Networks feature on AccessNode that supports the GR-303 standard functionality *plus enhancements* on DMS-100 SuperNode switches.
 - DS1 tandem services are non-switched and non-locally switched connections to the Special Services Digital Network (SSDN).
 - VLCM is a link that interfaces the AccessNode to a DMS-10 switch. The AccessNode emulates a remote line concentrating module (RLCM). For a translation table that shows how AccessNode lines translate to lines on the DMS-10NA switch, see *Line Card Provisioning Procedures, 323-3001-315, Operations, Administration, and Provisioning, Volume 4B*.
 - Data Direct links are used to bypass the public switched telephone network (PSTN) and route Internet-bound traffic to a dial-up switch.
- a unique link name (not required for DS1 tandem), that includes both the switch CLLI and IDT number, or the GR-303 interface group and link number, or the TR-08 system number and link number

Setup form

To provision the DS1 facility assignments, refer to the DS1 Assignments Setup Form prepared by your system administrator.

Requirements

Before starting this procedure, you must do the following:

- Make sure the physical connections from the subscriber module access (SMA) to network element DS1 ports match the datafill of the facility assignment. For example, if the datafill maps G1 port 1 to SMA x link 10 and G2 port 1 to SMA x link 11, make sure the connections are in place. If the datafill and the connections do not match, there are no alarms and the DS1 facility appears to be in service (IS), but there will be maintenance failure and no dial tone on lines provisioned over the connections.
- Provision a host for GR-303 DS1s if you want a GR-303 facility assignment. A network element must have a minimum of two GR-303 DMS links before it can communicate with the switch. Links one and two are used for messaging and traffic. Links three and higher are used only for traffic.

Action

Step	Action
1	On the Connection Manager main window, display the Options menu by pressing Ctrl_L G . Press the up arrow to move to the Options menu. <i>The Options menu appears.</i>
2	Press the left arrow and then the down arrow to move to the Manage facility assignments command. Select the Manage facility assignments command by pressing the space bar . <i>The Manage Facility Assignments dialog appears.</i>
3	In the End NE A field, press Ctrl_L / to display the chooser menu. <i>The chooser menu appears, listing the available NEs.</i>
4	Use the down arrow key to move to the NE ID you want, then press the space bar . <i>The system displays an In Progress message, and then the NE ID appears in the End NE A and End NE Z fields.</i>
5	Tab to the list of DS1s.
6	Move to the DS1 for which you want to change the assignment.
7	To display the List item menu, press Ctrl_L . <i>The List item menu for the selected facility appears.</i>

—continued—

Procedure 4-9 (continued)

Provisioning DS1 facility assignments

Step Action

8 Change the assignment for the facility.

If you want to change the facility assignment to	Then go to
tandem service	step 9
GR-303 DMS or GR-303 MVI service	step 10
TR-08 service	step 11
VLCM service	step 12
Data Direct	step 13
unassigned	step 15

9 To change the facility assignment to tandem service, move the cursor to **Assign as Tandem**, then press the **space bar**.

If you want to	Then go to
change another assignment	step 7
exit from the Manage Facility Assignments dialog	step 18

10 To change the DS1 assignment to GR-303 DMS or GR-303 MVI service:

- a.** Move the cursor to Assign as GR-303 DMS, and press the **space bar**.
The GR-303 facilities dialog appears.
- b.** Tab to the IG Number field, then press **Ctrl_L /**.
The chooser menu appears.

Note: The host must be defined using the OPC Host Provisioning Manager tool before the host name appears in the list.

- c.** Move to the IG number you want, then press the **space bar**.
The host name appears in the Host Name field, the IDT number appears in the IDT number field, and a link number appears in the RDTLink Number field.

Note 1: The host name and IDT number identify the IG to the system.

Note 2: The RDTLink Number assigned to the DS1 port must match the RDTLink number assigned to the port (SMA port for a DMS) to which it is physically connected. Table RDTINV on the Host contains the RDTLink Number to the port pairings. This number is the next available logical line number for the Host.

- d.** Tab to the **OK** button, then press **Ctrl_A**.
A warning screen appears.

—continued—

Procedure 4-9 (continued)
Provisioning DS1 facility assignments

Step Action

- e. Press **Ctrl_A** on the **OK** button again.

The OPC requests that the network element create the links.

If a message appears stating that the link will not be assigned and that the network element cannot assign more links because the limit of 31 DS0 links have been assigned.

If you want to	Then go to
change another assignment	step 7
exit from the Manage Facility Assignments dialog	step 18

- 11 To change the DS1 assignment to TR-08 service:

- a. Move the cursor to **Assign as TR-08**, and press the **space bar**.

The TR-08 facilities dialog appears.

- b. In the System Number field, press **Ctrl_L /** to display the chooser menu.

- c. Move to the system number you want, and press the **space bar**.

The Link Id field is filled in with a suggested letter.

If you	Then go to
want to change the suggested Link Id	step 11d
do not want to change the Link Id	step 11e

- d. Move to the Link Id number you want, then press the **space bar**.

The A-link is allowed only on TIC ports 1, 5, 9, 13, 17, 21, or 25.

The first link provisioned in a system must be the A-link, which carries the derived data link (DDL) format. Subsequent links can be B, C, or D.

Note: Only TR-08 links (A, B, C, or D) that have not yet been selected are displayed.

- e. Tab to the **OK** button and select it by pressing **Ctrl_A** if you want to initiate the assignment of the TR-08 service for the selected DS1.

The assignment of the DS1 in the Facilities list in the main window is changed to the TR-08 system number (1 to 7) and the link number (A, B, C, or D).

If you want to	Then go to
change another assignment	step 7
exit the Manage Facility Assignments dialog	step 18

—continued—

Procedure 4-9 (continued)

Provisioning DS1 facility assignments

- | Step | Action |
|------|---|
| 12 | <p>To change the DS1 assignment to VLCM service:</p> <ul style="list-style-type: none"> a. Use the arrow keys to move to the Assign as VLCM command, then press the space bar.
<i>The Assign as VLCM dialog appears.</i> b. In the System Number field, press Ctrl_L to display the chooser menu. c. Use the arrow keys to move to system number 1, then press the space bar. <p>Note: You must select system number 1 or 2.</p> <ul style="list-style-type: none"> d. Tab to the Switch Port Number field, then press Ctrl_L to display the chooser menu.
<i>The chooser menu appears.</i> e. Use the arrow keys to move to the switch port you want, then press the space bar.
<i>The switch port number appears in the Switch Port Number field.</i> <p>Note 1: Ports 0 and 3 are reserved as signalling links. One of these ports must be provisioned if you want to perform line/loop testing. When you provision port 0 or 3, a dialog appears. The dialog allows you to assign a remote maintenance module (RMM) channel to the signalling link so you can perform line/loop testing.</p> <p>Note 2: Ports 2 and 5 are not used.</p> <ul style="list-style-type: none"> f. Tab to the OK button, then press Ctrl_A.
<i>The DS1 in the facilities list on the main window changes to VLCM.</i> |

If you want to	Then go to
change another assignment	step 7
exit from the Manage Facility Assignments dialog	step 18

- | | |
|----|---|
| 13 | <p>To change the DS1 assignment to Data Direct, move to the Assign as Data Direct command, then press the space bar.</p> |
| 14 | <p>Tab to the OK button, then press Ctrl_A.
<i>The DS1 in the facilities list on the main window changes to Data Direct</i></p> |

If you want to	Then go to
change another assignment	step 7
exit from the tool	step 18

—continued—

Procedure 4-9 (continued)

Provisioning DS1 facility assignments**Step Action**

- 15** To remove the facility assignment:
- a.** Move to the **Unassign** command, then press the **space bar**.
A confirmation dialog appears informing you that the selected DS1 will have its current assignment removed.
 - b.** Tab to the **OK** button, then press **Ctrl_A**.
The assignment in the Facilities list in the main window is removed (changed) to Unassigned.

**CAUTION****Unexpected busy tone**

Removing a facility assignment at the AccessNode without removing the corresponding link at the switch can produce a busy tone when your subscriber dials an idle circuit.

- 16** Do one of the following:

If you want to	Then go to
change another assignment	step 7
exit from the tool	step 18

- 17** Do one of the following:

If you want to	Then go to
If you want to assign a DS1 to another RFT	step 4
exit from the tool	step 18

- 18** To close the Manage Facility Assignments dialog, tab to the **Done** button, then press **Ctrl_A**.

The Connection Manager main window appears.

- 19** To close the Connection Manager tool, press **Ctrl_L W**.

The window menu appears.

- 20** Press the **space bar** to exit.

The User Session Manager appears.

—end—

Procedure 4-10

Setting the time zone, date, and time at the OPC

Use the following procedure to change the time zone, date, and time in an OPC. The time zone codes are listed within the OPC Date tool, and the appropriate code is selected using this procedure.

The local time and date must be set during initial commissioning, and whenever the OPC clock battery has discharged. It should not be necessary to set the clock again unless the OPC is moved to a new time zone, or replaced. However, the OPC local time may require infrequent adjustment. Changing the time or date of an operational OPC involves shutting it down. The shutdown procedure is automatically initiated within the procedure to change the time.

The time-of-day clocks on the primary and backup OPCs must be set as closely to the same time as possible in their respective time zones. In case of primary OPC failure, the backup OPC clock becomes the time-of-day clock source.

If you are adding a network element to an existing OPC span of control, skip this procedure and go to Procedure 4-12 on page 4-39.

Setup form

To enter the information required in this procedure, refer to the OPC Setup Form prepared by your system administrator.

Action

Step	Action
------	--------

- 1 On the User Session Manager main window, tab to the Available Tools menu.
- 2 Position the cursor on the OPC Date tool, and press **Ctrl_A**.
The OPC Date main window is displayed.
- 3 Decide whether you are changing the time by more than 30 minutes.

