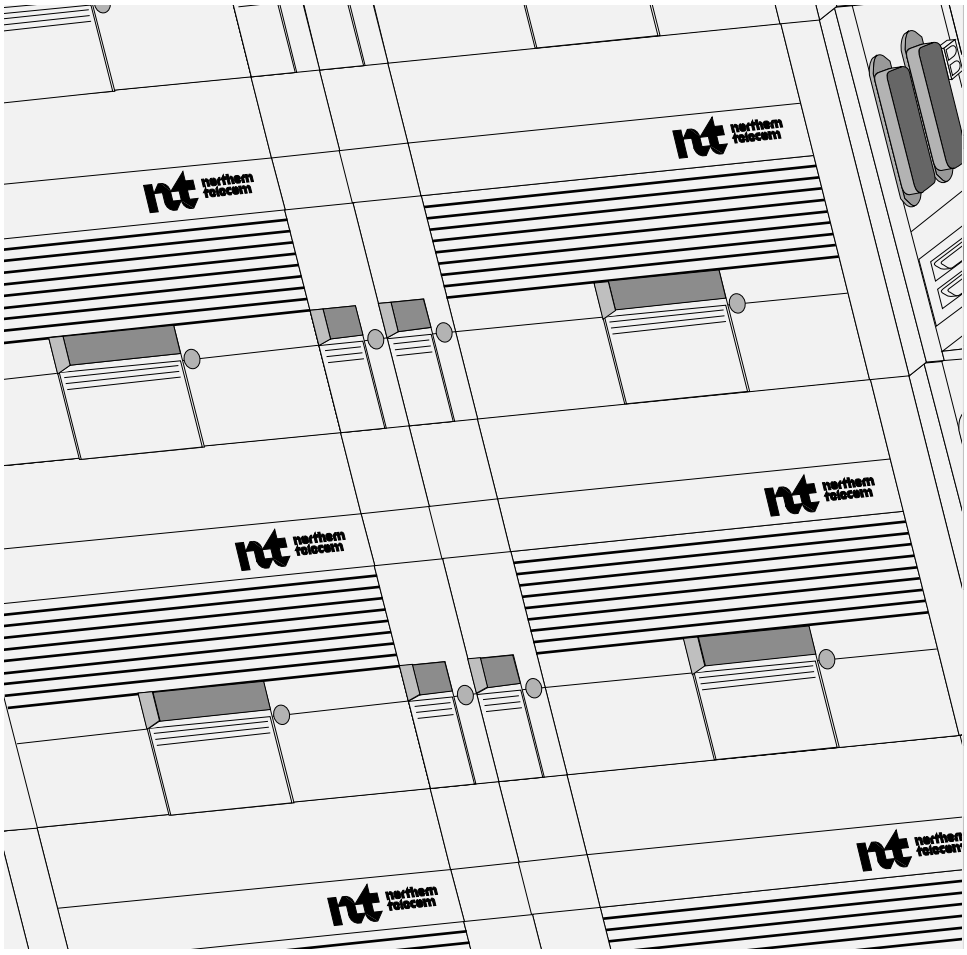
NT4K00LA **323-3001-310**

SONET Products

AccessNode

Provisioning and Operations Procedures

Issue 2.0 June 1999



NORTEL NETWORKS™

SONET Products

AccessNode

Provisioning and Operations Procedures

Document number: 323-3001-310
Document release: Issue 2.0
Date: June 1999

Printed in Canada

Publication history

June 1999

AN17 Standard release of the document, Issue 2.0. This includes adding the following:

- *UE9000 Voice OAM&P Guide* references
- ATIC/TR08
- Channel Route Rollover
- STS-VT Edits

February 1999

AN16 Standard release of the document, Issue 1.0. This includes adding the following:

- ANX line expansion
- OPC alarms
- performance monitoring
- FST removal

June 1998

AN15 Standard 1.01 release of the document. Updated chapters 6, 7, 8, 12, 15, and 16 for the DMS Access feature. Updated chapter 12 for the STS-1/OC3 to TIC feature.

September 1997

Standard AN14 release of the document.

June 1997

Standard AN12.21 release of the document.

July 1996

Standard AN12 release of the document.

November 1995

Standard AN11 release of the document. Addition of STS-1 chapter.

April 1995

Standard AN10 release of the document.

December 1994

Standard AN08 release of the document.

November 1994

Reissue of AN07 standard.

April 1994

Standard AN07 release of the document.

May 1993

Standard FWP06 release of the document.

Contents

About this document

This document contains procedures for personnel responsible for the following provisioning and operating tasks:

- accessing a user interface, either the network element user interface (NEUI) or the operations controller (OPC) user interface
- manually provisioning and deprovisioning equipment
- manually provisioning and deprovisioning facilities
- manually provisioning external synchronization (optional)
- provisioning multiple host switches
- provisioning DS1 assignments
- displaying equipment and facility screens
- operating and releasing protection switching
- changing the operating state of a circuit pack
- performing diagnostic tests and setting loopback

You can use a graphical terminal for the OPC procedures in this document (even though the procedures are based on a character-mode terminal). If you use a graphical terminal, you must substitute the graphical equivalent of the character-mode keystrokes used in the procedures. See the Graphical Reference card that is provided in the sleeve of this volume.

Detailed information on commands, parameters, and response conventions used in NEUI procedures is available in *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A. The same information is available for OPC procedures in *OPC User Interface Description*, 323-3001-301, in *Operations, Administration, and Provisioning*, Volume 4A.

When to use this document

This document is written for the latest release of AccessNode products.

References in this document

This document refers to the following documents in the AccessNode Nortel Networks Publication library.

Engineering, Configuration, and Ordering Guide, Volume 1

- *Mapper Layouts Planning Guide,* 323-3001-154

Description, Volume 2

- *Configuration and Equipment,* 323-3001-100

Commissioning and Testing Volume, 3A

- *Setting Up Your System: VTBM*, 323-3001-230
- *Setting Up Your System: DFA*, 323-3001-235
- *Setting Up Your System: Point-to-Point*, 323-3001-240
- *Setting Up Your System: Single-Ended,* 323-3001-245

Commissioning and Testing, Volume 3B

- *Optional Commissioning Procedures*, 323-3001-220
- *Site Testing Procedures,* 323-3001-221

Operations, Administration, and Provisioning, Volume 4A

- *Network Element User Interface Description,* 323-3001-300
- *OPC User Interface Description*, 323-3001-301
- *System Administration Procedures*, 323-3001-302

Operations, Administration, and Provisioning, Volume 4B

- *Line Card Provisioning Procedures,* 323-3001-315
- *Line Card Testing Procedures*, 323-3001-316

Operations, Administration, and Provisioning, Volume 4C

- *System Expansion Procedures,* 323-3001-324

Maintenance, Volume 5A

- *Alarm and Trouble Clearing Procedures,* 323-3001-543

Maintenance, Volume 5C

- *Routine Maintenance Procedures*, 323-3001-546
- *Module Replacement Procedures,* 323-3001-547

In addition, this document refers to the following documents.

- *DMS-100 Subscriber Carrier Module-100 Access Translations Guide*, 297-2741-350
- *DMS-100 XPM Translations Reference Manual*, 297-8321-815
- *Nodal Connection Manager Quick Reference Guide*

Overview of provisioning

This chapter describes how to provision network elements (NEs) in the following AccessNode systems:

- fiber-fed point-to-point
- fiber-fed ring
- DS1-fed
- single-ended

Before starting the provisioning process

Ensure that you have made the following preparations before beginning:

- you have the necessary equipment, as listed in “Equipment requirements.”
- you know an operations controller (OPC) userID and password that allows you to access the OPC Provisioning Manager tool.
- you know the NE userID and password for the admin security level, for each network element to be provisioned (the default userID is “admin” with password “admin”).
- you have read the provisioning flowcharts and detailed task lists that are included in this chapter.

Equipment requirements

Provisioning requires a VT100-compatible terminal or laptop computer with a VT100 emulation package. For details on the cable requirements and pin assignments for this equipment, see *Commissioning and Testing,* Volume 3. For details on connecting a terminal or laptop computer to an operations controller (OPC) or network element, see the appropriate procedures in *OPC User Interface Description,* 323-3001-301, in *Operations, Administration, and Provisioning,* Volume 4A.

How to use this chapter

The flowchart and task lists on the following pages outline the provisioning process. Use them to determine the procedures required to provision your system.

Provisioning must be done in the order specified in each task list.

Look up the task you want to perform, then go to specified procedure.

The individual chapters of this manual include task lists of occasional tasks. Occasional tasks are provisioning tasks that you would not normally perform during initial provisioning.

Note 1: You can use the operations controller (OPC) user interface to access the network element user interface (NEUI), which allows you to perform NEUI procedures through the OPC user interface.

Note 2: Remote digital terminal (RDT) as used on the DMS-100 maintenance administration position (MAP) is a generic term. A specific type of RDT is the AccessNode remote fiber terminal (RFT). In an integrated AccessNode configuration, the term RDT always means remote fiber terminal (RFT).

Task lists for provisioning an AccessNode system

Tables 1-1 and 1-2 show the task lists for provisioning the following types of systems:

- fiber-fed point-to-point system (Table 1-1)
- fiber-fed ring system (Table 1-2)
- DS1-fed system (Table 1-2)
- single-ended system (Table 1-2)

Table 1-1
Task list for provisioning a fiber-fed point-to-point system

Procedure	Task	See	Type of configuration		
			Universal	Integrated	Combined
Provisioning common equipment					
5-2	Enabling or disabling equipment alarm points	page 5-11	x	x	x
5-3	Provisioning processor parameters	page 5-15	x	x	x
5-4	Setting the bay frame location ID	page 5-16	x	x	x
5-5 and 5-6	Provisioning OC-3 or OC-12 equipment performance monitoring thresholds	pages 5-17 and 5-21	x	x	x
5-7	Setting the TBM shelf position number	page 5-24		x	
Provisioning protection switching					
	Provisioning DS1/DS3 protection parameters	323-3001-311	x	x	x
	Provisioning OC-3/OC-12 protection parameters	323-3001-311	x	x	x
	Scheduling a shelf event or exercise	323-3001-311	x	x	x
Facility provisioning					
6-1	Adding a facility	page 6-3	x	x	x
6-2	Enabling and disabling DS1 and STS-1 facility alarms	page 6-6	x	x	x

—continued—

Table 1-1 (continued)
Task list for provisioning a fiber-fed point-to-point system

Procedure	Task	See	Type of configuration		
			Universal	Integrated	Combined
6-3, 6-4, and 6-5	Enabling and disabling DS3, OC-3, OC-12 or COMM facility alarms	pages 6-9, 6-12, and 6-14	x	x	x
6-6	Enabling and disabling TIC/STS-1 and VT1.5 alarms	page 6-16	x	x	x
6-7 and 6-8	Provisioning DS1 or DS3 facility parameters	pages 6-21 and 6-27	x	x	x
6-9, 6-10, and 6-11	Provisioning OMC DS1, OC-3, OC-12, or COMM facility parameters	pages 6-31, 6-35, and 6-38	x	x	x
6-12 and 6-13	Provisioning DS1, DS3, OC-3, or OC-12 facility performance monitoring thresholds	pages 6-41 and 6-47	x	x	x
6-15	Provisioning the SDCC connections	page 6-57	x	x	x
Selecting the PSTN load for Hong Kong					
9-3	Selecting the Hong Kong PSTN software load	page 9-4	x	x	x
Synchronization					
4-2	Enabling and disabling timing reference alarms	page 4-10	x	x	x
Setting up connections at the OPC					
12-2	Finding available channels and tributaries	page 12-19	x	x	x
12-3	Editing an STS connection	page 12-24	x	x	x
12-8	Modifying the list of connections	page 12-41	x	x	x
Provisioning line card services					
	Bulk-provisioning POTs service on a universal system	323-3001-315	x		x

—continued—

Table 1-1 (continued)
Task list for provisioning a fiber-fed point-to-point system

Procedure	Task	See	Type of configuration		
			Universal	Integrated	Combined
	Bulk-provisioning services on a TR-08 shelf	323-3001-315		x	x
	Adding a new universal (UDLC) circuit	323-3001-315	x		x
	Adding a DS1 tandem or TR-08 circuit	323-3001-315	x	x	x
	Adding a DS1 tandem VT circuit or TR-08 VT circuit	323-3001-315	x	x	x
	Modifying circuit details	323-3001-315	x		x
	Deleting a circuit	323-3001-315	x	x	x
Modifying log and alarm settings					
	Setting service-level logs and alarms	323-3001-315	x	x	x
	Setting line-card-level logs and alarms	323-3001-315	x	x	x
	Enabling and disabling line card alarms	323-3001-315	x	x	x
	Enabling and disabling ISDN alarms	323-3001-315		x	x
Managing NE and OPC databases					
	Performing a manual NE database backup	323-3001-220	x	x	x
	Saving OPC data to tape	323-3001-304	x	x	x
	Scheduling an OPC backup	323-3001-304	x	x	x
—end—					

Table 1-2
Task list for provisioning a fiber-fed ring, DS1-fed or single-ended system

Procedure	Task	See	Type of system		
			Fiber-fed Ring	DS-1 fed	Single-ended
Provisioning common equipment					
5-2	Enabling or disabling equipment alarm points	page 5-11	x	x	x
5-3	Provisioning processor parameters	page 5-15	x	x	x
5-4	Setting the bay frame location ID	page 5-16	x	x	x
5-5 and 5-6	Provisioning OC-3/OC-12 equipment performance monitoring thresholds	pages 5-17 and 5-21	x		x
5-7	Setting the TBM shelf position number	page 5-24	x		
Provisioning protection switching					
	Provisioning DS1/DS3 protection parameters	323-3001-311	x	x	x
	Provisioning OC-3/OC-12 protection parameters	323-3001-311	x		x
	Provisioning the OC-12 VTBM wait-to-restore period	323-3001-311	x		
	Scheduling a shelf event or exercise	323-3001-311	x	x	x
	Scheduling the exerciser for all ADMs in a ring	323-3001-311	x		
	Scheduling the exerciser for a single ADM	323-3001-311	x		
Facility provisioning					
6-1	Adding a facility to the system	page 6-3	x	x	x
6-2	Enabling and disabling DS1 and STS-1 facility alarms	page 6-6	x	x	x

—continued—

Table 1-2 (continued)
Task list for provisioning a fiber-fed ring, DS1-fed or single-ended system

Procedure	Task	See	Type of system		
			Fiber-fed Ring	DS-1 fed	Single-ended
6-3, 6-4, and 6-5	Enabling or disabling DS3, STS-1, OC-3, OC-12 or COMM facility alarms	pages 6-9, 6-12, and 6-14	x	x	x
6-6	Enabling and disabling TIC/STS-1 and VT1.5 alarms	page 6-16	x	x	x
6-7 and 6-8	Provisioning DS1, DS3, or STS-1 facility parameters	pages 6-21 and 6-27	x	x (STS-1 does not apply)	x (STS-1 does not apply)
6-9 and 6-10	Provisioning OC-3 or OC-12 facility parameters	pages 6-31 and 6-35	x	x	x
6-12, 6-13, and 6-14	Provisioning facility performance thresholds	pages 6-41, 6-47, and 6-52	x	x	x
6-15	Provisioning the SDCC connections	page 6-57	x		x
Selecting the PSTN load for Hong Kong					
9-3	Selecting the Hong Kong PSTN software load	page 9-4	x	x	x
Synchronization					
4-2	Enabling and disabling timing reference alarms	page 4-10	x		
4-4	Enabling and disabling ESI facility alarm points	page 4-13		x	

—continued—

Table 1-2 (continued)
Task list for provisioning a fiber-fed ring, DS1-fed or single-ended system

Procedure	Task	See	Type of system		
			Fiber-fed Ring	DS-1 fed	Single-ended
Managing OC-12 rings					
14-3	Scheduling an audit of configuration data	page 14-9	x		
3-2	Editing the APS ID for a ring ADM	page 3-6	x		
14-5	Sending configuration data to a ring ADM	page 14-14	x		
3-3	Editing the ring name	page 3-9	x		
Setting up connections at the OPC					
12-1	Provisioning default connections on single-ended systems	page 12-17		x	x
12-2	Finding available channels and tributaries	page 12-19	x		
12-3	Editing an STS connection	page 12-24	x		
12-8	Modifying the list of connections	page 12-41	x		
12-9	Scheduling an audit of connection data	page 12-47	x		

—continued—

Table 1-2 (continued)
Task list for provisioning a fiber-fed ring, DS1-fed or single-ended system

Procedure	Task	See	Type of system		
			Fiber-fed Ring	DS-1 fed	Single-ended
Provisioning line card services					
	Bulk-provisioning services on a TR-08 shelf	323-3001-315	x	x	x
	Adding a new universal (UDLC) circuit	323-3001-315	x		x
	Adding a DS1 tandem or TR-08 circuit	323-3001-315	x	x	x
	Adding a DS1 tandem VT circuit or TR-0-8 VT circuit	323-3001-315	x		x
	Deleting a circuit	323-3001-315	x	x	x
Modifying log and alarm settings					
	Setting service-level logs and alarms	323-3001-315	x	x	x
	Setting line-card-level logs and alarms	323-3001-315	x	x	x
	Enabling and disabling line card alarms	323-3001-315	x	x	x
	Enabling and disabling ISDN alarms	323-3001-315		x	x
Managing NE and OPC databases					
	Performing a manual NE database backup	323-3001-220	x	x	x
	Saving OPC data to tape	323-3001-304			
	Scheduling an OPC backup	323-3001-304			
—end—					

Setting up point-to-point configurations

This chapter contains procedures for managing point-to-point configurations using the Configuration Manager tool. See Chapter 3, "Setting up VTBM ring configurations," for procedures on managing ring configurations.

The Configuration Manager tool is in the Network Admin toolset and the System Lineup and Test (SLAT) toolset. The purpose of the Configuration Manager tool is to create and modify configuration information. This tool allows you to create, delete, edit, and display point-to-point and ring configurations. All configuration data created using this tool are stored in the operations controller (OPC) database and are used by the OPC for provisioning synchronous transport signal (STS) connections.

The network elements in each configuration must be under the current OPC span of control. They can be either a fiber central office terminal (FCOT) or a remote fiber terminal (RFT).

The Configuration Manager also supplies an overview of all configurations. It lists all point-to-point and ring configurations, and displays the name, type, topology, and rate for all network elements in each configuration. For a brief description of this tool, see OPC *User Interface Description*, 323-3001-301, in *Operations, Administration, and Provisioning*, Volume 4A.

Restrictions and limitations

You can open only one instance of the Configuration Manager at a time.

When the Configuration Manager is open, you cannot open the Connection Manager. Similarly, you cannot open the Configuration Manager when the Connection Manager is open.

Chapter task list

It is unlikely that you will use the Configuration Manager by itself. To manage a point-to-point configuration, use the Configuration Manager in combination with installation procedures, procedures performed at the network element user interface, and procedures performed using other OPC tools. For more information, see *Commissioning and Testing*, Volume 3.

This chapter includes the following tasks:

Procedure	Task	See
2-1	Sorting and displaying a point-to-point configuration	page 2-3
2-2	Editing a point-to-point configuration	page 2-5
2-3	Deleting a point-to-point configuration	page 2-8

Note: If you cannot successfully complete these procedures, contact your next level of support.

Requirements for procedures

Before performing these procedures, you must do the following:

- Have a userID and password that allow you to access to the Configuration Manager tool.
- Read the tool restrictions and limitations at the beginning of this chapter.
- Read the command conventions for the type of interface you are using, either character-mode terminal (CMT) or graphical, in OPC *User Interface Description,* 323-3001-301, in *Operations, Administration, and Provisioning*, Volume 4A.

Procedure 2-1
Sorting and displaying point-to-point configurations

Use this procedure to sort and display configuration data for existing point-to-point configurations.