If you are changing the time by	Then go to
less than 30 minutes	step 4
more than 30 minutes	step 10

Adjust Time

- 4 Select the Adjust Time button by pressing **Ctrl_A**.
The time and date change dialog is displayed.

—continued—

 Procedure 4-10 (continued)

Setting the time zone, date, and time at the OPC

- | Step | Action |
|------|---|
| 5 | To change the date, enter a new value in the Date field in the form dd/mm/yyyy. |

where

- dd is the day of the month (range 01 to 28, 29, 30, or 31, depending on the month)
- mm is the month (range 01 to 12)
- yyyy is the year (range 1976 to 2036)

The new date is displayed in the Date entry field.

Note 1: Make sure the old date is removed. Use the right arrow key to position the cursor after the old text and press the backspace key.

Note 2: When using the Adjust Time capability, you can only change the date to the day immediately preceding or following the current day, and only if the current time is within 30 minutes of the day change. Modifications to the date field at this point are required to support a 30 minute time advance near the end of the day.

- | | |
|---|--|
| 6 | To change the time, tab to the Time field and enter a new value in the form hh:mm. |
|---|--|

where

- hh is the hour (range 00 to 23)
- mm is the minute (range 00 to 59)

The new time is displayed in the Time field.

Note 1: When using the Adjust Time capability, you can only change the time to within 30 minutes of the current value.

Note 2: It is recommended that the current time of the active OPC clock be used as the source of the correct time when setting the standby OPC clock.

- | | |
|---|--|
| 7 | Tab to the Update button and select it by pressing Ctrl_A . |
|---|--|

The data you entered is validated. If the data is incorrect, an error dialog is displayed telling you what to do. If the data is correct, the OPC Date main window is redisplayed.

If you select the Cancel button, the changes you make are not saved.

—continued—

Procedure 4-10 (continued)

Setting the time zone, date, and time at the OPC

Step	Action
-------------	---------------

8 Press **Ctrl_L W**.

The system displays a selection menu.

9 Select Exit by pressing the **space bar**.

The system displays the User Session Manager main window.

You are finished with this procedure. Go to Procedure 4-12 on page 4-39.

Reset Time

10 Select the Reset Time button from the OPC Date window by pressing **Ctrl_A**.

A confirmation dialog is displayed, indicating the amount of time required for shutting down the OPC and giving you a final chance to abort the shutdown.

11 Tab to the Proceed button and select it by pressing **Ctrl_A**.

The OPC shutdown process starts. A console message is displayed to all users who are currently logged in to the OPC.

Note 1: The selection of the Proceed button commits the shutdown of the OPC, even if you decide later to abort the changes to the time and date. To stop the OPC shutdown procedure, select the Cancel button.

Note 2: The OPC clock is reset to the time you specified when the last dialog is confirmed in step 17.

12 Select the OK button by pressing **Ctrl_A**.

A shutdown progress message is displayed. As the shutdown progresses, the dots on the dialog are replaced with Xs.

The progress message indicates that the OPC is shutting down normally. Since the shutdown continues while the previous console message is displayed, the shutdown can complete before you select the OK button in this step. In this case, you do not see the progress message following.

This dialog is replaced by the following dialog when the shutdown is complete. The new dialog is displayed to all users who are currently logged in to the OPC.

13 Select the Done button by pressing **Ctrl_A**.

The dialog is replaced by the Time and Date Change dialog.

—continued—

 Procedure 4-10 (continued)

Setting the time zone, date, and time at the OPC

Step	Action
14	<p>To change the date, tab to the Date field and enter a new value in the form dd/mm/yyyy.</p> <p style="text-align: center;">where</p> <p style="padding-left: 40px;">dd is the day of the month (range 01 to 28, 29, 30, or 31 depending on the month).</p> <p style="padding-left: 40px;">mm is the month (range 01 to 12).</p> <p style="padding-left: 40px;">yyyy is the year (range 1976 to 2036).</p> <p><i>The new date is displayed in the Date entry field.</i></p> <p>Note: Make sure old data is removed by using the right arrow key to position the cursor ahead of old text and pressing the backspace key.</p>
15	<p>To change the time, tab to the Time field and enter a new value in the form hh:mm.</p> <p style="text-align: center;">where</p> <p style="padding-left: 40px;">hh is the hour (range 00 to 23).</p> <p style="padding-left: 40px;">mm is the minute (range 00 to 59).</p> <p><i>The new time is displayed in the Time entry field.</i></p> <p>Note: It is recommended that the current time on the active OPC clock be used when setting the standby OPC clock. The OPC clock is actually reset to the specified time when the last dialog is confirmed in step 15.</p> <p>To change the time zone, tab to the Time Zone list, use the arrow keys to move the cursor to the time zone code desired and select it by pressing Ctrl_A. Refer to the OPC Setup Form for the time zone code you need to enter. See Table 4-1 on page 4-35 for a list of time zones and their associated codes.</p> <p><i>The selected entry will be placed in the Time Zone field.</i></p>
16	<p>Tab to the Update button and select it by pressing Ctrl_A.</p> <p><i>A confirmation message is displayed, indicating that an error in selecting the new time and date would require a second OPC shutdown to correct.</i></p> <p>Note: If you select the Cancel button, the changes you have made are not saved and you are returned to the time and date change dialog.</p>

—continued—

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Procedure 4-10 (continued)

Setting the time zone, date, and time at the OPC

Step	Action
17	Select the OK button by pressing Ctrl_A . <i>The OPC clock is now set to the time you specified.</i> <i>The data you entered is validated. If incorrect, an error dialog is displayed that tells you what to do. If correct, the time and date information is saved and the OPC begins its reboot sequence. You can briefly see the User Session Manager screen.</i> <i>The reboot process takes about 5 to 10 minutes. When it is completed, the OPC login prompt (login:) is displayed.</i> <i>The shutdown of the OPC terminates all user login sessions and you have to log in again, after the OPC returns to service.</i>
18	Log in to the OPC using the root user ID and password.
19	At the opc prompt, type opcu i. The User Session Manager is displayed.

—end—

Time zone codes

The following table lists time zones and their associated time zone codes.

Table 4-1
Time zones and codes

Time zone	Time zone code
Hawaiian Standard Time Hawaiian Daylight Time	HST10
Aleutian Standard Time Aleutian Daylight Time	AST10ADT
Yukon Standard Time Yukon Daylight Time	YST9YDT
Pacific Standard Time Pacific Daylight Time	PST8PDT#Canada
Pacific Standard Time Pacific Daylight Time	PST8PDT
Mountain Standard Time Mountain Daylight Time	MST7MDT#Canada
Mountain Standard Time Mountain Daylight Time	MST7MDT
Mountain Standard Time Mountain Daylight Time	MST7
Central Standard Time Central Daylight Time	CST6CDT#Canada
Central Standard Time Central Daylight Time	CST6CDT
Central Standard Time Central Daylight Time	EST5CDT
Eastern Standard Time Eastern Daylight Time	EST5EDT#Canada
Eastern Standard Time Eastern Daylight Time	EST5EDT
Atlantic Standard Time Atlantic Daylight Time	AST4ADT
—continued—	

Table 4-1 (continued)
Time zones and codes

Time zone	Time zone code
Newfoundland Standard Time Newfoundland Daylight Time	NST3:30NDT
Western European Time Western European Daylight Time	WETOWETDST
Portuguese Winter Time Portuguese Summer Time	PWTOPST
Middle European Time Middle European Daylight Time	MET-1METDST
South Africa Standard Time South Africa Daylight Time	SAST-2SADT
Japan Standard Time	JST-9
Australian Western Standard Time	WST-8:00
Australian Central Standard Time	CST-9:30
Australian Eastern Standard Time	EST-10
Australian Central Standard Time Australian Central Daylight Time	CST-9:30CDT
Australian Eastern Standard Time Australian Eastern Daylight Time	EDT-10EDT
—end—	

Procedure 4-11

Setting the time zone at the network element

Use this procedure to set the time zone at the network element (NE) for accurate timestamping of logs and alarms generated during testing.

Setup Form

To enter the data required by this procedure, refer to the Network Elements Setup Form prepared by your system administrator.

Action

Step	Action
1	Tab to the Available Tools menu.
2	Press the arrow key to move to the NE Login Manager, then select it by pressing Ctrl_A . <i>The NE Login Manager main window is displayed.</i>
3	In the Network Element field, type the NE ID of the network element you want to log in to.
4	Tab to the Login button and press Ctrl_A . <i>The system displays "Enter User ID."</i>
5	Type admin and press Enter . <i>The system displays "Enter Password."</i>
6	Type admin and press Enter . <i>The system displays the S/DMS Nodes screen with a warning message.</i>
7	Press Enter . <i>The message is cleared from the screen.</i>
8	From the S/DMS Nodes screen, type: eq sh
9	Press Enter . <i>The Shelf Equipment screen is displayed.</i>
10	Type edit , and then press Enter . <i>The Edit shelf screen is displayed.</i>

—continued—

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Procedure 4-11 (continued)

Setting the time zone at the network element

Step	Action
-------------	---------------

11	Enter the time zone using the following format:
-----------	---

Timezone <NE time zone> ↵

where

<NE time zone> is the time zone code on the Network Elements Setup Form (also see Table 4-1 on page 4-35)

The following warning is displayed:

Warning: changing the time zone may affect the performance monitoring statistics and the scheduler.

Please confirm ("Yes" or "No"):

yes ↵

—end—

Procedure 4-12

Setting the network synchronization

This procedure sets the network element synchronization as tribline timed. This setting allows the NE to synchronize timing from the DS1s.

Action

Step	Action
1	From the Edit Shelf screen, type: clocksrc TribLineTimed ↵ <i>The system displays a message that synchronization traffic may be affected.</i>
2	Type y and press Enter (↵) to continue. <i>The system displays the following message:</i> ClockSRC command successful. <i>The NE Clock Source field displays the following:</i> TribLineTimed
3	At the command line, enter the following command: quit ↵ <i>The system displays the Shelf Equipment screen.</i>
4	At the command line, enter the following command: quit ↵ <i>The S/DMS Nodes screen is displayed.</i>

—end—

Procedure 4-13

Setting the network element name

This procedure is used to set the name of the NE as defined by the user.

Setup form

To enter the information required in this procedure, refer to the Network Elements Setup Form prepared by your system administrator.

Action

Step	Action
1	From the S/DMS Nodes screen, access the System Administration screen by entering: admin nep ↵ <i>The Network Element Profile screen is displayed.</i>
2	Set the NE name by entering: nename <nename> ↵ where <nename> the NE name on the Network Elements Setup Form. Note 1: If the NE name contains spaces, special characters, or lower case characters, you must enter the name inside single quotes ('NE name'). The system will not accept special characters or spaces if the name is entered without the quotes, and any lower case characters will be converted to uppercase. Note 2: If the NE name is to be used in conjunction with TL1 target identifier (TID) and system identifier (SID), the TL1 TID/SID permissible character set must be followed. This character set includes uppercase or lowercase letters A to Z, numbers 0 to 9, and the special characters: dash, underscore, comma, and period. The special characters cannot be the first character in the name. <i>A message appears as shown below when the procedure is completed.</i> NE Name command successful
3	Type quit at the command line and press Enter (↵). <i>The system displays the S/DMS Nodes screen.</i>

—end—

Procedure 4-14

Disabling TIC alarms and TIC Ports

Use this procedure to disable VT1.5 facility alarms associated with the transport interface card (TIC) facility. The procedure also describes how to enable synchronous transport signal-1 (STS-1) and VT1.5 facility alarms for connections terminating at the TIC.

When the default STS-1 map is invoked, it creates STS-1 and VT1.5 connections to the TIC. STS-1 and VT1.5 alarms are enabled by default when an STS-1 or VT1.5 connection is added. If any of these connections are not going to be used, then disable alarms associated with unused STS-1s and VT1.5s.

Action

Step	Action
1	From the S/DMS Nodes screen, display the TIC Facility screen for the STS-1 by entering the following command: fa tic 2 ↵ <i>The TIC Facility screen is displayed for the selected STS-1.</i>
2	Display the alarm provisioning screen: almprov ↵ <i>The TIC Fac Alarm Provisioning screen is displayed.</i>
3	Turn the alarms off by entering: editstat 1 (↵) and enter y (↵) editstat 2 (↵) and enter y (↵) editstat 3 (↵) and enter y (↵) editstat 4 (↵) and enter y (↵)
4	Repeat steps 1–3 for TIC 3.
5	From the TIC Facility screen, enter: fa tic 1 (↵) <i>The TIC Facility screen for STS-1 #1 is displayed.</i>

—continued—

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Procedure 4-14 (continued)

Disabling TIC alarms and TIC Ports

Step Action

6 Disable all ports that were not provisioned in Procedure 4-11.

chgstate oos <Beginning port> <Ending port>

The following example disables ports 7 through 14:

chgstate oos 7 14

The screen displays the following warning message:

CHGSTATE command successful.

The ports you disabled are displayed as out of service (oos) in the ports list, and the provisioned ports, which were not disabled, show TRBL.

7 Type **Yes**.

8 Return to the S/DMS Nodes screen:

quit ↵

The S/DMS Nodes screen is displayed.

—end—

Procedure 4-15 Provisioning DS1 facility parameters

Use this procedure to provision the parameters for a DS1 transmission facility. This procedure contains steps to busy out all unused DS1 facilities, which you must do before you can provision the used DS1 facilities.

Table 4-2 lists the parameters for provisioning a DS1 facility for GR-303 digital multiplex switch (DMS), GR-303 multivendor interface (MVI), TR-08, tandem and transport DS1s. Use this table to find the command for each parameter based on your equipment.

Table 4-2
Provisioning DS1 parameters for GR-303 DMS/MVI, VLCM, TR-08, tandem and transport DS1s

Parameter	GR-303 DMS/MVI or VLCM DS1s	TR-08 DS1s	Tandem DS1s	Transport DS1s
line coding	use b8zs	use amizcs	use amizcs or b8zs	use ami or b8zs
frame format	use extended	if associated with span A, use dlc if associated with spans B, C, and D, use superframe	use superframe or extended superframe depending on the circuit order	use superframe or extended superframe
alarm encoding	use ones	use ones	use ones	use ones or zeros
synchronization mode	use bytesynchronous	use bytesynchronous	use bytesynchronous	use asynchronous

Setup form

To enter the data required by this procedure, refer to the DS1 Assignments Setup Form prepared by your system administrator.

—continued—

Procedure 4-15 (continued)

Provisioning DS1 facility parameters

Action

Step	Action
1	On the command line of the S/DMS Nodes screen, enter the following command: fa ds1 All ↵ <i>The screen displays the DS1 facilities menu.</i>
2	Take the facility out of service by entering the following command: chgstate OOS ↵ <i>The screen displays a warning message.</i>
3	Type the following command to confirm the change state command: LoseAll ↵ <i>The system displays an In Progress message followed by a message that the command was successful.</i>
4	At the command line, enter the following command: fa ds1 <group> <port>
	where
	<group> is the group number of the first DS1 group assigned in Procedure 4-9 on page 4-24
	<port> is the port number of the first port assigned in Procedure 4-9 on page 4-24
	<i>Example: g1 1</i>
5	At the command line, enter edit . <i>The system displays the Edit Facility screen.</i>

—continued—

Procedure 4-15 (continued)
Provisioning DS1 facility parameters

Step Action

- 6** Set or change any or all DS1 facility parameters according to the DS1 Assignments Setup Form prepared by your system administrator. The following table explains the formats for entering the parameters.

If provisioning	Then enter
DS1 facility identifier	<p>facid <identifier>↵</p> <p>where <identifier> an alphanumeric string up to 38 characters</p> <p>Note: Lowercase characters are translated to uppercase. If you want the facility ID to contain mixed case characters or nonalphanumeric characters, such as spaces, hyphens, or slash marks, begin the identifier string with a single quotation mark (').</p> <p><i>The provisioned value appears in reverse video.</i></p>
line coding	<p>lcoding <type>↵</p> <p>where <type> type of line coding: b8zs, ami or amizcs</p> <p>The provisioned vale appears in reverse video.</p>
line build-out range	<p>lbo < range >↵</p> <p>where <range> the line build-out range: short, medium, or long</p> <p><i>The provisioned value appears in reverse video.</i></p>
framing format	<p>framefmt <format>↵</p> <p>where <format> the framing format: null, superframe, extended, or dlc</p> <p>The provisioned value appears in reverse video.</p>
—continued—	

—continued—

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Procedure 4-15 (continued)

Provisioning DS1 facility parameters

Step Action

If provisioning	Then enter
alarm encoding	<p>alarmenc <encoding>↵</p> <p>where <encoding> type of alarm encoding: ones or zeros</p> <p>The provisioned value appears in reverse video.</p>
synchronization mode	<p>synchr <mode>↵</p> <p>where <mode> synchronization mode: bytesynchronous or asynchronous</p> <p>The provisioned value appears in reverse video.</p> <p>Note: If you select the wrong type of synchronization for the installed card, the system responds with the following message: "The Synchr command cannot be processed since the current hardware version does not support the requested synchronization mode."</p>
performance monitoring	<p>pmprov <status>↵</p> <p>where <status> status of the DS1 facility performance monitoring: enable or disable</p> <p>The provisioned value appears in reverse video.</p>
—end—	

7 Type **quit** ↵.

8 Return the facility to in service by entering the following command on the command line:

chgstate is↵

The state changes to in service (IS) or in service with trouble (IS TRBL). If the state is IS TRBL, you will need to clear alarms after you finish the commissioning and provisioning procedures. The process for clearing alarms is covered in Procedure 4-20 on page 4-68.

9 Repeat steps 3 through 6 for each DS1 facility (port) to be provisioned and for each DS1 group to be provisioned.

10 At the command line, type **quit**.

The S/DMS Nodes screen is displayed.

—end—

Procedure 4-16

Diagnosing failed circuit packs

Use this procedure to identify failed circuit packs or to verify failure of circuit packs when a red LED is on.

Refer to *Alarm and Trouble Clearing Procedures*, 323-3001-543, in *Maintenance*, Volume 5A, for information about clearing alarms.



DANGER

Risk of injury or damage

Read the previous warnings and precautions to minimize any risk to personnel and equipment.

Action

Step	Action
------	--------

- 1 On the S/DMS Nodes screen, enter **alarms** on the command line.
The system displays the Active Alarms screen showing all alarms on the network element.
- 2 Look at the list of alarms for Eqp alarms with a reason of "circuit pack fail." Then look at the shelf type for each failed circuit pack to determine whether the circuit pack is in a CDS shelf or a common equipment shelf. (If there is more than one screen of alarms, enter the letter F to move forward through the list of alarms.)

If there are no failed alarms, continue with the next procedure.

- 3 For each failed circuit pack, do the following:

If the failed circuit pack is in the	Then
common equipment shelf	do the subprocedure for diagnosing failed common equipment circuit packs (step 4)
CDS shelf	do the subprocedure for diagnosing failed CDS circuit packs (step 10)

—continued—

Procedure 4-16 (continued)

Diagnosing failed circuit packs

Step Action

Diagnosing failed common equipment circuit packs

- 4 Display the appropriate equipment screen by entering:
equipmnt <equipment ID>↵

where

<equipment ID> is one of the circuit pack equipment IDs listed in the following table. It is not necessary to test circuit packs in the order given in the table below.