Action

Step	Action
1	Log in to the operations controller (OPC) and open the Configuration Manager tool. If you do not know how to do this, see *OPC User Interface Description*, 323-3001-301, in *Operations, Administration, and Provisioning*, Volume 3A. *The Configuration Manager main window appears.*
2	To display the list menu, press **Ctrl_L /** (or Keypad **3**). *The list menu appears.*
3	Move to the Sort command. *A cascade menu appears, displaying the options: By Name, By Topology, or By Rate.*
4	Using the arrow keys, move to the required option, then press **Space** (or Keypad **0**). *The Configuration Manager main window appears. The Configuration list is sorted according to the option selected.*
5	In the Configuration list, move to the configuration you want to display, then press **Ctrl_L** (or Keypad **Enter**) to display the list item menu. *The list item menu appears.*
6	Move to the Edit/Delete Configuration command, then press **Ctrl_A** (or Keypad **0**). *The Configuration Manager: Point-to-Point window appears in the edit mode.*
7	To close the Configuration Manager: Point-to-Point window, press **Ctrl_L W** (or Keypad **6**) to display the window menu. *The window menu appears.*
8	To select the Exit command, press **Space** (or Keypad **0**). *The Configuration Manager main window appears.*

—continued—

Procedure 2-1 (continued)
Sorting and displaying point-to-point configurations

Step	Action
9	To close the tool, complete the instructions in the following table:

To	Press
display the window menu	**Ctrl_L W** (or Keypad **6**) *The window menu appears.*
exit	**Space** (or Keypad **0**) *The tool closes.*

—end—

Procedure 2-2
Editing a point-to-point configuration

Use this procedure to perform the following edits on an existing configuration:

- change the transmission rate
- change the alarm management level from network element (NE) level to system level or vice versa
- change the configuration name

Action

Step	Action
1	Log in to the operations controller (OPC) and open the Configuration Manager tool. If you do not know how to do this, see *OPC User Interface Description*, 323-3001-301, in *Operations, Administration, and Provisioning*, Volume 4A. *The Configuration Manager main window appears.*
2	In the Configuration list, move to the configuration you want to edit, then press **Ctrl_L** (or Keypad **Enter**) to display the list item menu. *The list item menu appears.*
3	Move to the Edit/Delete Configuration command, then press **Space** (or Keypad **0**). *The Configuration Manager: Point-to-Point window appears in the edit mode.*

—continued—

Procedure 2-2 (continued)
Editing a point-to-point configuration

Step	Action
4	Determine the task you want to perform.

If you want to	Then complete the following
change the transmission rate from OC-3 to OC-12	***Note:*** The rate can be changed only from OC-3 to OC-12. **a.** Tab to the Rate buttons. **b.** Using the arrow keys, move to OC-12 rate, then press **Ctrl_A** (or Keypad **0**). *The OC-3 rate is deselected. OC-12 rate is selected.* **c.** Tab to the Save Configuration button, then press **Ctrl_A** (or Keypad **0**). *A message appears stating that the rate has been changed and asking you to confirm the operation.* **d.** Tab to the Yes button, then press **Ctrl_A** (or Keypad **0**). *A message appears stating that the operation was successful.* **e.** Tab to the OK button, then press **Ctrl_A** (or Keypad **0**).
change the alarm management level	**a.** Tab to the Alarm Management field. Use the arrow keys to point to the required alarm level button (either NE-Level Alarm or System-Level Alarm), then press **Ctrl_A** (or Keypad **0**) **b.** Tab to the Set Alarm Level button, then press **Ctrl_A** (or Keypad **0**). *After the alarming level has changed, the Configuration Manager: Point-to-Point window appears in the edit mode.* **c.** Tab to the Save Configuration button, then press **Ctrl_A** (or Keypad **0**). *A dialog appears indicating the data has been saved.* **d.** To close the dialog, press **Ctrl_A** (or Keypad **0**) to select the OK button.
	—continued—

—continued—

Procedure 2-2 (continued)
Editing a point-to-point configuration

Step **Action**

If you want to	Then complete the following
change the configuration name	Tab to the Name field and type in a new configuration name.
close the tool	Go to step 5.

—end—

5 To close the Configuration Manager: Point-to-Point window, press **Ctrl_L W** (or Keypad **6**) to display the window menu.

The window menu appears.

6 To select the Exit command, press **Space** (or Keypad **0**).

A confirmation dialog appears.

7 To transfer the new configuration data to the backup OPC, tab to the Yes button, then press **Ctrl_A** (or Keypad **0**).

A confirmation dialog appears.

8 Tab to the Yes button, then press **Ctrl_A** (or Keypad **0**). If you want to cancel your request, select the No button.

The Configuration Manager main window appears with the edited configuration listed in the configuration list.

Note: You may receive a warning dialog that the backup OPC is unavailable and you should to try again later. The updated configuration data is saved to the primary OPC and listed in the configuration list.

9 To close the tool, complete the instructions in the following table:

To	Press
display the window menu	**Ctrl_L W** (or Keypad **6**) *The window menu appears.*
exit	**Space** (or Keypad **0**) *The tool closes.*

—end—

Procedure 2-3
Deleting a point-to-point configuration

Use this procedure to delete a point-to-point configuration from the configuration data.

The following procedure describes how to do the following tasks:

- select the configuration to be deleted
- display the configuration data in edit mode (in the Configuration Manager: Point-to-Point window)
- delete the configuration
- update the primary and backup operations controller (OPC) databases

Action

Step	Action
1	Log in to the OPC and open the Configuration Manager tool. If you do not know how to do this, see *OPC User Interface Description*, 323-3001-301, in *Operations, Administration, and Provisioning*, Volume 4A. *The Configuration Manager main window appears.*
2	In the Configuration list, move to the configuration you want to delete, then press **Ctrl_L** (or Keypad **Enter**). *The list item menu appears.*
3	Move to the Edit/Delete configuration command, then press **Ctrl_A** (or Keypad **0**). *The Configuration Manager: Point-to-Point window appears in the edit mode.*
4	To display the Options menu, press **Ctrl_L T** (or Keypad **,**). *The Options menu appears.*
5	Move to the Delete configuration command, then press **Space** (or Keypad **0**). *A confirmation dialog appears.*
6	Tab to the Yes button, then press **Ctrl_A** (or Keypad **0**). *Data for the configuration are cleared from all fields in the window and the updated configuration data is saved on the primary OPC. The Configuration Manager: Point-to-Point window appears in the Add mode.*
7	To close the Configuration Manager: Point-to-Point window, press **Ctrl_L W** (or Keypad **6**) to display the window menu.

—continued—

Procedure 2-3 (continued)
Deleting a point-to-point configuration

Step	Action
	The window menu appears.
8	To select the Exit command, press **Space** (or Keypad **0**). *A confirmation dialog appears.*
9	To transfer the new configuration data to the backup OPC, tab to the Yes button, then press **Ctrl_A** (or Keypad **0**). If you do not want to transfer the configuration data to the backup OPC, select the **No** button. *A confirmation dialog appears.*
10	Tab to the Yes button, then press **Ctrl_A** (or Keypad **0**). *The Configuration Manager main window appears, with the configuration removed from the configuration list.* ***Note:*** You may receive a warning dialog that the backup OPC is unavailable and you should try again later. The updated configuration data is saved to the primary OPC and listed in the configuration list.
11	To close the tool, complete the instructions in the following table:

To	Press
display the window menu	**Ctrl_L W** (or Keypad **6**) *The window menu appears.*
exit	**Space** (or Keypad **0**) *The tool closes.*

—end—

Setting up VTBM ring configurations

This chapter contains procedures for setting up virtual tributary bandwidth manager (VTBM) rings using the Configuration Manager tool. The tool is in the operations controller (OPC) Network Admin toolset and the System Lineup and Test (SLAT) toolset. You can use the Configuration Manager tool to create and modify ring configuration data for 2-fiber, bidirectional line-switched rings (BLSRs).

> ***Note:*** See Chapter 2, "Setting up point-to-point configurations," for procedures on setting up point-to-point configurations.

This chapter does not cover all Configuration Manager procedures. See Table 3-1 on page 3-2 for the full set of procedures and the necessary documents for each task.

For a brief description of the Configuration Manager tool, see *OPC User Interface Description*, 323-3001-301, in *Operations, Administration, and Provisioning*, Volume 4A.

The Configuration Manager is most likely to be used when creating or upgrading a ring configuration. The main window of the tool lists buttons in the order that you must select them to add an add-drop multiplexer (ADM) to a ring. After you select a button and complete the action, the arrow to the left of the button moves down, indicating the next recommended button.

After creating a ring configuration using the Configuration Manager, you can display the configuration data, audit the configuration data, edit the automatic protection-switching (APS) IDs.

Restrictions and limitations

The Configuration Manager confirms that the circuit pack group (CPG) connections you enter form a valid, closed ring. The tool does not show the current state of the CPG facilities when the ring configuration is created. Ensure that the appropriate equipment is installed. The facilities are provisioned using the network element user interface.

You can open only one instance of the Configuration Manager tool at a time.

Configuration changes cannot be made when the backup OPC is active. Although you can open the Configuration Manager, you cannot change the configuration data until the primary OPC becomes active again.

When the Configuration Manager tool is open, you cannot open the Connection Manager tool. This restriction ensures that connection data is not changed while the configuration is being changed. Similarly, you cannot open the Configuration Manager tool when the Connection Manager tool is open.

Chapter task list

You rarely use the Configuration Manager tool by itself. To manage a ring configuration, you must use the Configuration Manager in combination with the following procedures:

- installation procedures
- procedures performed at the network element user interface (NEUI)
- procedures using other OPC tools

Table 3-1 lists configuration management tasks that use the Configuration Manager. It lists the tasks in this chapter as well as tasks described in other documents.

Table 3-1
Configuration tasks and documentation

Procedure	Task	See
3-1	Displaying ring ADMs in a configuration	page 3-4
3-2	Editing the APS ID for a ring ADM	page 3-6
3-3	Editing the ring name	page 3-9
3-4	Deleting a ring configuration	page 3-11
-	Adding an ADM to an existing ring configuration	See appropriate CAP for *NE Addition in VTBM Ring*
-	Deleting a ring ADM from an existing configuration	See appropriate CAP for *NE Removal from VTBM Ring*

Requirements for procedures

Before performing these procedures, you must do the following:

- Have a userID and password that allow you access to the OPC and the Configuration Manager tool.
- Read the tool restrictions and limitations at the beginning of this chapter.
- Read the command conventions for the type of interface you are using, either character-mode terminal (CMT) or graphical, in *OPC User Interface Description*, 323-3001-301, in *Operations, Administration, and Provisioning,* Volume 4A.

Procedure 3-1
Displaying ring ADMs in a configuration

Use this procedure to display all add-drop multiplexers (ADMs) in a ring configuration. This procedure describes how to display the following:

- the list of ring ADMs
- a graphical depiction of the ring
- details for a selected ring ADM

Action

Step	Action
1	Log in to the operations controller (OPC) and open the Configuration Manager tool. If you do not know how to do this, see the procedure in *OPC User Interface Description*, 323-3001-301*,* in *Operations, Administration, and Provisioning,* Volume 4A. *The Configuration Manager main window appears.*
2	Move to the ring you want to display, then press **Ctrl_A** (or Keypad **0**). *The ring is highlighted.*
3	To display the list item menu, press **Ctrl_L** (or Keypad **Enter**). *The list item menu appears.*
4	To select the Edit configuration command, press **Space** (or Keypad **0**). *The Configuration Manager: Ring window appears.*
Viewing a graphical depiction of the ring	
5	To display the Options menu, press **Ctrl_L T** (or Keypad **,**). *The Options item menu appears.*
6	To select the Show Configuration command, press **Space** (or Keypad **0**). *The Show Configuration dialog appears.*
7	Tab to the Done button, then press **Ctrl_A** (or Keypad **0**). *The Configuration Manager: Ring window appears.*
Sorting the list	
8	Tab to the Configured Ring ADM list, then move to the ring ADM that you want to appear first in the list.
9	To display the list item menu, press **Ctrl_L** (or Keypad **Enter**). *The list item menu appears.*

—continued—

Procedure 3-1 (continued)
Displaying ring ADMs in a configuration

Step	Action

10 Move to the **Sort list** command and, using the arrow keys, move to the cascade menu.

The cascade menu appears, displaying the G1 and G2 options.

If you want to sort items in the	Then
G1 direction of the ring ADM	select from **CPG G1** of this ADM by pressing **Space** (or Keypad **0**).
G2 direction of the ring ADM	move to from **CPG G2** of this ADM, then press **Space** (or Keypad **0**).

Items in the list are sorted according to the selected command.

Displaying details for a selected ring ADM

11 Move to the item for which you want to display details, then press **Ctrl_L** (or Keypad **Enter**) to display the list item menu.

The list item menu appears.

12 To select the Details command, press **Space** (or Keypad **0**).

The Ring ADM Configuration Details dialog appears.

13 To select the OK button, press **Ctrl_A** (or Keypad **0**).

The Configuration Manager: Ring window appears.

Closing the tool

14 To close the Configuration Manager: Ring window, press **Esc)**, or do the following:

a. To display the window menu, press **Ctrl_L W** (or Keypad **6**).

The window menu appears.

b. To select the Exit command, press **Space** (or Keypad **0**).

The Configuration Manager main window appears.

15 To close the Configuration Manager tool, press **Esc)**, or do the following:

a. To display the window menu, press **Ctrl_L W** (or Keypad **6**).

The window menu appears.

b. To select the Exit command, press **Space** (or Keypad **0**).

The User Session Manager appears.

—end—

Procedure 3-2
Editing the APS ID for a ring ADM

Use this procedure to edit the automatic protection-switching (APS) ID for an add-drop multiplexer (ADM) in a ring configuration.

The APS ID is a unique node identifier for each ADM in a ring. Since a ring can contain up to 16 nodes, these identifiers range from 0 to 15.

Each ring ADM must have a unique APS ID. IDs already assigned in the ring are disabled and cannot be selected again.

Note: During this procedure, only the buttons and commands you need to edit the APS ID are available. All other buttons and commands are disabled until you complete the procedure. To abandon this procedure *before saving the configuration data*, use the Revert command in the list item menu.

CAUTION
Risk of loss of traffic
This procedure might affect traffic if it is performed while a protection switch is active.

Action

Step	Action
1	Log in to the OPC and open the Configuration Manager tool. If you do not know how to do this, see the procedure in *OPC User Interface Description*, 323-3001-301, in *Operations, Administration, and Provisioning*, Volume 4A. *The Configuration Manager main window appears, showing the ring configuration.*
2	Use the arrow keys to move to the ring you want to edit, then press **Ctrl_A** (or Keypad **0**). *The ring is highlighted.*
3	To display the list item menu, press **Ctrl_L** (or Keypad **Enter**). *The list item menu appears.*
4	To select the Edit configuration command, press **Space** (or Keypad **0**). *The Configuration Manager: Ring window appears, displaying all ADMs in the ring. The Configured ADMs field identifies the starting ring ADM and direction around the ring.*

—continued—

Procedure 3-2 (continued)
Editing the APS ID for a ring ADM

Step	Action
5	Tab to the Configured Ring ADM list. Use the arrow keys to move to the ring ADM you want to edit, then press **Ctrl_A** (or Keypad **0**). *The ring ADM is highlighted.*
6	To display the list item menu, press **Ctrl_L** (or Keypad **Enter**). *The list item menu appears.*
7	Use the arrow keys to move to the Edit command. *A cascade menu appears, displaying the options: APS ID and Configuration.*
8	Using the right arrow key, move to the APS Id command, then press **Space** (or Keypad **0**). *A dialog appears warning that this command affects service if t protection switch is active.* *The Edit Ring ADM APS ID dialog appears. All fields are disabled except the Ring ADM APS ID field.*
9	Tab to the Ring ADM APS ID field, then press **Ctrl_L** ***/*** (or Keypad **3**) to display the chooser menu. *The chooser menu appears, displaying all APS IDs for the ring. IDs already assigned have a disable icon beside them.* ***Note:*** You can set the Ring APS ID field to a duplicate value to swap APS IDs for nodes. To set to a duplicate value, type the duplicate value in the field. You must clear duplicates before selecting the Save and send configuration data button in the main window.
10	Move to the new ID, then press **Space** (or Keypad **0**). *The selected ID appears in the field.*
11	Tab to the OK button, then press **Ctrl_A** (or Keypad **0**). *The APS ID is revised in the main window.*
12	Repeat steps 5 through 11 for each APS ID to be edited.
13	To select the Save and send configuration data button, press **Ctrl_A** (or Keypad **0**). *A confirmation dialog appears.*
14	Tab to the Yes button, then press **Ctrl_A** (or Keypad **0**). *A confirmation dialog appears, displaying the results of the operation.*
15	To select the Done button, press **Ctrl_A** (or Keypad **0**). *The Configuration Manager: Ring window appears.*

—continued—

Procedure 3-2 (continued)
Editing the APS ID for a ring ADM

Step	Action
16	Save the revised configuration data to the backup OPC. To display the Options menu, press **Ctrl_L T** (or Keypad **,**). *The Options menu appears.*
17	Move to the Transfer data to backup OPC command, then press **Space** (or Keypad **0**). *A confirmation dialog appears.*
18	Tab to the Yes button, then press **Ctrl_A** (or Keypad **0**). *An information dialog appears, displaying the results of the transfer operation.*
19	To select the Done button, press **Ctrl_A** (or Keypad **0**). *The Configuration Manager: Ring window appears.*
20	To close the Configuration Manager: Ring, press **Esc)**, or do the following:

To	Press
display the window menu	**Ctrl_L W** (or Keypad **6**). *The window menu appears.*
exit	**Space** (or Keypad **0**) *The Configuration Manager main window appears.*

Step	Action
21	To close the Connection Manager tool, press **Esc)**, or do the following:

To	Press
display the window menu	**Ctrl_L W** (or Keypad **6**). *The window menu appears.*
exit	**Space** (or Keypad **0**) *The User Session Manager appears.*

—end—

Procedure 3-3
Editing the ring name

Use this procedure to change the name of an existing ring.

Action

Step	Action
1	Log in to the operations controller (OPC) and open the Configuration Manager tool. If you do not know how to do this, see the procedures in *OPC User Interface Description*, 323-3001-301, in *Operations, Administration, and Provisioning,* Volume 4A. *The Configuration Manager main window appears, showing the ring configurations.*
2	Use the arrow keys to move to the ring you want to edit, then press **Ctrl_A** (or Keypad **0**). *The ring is highlighted.*
3	To display the list item menu, press **Ctrl_L** (or Keypad **Enter**). *The list item menu appears.*
4	To select the Edit configuration command, press **Space** (or Keypad **0**). *The Configuration Manager: Ring window appears, displaying all add-drop multiplexers (ADMs) in the ring. The Configured ADMs field identifies the starting ring ADM and direction around the ring.*
5	To display the Options menu, press **Ctrl_L T (**or Keypad **,**). *The Options menu appears.*
6	Move to the Edit Configuration Name command, then press **Space** (or Keypad **0**). *The Edit Configuration dialog appears.*
7	In the Name field, backspace over the existing ring name and enter a new name. You can enter up to 20 characters.
8	Tab to the OK button, then press **Ctrl_A** (or Keypad **0**). *A progress dialog appears, indicating that the ring name is being changed. When the change is complete, the new ring name appears at the top of the Configuration Manager: Ring window.*

—continued—

Procedure 3-3 (continued)
Editing the ring name

Step	Action

9 To close the Configuration Manager: Ring, press **Esc)**, or do the following:

To	Press
display the window menu	**Ctrl_L W** (or Keypad **6**). *The window menu appears.*
exit	**Space** (or Keypad **0**) *The Configuration Manager main window appears.*

10 To close the Connection Manager tool, press **Esc)**, or do the following:

To	Press
display the window menu	**Ctrl_L W** (or Keypad **6**). *The window menu appears.*
exit	**Space** (or Keypad **0**) *The User Session Manager appears.*

—end—

Procedure 3-4
Deleting a ring configuration

Use this procedure to delete a ring configuration from the configuration data.