The equipment types and equipment IDs are listed in the table below:

Equipment type	Equipment ID
processor (Proc)	proc a, proc b
maintenance interface card (MIC)	mic
operations controller (OPC)	opc
DS1/VT mapper	(see note)
access interface card (AIC)	aic a, aic b
transport interface card (TIC)	tic a, tic b
test access card (TAC)	tac
integrated remote test unit (IRTU)	irtu

- 5 If the module to be diagnosed is not already out of service, enter:
chgstate oos ↵

Confirmation is requested. If you confirm the action, the State field value changes to OOS.

Note: The TIC, AIC, MIC, and processor cards can be put through self-diagnostics without taking the system out of service. Although you can do out-of-service (OOS) diagnostics on all cards as explained above, you can do in-service diagnostics starting at step 6.

—continued—

 Procedure 4-16 (continued)
Diagnosing failed circuit packs

Step	Action						
6	Initiate diagnostics by entering: chgstate is ↵ <i>The system performs an out-of-service diagnostics (OOS) on the circuit pack as part of the transition from an OOS state to an in-service (IS) state.</i> <i>Diagnostics can take a while; it proceeds as a background task. The diagnosis is reported as an update to the circuit pack state, as follows:</i> <table border="0" style="margin-left: 40px;"> <tr> <td>OOS-Diagnose</td> <td>diagnostics in progress</td> </tr> <tr> <td>Test fail</td> <td>diagnostics failed</td> </tr> <tr> <td>IS</td> <td>diagnostics passed</td> </tr> </table>	OOS-Diagnose	diagnostics in progress	Test fail	diagnostics failed	IS	diagnostics passed
OOS-Diagnose	diagnostics in progress						
Test fail	diagnostics failed						
IS	diagnostics passed						
7	If a failure is indicated, remove the defective module and insert a spare module. Note: If the test access card (TAC) is indicating a failure, verify that all ground cables are properly connected according to one of the acceptable office grounding schemes described in the chapter “Power and ground distribution”, in <i>Site Installation Planning and Engineering</i> , 323-3001-200, in <i>Engineering, Configuration, and Ordering Guide</i> , Volume 1.						
8	Diagnose any other failed circuit packs.						
9	Type quit to return to the S/DMS Nodes screen.						
Diagnosing failed CDS circuit packs							
10	If the indicator of a line interface card (LIC), or copper-distribution shelf power converter (CDSP) circuit pack in a copper-distribution shelf (CDS) indicates trouble or failure, you should perform out-of-service (OOS) diagnostics on the failed circuit pack. Display the detailed equipment screen for the appropriate circuit pack as follows: If the circuit pack is a LIC, enter: eq lic ↵ dtllic <CDS #> <ID> ↵ If the circuit pack is a CDSP power card, enter the following: eq cdsp ↵ dtlcdsp <CDS #> <ID> ↵ where <table border="0" style="margin-left: 40px;"> <tr> <td style="padding-right: 20px;"><CDS #></td> <td>is copper-distribution shelf number: one of 1 to 7</td> </tr> <tr> <td style="padding-right: 20px;"><ID></td> <td>is equipment instance: one of a, b, c, or d for LICs, or a or b for CDSPs</td> </tr> </table>	<CDS #>	is copper-distribution shelf number: one of 1 to 7	<ID>	is equipment instance: one of a , b , c , or d for LICs, or a or b for CDSPs		
<CDS #>	is copper-distribution shelf number: one of 1 to 7						
<ID>	is equipment instance: one of a , b , c , or d for LICs, or a or b for CDSPs						

—continued—

Procedure 4-16 (continued)

Diagnosing failed circuit packs

Step	Action
11	If the primary LIC is not functioning, it must be put in an inactive state before placing it out of service for diagnostics. Enter the following: switch ↵ <i>Confirmation is requested.</i> y ↵ <i>The two LICs exchange primary and inactive status.</i>
12	At the prompt, enter the following command: chgstate oos ↵
13	At the prompt enter the following command: chgstate is ↵
14	Repeat steps 9 through 12 for all failed CDSPs and LICs.
15	If a metallic test access card (MTA) indicates failure, enter the following: eq mtac ↵ dtlmtac <CDS #> <ID> ↵ where <CDS #> is copper-distribution shelf number: one of 1 to 7 <ID> is equipment instance: one of a or b for MTAs
16	If the MTA to be diagnosed is still in service, enter the following: chgstate oos ↵ <i>Confirmation is requested. If you confirm the action, the State field value changes to OOS.</i> Note: On an MTA, out-of-service diagnostics are not automatically conducted during the transition from an OOS state to an IS state. It is necessary to use the “diagnose” command to invoke diagnostics.

—continued—

 Procedure 4-16 (continued)

Diagnosing failed circuit packs

- 17 Start diagnostics, by entering:

diagnose ↵

The system performs out-of-service diagnostics on the MTA.

Note: When diagnostics are requested on an MTA and the resources are busy, the diagnostic request is rejected. If diagnostics are requested on an MTA that is not out-of-service, the diagnostic request is rejected.

Diagnosis runs as a background task. The diagnosis is reported as an update to the state of the circuit pack, as follows:

OOS-Diagnose	diagnostics in progress
Test fail	diagnostics failed
IS	diagnostics passed

- 18 If failure is indicated, remove the defective MTA and insert a spare one.

The new MTA undergoes self-testing.

Note: The MTA remains out-of-service after being inserted and passing its self-tests.

If the new MTA fails or if more than one MTA fails diagnostics, there can be a higher order problem, such as loose cables, bent pins, TAC fault, or other condition. Refer to the document, *Alarm and Trouble Clearing Procedures*, 323-3001-543 in *Maintenance*, Volume 5A.

- 19 If the MTA passes diagnostics, place it back in service by entering:

chgstate is ↵

The MTA goes in service.

- 20 Type **quit** to return to the S/DMS Nodes screen.

—end—

Procedure 4-17

Verifying redundant common-equipment cards

Use this procedure to test the redundancy feature of the common-equipment cards equipped in your configuration.

The following cards are checked for redundancy operation:

- processor card (Proc), NT4K52
- transport interface card (TIC), NT4K56
- narrowband line interface card (NLIC), NT4K70 in copper-distribution shelves (CDSs). The access interface cards are automatically verified when the NLICs are verified.
- transport cross-connect cards (OC-3s), NT4K75

Both AICs are active at all times and carry the same traffic. This is true in each direction. Since no circuit pack switching occurs, a redundancy test of the AICs is not required.

Requirements

The following requirements must be met before starting this procedure:

- make sure that, for each type of card being tested, two cards are installed in the shelf and are in service (IS).
- make sure that the processor cards (Proc) have valid data and that their software is initialized.
- make sure that the AICs are installed and in service in order to test redundancy of the line interface cards (LICs) or the TICs.

Action

Step	Action
------	--------

Verifying redundancy of the processor (Proc) cards

- 1 From the S/DMS Nodes screen, display the Processor Equipment screen by entering the following command on the command line:

```
eq proc <equipment ID>↵
```

```
where
```

```
<equipment ID> a or b
```

The Processor Equipment screen is displayed.

—continued—

Procedure 4-17 (continued)

Verifying redundant common-equipment cards**Step Action**

2 Do one of the following:

If the Datasync State field shows	Then
Synced	go to step 3.
NotSynced	Enter datasync on and press Enter.

3 Do one of the following:

If the Routine exercise field shows	Then
on	go to step 4.
not on	Enter rexena on and press Enter. Routine exercising is enabled.

4 Enter the following command to verify that the processor cards can switch activity:

switch ↵**y ↵**

If card A was on standby, it becomes active, indicated by the green LED. Card B goes on standby, indicated when the green LED turns off. If card B was on standby, it becomes active (green LED on) and card A goes on standby (green LED off).

The switch command forces the termination of the user interface session and the system displays the NE Login Manager screen. This may take one to two minutes.

5 Log back in to the OPC using the login procedure in Appendix A.

Both cards, A and B, will show NotSynced in the Data Sync field. Wait for the cards to become synced before continuing with the next step in this procedure. It will take approximately five minutes for cards to become synced.

—continued—

4-54 Commissioning and provisioning the equipment

Procedure 4-17 (continued)

Verifying redundant common-equipment cards

Step Action

6 From the S/DMS Nodes screen, enter the following command:
eq proc <equipmentID> ↵

where

<equipment ID> **a** or **b**, whichever is on standby.

If circuit pack A was on standby, it becomes active, and circuit pack B becomes standby. If circuit pack B was on standby, it becomes active and circuit pack A becomes standby.

7 Do one of the following:

If the circuit pack was	Then
switched	repeat steps 1 through 6 to verify that switching works in the other direction in the related pair of circuit packs.
not switched	go to step 8.

8 Perform full diagnostics on the standby circuit pack by entering the following command:

eq proc <equipmentID> ↵

where

<equipment ID> **a** or **b**, whichever is on standby.

The system displays the Processor Equipment screen.

9 Enter the following command:

chgstate oos ↵

y ↵

The processor circuit pack goes out of service (OOS).

10 Enter the following command

chgstate is ↵

The Processor Equipment screen indicates that diagnostics are in progress. The state of the circuit pack changes from OOS to OOS-Diagnose and then to IS.

—continued—

Procedure 4-17 (continued)

Verifying redundant common-equipment cards

Step Action

11 Do one of the following:

If the circuit pack	Then
does not return to in service	<p>a. Replace the circuit pack.</p> <p>b. Wait for the circuit pack to initialize. As the circuit pack is initializing, the State field shows IS-initializing, and the DataSync State field shows NotSynced. The State field will change to IS, and the DataSync State field will change to Synced. Initializing takes 5–10 minutes.</p> <p>c. Repeat steps 2 through 7 to verify the replaced pack.</p> <p>d. Repeat steps 2 through 7 again to verify that switching works in the other direction in the related pair of circuit packs.</p>
returns to in service	repeat steps 2 through 7 to verify that switching works in the other direction in the related pair of circuit packs.