CAUTION
Risk of traffic loss
Before you delete the network elements in the configuration you want to delete, ensure that the ring is not carrying traffic. If any network elements are carrying traffic, see CAP AN 97-16, Addition of AccessNode Nodes in a VTBM ring, NTR464GA, and CAP AN 97-17, Removal of AccessNode Nodes in a VTBM ring, NTR465GA.

Before you can delete a configuration, you must first delete all network elements in that configuration. This procedure describes how to do the following tasks:

- selecting the configuration to be deleted
- displaying the configuration data in the Configuration Manager: Ring window
- deleting all network elements in the configuration
- deleting the configuration
- updating the primary and backup operations controller (OPC) databases

Requirements

Before starting this procedure, you must delete any connections that terminate at network elements in the configuration (see Chapter 12 “Setting up connections at the OPC”).

—continued—

Procedure 3-4 (continued)
Deleting a ring configuration

Action

Step	Action
1	Log in to the OPC and open the Configuration Manager tool. If you do not know how to do this, see the procedure in *OPC User Interface Description*, 323-3001-301, in *Operations, Administration, and Provisioning*, Volume 4A. *The Configuration Manager main window appears, showing the configurations.*
2	Move to the ring configuration you want to delete, then press **Ctrl_A** (or Keypad **0**). *The ring is highlighted.*
3	To display the list item menu, press **Ctrl_L** (or Keypad **Enter**). *The list item menu appears.*
4	To select the Edit configuration command, press **Space** (or Keypad **0**). *The Configuration Manager: Ring window appears, displaying all ADMs in the ring. The Configured ADMs field identifies the starting ring ADM and direction around the ring.*
5	Tab to the Configured Ring ADM list, then use the arrow keys to move to the network element you want to delete. To display the list item menu, press **Ctrl_L** (or Keypad **Enter**). *The list item menu appears.*
6	Move to the Delete command, then press **Space** (or Keypad **0**). *A confirmation dialog appears.*
7	Tab to the Yes button, then press **Ctrl_A** (or Keypad **0**). *The Configuration Manager: Ring main window reappears. The network element is deleted from the configuration and removed from the list.*
8	Repeat steps 5 through 7 for each network element in the list.
9	To select the Save and send configuration data button, press **Ctrl_A** (or Keypad **0**). *A confirmation dialog appears.*
10	Tab to the Yes button, then press **Ctrl_A** (or Keypad **0**). *The Configuration Manager: Ring window appears.*
11	To display the Options menu, press **Ctrl_L T (**or Keypad **,**). *The Options menu appears.*

—continued—

Procedure 3-4 (continued)
Deleting a ring configuration

Step	Action

12 To move to the Delete Configuration command, press **Space** (or Keypad **0**).

A confirmation dialog appears.

13 Tab to the Yes button, then press **Ctrl_A** (or Keypad **0**).

A confirmation dialog appears.

If you want to	Then
add a new ring configuration	Select the No button, then press **Ctrl_A** (or Keypad **0**). *The Add Configuration dialog appears.* You have completed this procedure. See Procedure 3-1 “Displaying ring ADMs in a configuration,” to add a new ring configuration.
exit the tool	Go to step 14.

14 Tab to the Yes button, then press **Ctrl_A (**or Keypad **0**).

The Configuration Manager main window appears. The deleted configuration is no longer in the configuration list.

15 To close the Configuration Manager tool, press **Esc)**, or complete the instructions in the following table:

To	Press
display the window menu	**Ctrl_L W** (or **Keypad 6)** *The window menu appears.*
exit	**Space** (or **Keypad 0)** *The User Session Manager appears.*

—end—

Timing reference and synchronization procedures

This chapter includes the provisioning procedures for timing references and synchronization on access bandwidth manager (ABM) and transport bandwidth manager (TBM) shelves.

Chapter task list

This chapter includes the following tasks.

Occasional tasks list

Procedure	Task	See
4-1	Changing the ESI timing distribution output parameters	page 4-7
4-2	Enabling and disabling timing reference alarms	page 4-10
4-3	Changing the OC-12 VTBM target clock mode	page 4-11
4-4	Enabling and disabling ESI facility alarm points	page 4-13
4-5	Provisioning ESI or TXC equipment alarm points	page 4-14
4-6	Changing timing and cross-connect parameters	page 4-16

Provisioning external synchronization for a fiber-fed AccessNode system

Procedure	Task	See
4-2	Enabling and disabling timing reference alarms	page 4-10
4-4	Enabling and disabling ESI facility alarm points	page 4-13
4-5	Provisioning ESI or TXC equipment alarm points	page 4-14

Provisioning external synchronization for a DS1-fed AccessNode system

Procedure	Task	See
4-5	Provisioning ESI or TXC equipment alarms points	page 4-14

Synchronization-status messaging

Synchronization-status messaging allows SONET network elements and BITS systems to communicate information about the quality of their timing references. The messages allow a SONET network to automatically select the best quality timing source available if the timing signal fails or degrades. Messaging also reduces the potential for timing loops.

For more information about synchronization-status messaging, see Chapter 11 in *Configuration and Equipment Description*, 323-3001-100, in Volume 2A.

Mix provisioning engineering guidelines

With the implementation of synchronization-status messaging, you can provision OC-12 interfaces at externally timed network elements for better timing survivability. However, because of the synchronization-status messaging protocol adopted in Bellcore document GR-253-CORE, mix provisioning at a network element can cause timing loops during fault conditions. To prevent timing loops during fault conditions, study a network's timing subsystems carefully and read the following engineering guidelines for mix provisioning of VTBM rings:

- Do not use mix provisioning in a ring system with only one externally timed network element.

  Figure 4-1 on page 4-4 shows a timing loop formed as the result of mix provisioning in a ring with only one externally timed network element.

- If you use mix provisioning in a ring system with two externally timed network elements, one network element must have only clockwise optics as its source, and the other network element must have only counterclockwise optics as a source.

  Figure 4-2 on page 4-5 shows the formation of a timing loop when the sources of the optics for both network elements are provisioned in the same direction. The diagram shows clockwise timing distribution. Although the network may have been configured for closest-to-source or split-timing distribution, it can change to clockwise timing distribution because of failures and nonrevertive switching between timing references.

CAUTION
Risk of timing loop
Determining the direction of traffic flow at a network element can be difficult. Examine network topology diagrams carefully.

- If you use mix provisioning in a ring system with more than two externally timed network elements, one network element must have only clockwise optics as its source, and one network element must have only counterclockwise optics as a source. The other externally timed network elements may have both optics provisioned.

Figure 4-1
Timing loop in ring with one externally timed network element

PC-3541

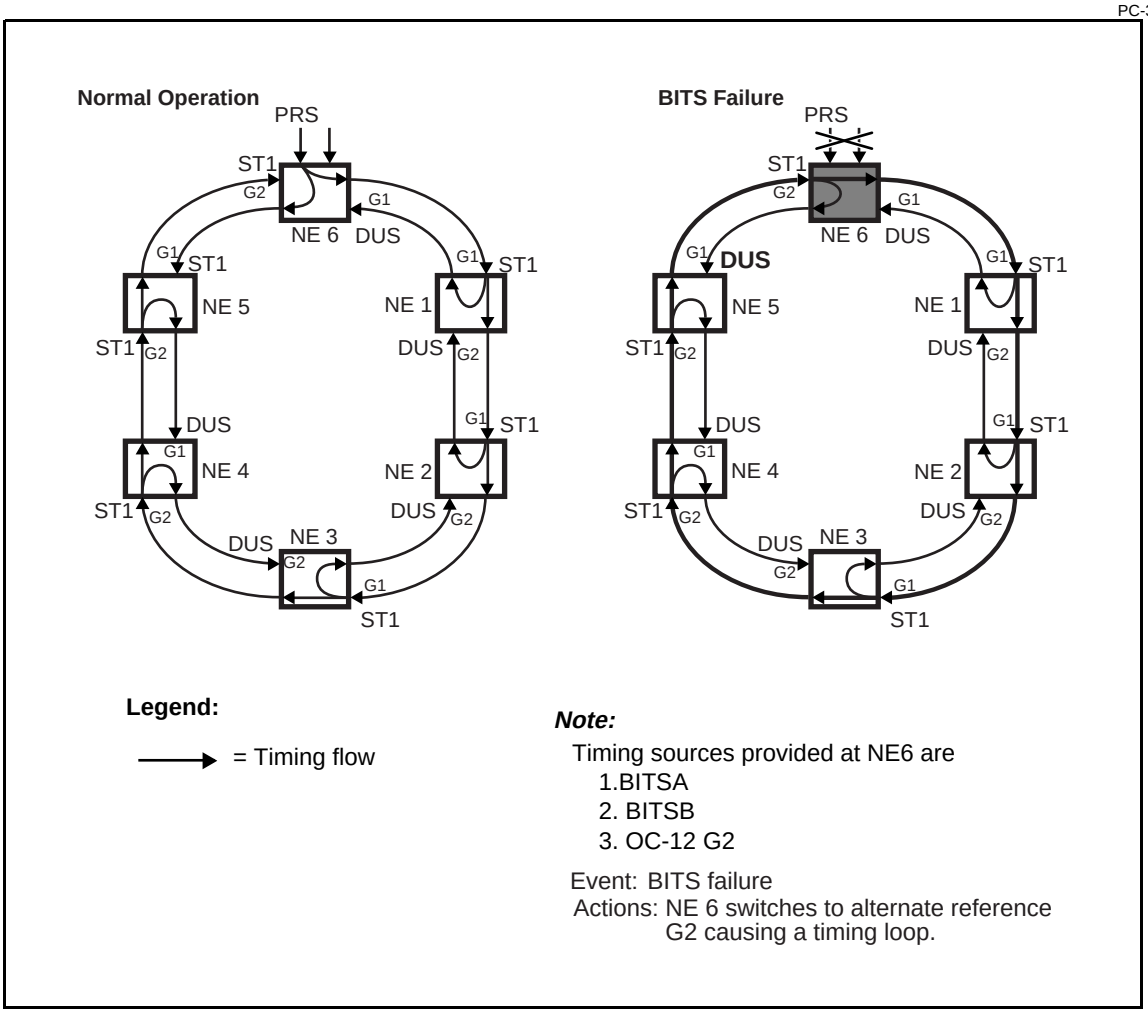
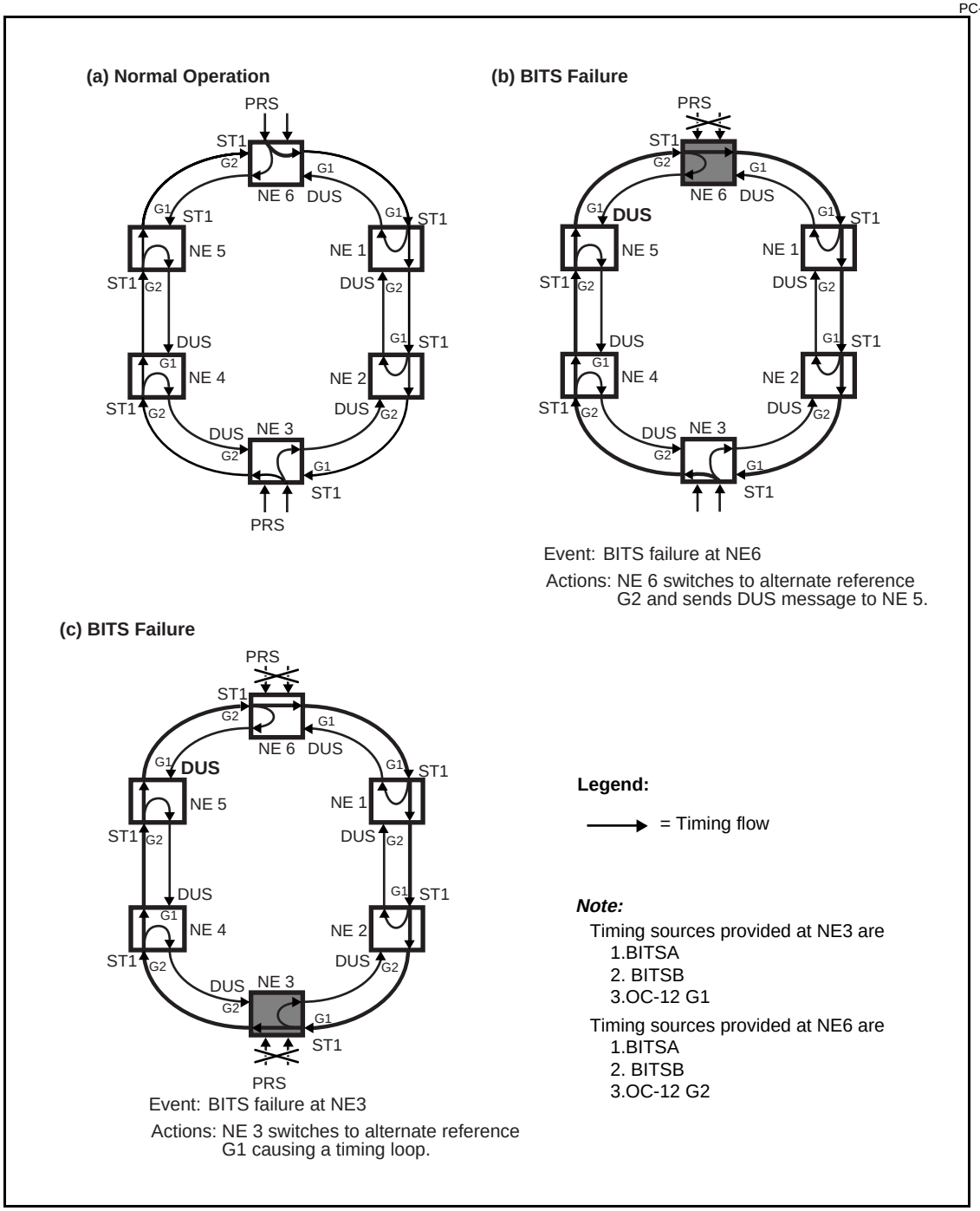


Figure 4-2
Timing loop in ring with two externally timed network elements

PC-3542



Derived DS1 signals from the best quality timed OC-12 line

You can provision OC-12 VTBM network elements to select the best quality timing reference as the timing source. You can use the configuration tool SHELF_CLOCK_CI or you can set the source tracking attribute of the outgoing ESI facility.

The following table lists and describes the possible settings for source tracking:

Setting	Description
Best	The DS1 output signal automatically selects the best quality timing reference. If both timing references are of the same quality, the DS1 output signal selects OCA.
Act	The DS1 output signal follows the active OC-N line.
Off	The output DS1 signal follows a fixed OC-N source. Automatic selection of the timing reference is not possible.

The Best option follows the Bellcore requirements for automatic selection of the best timing reference for a line-timed network element. Best is the recommended setting for source tracking on line-timed network elements. SHELF_CLOCK_CI automatically provisions source timing to Best.

Requirements for procedures

Before starting any of the procedures in this chapter, you must know how to use the VT100-type network element user interface (NEUI).

> ***Note:*** For a reminder of how to use the interface, see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A.

Procedure 4-1
Changing the ESI timing distribution output parameters

Use this procedure to change the parameters of the external synchronization interface (ESI) timing distribution signals (G1OUT and G2OUT). The ESI cable delivers these signals, which can be used to drive a local timing source, such as a building-integrated timing supply (BITS).

Each ESI subunit (G1 and G2) can provide one DS1 timing reference signal (G1OUT and G2OUT) to synchronize external equipment such as a BITS. Two sources for timing distribution are available: OCA and OCB. You can provision OCA and OCB to derive from OC-3 or OC-12 G1 or G2. If no timing distribution is required, you can take both G1OUT and G2OUT out of service.

Requirements

Before starting this procedure, log on the network element user interface and be at the main menu.

Action

Step	Action
1	Access the Facility screen and select the facility by entering: **facility esi <timing reference>** ↵ where <timing reference> **g1out** or **g2out**
2	Display the edit Facility screen by entering: **edit**↵ *The ESI Facility screen appears:*

—continued—

Procedure 4-1 (continued)
Changing the ESI timing distribution output parameters

Step	Action

3 To change the G1OUT and G2OUT parameters for the selected facility, select the menu command and complete the instructions in the following table.

If you are changing	Then enter
framing format	**framefmt <format>**↵ where <format> type of frame format: **superframe** (superframe) or **extended** (extended superframe) *The value appears in reverse video.*
line build out	**lbo <range>**↵ where <range> line build out range: **short** (less than 46 m or 150 ft) **medium** (46 m to 137 m or 150 ft to 450 ft) **long** (137 m to 200 m or 450 ft to 655 ft) *The value appears in reverse video.*
source	**source <optic>**↵ where <optic> optical source for the output: **oca** or **ocb** ***Note:*** A value is required only if the NE provides a timing reference source for external use. *The value appears in reverse video.*
source tracking	**srctrack <option>**↵ **yes**↵ where <option> tracking option: **Best** or **Off** *The value appears in reverse video.* See Note 1, which follows this table.
threshold AIS	**thresAIS <threshold>**↵ where <threshold> AIS threshold value: **ST1**, **ST2**, **ST3**, **SMC**, **STU**, or **null** *The value appears in reverse video.* See Note 2, which follows this table.

—continued—

Procedure 4-1 (continued)
Changing the ESI timing distribution output parameters

Step	Action
	Note 1: If the source tracking is set to Best, an alarm indication signal (AIS) is inserted only if both timing references fail or reach the specified threshold. If one timing reference is above the threshold, the DS1 output signal follows it, and no AIS is inserted. ***Note 2:*** The threshold AIS value is the quality level at or below which a timing reference must fall to cause G1OUT or G2OUT to issue an AIS. If you specify Null, the timing distribution facility (G1OUT or G2OUT) inserts an AIS only for a complete timing reference failure such as loss of signal (LOS). It does not insert an AIS because of quality level degradation.
4	Return to the ESI facility screen by entering: **quit** ↵

—end—

Procedure 4-2
Enabling and disabling timing reference alarms

Use this procedure to display the provisioning status of timing reference alarms and to enable and disable any of these alarms. A confirmation prompt appears when you disable an alarm. Alarm conditions are not reported for disabled alarms.

Requirements

Before starting this procedure, you must log on to the network element user interface (NEUI) and be at the main menu.

Action

Step	Action
1	Access the protection screen by entering: **protectn** ↵ *The protection screen appears.*
2	Access the timing reference protection screen by entering: **trefprot** ↵ *The timing reference protection screen appears.*
3	Access the timing reference alarm provisioning screen for a specific timing reference or for all timing references by entering: **almprov** *A screen displays the status of the timing reference alarms.*
4	Enable or disable a specific alarm by entering: **editstat <alarm point #> [<state>]** ↵ where <alarm point #> number of the alarm as displayed on the screen <state> **on** or **off**, or **blank** to toggle If you disable an alarm, the system prompts you for confirmation. Confirm by entering: **yes** ↵ **—end—**

Procedure 4-3
Changing the OC-12 VTBM target clock mode

Use this procedure to change the target clock mode of the OC-12 virtual tributary bandwidth manager (VTBM) circuit pack.

When you provision the target clock mode, follow the rules in Table 4-1. If you provision the target mode to a certain value, the system rejects any redundant request to provision the target mode to that value.

Table 4-1
Rules for provisioning the target clock mode

If the current clock mode is	You can select these target modes
acquire	freerun
freerun	freerun normal
normal	freerun holdover
holdover	freerun holdover normal
Note: If you set the target mode to **normal**, the current mode changes to normal only if a valid timing reference is available.	

Requirements

Before starting this procedure, you must log on to the network element user interface (NEUI) and be at the main menu.