Verifying redundancy of the transport interface cards (TICs)

12 Display the TIC Equipment screen by typing the following command on the command line:

eq tic <equipment ID> ↵

where

<equipment ID> a or b

13 Enter the following command to verify that the TIC cards can switch activity:

switch ↵

y ↵

If circuit pack A was in IS-Secondary state, it switches to the IS-Primary state and circuit pack B switches to the IS-Secondary state. If circuit pack B was in IS-Secondary state, it switches to the IS-Primary state and circuit pack A switches to the IS-Secondary state.

—continued—

Procedure 4-17 (continued)

Verifying redundant common-equipment cards

Step Action

14 Do one of the following:

If the circuit pack was	Then
switched	repeat steps 12 through 13 to verify that switching works in the other direction in the related pair of circuit packs.
not switched	go to step 15.

15 Perform full diagnostics on the standby circuit pack by entering the following command:

eq tic <equipmentID>

where

<equipment ID> **a** or **b**, whichever is the secondary circuit pack.

The system displays the TIC Equipment screen.

16 Enter the following command:

chgstate oos force ↵

y ↵

The circuit pack goes out of service (OOS).

17 Enter the following command

chgstate is ↵

The TIC Equipment screen indicates that diagnostics are in progress. The state of the circuit pack changes from OOS to OOS-Diagnose and then to IS.

18 Do one of the following:

If a fault was	Then
detected	replace the circuit pack, and repeat steps 13 through 17 to verify the replaced circuit pack. Then repeat steps 13 through 17 again to verify that switching works in the other direction in the related pair of circuit packs.
not detected	repeat steps 13 through 17 to verify that switching works in the other direction in the related pair of circuit packs.

—continued—

Procedure 4-17 (continued)

Verifying redundant common-equipment cards**Step Action****Verifying redundancy of the timing and cross-connect circuit packs (OC-3s)**

19 On the command line, enter the following command:

```
eq oc3 <group ID>↵
```

where

<group ID> **g1 or g2**

The OC-3 Equipment screen is displayed.

20 On the command line of the OC-3 Equipment screen, enter the following command:

```
dtlprot ↵
```

The OC-3 Protection screen is displayed.

21 Determine which circuit pack is active by looking at the Traffic field at the far right of the screen. If the field shows "On," the circuit pack is active; if it shows "Off," the circuit is on standby.

22 Enter the following command:

```
manual op <group ID>↵
```

where

<group ID> **g1 or g2, whichever circuit pack is active**

```
y ↵
```

If circuit pack g1 was active, it switches to standby, and circuit pack g2 switches to active. If circuit pack g2 was active, it switches to standby, and circuit pack g1 switches to active.

23 Do one of the following:

If the circuit pack was	Then
switched	repeat step 22 to verify that switching works in the other direction in the related pair of circuit packs.
not switched	go to step 24.

—continued—

Procedure 4-17 (continued)

Verifying redundant common-equipment cards

- | Step | Action |
|------|--|
| 24 | Perform full diagnostics on the standby circuit pack by entering the following command:
eq oc3 <group ID> ↵

where

<group ID> g1 or g2 , whichever is on standby. |
| 25 | Enter the following command:
chgstate oos ↵
y ↵
<i>The circuit pack goes out of service (OOS).</i> |
| 26 | Enter the following command
chgstate is ↵
<i>The OC-3 Equipment screen indicates that diagnostics are in progress. The state of the circuit pack changes from OOS to OOS-Diagnose and then to IS.</i> |
| 27 | Do one of the following: |

If a fault was	Then
detected	replace the circuit pack, and repeat steps 20 to 23 to verify the replaced circuit pack. Then repeat steps 20 to 23 again to verify that switching works in the other direction in the related pair of circuit packs.
not detected	repeat steps 20 to 23 to verify that switching works in the other direction in the related pair of circuit packs.

Verifying redundancy of the DS1 circuit packs

- 28 On the command line, type the following command:
eq ds1 <group ID> ↵

where

 <group ID> **g1, g2, g3, g4, g5, or g6**

The DS1 Equipment screen is displayed.

—continued—

Procedure 4-17 (continued)

Verifying redundant common-equipment cards

Step	Action						
29	Enter the following command: dtlprot <i>The DS1 Protection screen is displayed.</i>						
30	Enter the following command: manual op <group ID> where <group ID> g1, g2, g3, g4, g5, or g6						
31	<p>y ↵</p> <p>Verify that protection switching occurred by doing one of the following:</p> <ul style="list-style-type: none"> • Look for an asterisk in the Manual column beside the DS1 circuit pack you switched. If an asterisk is present, switching occurred. • Do the following steps: <ul style="list-style-type: none"> i. Enter eq ds1 <g1, g2, g3, g4, g5, or g6>. The DS1 Equipment screen is displayed. ii. Look for the word "Protection" in the Status field beside the circuit pack you switched. If "Protection" is present, switching occurred. iii. Enter dtlprot to return to the DS1 Protection screen. 						
32	Enter the following command: manual re <group ID> where <group ID> g1, g2, g3, g4, g5, or g6 <i>The protection switch is released.</i>						
33	Do one of the following: <table border="1" style="margin-left: 40px;"> <thead> <tr> <th style="text-align: left;">If protection switching</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>occurred</td> <td>repeat steps 28 to 32 to verify protection switching on all DS1 circuit packs.</td> </tr> <tr> <td>did not occur</td> <td>go to step 34.</td> </tr> </tbody> </table>	If protection switching	Then	occurred	repeat steps 28 to 32 to verify protection switching on all DS1 circuit packs.	did not occur	go to step 34.
If protection switching	Then						
occurred	repeat steps 28 to 32 to verify protection switching on all DS1 circuit packs.						
did not occur	go to step 34.						
34	Enter the following command: listalms ↵ <i>A list of alarms is displayed.</i>						

—continued—

Procedure 4-17 (continued)

Verifying redundant common-equipment cards

- | Step | Action |
|------|---|
| 35 | Clear the alarms by following the procedures in <i>Alarm and Trouble Clearing Procedures</i> , 323-3001-543, in <i>Maintenance</i> , Volume 5A. Then go to step 36. |
| 36 | Repeat steps 28 to 35 for the failed circuit pack. |
| 37 | Repeat steps 28 to 36 to verify protection switching on each of the other DS1 circuit packs. |

Verifying redundancy of the line interface cards (LICs)

- 38 Display the detailed LIC Equipment screen for a LIC by entering the following command:

eq lic

The LIC Equipment screen is displayed.

- 39 Enter the following command to test switching for the a and b LICs in the appropriate shelf:

dtlic <CDS #><equipment ID>↵

where

<CDS #> is 1 to 7

<equipment ID> is a

The LIC Equipment screen is displayed.

- 40 Verify that the LICs can switch activity by entering:

switch ↵

y ↵

If card A was IS-Secondary it switches to IS-Primary, and card B switches to IS-Secondary. The Status field on the screen shows the change.

- 41 Do one of the following:

If failure	Then go to
occurred	step 50 to perform diagnostics on the LICs. Then go to step 42.
did not occur	step 42.

- 42 Verify that the a and b LICs can switch activity in the opposite direction by entering:

switch ↵

y ↵

If card A was IS-Secondary it switches to IS-Primary, and card B switches to IS-Secondary. The Status field on the screen shows the change.

—continued—

Procedure 4-17 (continued)

Verifying redundant common-equipment cards**Step Action**

43 Do one of the following:

If failure	Then go to
occurred	step 50 to perform diagnostics on the LICs. Then do step 44.
did not occur	step 44.

44 Enter the following command to test switching for the c and d LICs in the appropriate shelf:

dtllc <CDS #><equipment ID>.**where**

<CDS #> is 1 to 7

<equipment ID> is c

The LIC Equipment screen is displayed.

45 Verify that the LICs can switch activity by entering:

switch ↵**y** ↵*If card C was IS-Secondary it switches to IS-Primary, and card D switches to IS-Secondary. The Status field on the screen shows the change.*

46 Do one of the following:

If failure	Then go to
occurred	step 50 to perform diagnostics on the LICs. Then do step 47.
did not occur	step 47.

47 Verify that the c and d LICs can switch activity in the opposite direction by entering:

switch ↵**y** ↵*If card C was IS-Secondary it switches to IS-Primary, and card D switches to IS-Secondary. The Status field on the screen shows the change.*

48 Do one of the following:

If failure	Then go to
occurred	step 50 to perform diagnostics on the LICs. Then go step 49.
did not occur	step 49.

—continued—

Procedure 4-17 (continued)

Verifying redundant common-equipment cards

Step	Action
49	Repeat steps 39 to 48 to verify switching on any additional shelves.
50	Enter fwp . <i>The S/DMS Nodes screen is displayed.</i>
51	This procedure is complete. Go to the next procedure.
52	Perform full diagnostics on the LIC in the secondary state, by entering: eq lic; dtllic <CDS #><equipment ID> where <CDS #> is 1 to 7 <equipment ID> is a, b, c, or d <i>The LIC Equipment screen is displayed.</i> chgstate oos y <i>The LIC card is placed out of service.</i> chgstate is <i>The LIC Equipment screen indicates that diagnostics are in progress. When diagnostics are complete, the screen shows that the LIC card is back in-service.</i> If a fault is detected, replace the card.
53	Enter the following command to determine whether switching is working with the replaced circuit pack: switch y —end—

Procedure 4-18

Performing a manual NE database backup

Use this procedure to make a backup copy of the NE database that includes all provisioning data. If there is a failure, the backup copy can be used to restore the database. Shelf (or NE) database backups are stored on the hard drive of the OPC module. Two copies of the database are stored: current and backup1. When you perform a backup, the oldest copy is deleted.

Action

Step	Action
1	From the S/DMS Nodes screen, display the Shelf Equipment screen: eq sh ↵ <i>The Shelf Equipment screen appears.</i>
2	Back up the NE database: backupdb ↵ <i>The system prompts for confirmation.</i>
3	Confirm the backup command: y ↵ <i>The backup process can take up to five minutes to complete depending on system use.</i>
4	Confirm the successful completion of the backup by checking the logs buffer: logutil ↵ open FWDB ↵ <i>The FiberWorld database (FWDB) logs (or NE logs) show the status of the database backup and the elapsed time of the backup. An FWDB300-series log indicates if there is a problem with the backup.</i>
5	Log out of the NE by entering the following command: logout ↵
6	Close the Login Manager by pressing Ctrl_L and the letter W .
7	Select the exit command by pressing the space bar . <i>The system displays the User Session Manager main window.</i>

—end—

Procedure 4-19

Saving OPC data to tape

Use this procedure to save OPC data to a backup tape in the OPC tape drive. After you start the save operation, you cannot access any other OPC tool until the operation is canceled or completed. The save operation can take up to 40 minutes to complete depending on the amount of data on the disk.



CAUTION

Risk of damage to electrostatic-sensitive devices

Electrostatic-sensitive devices can be damaged by electrostatic discharge. Always ground yourself before handling the tape.

You cannot select individual files to be saved. The OPC Save and Restore tool automatically selects and saves the appropriate files.

When you open the tool, the “Save to tape” operation is selected by default.

Note: If the Save to tape button at the top of the main window is disabled, the local OPC is inactive. You cannot perform the following procedure.

The tool contains two action buttons:

- Display tape details
- Save OPC data to tape

It is recommended that you select both buttons in the order that they appear.

Requirements

To perform this procedure, you must meet the following requirements:

- insert the tape in the local OPC tape drive (use a blank tape, or an existing tape designated for commissioning data for this OPC).
- allow the tape to reach room temperature.

Note: Never insert a tape that has been stored at temperatures outside the range 10°C to 30°C (50°F to 90°F) until it has reached room temperature.

- obtain a user ID and password that allow you access to the OPC.
- connect a terminal to the OPC.

—continued—

Procedure 4-19 (continued)
Saving OPC data to tape

Action

- | Step | Action |
|------|--|
| 1 | <p>On the Available Tools menu, move the cursor to the Open the OPC Save and Restore tool by pressing the arrow keys, and press Ctrl_A.</p> <p><i>The OPC Save and Restore main window appears. The Save to tape button is selected and the buttons for saving OPC data to tape appear in the bottom half of the window.</i></p> |
| 2 | <p>Insert a tape into the OPC tape drive.</p> <div data-bbox="522 699 1417 869" style="border: 1px solid black; padding: 10px;"> <div style="display: flex; align-items: center;">  <div> <p>CAUTION
 Loss of data
 All existing data on the tape will be overwritten by this procedure.</p> </div> </div> </div> |
| 3 | <p>Select the Display tape details button by pressing Ctrl_A (or Keypad 0).</p> <p><i>The Tape Details dialog appears. It shows information about the tape.</i></p> |
| 4 | <p>Check the fields in the dialog to confirm that the correct tape is in the tape drive.</p> <p>If you inserted the incorrect tape, remove it and insert the correct one.</p> |
| 5 | <p>When the correct tape is in the tape drive, select the Done button in the Tape Details dialog by pressing Ctrl_A (or Keypad 0).</p> <p><i>The Tape Details dialog closes. In the OPC Save and Restore tool main window, the arrow moves to the Save OPC data to tape button.</i></p> |
| 6 | <p>Select the Save OPC data to tape button by pressing Ctrl_A (or Keypad 0).</p> <p><i>The Save confirmation dialog appears, prompting you to confirm your request.</i></p> |
| 7 | <p>Tab to the Yes button, then press Ctrl_A (or Keypad 0).</p> |

If the backup tape	Then
is blank	a progress dialog appears indicating that the save operation has been initiated. Go to step 8.
contains data that you are overwriting	a configuration dialog appears. Go to step 9.

—continued—

Procedure 4-19 (continued)
Saving OPC data to tape

Step	Action						
8	<p>Determine whether you want to continue or cancel the save operation.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If you want to</th> <th style="text-align: left;">Then go to</th> </tr> </thead> <tbody> <tr> <td>cancel the save operation</td> <td>step 10</td> </tr> <tr> <td>continue with the save operation</td> <td>step 12 when the completion dialog appears</td> </tr> </tbody> </table>	If you want to	Then go to	cancel the save operation	step 10	continue with the save operation	step 12 when the completion dialog appears
If you want to	Then go to						
cancel the save operation	step 10						
continue with the save operation	step 12 when the completion dialog appears						
9	<p>Determine whether the tape contains a data archive or a software load.</p> <p>If the tape contains a data archive, a dialog prompts you to confirm your request to overwrite the existing data on the tape.</p> <p>If the tape contains a software load, a dialog prompts you to confirm your request to overwrite the existing data on the tape.</p> <p>Tab to the OK button, then press Ctrl_A (or Keypad 0).</p> <p><i>A progress dialog appears, indicating the progress of the save operation.</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If you want to</th> <th style="text-align: left;">Then go to</th> </tr> </thead> <tbody> <tr> <td>cancel save operation</td> <td>step 10</td> </tr> <tr> <td>continue with save operation</td> <td>step 11 when the completion dialog appears</td> </tr> </tbody> </table>	If you want to	Then go to	cancel save operation	step 10	continue with save operation	step 11 when the completion dialog appears
If you want to	Then go to						
cancel save operation	step 10						
continue with save operation	step 11 when the completion dialog appears						
10	<p>To cancel the save operation, select the Cancel button by pressing Ctrl_A (or Keypad 0).</p> <p><i>A confirmation dialog appears, prompting you to confirm your request to cancel the save operation.</i></p>						
11	<p>Tab to the OK button, then press Ctrl_A (or Keypad 0).</p> <p><i>Another progress dialog appears that indicates the save operation is being canceled and the tape is being erased.</i></p> <p>When you cancel the save operation, a completion dialog appears.</p>						
12	<p>To exit the completion dialog, select the Done button by pressing Ctrl_A (or Keypad 0).</p> <p><i>The completion dialog closes and the main window appears.</i></p> <p>Go to step 13.</p>						
13	<p>Close the tool by doing the following steps:</p> <ol style="list-style-type: none"> a. Display the window menu by pressing Ctrl_L W (or Keypad 6). <i>The window menu appears.</i> b. Select the Exit command by pressing the space bar (or Keypad 0). <i>The tool closes, and the User Session Manager main window is displayed.</i> 						

—continued—

Procedure 4-19 (continued)
Saving OPC data to tape

Step	Action
14	Tab to the Logout button and press Ctrl_A . <i>A confirmation dialog box is displayed.</i>
15	Tab to the Logout button, and press Ctrl_A . <i>The OPC prompt is displayed.</i>
16	Type logout and press Enter . <i>The Login prompt is displayed.</i>

—end—

Procedure 4-20 Clearing alarms

The procedures for turning up the system are now completed. Some alarms may still be present in the system. If DS1 or timing alarms are present, ensure that the DS1s are terminated at both ends. Timing is derived from the incoming DS1s, and alarms will occur if the DS1s are not properly terminated.

To clear these alarms, use the procedures in *Alarm and Trouble Clearing Procedures*, 323-3001-543, in *Maintenance*, Volume 5A.

Also, refer to Appendix B for miscellaneous procedures that you may need to perform.

Other procedures that may be applicable to the SEAN AccessNode are in the following books:

- *Line Card Provisioning Procedures*, 323-3001-315, in *Operations, Maintenance, and Provisioning*, Volume 4B
- *Line Card Testing Procedures*, 323-3001-316, in *Operations, Maintenance, and Provisioning*, Volume 4B
- *Site Testing Procedures*, 323-3001-221, in *Commissioning and Testing*, Volume 3B
- *DS1 Feeder Testing Procedures*, 323-3001-225, in *Commissioning and Testing*, Volume 3B

—end—

Appendix A: Common commissioning procedures

This appendix contains procedures that are commonly used to commission a SEAN system.

Steps in commissioning the system

The following table lists the procedures in this chapter. These procedures guide you through common commissioning tasks.

Procedure	Page
5-1 Logging in to the OPC	5-2
5-2 Logging in to the network element	5-3

Procedure 5-1 Logging in to the OPC

Use this procedure to log in to the OPC.

Action

Step	Action
1	Connect the terminal to the OPC port on the left side of the common equipment shelf using a 9-pin connector. <i>A login prompt appears.</i>
2	Enter the User ID by entering: root
3	Enter the password by entering: root <i>The TERM = vt100 prompt is displayed.</i> Press the Return key (↵) to select the VT100 terminal mode. <i>The opc> prompt is displayed.</i>

Note: To access the User Session Manager at the OPC prompt, type in **opcui** and press Enter.

—end—

Procedure 5-2

Logging in to the network element

Use this procedure to log in to the network element.

Action

Step	Action
1	From the User Session Manager, tab to the Available tool menu.
2	Press the right bracket key to go to the end of the tools list.
3	Use the arrow keys to move to the NE Login Manager.
4	Open the NE Login Manager by pressing Ctrl_A . <i>The NE Login Manager screen is displayed.</i>
5	Enter the ID number of the network element that you wish to log on to, in the Network Element field.
6	Tab to the Login field and press Ctrl_A .
7	For the user name enter: admin
8	For the password enter: admin <i>A warning message appears.</i>
9	Press Enter to cancel the displayed warning message. <i>The S/DMS Nodes screen appears.</i>
10	Return to the current procedure for further steps.

—end—

Appendix B: Miscellaneous Procedures

In commissioning and provisioning a SEAN system, there are several miscellaneous procedures that you may need to do depending on the needs of your system. This chapter describes these procedures.

Procedures in this chapter

This chapter contains the following procedures:

Procedure	Page
6-1 Adding a backup OPC	6-2
6-2 Setting the target identifiers for a network element	6-5
6-3 Defining and enabling an X.25 configuration	6-7
6-4 Configuring a LAN port	6-13

Procedure 6-1

Adding a backup OPC

Use this procedure to add a backup OPC.