Action

Step	Action
1	Access the OC-12 Equipment screen and display the equipment status by entering: **equipmnt oc12 <circuit pack group>** where <circuit pack group> **g1** or **g2** *The Equipment screen showing the equipment status appears.*

—continued—

Procedure 4-3 (continued)
Changing the OC-12 VTBM target clock mode

Step	Action
2	Change the target clock mode by entering: **edittarg <clock mode>** where <clock mode> **holdover**, **normal**, or **freerun** ***Note:*** Changing the target clock mode of OC12 G1 automatically changes the target clock mode of G2 to the same value. *A screen indicating the command was successful appears.* **—end—**

Procedure 4-4
Enabling and disabling ESI facility alarm points

Use this procedure to enable or disable external synchronization interface (ESI) facility alarms. When you set an alarm point On, the system raises an alarm when an alarm condition occurs. When you set an alarm point Off, the system does not raise an alarm when an alarm condition occurs.

Action

Step	Action
1	From the Network Element Status screen, display the ESI facility screen by entering: **fa esi <type>**↵ where <type> type of ESI facility: **bitsa, bitsb, g1out** or **g2out** *The ESI facility screen appears.*
2	Display the alarm provisioning screen by entering: **almprov**↵ *The ESI alarm provisioning screen appears.*
3	Set the alarm points to be either On or Off by entering: **editstat <#> <status>**↵ where <#> number of the alarm point to the left of the alarm point text on the screen <status> status of the alarm point: **on** , **off** , or **Spacebar** to toggle If you set an alarm point to Off, the system prompts for confirmation. Enter: **y** ↵ *The screen is updated with the new alarm point settings in reverse video.*
4	Repeat step 3 for each alarm point to be set.
5	Repeat steps 1 through 4 for each ESI facility.
6	Return to the Network Element Status screen by entering: **fwpui**↵

—end—

Procedure 4-5
Provisioning ESI or TXC equipment alarm points

Use this procedure to provision alarm points for the external synchronization interface (ESI) or timing and cross-current (TXC) circuit packs.

Action

Step	Action

1 From the Network Element Status screen, display the required equipment screen.

2 Complete the instructions in the following table.

If you want to provision	Then enter
ESI alarm points	**eq esi <group>**↵ where <group> group number of the circuit pack: **g1** (g1 is the top card in the ESI carrier) or **g2** (g2 is the bottom card in the ESI carrier) *The ESI Equipment screen appears.*
TXC alarm points	**eq txc <group>**↵ where <group> group number of the circuit pack: **g1** or **g2** *The TXC Equipment screen appears.*

3 Display the Equipment Alarm Provisioning screen by entering:

almprov↵

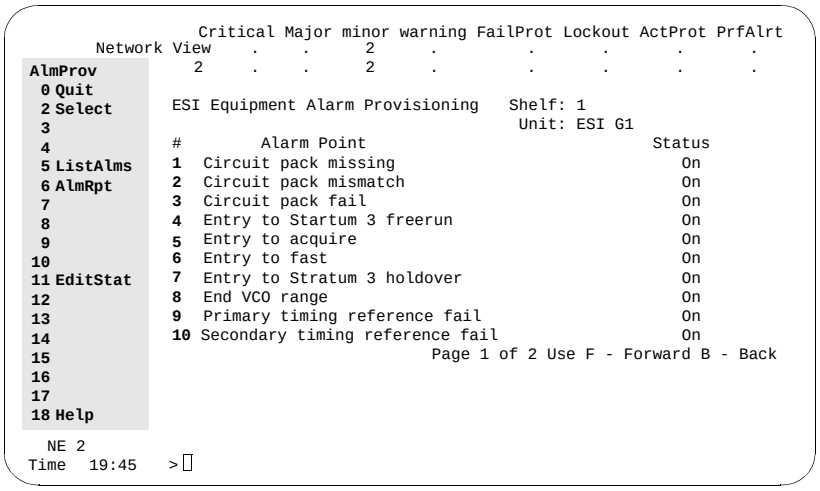
The Equipment Alarm Provisioning screen appears.

The following screen is a typical ESI screen. Although TXC alarms are different from ESI alarms, the overall screen layout is similar. As shown in the example, each alarm is identified by an alarm name and number. In the example, the alarm number is shown in bold to the left of the alarm name (for example, the `Entry to fast` alarm has a number of 6).

—continued—

Procedure 4-5 (continued)
Provisioning ESI or TXC equipment alarm points

Step	Action



4 Set the alarm points to either On (enabled) or Off (disabled) by entering:

editstat <#> <status>↵

where

<#>	the number that appears on the screen to the left of the alarm point text
<status>	status of the alarm point: **on**, **off**, or **Spacebar** toggle

Note: You can set an alarm point only for an alarm that is displayed on screen. Type F to scroll the list of alarms forward, or type B to scroll the list backward. If you set an alarm point to Off, the system prompts for confirmation. To confirm, enter:

y↵

The screen is updated with the new alarm point status in reverse video.

5 Repeat step 4 for each alarm point to be provisioned.

6 Repeat steps 1 through 4 for each ESI or TXC to be provisioned.

7 Return to the Network Element Status screen by entering:

fwpui↵

—end—

Procedure 4-6
Changing timing and cross-connect parameters

Use this procedure for a DS1-fed AccessNode (DFA) configuration to change NT4K75 timing and cross-connect (TXC) cards located in a DFA remote fiber terminal (RFT) or operations contoller (OPC) shelf.

A TXC card in a DFA RFT can be synchronized to a local digital switch by means of a DS1 facility that drives reference buses between the DS1/VT mapper card and the TXC card. The TXC cards in an OPC shelf can be synchronized to a DFA RFT through a DS1 between a DFA RFT and the OPC shelf.

Use this procedure to provision the following timing functions:

- **ClockSrc**: clock source
- **EditTarg**: target filter mode
- **PriTSrc**: primary timing source
- **SecTSrc**: secondary timing source
- **REFASrc**: reference bus A timing source
- **REFBSrc**: reference bus B timing source

Tables 4-2 through 4-7 on pages 4-17 through 4-18 list the various TXC parameters used in this procedure and explain each parameter.

—continued—

Procedure 4-6 (continued)
Changing timing and cross-connect parameters

Table 4-2
ClockSrc: clock source parameters

Parameter	Setting and explanation	Default
DS1LineTimed	sets the TXC card as the clock source for the shelf. The TXC card can then be synchronized to the local digital switch through a DS1 tributary.	-
FREERUN	sets the clock source to freerun (free) for the shelf. In freerun the shelf is not locked to an external timing reference.	freerun

Table 4-3
EditTarg: target filter mode parameters

Parameter	Setting and explanation	Default
normal	sets the TXC clock to normal (norm). In normal mode, the TXC card maintains its timing based on the external timing reference.	normal
freerun	sets the TXC clock to freerun (free). In freerun mode, the TXC is not locked to an external timing reference. The voltage controlled oscillator on the TXC is set at the midpoint and provides a Stratum 3 clock. This mode is used typically during installation of the TXC.	-
holdover	sets the TXC clock to holdover (hold). In holdover mode, the TXC maintains a Stratum 3 holdover based on the last good reference signal.	-

Table 4-4
PriTSrc: primary timing source parameters

Parameter	Setting and explanation	Default
REFA	sets the primary timing source to reference bus A for both TXCs	-
REFB	sets the primary timing source to reference bus B for both TXCs	-
NULL	sets the primary timing source to null (provision NULL if the primary timing source is not used)	NULL

—continued—

Procedure 4-6 (continued)
Changing timing and cross-connect parameters

Table 4-5
SecTSrc: secondary timing source parameter

Parameter	Setting and explanation	Default
REFA	sets the secondary timing source to reference bus A for both TXCs	-
REFB	sets the secondary timing source to reference bus B for both TXCs	-
NULL	sets the secondary timing source to NULL (provision NULL if the secondary timing source is not used)	NULL

Table 4-6
REFASrc: Reference bus A timing source

Parameter	Setting and explanation	Default
DS1 <group> <port>	sets the timing source for reference bus A (REFA) to a DS1 facility. Two variables define this DS1 facility: where <group> is G1, G2, or G4 and <port> is 1 to 14.	-
NULL	sets the timing source for reference bus A (REFA) to NULL indicating no timing reference exists	NULL

Table 4-7
REFBSrc: reference bus B timing source

Parameter	Setting and explanation	Default
DS1 <group> <port>	sets the timing source for reference bus B (REFB) to DS1<group> <port> where <group> is G1, G2, or G4 <port> is 1 to 14	-
NULL	sets the timing source for reference bus B (REFB) to NULL indicating no timing reference exists	NULL

—continued—

Procedure 4-6 (continued)
Changing timing and cross-connect parameters

Requirements

Before performing this procedure for a DFA RFT, provision the incoming DS1 facility that supplies the timing reference from a host switch. The incoming DS1 facility used for synchronization at a DFA RFT can also carry traffic. For details see Chapter 5, “Provisioning and deprovisioning equipment.”

For a DFA OPC shelf that is being synchronized to a DFA RFT, provision the DS1 facility before performing this procedure. The DS1 facility used for synchronization cannot be provisioned as a DS1 Operations Maintenance Channel (OMC) link.

Action

Step	Action
1	From the Network Element Status screen, display the equipment screen for the network element by entering: **eq sh**↵ *The Shelf Equipment screen appears.*
2	Change the clock source for the shelf by entering: **edit;clocksrc <source>**↵ **yes**↵ where <source> clock source for the shelf: **ds1linetimed** or **freerun** *The provisioned value appears in reverse video on the Edit Shelf screen.*
3	To change the timing functions, complete the instructions in the following table.

—continued—

Procedure 4-6 (continued)
Changing timing and cross-connect parameters

Step **Action**

To change the	Complete the following
target clock mode for the TXC clock	From the TXC Equipment screen, enter: **eq txc <group>;edittarg <mode>**↵ where <group> TXC group number: **g1** or **g2** <mode> the target clock mode of the TXC clock: **normal**, **freerun**, or **holdover** *The target clock mode appears in reverse video.*
primary and secondary timing references for the TXC cards	**a.** To change the primary timing reference, from the TXC Protection screen, enter: **trefprot;pritsrc <reference>**↵ **yes**↵ where <reference> primary (Active) timing reference bus: **REFA**, **REFB**, or **NULL** *The Timing Reference Protection screen appears.* **b.** To change the secondary timing reference, enter: **sectsrc <reference>**↵ **yes**↵ where <reference> secondary (Active) timing reference bus: **REFA**, **REFB**, or **NULL**
—continued—	

—continued—

Procedure 4-6 (continued)
Changing timing and cross-connect parameters

Step **Action**

To change the	Complete the following
reference bus A timing source	***Note:*** You must set the primary timing reference before you change the reference bus A timing source. From the TXC Timing Reference source screen, enter: **trefsrc;refasrc <facility> <group> <port>↵** **yes↵** where <facility> facility type: **DS1** or **NULL** <group> group number of an existing DS1 facility from a local digital switch used for timing: **G1**, **G2**, or **G4** (see "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2). <port> port number of the DS1 facility: **1** to **14** *The NE Timing Reference Source screen appears.*
reference bus B timing source	***Note:*** You must set the secondary timing reference before you change the reference bus B timing source. From the TXC Timing Reference Source screen, enter: **refbsrc <facility> <group> <port>↵** **yes↵** where <facility> facility type: **DS1** or **NULL** <group> group number of an existing DS1 facility from a local digital switch used for timing: **G1**, **G2** or **G4** (see "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2). <port> port number of the DS1 facility: **1** to **14** *The NE Timing Reference Source screen appears.*
—end—	

4 To provision a second TXC card on the shelf, repeat step 3.

—end—

Provisioning and deprovisioning equipment

This chapter contains procedures for manually provisioning and deprovisioning AccessNode shelves and circuit packs.

Specific provisioning tasks allow you to change the default values the system assigns when equipment is first installed. For lists of provisioning tasks, see Chapter 1, “Overview of provisioning.”

Note: For information on provisioning or deprovisioning Universal Edge 9000 (UE9000) systems, see the *UE9000 Voice OAM&P User Guide*.

Chapter task list

This chapter includes the following tasks.

Occasional tasks

Procedure	Task	See
5-1	Adding a circuit pack group	page 5-8
5-2	Enabling or disabling equipment alarm points	page 5-11
5-3	Provisioning processor parameters	page 5-15
5-4	Setting the bay frame location ID	page 5-16
5-5	Provisioning OC-3 equipment performance monitoring thresholds	page 5-17
5-6	Provisioning OC-12 equipment performance monitoring thresholds	page 5-21
5-7	Setting the TBM shelf position number	page 5-24
5-8	Deleting a circuit pack group	page 5-26
5-9	Deleting a copper-distribution shelf	page 5-30

Note: If you cannot successfully complete these procedures, contact your next level of support.

Requirements for procedures

Read the command conventions in *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A.

Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12

The group number you enter in a command string depends on the shelf type and function, the mapper type, and its slot location.

Table 5-1 summarizes the group and slot associations for the different mappers and shelves.

Note: The following tables do not imply that all slots are available for your configuration. For details about the capacity for each configuration, see the *Mapper Layouts Planning Guide*, 323-3001-154, in the *Engineering, Configuration, and Ordering Guide*, Volume 1.

Table 5-1
Group and slot association matrix

Mapper and shelf function		Mapper slot																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
DS1	DS1-fed ABM	G1	G2	P	G4	G5	G6													
	ABM FCOT or FCOT_BLSR	G1	G2	P	G4	G5	G6	G7	G8											
	TBM FCOT			G3	G4							G5	G6	P	G8	G9	G10	G11	G12	
	TBM FCOT_BLSR	G1	G2	G3	G4							G5	G6	P	G8	G9	G10	G11	G12	
	TBM TN_BLSR	G1	G2	G3	G4							G5	G6	G7	G8	G9	G10	G11	G12	P
DS3	ABM	P	S	G1		G2		G3												
	TBM FCOT	P	S									G1		-		G3		G4		
	TBM FCOT_BLSR or TN_BLSR	P	S									G1		G2*		G3		G4		
STS-1	TN_BLSR		S	P								G1		G2		G3		G4		
OC-3	ABM tributary	G3		G4		G1S		G2S												
	TBM tributary	G3		G4		G1S		G2S				G5		G6		G7		G8		
	Feeder									G1	G2									

Table 5-1
Group and slot association matrix

Mapper and shelf function		Mapper slot																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
OC-12	Feeder									G1	G2									
OC-12 VTBM	Feeder									G1	G2									
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19

* For DS3 TBM FCOT_BLSR fiber-fed shelves, this group is available only if no DS1s are provisioned for that shelf.

Group and slot associations for DS1, DS3, or STS-1 I/O cards

For some tasks, you must also know the slot numbers of the input and output cards. The following table shows which table to use to determine the I/O slot(s) for the mapper you need.

If you are provisioning this equipment	For this shelf type	Then see
DS1 equipment	access bandwidth manager (ABM)	Table 5-2
	transport bandwidth manager (TBM)	Table 5-3
DS3 equipment	ABM	Table 5-4
	TBM	Table 5-6
STS-1 equipment	TBM (TN_BLSR only)	Table 5-6

For DS1, DS3, and STS-1 circuit packs, Tables 5-6 through 5-6 show the association between mappers in the lower level of the common equipment shelf and input/output cards in the upper level.

For example, DS1 circuit pack group G1 refers to the group of modules including the working DS1/VT mapper circuit pack in slot 1 and its corresponding DS1 input and output cards in slots 30 and 32. Similarly, DS1 circuit pack group P refers to the group of modules including the protection DS1/VT mapper circuit pack in slot 3 and the DS1 protection bridge cards in slots 34 and 36.

DS1 I/O numbers

Table 5-2 lists the DS1 circuit pack groups for the ABM shelf functions. It also shows the association between mappers in the lower level of the shelf, and input cards and output cards in the upper level.

Table 5-2
ABM DS1 mapper, group, and I/O numbers

Shelf function	Group or I/O slot	Mapper slot																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	-
RFT	Group	g1*	g2*	P*	g4*	g5*	g6*	g7	g8											
RFT_BLSR	Input slot	30*	31*	34p*	35*	38	39	42	43											
FCOT	Output slot	32*	33*	36p*	37*	40	41	44	45											
FCOT_BLSR																				

Note 1: * DS1 equipment allowed in a DS1-fed ABM shelf.

Note 2: The symbol “p” in the DS1 input and output slots denotes a protection bridge card.

Note 3: The feeder occupies slots 9 and 10. If an operations controller (OPC) is installed, it occupies slots 5 through 8.

Table 5-3 lists the DS1 circuit pack groups for the different TBM shelf functions. It also shows the association between mappers in the lower level of the shelf, and input cards and output cards in the upper level.

Table 5-3
TBM DS1 mapper, group, and I/O numbers

Shelf function	Group or I/O slot	Mapper slot																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
FCOT	Group			g3	g4							g5	g6	P	g8	g9	g10	g11	g12	
	Input slot			34	35							38	39	42p	43	46	47	50	51	
	Output slot			36	37							40	41	44p	45	48	49	52	53	
FCOT_BLSR	Group	g1*	g2*	g3	g4							g5	g6	P	g8	g9	g10	g11	g12	
	Input slot	30*	31*	34	35							38	39	42p	43	46	47	50	51	
	Output slot	32*	33*	36	37							40	41	44p	45	48	49	52	53	
TN_BLSR	Group	g1*	g2*	g3	g4							g5	g6	g7	g8	g9	g10	g11	g12	P
	Input slot	30*	31*	34	35							38	39	42	43	46	47	50	51	-
	Output slot	32*	33*	36	37							40	41	44	45	48	49	52	53	-

Note 1: * FCOT_BLSR and TN_BLSR shelves can contain two additional DS1 working groups (compared to a fiber central office terminal (FCOT)) when DS3 protection mappers are not used in slots 1 and 2. The two additional DS1 working groups are g1 (slots 1, 30, 32) and g2 (slots 2, 31, 33).

Note 2: The symbol “p” in the DS1 input and output slots denotes a protection bridge card.

Note 3: The feeder occupies slots 9 and 10. If an OPC is installed, it occupies slots 5 through 8.

DS3 I/O numbers

Table 5-4 lists the DS3 circuit pack groups for the ABM shelf functions. It also shows the association between mappers in the lower level of the shelf, and input cards and output cards in the upper level.

Table 5-4
ABM DS3 mapper, group, and I/O numbers

Shelf function	Group or I/O slot	Mapper slot																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	-
RFT	Group	P	S	g1	—	g2	—	g3	—											
RFT_BLSR	I/O slots	—	—	34		38		42												
FCOT		—	—	35		39		43												
FCOT_BLSR		—	—	36		40		44												

Note 1: The feeder occupies slots 9 and 10. If an OPC is installed, it occupies slots 5 through 8.

Note 2: The symbol “P” in slot 1 denotes a protection mapper; the symbol “S” in slot 2 denotes a protection switch card.

Table 5-5 lists the DS3 circuit pack groups for the TBM shelf functions. It also shows the association between mappers in the lower level of the shelf, and input/output cards in the upper level.

Table 5-5
TBM DS3 mapper, group, and I/O numbers

Shelf function	Group or I/O slot	Mapper slot																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
FCOT	Group	P	S	—	—							g1	—	g2*	—	g3	—	g4	—	—
FCOT_BLSR	I/O slots	—	—									38		42*		46		50		
TN_BLSR		—	—									39		43*		47		51		
		—	—									40		44*		48		52		

Note 1: * This group is available for FCOT_BLSR shelves that have no DS1s provisioned.

Note 2: The feeder occupies slots 9 and 10. If an OPC is installed, it occupies slots 5 through 8.

Note 3: The symbol “P” in slot 1 denotes a protection mapper; the symbol “S” in slot 2 denotes a protection switch card.

STS-1 I/O numbers

Table 5-6 lists the STS-1 circuit pack groups for the TBM shelf functions. It also shows the association between mappers in the lower level of the shelf, and input/output cards in the upper level.

Table 5-6
TBM STS-1 interface, group, and I/O numbers

Shelf function	Group or I/O slot	Mapper slot																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
TN_BLSR	Group		S	P	—							g1	—	g2	—	g3	—	g4	—	—
	I/O slots	— — —	— — —									38 39 40		42 43 44		46 47 48		50 51 52		

Note 1: The feeder occupies slots 9 and 10. If an OPC is installed, it occupies slots 5 through 8.

Note 2: The symbol “P” in slot 3 denotes a protection mapper; the symbol “S” in slot 2 denotes a protection switch card.

Procedure 5-1
Adding a circuit pack group

Use this procedure to manually add a circuit pack group before installing the equipment in the shelf. This allows you to provision the equipment before installation.

> ***Note:*** When you add a DS1, DS3, STS-1, OC-3, or OC-12 circuit pack group, you must also add the corresponding facilities. See Chapter 6, "Provisioning and deprovisioning a facility."

Use this procedure to add the following equipment:

- access interface card (AIC)
- copper-distribution shelf power (CDSP) card
- DS1/VT mapper
- DS3/STS mapper
- external synchronization interface (ESI)
- line interface card (LIC)
- OC-3 interface card
- OC-12 interface card
- operations controller (OPC)
- processor (Proc)
- STS-1 interface card
- timing and cross-connect card (TXC)
- transport interface card (TIC)

Action

Step	Action
1	From the Network Element Status screen, display the required equipment screen:

—continued—

Procedure 5-1 (continued)
Adding a circuit pack group

Step Action

If you are provisioning	Then enter
DS1, DS3, STS-1, OC-3, or OC-12	**eq <type> <group>**↵ where <type> **ds1**, **ds3**, **sts1**, **oc3**, or **oc12** <group> See "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2. *The selected equipment screen appears.*
ESI	**eq <type> <group>**↵ where <type> **esi** <group> **g1** (top card) or **g2** (bottom card) *The selected equipment screen appears.*
TXC	**eq <type> <group>**↵ where <type> **txc** <group> **g1**, **g2** *The selected equipment screen appears.*
TIC, AIC, or Proc	**eq <type> <group>**↵ where <type> **tic**, **aic**, or **proc** <group> **a** or **b** *The selected equipment screen appears.*
opc	**eq <type>** ↵ where <type > **opc** *The selected equipment screen appears.*
—continued—	

—continued—

Procedure 5-1 (continued)
Adding a circuit pack group

Step **Action**

If you are provisioning	Then enter
LIC or CDSP	**eq <type>; <details> <CDS #> <group>**↵ where <type> type of circuit pack: **lic** or **cdsp** <details> LIC or CDSP details screen: **dtllic or dtlcdsp** <CDS #> number of the copper-distribution shelf housing the equipment: **1** to **7** <group> group number of the equipment: For a LIC: **a, b, c,** or **d** For a CDSP: **a** or **b** *The selected equipment screen appears.*
—end—	

If the equipment is not installed, the system response is as follows:

```
The equipment does not exist.
Please select another equipment.
Alternatively, use the add command to create the
equipment.
```

2 Add the circuit pack by entering:

add↵

3 Repeat steps 1 and 2 for each circuit pack group to be added.

4 Return to the Network Element Status screen by entering:

fwpui↵

—end—

Procedure 5-2
Enabling or disabling equipment alarm points

Use this procedure to enable or disable equipment alarm points for AccessNode circuit packs and common equipment shelf. Setting an alarm point On enables the alarm; therefore, the system raises an alarm when the alarm condition occurs. Setting an alarm point Off disables the alarm; therefore, the system does not raise an alarm when the alarm condition occurs.

Note 1: Initially, all alarm points are set to On (enabled).

Note 2: As an alternative to disabling alarms for unused equipment, you can take the unused equipment out of service. See Chapter 16, "Changing operating states."

Use this procedure to enable or disable the following equipment alarm points:

- access interface card (AIC)
- copper-distribution shelf power (CDSP) card
- common equipment shelf (CE), includes environmental alarms
- DS1/VT mapper (DS1) for a working group
- DS1/VT mapper (DS1) for a protection group
- DS3 mapper (DS3) for a working group
- DS3 mapper (DS3) for a protection group
- external synchronization interface (ESI)
- integrated remote test unit (IRTU)
- line interface card (LIC)
- maintenance interface card (MIC)
- metallic test access card (MTAC)
- OC-3 optical interface (OC3)
- OC-12 optical interface (OC12)
- processor (Proc)
- STS-1 interface card
- test access card (TAC)
- timing and cross-connect card (TXC)
- transport interface card (TIC)

Note: For ESI equipment alarm provisioning, see Chapter 4, "Timing reference and synchronization procedures."

—continued—

Procedure 5-2 (continued)
Enabling or disabling equipment alarm points

Action

Step	Action

1 From the Network Element Status screen, display the screen for the equipment to be provisioned:

If you are provisioning	Then enter
DS1, DS3, STS-1, OC-3, or OC-12	**eq <type> <group>**↵ where <type> **ds1**, **ds3**, **sts1**, **oc3**, or **oc12** <group> See "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2. *The selected equipment screen appears.*
ESI	**eq <type> <group>**↵ where <type> **esi** <group> **g1** (top card) or **g2** (bottom card) *The selected equipment screen appears.*
TXC	**eq <type> <group>**↵ where <type> **txc** <group> **g1**, **g2** *The selected equipment screen appears.*
TIC, AIC, or Proc	**eq <type> <group>**↵ where <type> **tic**, **aic**, or **proc** <group> **a** or **b** *The selected equipment screen appears.*
SH (shelf), IRTU, MIC, or TAC	**eq <type>** ↵ where <type > type of circuit pack: **irtu**, **mic**, **sh**, or **tac** *The selected equipment screen appears.*
—continued—	

—continued—

Procedure 5-2 (continued)
Enabling or disabling equipment alarm points

Step **Action**

If you are provisioning	Then enter
CDSP, LIC, or MTAC	**eq <type>; <details> <CDS #> <group>**↵ where <type> type of circuit pack: **cdsp**, **lic**, or **mtac** <details> CDSP, LIC, or MTAC details screen: **dtlcdsp, dtllic, or dtlmtac** <CDS #> number of the copper-distribution shelf housing the equipment: **1** to **7** <group> group number of the equipment: For a LIC: **a, b, c,** or **d** For an MTAC or CDSP: **a** or **b** *The selected equipment screen appears.*
—end—	

2 Display the Equipment Alarm Provisioning screen by entering:

almprov↵

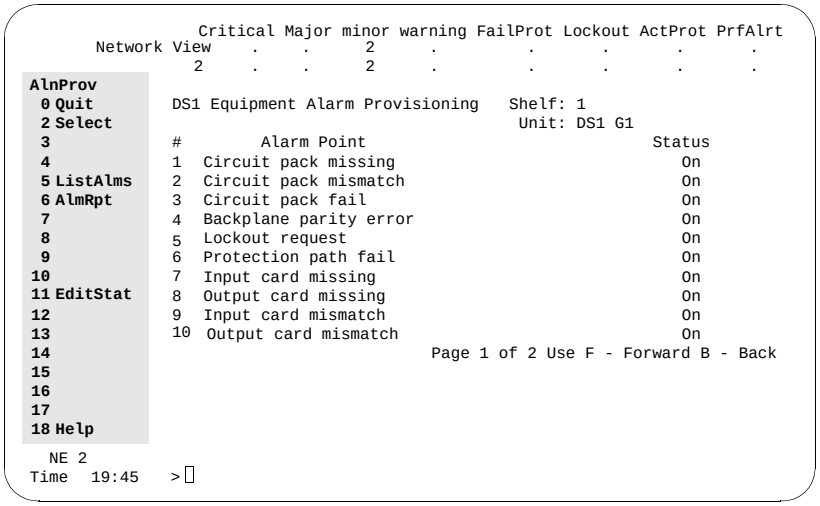
The Equipment Alarm Provisioning screen appears. The following example shows a typical screen. An alarm name and number identifies each alarm.The alarm number is shown to the left of the alarm name (for example, the `Protection path fail` *alarm has a number of 6).*

—continued—

Procedure 5-2 (continued)
Enabling or disabling equipment alarm points

Step	Action

Typical Equipment Alarm Provisioning screen



3 Set the alarm points to either On (enabled) or Off (disabled) by entering:

editstat <#> <status>↵

where

<#>	number of the alarm point
<status>	status of the alarm point: **on** or **off**

Note: to set an alarm point, the alarm must be displayed on the screen. To scroll the list of alarms forward, type **F**; to scroll the list backward, type **B**.

If you set an alarm point to Off, the system prompts for confirmation. To confirm, enter:

y↵

The new alarm point status appears on the screen in reverse video.

4 Repeat step 3 for each alarm point to be provisioned.

5 Repeat steps 1 through 4 for each piece of equipment to be provisioned.

6 Return to the Network Element Status screen by entering:

fwpui↵

—end—

Procedure 5-3
Provisioning processor parameters

Use this procedure to provision the operating parameters for the shelf processor. These operating parameters include routine exerciser and data synchronization. Each of these parameters defaults to On.

Action

Step	Action

1 From the Network Element Status screen, display the processor equipment screen by entering:

eq proc <group>↵

where

<group> the unit representing the processor: **a** or **b**

2 Provision any or all of the following processor parameters as required:

If you are setting or changing	Then do the following
data synchronization	Toggle the state of the data synchronization setting by entering: **datasync**↵ *The state toggles to either On or Off as you enter the command.*
Rex enable	Toggle the state of the Rex test enable state by entering: **rexena**↵ *The state toggles to either On or Off as you enter the command.*

3 Return to the Network Element Status screen by entering:

quit↵

—end—

Procedure 5-4
Setting the bay frame location ID

Use this procedure to identify a bay/aisle to a bay frame. The location ID can include up to seven ASCII characters; it appears on all equipment screens.

Requirements

Before starting this procedure, you must be familiar with the VT 100-type network element user interface. To review how to use the interface, see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A.

Action

Step	Action
1	Log in to the desired TBM shelf.
2	To access the Shelf Equipment screen with the Edit Shelf menu, enter: **eq sh; edit** ↵ *The Shelf Equipment screen appears with the Edit Shelf menu.*
3	To change the bay frame location ID, enter: **location <location id>** ↵ where **<location id>** 1 to 7 ASCII characters ***Note:*** When typing the bay frame location ID, place it within single quotes ('ID'); otherwise all the text converts to uppercase. Use single quotes if the ID includes spaces or special characters (?,=), or if the first character is a number. *The Shelf Equipment screen appears.* **—end—**

Procedure 5-5
Provisioning OC-3 equipment performance monitoring thresholds

Use this procedure to provision the OC-3 equipment performance monitoring thresholds.

Tables 5-7 and 5-8 show OC-3 equipment performance monitoring thresholds.

Table 5-7
OC-3 performance monitoring thresholds

Parameter	Menu command	Setting and explanation	Default
Status threshold 1	**StatusT1**	sets status of the first performance threshold	off
Value threshold 1	**ValueT1**	sets value of the first performance threshold	See Table 5-8
Report type	**RptType**	determines the type of report generated when a threshold is crossed: alert (PAlrt) or alarm (Alm).	PAlrt

Table 5-8
OC-3 first performance threshold

Parameter number	Performance parameter	Threshold values	Default threshold value
1	laser bias current (LBC)	percentage above normal bias current: 1 to 65535	150

Requirements

The system administrator must supply the thresholds to be provisioned.

Action

Step	Action
1	From the Network Element Status screen, display the performance monitoring screen by entering: **pm↵** *The active PM thresholds screen appears.*

—continued—

Procedure 5-5 (continued)
Provisioning OC-3 equipment performance monitoring thresholds

Step	Action

2 Display the equipment threshold provisioning screen by entering:

eqpperf oc3 <group>; threshld; edit↵

where

<group> the number of the OC-3 circuit pack group for the feeder or tributary as follows:

If the OC-3 is	Then enter one of these valid <group> options	See "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2.
a feeder	**all**, **g1**, or **g2**	
an access bandwidth manager (ABM) tributary	**all**, **g1s**, **g2s**, **g3**, **g4**	
a transport bandwidth manager (TBM) tributary	**all**, **g1s**, **g2s**, **g3**, **g4**, **g5**, **g6**, **g7**, **g8**	

The OC-3 PerfMon Thresholds screen appears.

3 Provision the first threshold status for parameter 1 laser bias current (LBC) by entering:

statust1 1 <status>↵

where

<status> enables or disables the threshold for parameter 1: **on** or **off**

The screen displays the status in reverse video.

—continued—

Procedure 5-5 (continued)
Provisioning OC-3 equipment performance monitoring thresholds

Step	Action
4	Provision the first threshold value for the LBC by entering: **valuet1 1 <value>**↵ where <value> any positive integer to set the threshold for parameter 1
5	Provision the first threshold status for parameter 2, optical power received, (OPR) by entering: **statust2 2 <status>**↵ where <status> enables or disables the threshold for parameter 2: **on** or **off** *The screen displays the status in reverse video.*
6	Provision the second threshold value for the OPR by entering: **valuet2 2 <value>**↵ where <value> any positive integer to set the threshold for parameter 2 *The screen displays the value in reverse video.*
7	Provision the type of report generated when a threshold is crossed by entering: **rpttype <type>**↵ where <type> type of report: alarm (**alm**), or performance alert (**palrt**) *The screen displays the report type in reverse video.*

—continued—

Procedure 5-5 (continued)
Provisioning OC-3 equipment performance monitoring thresholds

Step	Action
8	Repeat steps 2 through 7 for each OC-3 to be provisioned.
9	Return to the Network Element Status screen by entering: **fwpui** ↵

—end—

Procedure 5-6
Provisioning OC-12 equipment performance monitoring thresholds

Use this procedure to provision the following OC-12 equipment performance thresholds.

> ***Note:*** If you want to provision the one-minute time interval (available only for OC3 and OC12), you must use this procedure, which utilizes the network element user interface Performance Monitoring Threshold Edit screen. You cannot provision one-minute thresholds using TL1.

Tables 5-9 and 5-10 show OC-12 equipment performance monitoring thresholds.

Table 5-9
OC-12 performance monitoring thresholds

Parameter	Menu command	Setting and explanation	Default
Status threshold 1	**StatusT1**	sets status of the first performance threshold	off
Value threshold 1	**ValueT1**	sets value of the first performance threshold	See Table 5-10
Report type	**RptType**	determines the type of report generated when a threshold is crossed: alert (PAlrt) or alarm (Alm).	PAlrt

Table 5-10
OC-12 first performance thresholds

Parameter number	Performance parameter	Threshold values	Default threshold value
1	laser bias current (LBC)	percentage above normal bias current: 1 to 65535	150

Requirements

The system administrator must supply the thresholds to be provisioned.

—continued—

Procedure 5-6 (continued)
Provisioning OC-12 equipment performance monitoring thresholds

Action

Step	Action
1	From the Network Element Status screen, display the performance monitoring screen by entering: **pm**↵ *The active PM thresholds screen appears.*
2	Display the equipment threshold provisioning screen by entering: **eqpperf oc12 <group>; threshld; edit**↵ where <group> the number of the OC-12 circuit pack group: **g1** or **g2** (see "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2) *The OC-12 PerfMon Thresholds screen appears.*
3	Provision the first threshold status for parameter 1 laser bias current (LBC) by entering: **statust1 1 <status>**↵ where <status> enables or disables the threshold for parameter 1: **on** or **off** *The screen displays the status in reverse video.*
4	Provision the first threshold value for the LBC by entering: **valuet1 1 <value>**↵ where <value> any positive integer to set the threshold for parameter 1 *The screen displays the value in reverse video.*

—continued—

Procedure 5-6 (continued)
Provisioning OC-12 equipment performance monitoring thresholds

Step	Action
5	Provision the type of report to be generated when a threshold is crossed by entering: **rpttype <type>**↵ where <type> type of report: alarm (**alm**), or performance alert (**palrt**) *The screen displays the report type in reverse video.*
6	Repeat steps 2 through 5 for each OC-12 to be provisioned.
7	Return to the Network Element Status screen by entering: **quit 4**↵

—end—

Procedure 5-7
Setting the TBM shelf position number

Use this procedure to identify the position of a transport bandwidth manager (TBM) shelf on a bay. A central office equipment bay can hold up to three TBM shelves.

Requirements

Before starting this procedure, you must be familiar with the VT 100-type network element user interface. To review how to use the interface, see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A.

Action

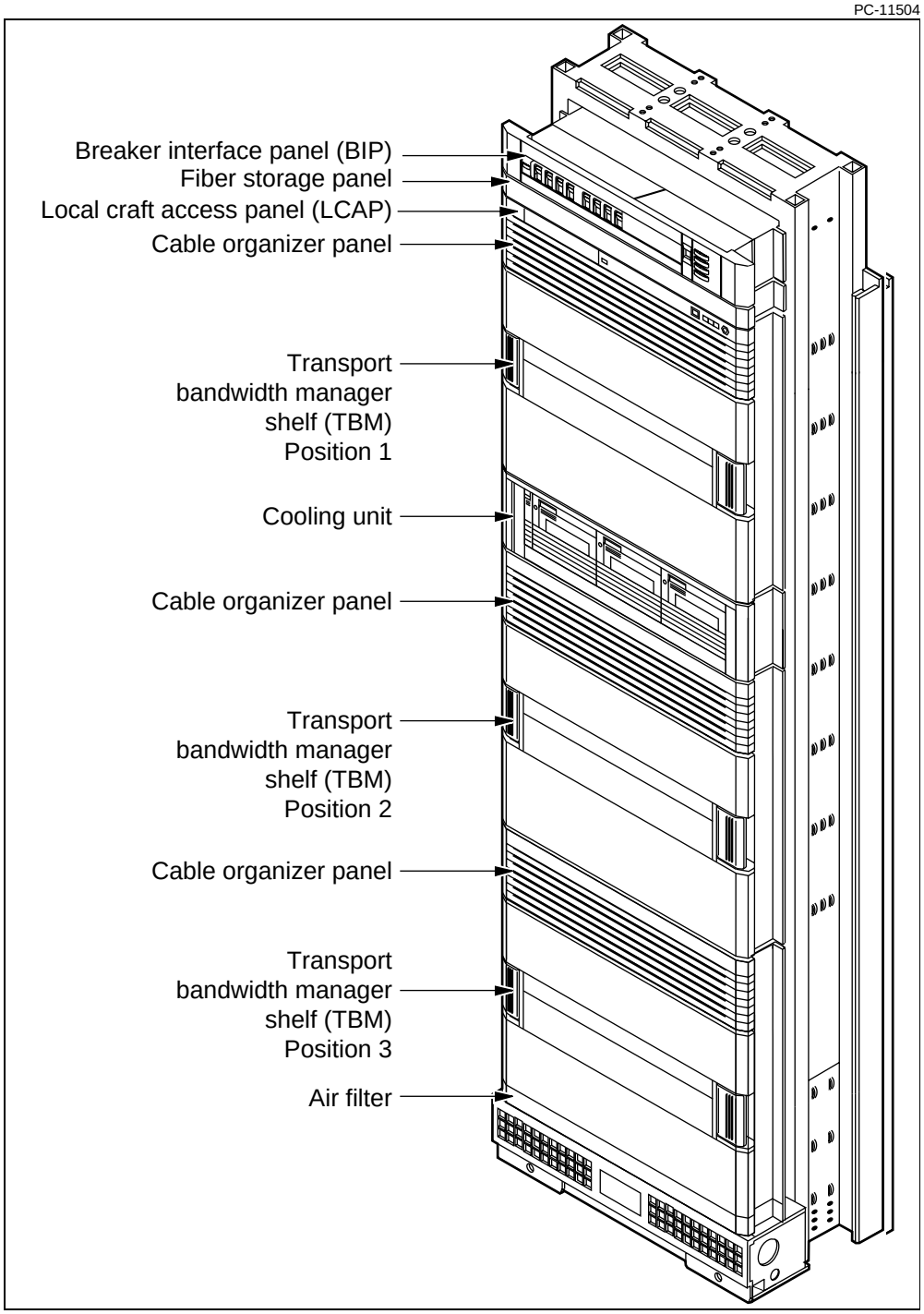
Step	Action
1	Log in to the desired TBM shelf.
2	To access the Shelf Equipment screen with the Edit Shelf menu, enter: **eq sh; edit** ↵ *The Shelf Equipment screen appears with the Edit Shelf menu.*
3	To set the TBM shelf position, enter: **shpos <1/2/3>** ↵ *Figure 5-1 shows that shelves are numbered from top to bottom.*

—continued—

Procedure 5-7 (continued)
Setting the TBM shelf position number

Figure 5-1
Position numbers of transport bandwidth manager shelves

PC-11504



—end—

Procedure 5-8
Deleting a circuit pack group

Use this procedure to delete a circuit pack group (CPG). To delete a DS1, DS3, STS-1, OC-3 or OC-12 circuit pack, you must take the corresponding facilities out of service and delete them. See “Deleting a facility” on page 6-59.