Action

-
- | Step | Action |
|------|--------|
|------|--------|
-
- 1 Log in to the primary OPC. For steps to log in to the OPC, see Procedure 5-1 on page 5-2.
 - 2 Log in to the NE Login Manager. For steps to log in to the NE Login Manager, see Procedure 5-2 on page 5-3.
 - 3 Perform a database backup for each network element within the Primary OPC span of control, using Procedure 4-18 on page 4-63 .
 - 4 Save the OPC data to tape using Procedure 4-19 on page 4-64.
 - 5 Insert the backup OPC into slot 5 of the backup OPC shelf and engage to the backplane.
 - 6 If it is not already connected, connect a CNET cable (NT7E44JC/JK) from the CNET OUT port on the left side of the primary OPC shelf to the CNET IN port of the backup OPC shelf. Ensure that the CNET termination connectors (NT7E5072) are inserted into the unused CNET ports on the left side of the primary and backup OPC shelves.
 - 7 Wait for the backup OPC to become active.
 - 8 Log out of the primary OPC.
 - 9 Move the VT100 cable from the primary OPC shelf to the backup OPC shelf.
 - 10 Log in to the backup OPC using Procedure 5-1 on page 5-2.
 - 11 Verify that the backup OPC is equipped with the same software load as the primary OPC, using Procedure 4-1 on page 4-3.

If the software is	Then
not installed	perform Procedure 4-3.
incorrect	perform Procedures 4-2 and 4-3.
correct	go to step 12.

- 12 Set the time zone of the backup OPC to match the primary OPC, using Procedure 4-12.
- 13 Log out of the backup OPC by tabbing to the Logout button and pressing Ctrl_A.

A confirmation message appears.

—continued—

 Procedure 6-1 (continued)
Adding a backup OPC

Step	Action
14	Tab to the Logout button again, and press Ctrl_A . <i>The OPC prompt appears.</i>
15	Enter logout
16	Move the VT100 cable from the backup OPC shelf to the primary OPC shelf.
17	Log in to the primary OPC using Procedure 5-1 on page 5-2.
18	At the OPC prompt, enter opcui <i>The User Session Manager window appears.</i>
19	On the primary OPC, open the Commissioning Manager tool. <i>The Commissioning Manager main window appears.</i>
20	Tab to the Edit System Data button, then press Ctrl_A (or Keypad 0). <i>The System Data Commissioning dialog appears, similar to the following figure.</i>
21	Tab to the Backup OPC serial number field, then type the serial number of the backup OPC. As you are looking at the faceplate, the serial number is at the bottom center of the motherboard, on the right side. OPC serial numbers have the following format: Anhhhhhhh where n is a positive integer, and h is a hexadecimal number. (Example: A1b3e01be) Note: If this serial number is not accepted, call your Nortel Networks technical support person.
22	To specify an alias for the backup OPC, tab to the Backup OPC alias field, then type a name up to 8 alphanumeric characters long. This step is optional, since the default alias is the OPC name followed by B for backup.
23	To complete the entry of system data, tab to the OK button, then press Ctrl_A (or Keypad 0). <i>If the information is correct, the name of the system being commissioned appears on the first line of the main window.</i> Note: If essential data is incorrect, an error dialog explaining the problem appears. The System Data Commissioning dialog remains displayed, and X marks the fields containing erroneous data.

—continued—

Procedure 6-1 (continued)
Adding a backup OPC

Step	Action
24	Tab to the list of network elements commissioned in this system in the Commissioning Manager main window, select the network element representing the backup OPC shelf, then press Ctrl_L (or Keypad Enter) to display the List item menu.
25	To select the Edit option in the List item menu, press the space bar (or Keypad 0). <i>The Network Element Commissioning Data dialog for shelf B appears, similar to the following figure.</i>
26	Tab to the field containing the three OPC radio buttons.
27	Using the arrow keys, move the cursor to the Backup OPC button, then press Ctrl_A (or Keypad 0). <i>A mark appears between the brackets beside Backup OPC.</i>
28	Tab to the OK button, then press Ctrl_A (or Keypad 0) to confirm the changes and close the Network Element Commissioning Data dialog.
29	Tab to the Transfer data to Backup OPC button and select it by pressing Ctrl_A (or Keypad 0). <i>A confirmation dialog appears, prompting you to confirm your request.</i>
30	Tab to the Yes button and select it by pressing Ctrl_A (or Keypad 0). <i>The confirmation dialog closes. Progress dialogs appear, indicating that the data on the OPC disk is being copied to the backup OPC. This operation can take up to 30 minutes to complete. When the transfer is complete, the following completion dialog appears.</i>
31	To remove the dialog, select the Done button by pressing Ctrl_A (or Keypad 0). <i>The dialog closes.</i>
32	To close the tool: a. Display the window menu by pressing Ctrl_L W (or Keypad 6). <i>The window menu appears.</i> b. Select the Exit command by pressing the space bar (or Keypad 0). <i>The tool closes.</i>
33	Repeat steps 3 and 4.
34	If you are using a LAN port, do Procedure 6-4 on page 6-13 for the backup OPC LAN port.

—end—

Procedure 6-2

Setting the target identifiers for a network element

Use this procedure to assign or modify the target identifiers (TIDs) for surveillance and provisioning interfaces.

Note: This procedure should only be used if the element is to be monitored by an X.25 link.

A TID defines a TL1 target identifier and fully supports Bellcore's format for naming network elements. The TID can be up to 20 characters. The following characters are allowed:

A–Z	hyphen (-)	period (.)
0–9	underscore (_)	

No spaces or other characters are allowed.

Note 1: Although the maximum size of each TID field is 20 characters, different operations systems (OS) support different TID sizes. You must therefore define the TID to support the OS that will be establishing connections to your system.

Note 2: This procedure uses the `tidmap` command. To display help for `tidmap`, enter:

```
tidmap.↓
```

Upgrading from previous releases

Before you start this procedure, read the following information about upgrading from previous releases:

- If the previous release did not support 20-character TIDs, the network element names are converted to TIDs. If a network element name was not defined or it contains unsupported characters, the network element ID becomes the default TID.

Note: The automatic TID assignment happens only when you run NMA or OPS. If you look at an OPC where neither NMA or OPS has been run, the TIDs are not defined even though the network element names and IDs are defined.

- If the previous release supported TIDs, the TIDs are preserved.

—continued—

Procedure 6-2 (continued)

Setting the target identifiers for a network element

Setup form

To enter the information required in this procedure, refer to the OPC Setup Form prepared by your system administrator.

Action

Step Action

- 1 Log in to the OPC at the root or admin level.
If you are logging in as an admin user, you must open the UNIX shell tool (in the OPC Admin section) when the User Session Manager dialog appears.
- 2 To display the current network element ID, network element name, and TID for each network element in the OPC span of control, enter:

tidmap.

A table similar to the following appears:

```
opc> tidmap
=====
88
5HDT
HDT06
opc> █
```

NE Name	NE ID
	88
HDT5	5
NE06	6

Note: Entries appear under TID or NE Name only if the TID or network element name has been defined and you have run NMA or OPS.

- 3 To add or change a TID, enter:

tidmap -a <network element ID> <TID>.

where

<network element ID> current value of the network element ID

<TID> new value for the TID

- 4 To verify the changes, enter:

tidmap.

- 5 Exit the UNIX shell by entering:

exit.

—end—

Procedure 6-3

Defining and enabling an X.25 configuration

Requirements

The following requirements must be met before performing this procedure:

- Obtain the root or admin user ID and password.
- Obtain the values of the basic parameters that define the X.25 service which is provided by your carrier. These parameters are described in *System Administration Procedures*, 323-3001-302, in *Operations, Administration, and Provisioning*, Volume 4A.
- Refer to the X.25 interface worksheet in *System Administration Procedures*, 323-3001-302, in *Operations, Administration, and Provisioning*, Volume 4A.

Action

Step	Action
------	--------

- | | |
|---|--------------------|
| 1 | Log in to the OPC. |
|---|--------------------|

If you are logging in as	Then
root	<i>The UNIX prompt, <code>opc></code>, appears.</i> Enter the following command: config_port
admin	<i>The User Session Manager appears.</i> Move to the Port Configuration tool, then press Ctrl_A .

The Port Configuration main menu appears.

- | | |
|---|---|
| 2 | To display OPC port configuration, enter: |
|---|---|

1 ↵

The port configurations appear. If ports 2 and 3 are available, these ports are listed.

- | | |
|---|---|
| 3 | Record the port configurations, then press Enter to return to the main menu. |
|---|---|

—continued—

Procedure 6-3 (continued)

Defining and enabling an X.25 configuration

Step Action

Configuring a service and X.25

4 Configure a service by entering:

2 ↵

The Configure a service menu appears.

1	Terminal
2	Printer
3	X.25
4	X.3 PAD
5	PPL
8	Return to Main menu
9	Exit

5 Configure X.25 by entering:

3 ↵

The Configure X.25 menu appears.

1	View X.25 parameters
2	Enter X.25 parameters
3	Enable X.25
8	Return to Configure menu
9	Exit

6 View X.25 parameters by entering:

1 ↵

X.25 configuration parameters appear.

—continued—

 Procedure 6-3 (continued)

Defining and enabling an X.25 configuration

Step Action

- 7** Compare the X.25 parameters values on your X.25 interface worksheet with the values on the screen, then press **Return** to return to the configure X.25 menu.

If the values are	Then go to
different	step 8
the same	step 23

- 8** Enter X.25 parameters by entering:

2 ↵

To properly configure X.25 you *must* know the following information:

- X.121 Address
- X.25 Programmatic Access Name
- Circuit Table Definition

Do you wish to begin configuring X.25 parameter values?
[y/n]:

Defining parameter values

- 9** To begin defining parameter values, enter:

y ↵

The following menu appears:

1	Global parameters
2	Level 2 parameters
3	Level 3 parameters
4	IP parameters
5	Display all parameters
6	Exit configuration program and create file
7	Abort configuration program; file will not be created.