Use this procedure to take the following circuit pack groups out of service and delete them:

- access interface card (AIC)
- copper-distribution shelf power converter (CDSP)
- DS1/VT mapper
- DS3/STS mapper
- external synchronization interface (ESI)
- integrated remote test unit (IRTU)
- line interface card (LIC)
- OC-3 interface card
- OC-12 interface card
- operations controller (OPC)
- processor card (Proc)
- STS-1 interface card
- transport interface card (TIC)
- timing and cross-connect (TXC)

—continued—

Procedure 5-8 (continued)
Deleting a circuit pack group

Action

Step	Action

1 From the Network Element Status screen, display the required equipment screen:

If you are deleting	Then enter
DS1, DS3,STS-1, OC-3, OC-12	**eq <type> <group>**↵ where <type> **ds1**, **ds3**, **sts1**, **oc3**, or **oc12** <group> See "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2. *A typical circuit pack group screen appears.*
ESI	**eq <type> <group>**↵ where <type> **esi** <group> **g1** (top card) or **g2** (bottom card) *A typical circuit pack group screen appears.*
—continued—	

—continued—

Procedure 5-8 (continued)
Deleting a circuit pack group

Step **Action**

If you are deleting	Then enter
TXC	**eq <type> <group>**↵ where <type> **txc** <group> **g1**, **g2** *A typical circuit pack group screen appears.*
TIC, AIC, Proc	**eq <type> <group>**↵ where <type> **tic**, **aic**, or **proc** <group> **a** or **b** *A typical circuit pack group screen appears.*
IRTU or OPC	**eq <type> <group>**↵ where <type> **irtu** or **opc** <group> (no group required) *A typical circuit pack group screen appears.*
LIC or CDSP	**eq <type>;<details> <CDS #> <group>**↵ where <type> type of circuit pack: **lic** or **cdsp** <details> LIC or CDSP details screen: **dtllic** or **dtlcdsp** <CDS #> copper-distribution shelf housing the equipment: **1** to **7** <group> group number of the equipment: For a LIC: **a, b, c,** or **d** For a CDSP: **a** or **b** *A typical circuit pack group screen appears.*
—end—	

2 Change the operating state of the circuit pack group to out of service (OOS) by entering:

chgstate oos↵

yes↵

The state of the circuit pack group changes to OOS.

—continued—

Procedure 5-8 (continued)
Deleting a circuit pack group

Step	Action
3	Delete the circuit pack group by entering: **delete**↵ *The system prompts you for confirmation of the deletion.*
4	Confirm the deletion by entering: **y**↵
5	Repeat steps 1 through 4 for each circuit pack group to be deleted.

—end—

Procedure 5-9
Deleting a copper-distribution shelf

Use this procedure to:

- delete (deprovision) unused copper-distribution shelves (CDSs)
- delete one or more copper-distribution shelves at the fiber central-office terminal (FCOT) when changing from a universal to an integrated configuration
- delete the CDS when the services of an entire CDS are no longer required

This procedure deletes all instances of the following objects:

- line interface cards: NT4K70
- metallic test access cards: NT4K73
- line cards: NT4K65, NT4K67, NT4K68, NT4K69, NT4K77, NT4K78, and NT4K79
- copper-distribution shelf power (CDSP) cards: NT4K62
- the copper-distribution shelf (CDS): NT4K12

Requirements

You must use the Provisioning Manager tool from the operations controller (OPC) or from the DMS-100 maintenance and administration position (MAP) to delete all DS0 line terminations.

For a detailed procedure on deleting a line circuit using the OPC, see *Line Card Testing Procedures*, 323-3001-316, in this volume.

Line card and DS0 channel associations for a integrated configuration are deprovisioned from the DMS-100 MAP. For additional information, see *Subscriber Carrier Module-100 Access, Translation Guide*, 297-2741-350.

Action

Step	Action
1	Use the OPC Provisioning Manager tool to ensure that all DS0 line terminations have been deleted. See *Line Card Testing Procedures*, 323-3001-316, in this volume.

—continued—

Procedure 5-9 (continued)
Deleting a copper-distribution shelf

Step	Action
2	At the breaker interface panel (BIP), turn off the breakers that correspond to the CDSs being deprovisioned. These breakers are labeled “CDS Pwr” and “CDS TB.” ***Note:*** If the equipment is in service when you turn off the CDS breakers, the system generates alarms.
3	Open the line drawers on the CDS and remove all line interface cards (LICs), line cards (LCs), and metallic test access cards (MTACs). **a.** To remove the CDSP, pull the ejector latch. **b.** To remove cards from inside the line drawer, turn the drawer locking screws so the dots are not aligned. Then, to withdraw the line drawer from the (CDS), pull the drawer handle. **c.** To remove each card from its slot, grasp the tab on the line card faceplate with your thumb and forefinger and pull outward.
4	From the main screen network element user interface, display the shelf equipment screen by entering: **eq sh** ↵ *The Shelf Equipment screen appears.*
5	Display the inventory screen for the CDS to be deleted by entering: **inventry cds <CDS #>** ↵ where <CDS #> number of the CDS shelf being deleted: **1** to **7** *The CDS Inventory screen appears.*
6	Delete the copper-distribution shelf by entering: **cdsdel** ↵ *The system prompts for confirmation with the following message:* `This command deletes all objects associated with the CDS shelf (LICs, MTACs, CDSPs, and LCs). Do you wish to continue?`
7	Confirm or cancel the delete request: To cancel the delete request, enter: **no** ↵ To confirm the delete request, enter: **yes** ↵

—continued—

Procedure 5-9 (continued)
Deleting a copper-distribution shelf

Step **Action**

The following system messages can appear when you confirm the deletion:

System message	Meaning
Delete command in progress, Please wait...	The system is deleting the shelf and its objects.
Delete command successful.	The deletion is complete. Go to step 8.
The system is busy so the Delete command cannot be processed at the moment. Please re-enter the command later.	A CDS delete is already in progress. Re-enter this command at a later time.
The following LICs are not in the correct state:	Not all LICs were removed in step 3. The delete command has been aborted. Return to step 3, and remove all cards.
There is at least one LC with a line termination provisioned. Use “Query <CDS #>” command from the EQ LC screen to find out all LCs with line termination provisioned.	Find out which LCs are still provisioned. For details on deleting the termination, see *Line Card Testing Procedures*, 323-3001-316, in this volume.
No Shelf record(s) found	The delete command has been issued against a CDS already deleted from the system.
The Delete command cannot be processed since the LC exists or is an invalid state. Please check the LC and then re-enter the command.	A line termination was provisioned after the delete command was entered. Check the shelf for provisioned line terminations, and remove them. For details on deleting the termination, see *Line Card Testing Procedures*, 323-3001-316, in this volume.

—continued—

Procedure 5-9 (continued)
Deleting a copper-distribution shelf

Step	Action
8	Select the next CDS to be deleted by entering: **select <CDS #>** ↵ where <CDS #> number of the CDS being deleted: **1** to **7**
9	Repeat steps 6 through 8 for each CDS to be deleted. After deleting the necessary shelves, go to step 10.
10	Return to the Network Element Status screen by entering: **fwpui** ↵

Note: If the system is changing from universal to integrated, the line terminations at the remote network element must be reprovisioned from the DMS-100 MAP. For integrated line card provisioning, see *Subscriber Carrier Module-100 Access, Translation Guide,* 297-2741-350.

—end—

Provisioning and deprovisioning a facility

This chapter contains procedures for manually provisioning and deprovisioning AccessNode DS1, DS3, STS-1, OC-3, OC-12, and transport inferface card (TIC) facility parameters.

> ***Note:*** To provision external synchronization interface (ESI) facility parameters, see Chapter 4, “Timing reference and synchronization procedures.”

Specific provisioning tasks allow you to change the default values the system assigns during initial installation. For lists of provisioning tasks, see Chapter 1, “Overview of provisioning.”

> ***Note:*** For information on provisioning or deprovisioning Universal Edge 9000 (UE9000) systems, see the *UE9000 Voice OAM&P Guide*.

Chapter task list

This chapter includes the following tasks.

Occasional tasks

Procedure	Task	See
6-1	Adding a facility	page 6-3
6-2	Enabling and disabling DS1 and STS-1 facility alarms	page 6-6
6-3	Enabling and disabling DS3 or STS-1 facility alarms	page 6-9
6-4	Enabling and disabling OC-3 or OC-12 facility alarms	page 6-12
6-5	Enabling and disabling COMM facility alarms	page 6-14
6-6	Enabling and disabling TIC/STS-1 and VT1.5 alarms	page 6-16
6-7	Provisioning DS1 facility parameters	page 6-21
6-8	Provisioning DS3 or STS-1 facility parameters	page 6-27
6-9	Provisioning OMC DS1 facility parameters	page 6-31
6-10	Provisioning OC-3 or OC-12 facility parameters	page 6-35
6-11	Provisioning COMM facility transmission parameters	page 6-38
6-12	Provisioning DS1, DS3, or STS-1 facility performance monitoring thresholds	page 6-41
6-13	Provisioning OC-3 or OC-12 facility performance monitoring thresholds	page 6-47
6-14	Provisioning STS path or VT path facility performance monitoring thresholds	page 6-52
6-15	Provisioning the SDCC connections	page 6-57
6-16	Deleting a facility	page 6-59

Note: If you cannot successfully complete these procedures, contact your next level of support.

Requirements for procedures

Read the command conventions in *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A.

Procedure 6-1
Adding a facility

Use this procedure to add a DS1, DS3, STS-1, OC-3, or OC-12 facility to existing equipment. A facility can not be added if the equipment does not exist. The facility must be out of service before you perform this procedure.

Requirements

CAUTION
Loss of service
If you delete one OC-12 facility after provisioning both OC-12 facilities, ensure that a protection switch is not pending before re-adding the deleted OC-12 facility.

Actions

Step	Action

1 From the Network Element Status screen, display the screen for the facility to be added:

If you are adding a	Then enter
DS1 facility	**fa ds1 <group> <port>**↵ where <group> group number of the existing DS1 equipment (see “Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12” on page 5-2) <port> port number of the facility being added: **1** to **14** The DS1 facility screen appears.
DS3 facility	**fa ds3 <group> <port>**↵ where <group> group number of the existing DS3 equipment (see “Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12” on page 5-2) <port> port number of the facility being added: **1** to **3** The DS3 Facility screen appears.
—continued—	

—continued—

Procedure 6-1 (continued)
Adding a facility

Step **Action**

If you are adding an	Then enter
STS-1 facility	**fa sts1 <group> <port>**↵ where <group> group number of the existing STS-1 equipment (see “Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12” on page 5-2) <port> port number of the facility being added: **1** to **3** The STS1 Facility screen appears.
OC-3 facility that is a feeder	**fa oc3 <group>**↵ where <group> number of the OC-3 circuit pack group: **all**, **g1**, or **g2** (see “Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12” on page 5-2) The OC-3 Facility screen appears.
OC-3 facility that is an ABM tributary	**fa oc3 <group>**↵ where <group> number of the OC-3 circuit pack group: **all**, **g1s**, **g2s**, **g3**, **g4 (**see “Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12” on page 5-2) The OC-3 Facility screen appears.
OC-3 facility that is a TBM tributary	**fa oc3 <group>**↵ where <group> number of the OC-3 circuit pack group: **all**, **g1s**, **g2s**, **g3**, **g4**, **g5**, **g6**, **g7**, **g8** (see “Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12” on page 5-2 The OC-3 Facility screen appears.
—continued—	

—continued—

Procedure 6-1 (continued)
Adding a facility

Step **Action**

If you are adding a	**Then enter**
OC-12 facility	**fa oc12 <group>**↵ where <group> group number of existing OC-12 equipment: **g1** or **g2 (**see "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2) The OC-12 Facility screen appears.
—end—	

2 Add the new facility by entering:

add↵

3 For DS1, DS3, or STS-1 facilities, set the facility parameters. For directions, see "Provisioning DS1 facility parameters" on page 6-21 or "Provisioning DS3 or STS-1 facility parameters" on page 6-27.

4 For DS1 facilities, add the facility assignments.

5 Repeat steps 1 through 3 for each DS3 or STS-1 facility you are adding. Repeat steps 1 through 4 for each DS1 facility you are adding.

6 Return to the Network Element Status screen by entering:

fwpui↵

—end—

Procedure 6-2
Enabling and disabling DS1 and STS-1 facility alarms

Use this procedure to enable or disable DS1 and STS-1 facility alarm points. (STS-1 alarms are a subset of the DS1 facility alarms). Setting an alarm point On enables the alarm; therefore, the system raises the alarm when alarm conditions occur. Setting an alarm Off disables the alarm; therefore, the system does not raise the alarm when the alarm conditions occur.

Note 1: Initially, all alarm points are set to On (enabled).

Note 2: As an alternative to disabling alarms for unused facilities, you can take unused facilities out of service. See Chapter 16, "Changing operating states."

Action

Step	Action
1	From the Network Element Status screen, display the DS1 facility screen by entering: **fa ds1 <group> <port>; almprov**↵ where <group> — DS1 group number (see "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2) <port> — port number corresponding to the actual facility: **1** to **14,** or **all** *The DS1 Alarm Provisioning screen appears. The following example shows a typical screen. As shown in the example, an alarm name and number identifies each alarm. The alarm number is shown to the left of the alarm name (for example, the `Line Rx SES threshold 1` alarm has an alarm number of 6).* **—continued—**

Procedure 6-2 (continued)
Enabling and disabling DS1 and STS-1 facility alarms

Step	Action

Typical DS1 Facility Alarm Provisioning screen

```
                Critical Major minor warning FailProt Lockout ActProt PrfAlrt
      Network View    .     .     3      .         .       .       .       .
                      2     .     .      3         .       .       .       .       .

AlmProv
 0 Quit          DS1 Facility Alarm Provisioning    Shelf: 1
 2 Select                                            Unit: DS1 G1 Port:1
 3
 4
 5 ListAlms      #        Alarm Point                          Status
 6 AlmRpt        1  Loopback                                    On
 7               2  Line Rx CV threshold 1                     On
 8               3  Line Rx CV threshold 2                     On
 9               4  Line Rx ES threshold 1                     On
10               5  Line Rx ES threshold 2                     On
11 EditStat      6  Line Rx SES threshold 1                    On
12               7  Line Rx SES threshold 2                    On
13               8  Rx loss of signal                          On
14               9  Rx bipolar violation                       On
15               10 Rx loss of frame                           On
16                                  Page 1 of 2 Use F - Forward B - Back
17
18 Help

  NE 2
Time  19:45   >
```

2 Set the DS1 facility alarm points to either On or Off by entering:

editstat <alarm point #> < status >↵

where

<alarm point #>	number that represents the alarm point
<status>	status of the alarm point: **on** or **off**

If you set an alarm point to Off, the system prompts for confirmation. Enter:

y ↵

The screen displays the new alarm point settings in reverse video.

3 Repeat step 2 for each DS1 alarm point to be set. When all DS1 alarm points are set, go to step 4.

4 Display the DS1/STS-1 Facility Alarm Provisioning screen by entering:

select sts1 <unit> <port> ↵

where

<unit>	number corresponding to the STS-1
<port>	port number corresponding to the facility **1** to **14,** or **all**

—continued—

Procedure 6-2 (continued)
Enabling and disabling DS1 and STS-1 facility alarms

Step	Action
	The DS1/STS1 Fac Alarm Provisioning screen appears.
5	Set the STS-1 facility alarm points to either On or Off by entering: **editstat <alarm point #> <status>**↵ where <alarm point #> number that represents the alarm <status> status of the alarm point: **on** or **off** If you set an alarm point to Off, the system prompts for confirmation. Enter: **y** ↵ *The screen displays the new alarm point settings in reverse video.*
6	Repeat steps 1 through 5 for each facility (port) associated with a DS1 group, or for each DS1 group.
7	Return to the Network Element Status screen by entering: **fwpui**↵

—end—

Procedure 6-3
Enabling and disabling DS3 or STS-1 facility alarms

Use this procedure to enable or disable DS3 or STS-1 facility alarm points. Setting an alarm point On enables the alarm; therefore, the system raises the alarm when alarm conditions occur. Setting an alarm Off disables the alarm; therefore, the system does not raise the alarm when the alarm conditions occur.

Note 1: Initially, all alarm points are set to On (enabled).

Note 2: As an alternative to disabling alarms for unused facilities, you can take unused facilities out of service. See Chapter 16, "Changing operating states."

Action

Step	Action

1 From the Network Element Status screen, display the screen for the DS3 or STS-1 facility:

If you are enabling or disabling	**Then enter**	
a DS3 facility	**fa ds3 <group> <port>; almprov**↵ where	
	<group>	DS3 group number (see "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2)
	<port>	port number corresponding to the actual facility: **1** to **3**
	The DS3 Alarm Provisioning screen appears.	
—continued—		

—continued—

Procedure 6-3 (continued)
Enabling and disabling DS3 or STS-1 facility alarms

Step **Action**

If you are enabling or disabling	**Then enter**
an STS-1 facility	**fa sts1 <group> <port>; almprov**↵ where <group> STS-1 group number (see "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2) <port> port number corresponding to the actual facility: **1** to **3** The STS1 Alarm Provisioning screen appears.
—end—	

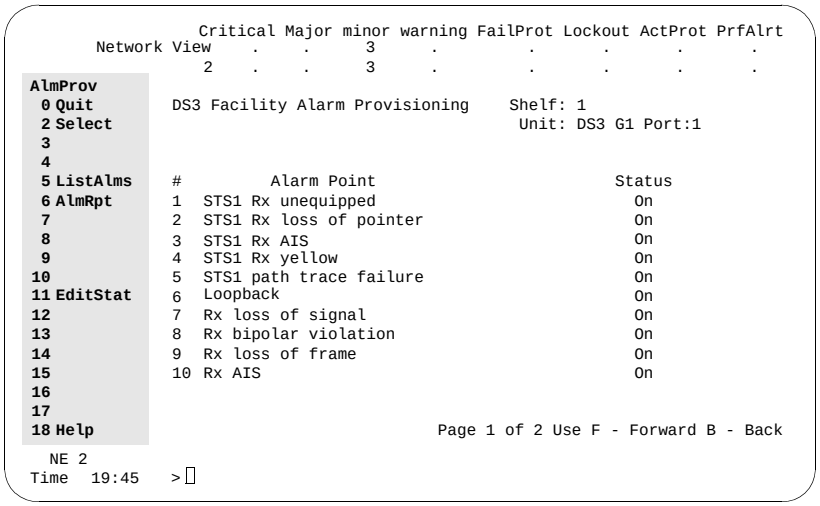
The following example shows a typical screen for a DS3 facility. The screen for the STS-1 facility is similar. As shown in the example, an alarm name and number identifies each alarm. The alarm number is shown to the left of the alarm name (for example, the `STS1 path trace failure` *alarm has a number of 5).*

—continued—

Procedure 6-3 (continued)
Enabling and disabling DS3 or STS-1 facility alarms

Step	Action

Typical DS3 Facility Alarm Provisioning screen



2 Set the DS3 or STS-1 facility alarm points to either On or Off by entering:

editstat <#> <status>↵

where

<#>	number that represents the alarm
<status>	status of the alarm point: **on** or **off**

If you set an alarm point to Off, the system prompts for confirmation. Enter:

y ↵

The screen displays the new alarm point settings in reverse video.

3 Repeat step 2 for each DS3 or STS-1 alarm point to be set.

4 Repeat steps 1 through 3 for each DS3 facility to be provisioned.

5 Return to the Network Element Status screen by entering:

fwpui↵

—end—

Procedure 6-4
Enabling and disabling OC-3 or OC-12 facility alarms

Use this procedure to enable or disable alarm points for an OC-3 or OC-12 facility. Setting an alarm point On enables the alarm; therefore, the system raises the alarm when alarm conditions occur. Setting an alarm Off disables the alarm; therefore, the system does not raise the alarm when the alarm conditions occur.

Note 1: Initially, all alarm points are set to On (enabled).

Note 2: As an alternative to disabling alarms for unused facilities, you can take unused facilities out of service. See Chapter 16, "Changing operating states."

Action

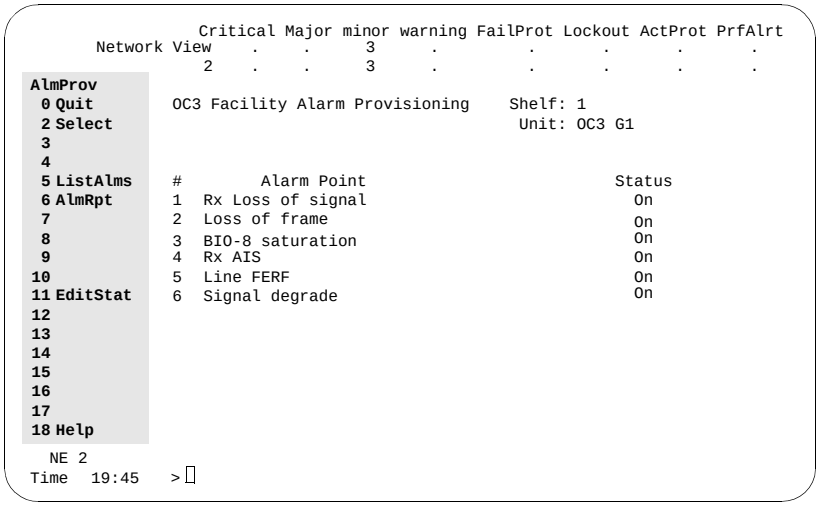
Step	Action
1	From the Network Element Status screen, display the OC-3 or OC-12 facility screen, as required, by entering: **fa <type> <group>**↵ where <type> **oc3** or **oc12** <group> See "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2. *The OC-3 facility screen appears.*
2	Display the Alarm Provisioning screen by entering: **almprov**↵ *The OC-3 or OC-12 Facility Alarm Provisioning screen appears. The following example shows a typical OC-3 facility alarm provisioning screen. As shown in the example, an alarm name and number identifies each alarm.The alarm number is shown to the left of the alarm name (for example, the* `Rx AIS` *alarm has a number of 4).*

—continued—

Procedure 6-4 (continued)
Enabling and disabling OC-3 or OC-12 facility alarms

Step	Action

Typical OC-3 Facility Alarm Provisioning screen



3 Set the alarm points to either On or Off by entering:

editstat <#> <status>↵

where

<#> number that represents the alarm.

<status> status of the alarm point: **on** or **off**

If you set an alarm point to Off, the system prompts for confirmation. Enter:

y ↵

The screen displays the new alarm point settings in reverse video.

4 Repeat step 3 for each alarm point to be set.

5 Repeat steps 1 through 4 for the second OC-3 group.

6 Return to the Network Element Status screen by entering:

fwpui↵

—end—

Procedure 6-5
Enabling and disabling COMM facility alarms

Use this procedure to enable or disable data communication (COMM) facility alarms, which include SONET data communications channel (SDCC), embedded operations channel (EOC), and common signaling channel (CSC). If you set an alarm point On, the system raises an alarm when the alarm condition occurs. If you set an alarm point Off, the system does not raise an alarm when the alarm condition occurs.

Action

Step	Action
1	From the Network Element Status screen, display the COMM Fac Port screen by entering: **fa comm; ports <type>**↵ where <type> specifies the type of COMM channel: **sdcc**, **eoc, csc, tmc, omc, vlcm,** or **cnet** *The COMM Fac Port screen appears for the specified communication channel.*
2	Display the COMM Fac Detail screen by entering: **dtlport <port>**↵ where <port> port number
3	Display the Alarm Provisioning screen by entering: **almprov**↵ *The COMM Alarm Provisioning screen appears.*

—continued—

Procedure 6-5 (continued)
Enabling and disabling COMM facility alarms

Step	Action
4	Set the alarm points to be either On or Off by entering: **editstat <#> <status>**↵ where <#> number of the alarm point as shown on the screen to the left of the alarm name <status> status of the alarm point: **on** or **off** If you set an alarm point to Off, the system prompts for confirmation. Enter: **y** ↵ *The screen displays the new alarm point settings in reverse video.*
5	Repeat step 4 for each alarm point to be set.
6	Repeat steps 1 through 4 for each channel and port.
7	Return to the Network Element Status screen by entering: **fwpui**↵

—end—

Procedure 6-6
Enabling and disabling TIC/STS-1 and VT1.5 alarms

Use this procedure to enable or disable STS-1 and VT1.5 facility alarms associated with the transport interface card (TIC) facility.

> ***Note:*** As an alternative to disabling alarms for unused VT1.5s, you can take unused VT1.5s out of service. This prevents unnecessary alarms from being raised: "VT Rx AIS" and "VT Rx unequipped." For details, see Chapter 16, "Changing operating states."

Table 6-1 lists the default assignments for disabling alarms for unused VT1.5s.

Table 6-1
VT1.5 default assignments

If you have this configuration	Then the VT1.5s assignments are	And they correspond to this DS1 port
integrated	up to 28 VT1.5s on STS-1 #1 (See note.)	-
universal	up to 28 VT1.5s on STS-1 #2	-
integrated, with TR-08 circuits	VT1.5s used for the "A" span on STS-1 #1 1 5 9 13 (See note.)	on DS1 card #1 1 5 9 13
	VT1.5s used for the "A" span on STS-1 #1 17 21 25 (See note.)	on DS1 card #2 3 7 11
Note: For DS1-fed AccessNodes, all GR-303 multivendor interface (MVI), GR-303 digital multiplex switch (DMS),TR-08, and tandem DS1 traffic require DS1/VT mappers G1 and G2. DS1/VT mapper G4 can be used only for OMC links.		

—continued—

Procedure 6-6 (continued)
Enabling and disabling TIC/STS-1 and VT1.5 alarms

Table 6-2 lists the default STS-1 assignments for disabling alarms associated with an unused STS-1 for each type of system.

Table 6-2
STS-1 default assignments

If you have this type of system	Then this STS-1	Carries this type of traffic
Fiber-fed ring	no default assignments	
Fiber-fed point-to-point, integrated (transport bandwidth manager — access bandwidth manager)	1	GR-303 DMS/MVI TR-08 DS1 tandem
	2	unused
	3	transport
	4 through 12 (for OC-12 only)	transport
Fiber-fed point-to-point, universal (ABM—ABM)	1	GR-303 DMS/MVI TR-08 DS1 tandem
	2	universal digital loop carrier (UDLC)
	3	unused
	4 through 12 (for OC-12 only)	transport
Single-ended	STS-1 #1	GR-303 DMS/MVI TR-08 DS1 tandem
	STS-1 #2	unused
	STS-1 #3	DS1 transport
DS1-fed	STS-1 #1	GR-303 DMS/MVI TR-08 DS1 tandem operations maintenance channel (OMC) DS1s
	STS-1 #2	OMC DS1s
	STS-1 #3	AccessNode Express

—continued—

Procedure 6-6 (continued)
Enabling and disabling TIC/STS-1 and VT1.5 alarms

Action

Step	Action
1	From the Network Element Status screen, display the transport interface card (TIC) facility screen for the STS-1 that requires alarms to be provisioned by entering: **fa tic <port #>**↵ where <port #> — number of the STS-1: AccessNode supports STS-1 **1** and **2**; AccessNode Express supports STS-1 **1**,**2**, and **3** If you provisioned default connections, see Tables 6-1 and 6-2. If you did not provision default connections, see the Connection Manager tool. *The TIC/STS-1 facility screen for the selected STS-1 appears.*
2	Display the Alarm Provisioning screen by entering: **almprov**↵ *The TIC/STS-1 Facility Alarm Provisioning screen appears.*
3	Set the STS-1 facility alarm points to either On or Off as required by entering: **editstat <alarm point #> <status>**↵ where <alarm point #> — number that represents the alarm as shown on the screen to the left of the alarm name <status> — status of the alarm point: **on** or **off** If you set an alarm point to Off, the system prompts for confirmation. Enter: **y** ↵ *The screen displays the new alarm point settings in reverse videos.*
4	Repeat step 3 for each alarm to be provisioned. After provisioning the required alarms, go to step 5.
5	Return to the TIC/STS-1 facility screen by entering: **quit**↵ *The TIC/STS-1 facility screen appears.*

—continued—

Procedure 6-6 (continued)
Enabling and disabling TIC/STS-1 and VT1.5 alarms

Step	Action
6	Display the screen for the VT1.5 to be provisioned by entering: **subptsel <subport #>**↵ where <subport #> number of the VT1.5 requiring alarms to be provisioned: **1** to **28** *The TIC/VT1.5 facility screen appears for the selected VT1.5 facility.*
7	Display the Alarm Provisioning screen by entering: **almprov**↵ *The TIC/VT1.5 Fac Alarm Provisioning screen appears.* ***Note:*** The text used in TR-08 alarms, as they appear on the alarm provisioning screen, always includes the phrase “System 1,” although the full range of TR-08 systems is 1 to 7. Therefore, if you disable a TR-08 alarm, such as TR-08 System 1 far end major, you are disabling this alarm for any TR-08 system assigned to the VT1.5 facility.
8	Set the VT1.5 facility alarm points to either On or Off by entering: **editstat <alarm point #> <status>**↵ where <alarm point #> number that represents the alarm as shown to the left of the alarm name <status> status of the alarm point: **on** or **off** If you set an alarm point to Off, the system prompts for confirmation. Enter: **y** ↵ *The screen displays the new alarm point settings in reverse video.*
9	Select the next VT1.5 to be provisioned by entering: **select <subport #>**↵ where <subport #> number of the VT1.5 requiring alarms to be provisioned: **1** to **28** *The TIC/VT1.5 Fac Alarm Provisioning screen appears for the selected VT1.5 facility.*

—continued—

Procedure 6-6 (continued)
Enabling and disabling TIC/STS-1 and VT1.5 alarms

Step	Action

10 Repeat steps 8 and 9 until you have provisioned all the VT1.5s with the required alarm settings. Then, go to step 11.

11 Display the TIC/STS-1 facility screen by entering:

quit ↵

12 Does another STS-1 require alarms to be provisioned?

If	Then
yes	Select the next STS-1 by entering: **select <port #>** ↵ where <port #> number of the next STS-1 you will provision
no	Return to the Network Element Status screen by entering: **fwpui**↵

13 If you provisioned default connections, see Tables 6-1 and 6-2. If you did not provision default connections, see the Connection Manager tool.

14 Repeat steps 2 through 11 of this procedure.

15 Return to the Network Element Status screen by entering:

fwpui↵

—end—

Procedure 6-7
Provisioning DS1 facility parameters

Use this procedure to provision the parameters for a DS1 transmission facility.

Note 1: For operations maintenance channel (OMC) DS1 facility parameters, see “Provisioning OMC DS1 facility parameters” on page 6-31.

Note 2: For information on provisioning DS1 facilities between a local digital switch and an S/DMS TransportNode network element (in a single-ended AccessNode configuration with an OC-12 ring), see *S/DMS TransportNode Provisioning and Operations Procedures*, 323-1111-310.

Table 6-3 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.

Note: Use b8zs line coding when provisioning a DS1 facility as an OMC or a virtual line concentration module (VLCM).

Table 6-3
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 ami, amizcs or b8zs	use ami, amiczs or b8zs
frame format	use extended superframe (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

—continued—

Procedure 6-7 (continued)
Provisioning DS1 facility parameters

Table 6-4 lists the parameters for provisioning a DS1 facility.

Table 6-4
Parameters for DS1s

Parameter and menu command	Setting	Explanation	Default
facility identifier, **facid**		An alphanumeric string up to 38 characters.	no entry
line coding, **lcoding**	ami amizcs b8zs	Line coding is a binary format that allows regenerative repeaters to distinguish valid input from line noise. 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. 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. 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.	ami

—continued—

Table 6-4 (continued)
Parameters for DS1s

Parameter and menu command	Setting	Explanation	Default
line build-out, **lbo**	short medium long	short: 0 to 46 m (0 to 150 ft) medium: 46 to 137 m (150 to 450 ft) long: 137 to 200 m (450 to 655 ft)	short
frame format, **framefmt**	superframe extended dlc null	Framing provides the orderly organization of the bits in the 1.544 Mb/s DS1 signal. A superframe contains 12 DS1 frames, with the 193rd bit in each frame used as a control bit. These control bits supply frame and signal management. 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. The digital loop carrier (DLC) setting is used mainly with TR-08 DS1s associated with span A. The null setting ensures that no framing bits are added.	superframe
alarm encoding, **alarmenc**	ones zeros	When an all 1's signal is received, the facility output can be provisioned to send an all 1's or an all 0's signal on the output port.	ones
synchronization mode, **synchr**	byte-synchronous asynchronous	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. Asychronous systems require bit stuffing because the bit rates vary from equipment to equipment. Therefore, an asychronous setting has no direct payload visibility.	byte-synchronous
performance monitoring, **pmprov**	enable disable	Enables or disables DS1 facility performance monitoring	enabled
—end—			

Procedure 6-7 (continued)
Provisioning DS1 facility parameters

Requirements

Before using this procedure, use the facility records to get the values for each of the DS1 parameters listed in Table 6-3.

Action

Step	Action
1	From the Network Element Status screen, display the DS1 facility provisioning screen by entering: **fa ds1 <group> <port>**↵ where <group> DS1 group number (see "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2) <port> number of the DS1 port: **1** to **14,** or **all**
2	Take the facility out of service by entering: **chgstate oos** ↵ **y** ↵ *The state of the facility changes to out of service (00S).*
3	To change the parameters, display the Edit Facility screen by entering: **edit** ↵ *The Edit Facility screen appears.*

—continued—

Procedure 6-7 (continued)
Provisioning DS1 facility parameters

Step	Action

4 Set or change any or all DS1 facility parameters listed in the following table. Make any number of settings or changes before proceeding to step 5. If you are provisioning for the first time, then provision all the facility parameters.

If provisioning	Then enter
DS1 facility identifier	**facid<identifier>**↵ where <identifier> an alphanumeric string up to 38 characters ***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 (’). *The provisioned value appears in reverse video.*
line coding	**lcoding <type>**↵ where <type> type of line coding: **b8zs**, **ami** or **amizcs** The provisioned vale appears in reverse video.
line build-out range	**lbo < range >**↵ where <range> the line build-out range: **short, medium,** or **long** *The provisioned value appears in reverse video.*
framing format	**framefmt <format>**↵ where <format> the framing format: **null, superframe, extended,** or **dlc** The provisioned value appears in reverse video.

—continued—

—continued—

Procedure 6-7 (continued)
Provisioning DS1 facility parameters

Step **Action**

If provisioning	Then enter
alarm encoding	**alarmenc <encoding>**↵ where <encoding> type of alarm encoding: **ones** or **zeros** The provisioned value appears in reverse video.
synchronization mode	**synchr <mode>**↵ where <mode> synchronization mode: **bytesynchronous** or **asynchronous** The provisioned value appears in reverse video. ***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.`"
performance monitoring	**pmprov <status>**↵ where <status> status of the DS1 facility performance monitoring: **enable** or **disable** The provisioned value appears in reverse video.
—end—	

5 Return the facility to in service by entering:

chgstate is↵

The state changes to in service (IS).

6 Repeat steps1 through 5 for each DS1 facility (port) to be provisioned and for each DS1 group to be provisioned.

7 Return to the Network Element Status screen by entering:
fwpui↵

—end—

Procedure 6-8
Provisioning DS3 or STS-1 facility parameters

Use this procedure to provision the parameters for a DS3 or STS-1 transmission facility.

Table 6-5 lists the parameters for provisioning a DS3 or STS-1 facility.

Table 6-5
Parameters for DS3s and STS-1s

Parameter	Menu command	Setting and explanation	Default
facility identifier	facid	an alphanumeric string up to 38 characters	no entry
line build-out	lbo	Cable RG59B/U: short: 0 to 50 m (0 to 164 ft) long: 50 to 76 m (164 to 250 ft) Cables 734/728A: short: 0 to 68 m (0 to 225 ft) long: 68 to 137 m (225 to 450 ft)	short
Tx parity correction	Txparity	sets the transmit (Tx) parity correction on or off	off
Rx parity correction	Rxparity	sets the receive (Rx) parity correction on or off	off
framing	framing	Toggles the framing to On or Off, or sets it as specified. Use off for clear-channel DS3s. When you select Off, also set Tx and Rx parity to Off, and ignore DS3 path performance monitoring.	on

Requirements

Before using this procedure, use the facility records to get the values for each of the DS3 or STS-1 parameters listed in Table 6-5.

—continued—

Procedure 6-8 (continued)
Provisioning DS3 or STS-1 facility parameters

Action

Step	Action

1 From the Network Element Status screen, display the screen for the facility to be provisioned:

If provisioning	Then enter
a DS3 facility	**fa ds3 <group> <port>** ↵ where <group> DS3 group number (see"Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2) <port> number of the DS3 port: **1** to **3,** or **all** The DS3 Facility Provisioning screen appears.
an STS-1 facility	**fa sts1 <group> <port>** ↵ where <group> STS-1 group number (see"Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2) <port> number of the STS-1 port: **1** to **3,** or **all** The STS1 Facility Provisioning screen appears.
—end—	

2 Take the facility out of service by entering:

chgstate oos↵

y↵

The state of the facility changes to out of service (OOS).

—continued—

Procedure 6-8 (continued)
Provisioning DS3 or STS-1 facility parameters

Step	Action

3 To change the parameters, display the Edit Facility screen by entering:

edit↵

The Edit DS3 (or STS1) Facility provisioning screen appears .

4 Set or change any or all DS3 facility parameters listed in the following table. Make any number of settings or STS-1 changes before proceeding to step 5. If you are provisioning for the first time, then provision all the facility parameters.

If provisioning	Then enter
DS3 or STS-1 facility identifier	**facid<identifier>**↵ where <identifier> an alphanumeric string up to 38 characters ***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 (’). The provisioned value appears in reverse video.
line build-out range	**lbo <range>**↵ where <range> the line build-out range: **Short** or **Long** The provisioned value appears in reverse video.
transmit (Tx) parity correction	**txparity <state>**↵ where <state> the state of the Tx parity correction: **on** or **off** The provisioned value appears in reverse video.
—continued—	

—continued—

Procedure 6-8 (continued)
Provisioning DS3 or STS-1 facility parameters

Step **Action**

If provisioning	Then enter
receive (Rx) parity correction	**rxparity <state>**↵ where <state> the state of the Rx parity correction: **on** or **off** The provisioned value appears in reverse video.
framing status	**framing <state>**↵ where <state> state of the framing: **on** or **off** The provisioned value appears in reverse video.
—end—	

5 Return the facility to in service (IS) by entering:

chgstate is↵

The state changes to IS

6 Repeat steps 1 through 5 for each DS3 facility (port) to be provisioned and for each DS3 group to be provisioned.

7 Return to the Network Element Status screen by entering:

fwpui↵

—end—

Procedure 6-9
Provisioning OMC DS1 facility parameters

Use this procedure to provision or deprovision a DS1 facility as an operations maintenance channel (OMC) in a DS1-fed AccessNode (DFA). Only network elements in DFA systems not connected by control network (CNET) or section data communications channel (SDCC) links require OMC provisioning. OMC provisioning must be performed independently at both the operations controller (OPC) shelf and the DFA remote fiber terminal (RFT).