- 10** To select global parameters, enter:

1 ↵

The global parameters appear. Default values are in square brackets following the parameter name. A menu containing two entries appears.

—continued—

Procedure 6-3 (continued)

Defining and enabling an X.25 configuration

Step	Action
11	To modify global parameters, enter: 1 ↵ <i>Each of the global parameters appears in turn. You can enter a value, or accept the default value by pressing Return.</i>
12	Respond to the prompts as required. To change the default value, enter a new value, then press Return . To accept the default value, press Return . For parameters that do not have a default, you must specify a value. <i>After you respond to all displayed parameters, the current values of all global parameters appear, and a menu containing two entries appears.</i>
13	To return to the menu shown in step 9, enter: 2 ↵
14	To select level 2 parameters, enter: 2 ↵ <i>The level 2 parameters appear. Default values are in square brackets following the parameter name. A menu containing two entries appears.</i>
15	To modify level 2 parameters, enter: 1 ↵ <i>Each of the level 2 parameters appears in turn. You can enter a value, or press Return to accept the default value.</i>
16	Respond to the prompts as required. To change the default value, enter a new value, then press Return . To accept the default value, press Return . For parameters that do not have a default, you must specify a value. <i>After you respond to all displayed parameters, the current values of all level 2 parameters are displayed, and a menu containing two entries appears.</i>
17	To return to the menu shown in step 9, enter: 2 ↵
18	To select level 3 parameters, enter: 3 ↵ <i>The level 3 parameters appear. Default values are in square brackets following the parameter name. A menu containing two entries appears.</i>
19	To modify level 3 parameters, enter: 1 ↵ <i>Each of the level 3 parameters appears in turn. You can enter a value, or press Return to accept the default value.</i>

—continued—

 Procedure 6-3 (continued)

Defining and enabling an X.25 configuration

Step	Action
20	Respond to the prompts as required. To change the default value, enter a new value, then press Return . To accept the default value, press Return . For parameters that do not have a default, you must specify a value. <i>After you respond to all displayed parameters, the current values of all level 3 parameters are displayed, and a menu containing two entries appears.</i>
21	To return to the menu shown in step 9, enter: 2 ↵
Creating the configuration file	
22	To create the configuration file, enter: 6 ↵ <i>The configuration file is created, the program terminates, and the Configure X.25 menu appears.</i>
23	Enable X.25 by entering: 3 ↵ <i>If your hardware configuration supports multiple OPC ports, a message prompting you to select a port appears.</i> Port Number (B, 1, 2, 3):
24	Select a port that is not already configured to enable X.25 on by entering: <port #> where <port #> B, 1, 2, or 3 <i>A confirmation message appears.</i> X.25 operation is being configured on port x. Do you wish to continue? (Yes/No):
25	Confirm by entering: y ↵ <i>The following message appears:</i> X.25 configuration successful on port x. Insert the appropriate X.25 cable on port x. <i>The Configure X.25 menu appears after a short period.</i>

—continued—

Procedure 6-3 (continued)

Defining and enabling an X.25 configuration

Step Action

Configuring other services or exiting

26 You have defined X.25 parameters and enabled X.25. You can exit or continue defining other services.

If you want to	Then
configure another service (X.3 PAD, PPL (electronic software delivery), terminal, or printer)	Enter: 8 ↵ <i>The Configure a service menu appears.</i> Repeat this procedure for that device.
exit	Enter: 9 ↵ <i>The program ends and the UNIX prompt, <code>opc></code>, appears.</i>

—end—

Procedure 6-4 Configuring a LAN port

For the OPC to recognize and support communications with a Nortel Network Manager or an X terminal using the Ethernet port on the OPC faceplate, the OPC Ethernet port must be initialized. Use this procedure to initialize the OPC Ethernet port so that it can communicate with a Network Manager or an X terminal.

Requirements

To complete this procedure, the following requirements must be met:

- make sure the OPC module is installed and started. Consult the workstation hardware documentation to determine the applicable cabling option.
- obtain the root password to access the OPC. This should be the OPC you want to initialize.
- obtain the following identifiers for initializing the OPC to be initialized:
 - the OPC node name (for example: OPCM001P)
 - the OPC Internet Protocol (IP) address (for example: 47.32.130.222)
 - the OPC IP netmask (for example: 255.255.255.0)
- read the command conventions in *OPC User Interface Description*, 323-3001-301, in *Operations, Administration, and Provisioning*, Volume 4A.

Note: Up to eight characters are allowed for the `SYSTEM_NAME` variable in the `/etc/rc` file. X terminal installation fails if this limit is exceeded.

Setup form

To enter the information required in this procedure, refer to the OPC Setup Form prepared by your system administrator.

—continued—

Procedure 6-4 (continued)
Configuring a LAN port

Action

Step	Action
-------------	---------------

1 Log in to the OPC by entering the root user ID and password at the login prompt on a character-mode terminal (CMT).

The UNIX shell `opc>` prompt is displayed.

Obtaining the OPC IP address

2 Enter the following to change the UNIX directory:

cd /etc

The UNIX shell `opc>` prompt is displayed.

3 Enter the following to find the internet address and official hostname of the OPC. The IP address and host name is used in later steps; therefore you may want to write down this information.

cat hosts

The following is displayed

```
# The form for each entry is:
# <internet address>    <official hostname>    <aliases>
#
# For example:
# 192.1.2.34      hpfcrm      loghost
#
# See the hosts(4) manual page for more information.
# Note:The entries cannot be preceded by a space.
#     The format described in this file is the correct format.
#     The original Berkeley manual page contains an error in
#     the format description.
#
# 127.1.1.1.      local host      loopback
# 47.32.130.222  batpp222
```

Note: The internet address and official hostname of the OPC appear on the last line of the above example.

—continued—

 Procedure 6-4 (continued)
Configuring a LAN port

Step	Action
------	--------

Starting the Ethernet administration script

- | | |
|----------|--|
| 4 | Start the Ethernet administration script by entering:
<code>/iws/lan/ether_admin ↵</code>
<i>The Ethernet port command list is displayed:</i> <ol style="list-style-type: none"> 1. Initialize and enable the Ethernet port 2. Ethernet port control (enable/disable) 3. X terminals configuration 4. Help 5. Quit Select one of the above commands [1-5]: |
| 5 | The Ethernet port must be initialized before it can be enabled or disabled. Select the Ethernet port initialization command by entering:
<code>1 ↵</code>
<i>A message describing the port initialization requirements is displayed, followed by a node name prompt:</i>
Enter the nodename:
Enter the node name assigned to the OPC.
<i>The node name can be up to a maximum of eight alphanumeric characters. An example of node name is "OPCM001P".</i>
Refer to <i>OPC User Interface Description, 323-3001-301, in Operations, Administration, and Provisioning, Volume 4A</i> , for information on obtaining the node name assigned to the OPC. |
| 6 | Press the Return key (↵).
<i>The nodename is checked. If the node name is not in the correct format an error message is displayed, followed by another node name prompt. If the node name prompt reappears, go to step 5.</i>
<i>Once you enter an acceptable node name, an IP address prompt is displayed:</i>
Enter the IP address: |
| 7 | Enter the unique IP address number assigned to the OPC as found in step 3.
<i>The IP address consists of four numbers, each separated by a period. Each number must be greater than or equal to 0, and less than or equal to 255. The IP address in the example is in step 3 and has the following:"</i>
<code>47.32.130.222</code> |
| 8 | Press the Return key (↵). |

—continued—

Procedure 6-4 (continued)
Configuring a LAN port

Step Action

The IP address is checked. If the IP address is not in the correct format, or it is reserved, or already assigned to another OPC, an error message is displayed, followed by another IP address prompt. If the IP address prompt re-appears, go to step 7.

Once you enter an acceptable IP address, the netmask prompt is displayed:

Enter the netmask [default 255.255.255.0]:

9 Enter the netmask number assigned to the OPC.

The default netmask value is 255.255.255.0. You can accept this value by pressing the Return key. If desired, you can enter a new netmask number using the same criteria as the IP address.

10 Press the Return key (↵).

The netmask is checked. If the netmask is not in the correct format, an error message is displayed followed by another netmask prompt. If the netmask prompt reappears, go to step 9.

Once you enter an acceptable netmask number, a summary of the Ethernet port initialization values appears, followed by a request to continue with the initialization process:

Initializing Ethernet to:

```
name: 'OPCM001P'
address: '47.32.130.222'
netmask: '255.255.255.0'
```

Do you wish to continue? [yes;no]:

11 Check the initialization values in the summary and verify that they are correct.

If you want to	Then go to
continue the Ethernet port initialization	step 12
discontinue the Ethernet port initialization	step 14

12 Continue the Ethernet port initialization process by entering:

yes ↵

The Ethernet port command list is displayed.

1. Initialize and enable the Ethernet port
2. Ethernet port control (enable/disable)
3. X terminals configuration
4. Help
5. Quit

Select one of the above commands [1-5]:

—continued—

Procedure 6-4 (continued)
Configuring a LAN port

Step	Action
13	Reboot the OPC. If you do not know how to do this, refer to <i>OPC User Interface Description</i> , 323-3001-301, in <i>Operations, Administration, and Provisioning</i> , Volume 4A. <i>The OPC is now ready to communicate with the Network Manager or X terminal.</i>
14	Discontinue the Ethernet port initialization process by entering: no ↵ <i>The Ethernet port command list appears.</i> If you want to reexecute the Ethernet port initialization process, go to step 3.
15	Quit the Ethernet administration script by entering: 5 ↵ <i>The UNIX shell <code>opc></code> prompt is displayed.</i>

—end—

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