A series of commands in a command interpreter (CI) tool accessed from the network element DS1 or TIC facility screen allows OMC provisioning. OMC links can be added, deleted, or queried. The OMC download channel can also be set.

> ***Note:*** Multiple OMC links can be provisioned only on a DFA RFT that will carry traffic and act as a communication server for other DFA RFTs.

Table 6-6 lists the DS1 parameters for provisioning an OMC.

Table 6-6
Provisioning DS1 parameters for an operations maintenance channel

Parameter	Menu command	Setting and explanation
OMC facility identifier	**omc add**	link number DS1 group number: G1, G2, or G4 DS1 port number: 1 to 14 number of DS0s utilized: 3 to 6 link name: maximum 20 character string
OMC software download channel	**omc setdlchan**	link number
OMC delete	**omc delete**	link number
line coding	lcoding	use the b8zs setting. See “Provisioning DS1 facility parameters” on page 6-21.

—continued—

Procedure 6-9 (continued)
Provisioning OMC DS1 facility parameters

Requirements

The equipment must exist for an OMC DS1 to be added. Only DS1s not assigned to carry traffic can be provisioned as OMC links; however, an OMC link can be used for synchronization at a DFA RFT or OPC shelf.

Each OMC link is assigned to a dedicated DS1. Ensure that the OMC bandwidth and DS1 facility parameters are provisioned with the same values at the OPC shelf and at the DFA RFT.

Action

Step	Action
1	At the Network Element Status screen, access the command interpreter (CI) by entering: **quit all**↵
2	Access the OMC command interpreter (OMC CI) by entering: **omcci**↵ *The OMCCI prompt appears.*
3	Determine the OMC links that currently exist by entering: **omc query all**↵ *A list of 10 OMC links appears (both assigned and unassigned).* ***Note:*** If an OMC link is assigned as the software download channel for an RFT, an asterisk appears under the D/L header.
4	Decide if you want to delete an existing OMC data link, then complete the instructions in the following table. ***Note:*** The OMC delete command is not available from the OPC. The delete command is available only from a local RFT network element user interface (NEUI) port located on the local craft access panel (LCAP).

CAUTION
Loss of operations administration and maintenance communication
Deleting an OMC link may disrupt operations, administration, and maintenance (OA&M) communication between the OPC and DFA RFT. If you delete the OMC link that is the software download channel for the RFT, you cannot download software until a new download channel is established.

—continued—

Procedure 6-9 (continued)
Provisioning OMC DS1 facility parameters

Step Action

If you want to	Then complete the following
delete an OMC link	From the Network Element Status screen, enter: **omc delete <link #>**↵ **y**↵ where <link #> OMC link number: **1** to **10** *The system indicates that the OMC link is deleted.* Go to step 5.
add an OMC link	From the Network Element Status screen, enter: **omc add <link #> <group> <port> <bandwidth> <linkname>**↵ where <link #> OMC link number: **1** to **10** <group> DFA DS1 group number: **g1**, **g2**, or **g4** (see "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2) <port> number of the DS1 port: **1** to **14** <bandwidth> number of DS0s used for OMC data link: **3**, **4**, **5,** or **6** <linkname> optional link name (character string up to 20 characters) *The system indicates that a link has been added.* To add more data links, repeat this step. Go to step 5.

—continued—

—continued—

Procedure 6-9 (continued)
Provisioning OMC DS1 facility parameters

Step **Action**

If you want to	Then complete the following
assign a software download channel	From the Network Element Status screen, enter: **omc setdlchan <link #>**↵ where <link #> OMC link number: **1** to **10** The system indicates that the OMC data link is established. ***Note:*** The system automatically assigns the OMC download channel to the first OMC data link added to the network element. To assign the OMC download channel to another OMC data link, use the **omc setdlchan** command. Go to step 5.
—end—	

5 Quit the OMC command interpreter by entering:

quit↵

—end—

Procedure 6-10
Provisioning OC-3 or OC-12 facility parameters

Use this procedure to provision the parameters for an OC-3 or OC-12 optical transmission facility.

Table 6-7 lists the parameters for an OC-3 or OC-12 facility.

Table 6-7
Parameters for OC-3 or OC-12

Parameter	Menu command	Setting and explanation	Default
facility identifier	facid	an alphanumeric string up to 38 characters	no entry
signal degrade threshold	linesdth	a number from 4 to 10, which represents the exponent for the signal degrade threshold For example, 6 represents 1.0E–6 ($1x10^{-6}$). If the threshold value is set to $1x10^{-4}$, the detection time on virtual tributary bandwidth manager (VTBM) based hardware is 1 second. The detection time on network (NWK) systems is 100 ms.	6
signal fail threshold	linesfth	a number from 3 to 5, which represents the exponent for the signal fail threshold For example, 3 represents 1.0E–3 ($1x10^{-3}$).	3

—continued—

Procedure 6-10 (continued)
Provisioning OC-3 or OC-12 facility parameters

Requirements

The system administrator must supply the values for each of the OC-3 parameters listed in Table 6-7.

CAUTION
Loss of service
If you delete one OC-12 facility after provisioning both OC-12 facilities, ensure that a protection switch is not pending before re-adding the deleted OC-12 facility.

Action

Step	Action

1 From the Network Element Status screen, display the OC-3 or OC-12 facility screen, as required, by entering:

fa <type> <group>↵

where

<type>	**oc3** or **oc12**
<group>	See “Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12” on page 5-2.

The Optical Facility screen appears.

2 Select the Edit Facility screen by entering:

edit ↵

The Edit Facility screen appears.

3 Set or change any or all optical facility parameters listed in the following table.

Make any number of settings or changes before proceeding to step 4.

If you are provisioning for the first time, then provision all optical facility parameters.

—continued—

Procedure 6-10 (continued)
Provisioning OC-3 or OC-12 facility parameters

Step **Action**

If provisioning	Then enter
OC-3 or OC-12 facility identifier	**facid <identifier>**↵ where <identifier> an alphanumeric string up to 38 characters ***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 ('). The provisioned value appears in reverse video.
optical signal degrade threshold	**linesdth <exponent>**↵ where <exponent> exponent for signal degrade threshold: **4, 5, 6, 7, 8, 9,** or **10** For example, 6 represents 1.0E–6 ($1x10^{-6}$). The provisioned value appears in reverse video.
OC-3 or OC-12 signal fail threshold	**linesfth<exponent>**↵ where <exponent> exponent for signal degrade threshold: **3, 4, 5** For example, 4 represents 1.0E–4 ($1x10^{-4}$). The changed value appears in reverse video.

4 Repeat steps 1 through 3 for each optical facility.

5 Return to the Network Element Status screen by entering:

fwpui↵

—end—

Procedure 6-11
Provisioning COMM facility transmission parameters

Use this procedure to provision the data link layer parameters for the operations and signaling communications (COMM) facilities between a remote fiber terminal (RFT) and its local digital switches (LDSs). Transmission parameters can be adjusted for each pair of channels, to suit the requirements of each host switch.

Operations and signaling channels contain embedded operations channels (EOCs), common signaling channels (CSCs), and timeslot management channels (TMCs). Up to five GR-303 DMS or GR-303 MVI switches or interface groups (IGs) can be connected, GR-303 DMS using two EOCs and two CSCs, GR-303 MVI using two EOCs and two TMCs.

EOCs reside on the 12th DS0 channel of the first two DS1s connected to each host switch. CSCs or TMCs reside on the 24th DS0 channel of those first two DS1s. Provisioning changes made to one channel in a CSC, EOC, or TMC pair are applied to both channels in the pair.

Table 6-8 describes the link access protocol - D channel (LAPD) parameters for COMM facilities.

Table 6-8
LAPD parameters for COMM facilities

LAPD parameter	Definition	Default value	Range of values
MaxIFrms	Maximum number of unacknowledged information frames at the data link layer	7	1 to 7
N200	Maximum number of retransmissions for a LAPD frame	3	1 to 10
T200	Maximum time (milliseconds) a data link layer entity will wait for acknowledgment of a transmitted frame GR-303 DMS—CSC or EOC: GR-303 MVI—TMC or EOC:	 250 ms 150 ms	100 to 350, in 50 ms steps
T203	Maximum time (seconds) the data link can remain idle before verifying the path between RDT and switch	30	10 to 300, in 10 s steps

—continued—

Procedure 6-11 (continued)
Provisioning COMM facility transmission parameters

Requirements

You must ensure the following tasks have been completed:

- the host switches have been added to RFT data using the operations controller (OPC) Host Provisioning Manager tool
- the first two DS1 facilities to each host switch have been assigned using the Connection Manager tool

Action

Step	Action
1	From the Network Element Status screen, display the Edit menu for the desired COMM channel by entering: **fa comm; ports <EOC, CSC, TMC, or VLCM>** ↵ **dtlport <port #>; edit** ↵ where port # — EOC: **1** to **10**; CSC: **1** to **10** (limit is eight CSCs if up to ten TMCs exist); TMC: **1** to **10**; VLCM: **1** to **8** *The COMM Facility Edit screen appears.*
2	Enter the desired parameter value, within the range indicated in Table 6-8 on page 6-38, by entering one of the following commands and its new value: **maxifrm <value>** ↵ **n200 <value>** ↵ **T200 <value>** ↵ **T203 <value>** ↵ *The system responds with "Warning: this command may affect service. Please refer to the NTPs before issuing this command. Please confirm ("Yes" or "No"):* Confirm the change by entering: **y** ↵ *The response is "Please ensure that the value is matched at both ends."*
3	To modify another parameter for this port, repeat step 2.

—continued—

Procedure 6-11 (continued)
Provisioning COMM facility transmission parameters

Step	Action
4	To modify the parameters of another port, select the port by entering: **dtlport <port #>; edit** ↵ Repeat steps 2 and 3.
5	Return to the Network Element Status screen by entering: **quit 3** ↵

—end—

Procedure 6-12
Provisioning DS1, DS3, or STS-1 facility performance monitoring thresholds

Use this procedure to provision the performance monitoring thresholds for a DS1, DS3, or STS-1 facility.

Table 6-9 lists the provisionable status and value for thresholds 1 and 2.

Table 6-9
Provisionable performance parameters

Parameter	Menu command	Setting and explanation	Default
Line or path report type (for DS1)	RptType	sets type of line or path report generated: either alarm (alm) or performance alert (palrt)	palrt
Line report type (for DS3)	LRptType	sets type of line report generated: either alarm (alm) or performance alert (palrt)	palrt
Path report type (for DS3)	PRptType	sets type of path report generated: either alarm (alm) or performance alert (palrt)	palrt
Line report type (for STS-1)	LRptType	sets type of line report generated: either alarm (alm) or performance alert (palrt)	palrt
Path report type (for STS-1 path)	PRptType	sets type of path report generated: either alarm (alm) or performance alert (palrt)	palrt
Status threshold 1	StatusT1	sets the status of the first performance threshold: ON or OFF	off
Value threshold 1	ValueT1	sets the value of the first performance threshold	for DS1 for DS3
Status threshold 2	StatusT2	sets the status of the second performance threshold: ON or OFF	off
Value threshold 2	ValueT2	sets the value of the second performance threshold	for DS1 for DS3

Tables 6-10, 6-11 and 6-12 show the threshold values for DS1, DS3, and STS-1 performance monitoring parameters.

—continued—

Procedure 6-12 (continued)
Provisioning DS1, DS3, or STS-1 facility performance monitoring thresholds

Table 6-10
Performance monitoring thresholds for a DS1 facility

Parameter	Errors per 15-minute interval	Errors per day	Errors per untimed interval	Default threshold 1	Default threshold 2
LineCV	1 to 1,388,700	1 to 133,315,200	1 to 4,294,967,295	13340/15Min	133400 day
LineES	1 to 900	1 to 65,535	1 to 65,535	65/15Min	648 day
LineSES	1 to 900	1 to 65,535	1 to 65,535	10/15Min	100 day
PathCV superframe, extended superframe	 1 to 6,300 1 to 287,100	 1 to 604,800 1 to 27,561,600	 1 to 4,294,967,295 1 to 4,294,967,295	 72/15Min 13296/15Min	 691day 132960 day
PathES	1 to 900	1 to 65,535	1 to 65,535	65/15Min	648 day
PathSES	1 to 900	1 to 65,535	1 to 65,535	10/15Min	100 day
PathSAS	1 to 900	1 to 65,535	1 to 65,535	2/15Min	17 day
PathUAS	1 to 900	1 to 65,535	1 to 65,535	10/15Min	10 day
PathFC	No thresholds.				
VT1.5 PathES	1 to 900	1 to 65,535	1 to 65,535	65/15Min	648 day
VT1.5 PathALS	1 to 900	1 to 65,535	1 to 65,535	2/15Min	17 day
VT1.5 PathFC	No thresholds.				

Table 6-11
Performance monitoring thresholds for a DS3 facility

Parameter	Errors per 15-minute interval	Errors per day	Errors per untimed interval	Default threshold 1	Default threshold 2
DS3 line CV	1 to 38,700	1 to 3,705,200	1 to 4,294,967,295	387/15Min	3865 day
DS3 line ES	1 to 900	1 to 65,535	1 to 65,535	25/15Min	250 day
DS3 line SES	1 to 900	1 to 65,535	1 to 65,535	4/15Min	40 day
DS3 path CV	1 to 38,700	1 to 3,705,200	1 to 4,294,967,295	382/15Min	3820 day
DS3 path ES	1 to 900	1 to 65,535	1 to 65,535	25/15Min	250 day
DS3 path SES	1 to 900	1 to 65,535	1 to 65,535	4/15Min	40 day
DS3 path SEFS	1 to 900	1 to 65,535	1 to 65,535	10/15Min	10 day
DS3 path AISS	1 to 900	1 to 65,535	1 to 65,535	7/15Min	17 day
DS3 path UAS	1 to 900	1 to 65,535	1 to 65,535	7/15Min	17 day

—continued—

Table 6-12
Performance monitoring thresholds for a STS-1 facility

Parameter	Errors per 15-minute interval	Errors per day	Errors per untimed interval	Default threshold 1	Default threshold 2
LineBCV	1 to 45,000	1 to 4,320,000	1 to 4,294,967,295	387/15Min	3865 day
LineBES	1 to 900	1 to 65,535	1 to 65,535	25/15Min	250 day
LineBSES	1 to 900	1 to 65,535	1 to 65,535	4/15Min	40 day
LineCV	1 to 2,249,100	1 to 215,913,600	1 to 4,294,967,295	382/15Min	3820 day
LineES	1 to 900	1 to 65,535	1 to 65,535	25/15Min	250 day
LineSES	1 to 900	1 to 65,535	1 to 65,535	4/15Min	40 day
LineUAS	1 to 900	1 to 65,535	1 to 65,535	10/15Min	10 day
PathCV	1 to 2,159,100	1 to 207,273,600	1 to 1,048,575	443	4430 day
PathES	1 to 900	1 to 65,535	1 to 65,535	65	648 day
PathSES	1 to 900	1 to 65,535	1 to 65,535	10	100 day
PathUAS	1 to 900	1 to 65,535	1 to 65,535	10	10 day
PathFC	No thresholds.				

Requirements

The system administrator must supply the thresholds to be provisioned.

Action

Step	Action
1	From the Network Element Status screen, display the performance monitoring (PM) screen by entering: **pm**↵ *The active PM Thresholds screen appears.*

—continued—

Procedure 6-12 (continued)
Provisioning DS1, DS3, or STS-1 facility performance monitoring thresholds

Step	Action

2 Select a DS1, DS3, or STS-1 facility:

facperf <rate> <circuit pack group> <port number> <direction> ↵

where

<rate>	**ds1**, **ds3**, or **sts1**
<circuit pack group>	See "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2 for values.
<port number>	**1** to **14** for DS1 **1** to **3** for DS3 or STS-1
<direction>	**rx** or **tx** only for DS3 (**rx** is the default for DS1 and STS-1 and cannot be changed)

3 Display the performance monitoring thresholds edit screen by entering:

threshld; edit↵

The digital facility PerfMon Thresholds screen appears.

4 Set or change any or all facility performance monitoring parameters listed in the following table. Make any number of settings or changes before proceeding to step 5. If you are provisioning for the first time, then provision all the parameters.

If provisioning	Then enter
line or path report type for DS1 when a line or path threshold is crossed	**rpttype <type>**↵ where <type> type of line report to be generated: **alm** or **palrt** The provisioned value appears in reverse video.
line report type for DS3 or STS-1 when a line threshold is crossed	**lrpttype <type>**↵ where <type> type of line report to be generated: **alm** or **palrt** The provisioned value appears in reverse video.
path report type for DS3 when a path threshold is crossed	**prpttype <type>**↵ where <type> type of path report to be generated: **alm** or **palrt** The provisioned value appears in reverse video.
—continued—	

—continued—

Procedure 6-12 (continued)
Provisioning DS1, DS3, or STS-1 facility performance monitoring thresholds

Step Action

If provisioning	**Then enter**
status of threshold one	**statust1 <parameter #> <status>**↵ **y**↵ where <parameter #> for DS1 Rx: **1** to **8** for DS3 Rx: **1** to **9** for DS3 Tx: **1** to **6** for STS-1 Rx: **1** to **7** <status> **on** or **off** The provisioned values appear in reverse video.
value and interval of threshold one	**valuet1 <parameter #> <threshold> <interval>**↵ where <parameter #> for DS1 Rx: **1** to **8** for DS3 Rx: **1** to **9** for DS3 Tx: **1** to **6** for STS-1 Rx: **1** to **7** <threshold> positive integer to set the threshold. For valid ranges, refer to Tables 6-10, 6-11 and 6-12. <interval> time interval for the threshold: **15Min**, **day**, or **unt** The provisioned values appear in reverse video.
status of threshold two	**statust2 <parameter #> <status>**↵ **y**↵ where <parameter #> for DS1 Rx: **1** to **8** for DS3 Rx: **1** to **9** for DS3 Tx: **1** to **6** for STS-1 Rx: **1** to **7** <status> is **on** or **off** The provisioned values appear in reverse video.
—continued—	

—continued—

Procedure 6-12 (continued)
Provisioning DS1, DS3, or STS-1 facility performance monitoring thresholds

Step **Action**

If provisioning	**Then enter**
value and interval of threshold two	**valuet2 <parameter #> <threshold> <interval>**↵ where <parameter #> for DS1 Rx: **1** to **8** for DS3 Rx: **1** to **9** for DS3 Tx: **1** to **6** for STS-1 Rx: **1** to **7** <value> positive integer to set the threshold. For valid ranges, refer to Tables 6-10, 6-11 and 6-12. <time> time interval for the threshold: **15Min, day,** or **unt** The provisioned values appear in reverse video.
—end—	

5 Repeat steps 2 through 4 for each DS1, DS3, or STS-1 facility.

6 Return to the Network Element Status screen by entering:

fwpui↵

—end—

Procedure 6-13
Provisioning OC-3 or OC-12 facility performance monitoring thresholds

Use this procedure to provision the performance monitoring thresholds for an OC-3 or OC-12 facility.

> ***Note:*** If you want to provision the one-minute time interval (available only for OC3 and OC12), you must use this procedure. You cannot provision one-minute thresholds through TL1.

Table 6-13 lists the provisionable status and value for thresholds 1 and 2.

Table 6-13
Provisionable performance thresholds

Parameter	Menu command	Setting and explanation	Default
Section report type	SRptType	sets type of section report generated: either alarm (alm) or performance alert (palrt)	palrt
Line report type	LRptType	sets type of line report generated: either alarm (alm) or performance alert (palrt)	palrt
Status threshold 1	StatusT1	sets the status of the first performance threshold: On or Off	off
Value threshold 1	ValueT1	sets the value of the first performance threshold	Table 6-14
Status threshold 2	StatusT2	sets the status of the second performance threshold: On or Off	off
Value threshold 2	ValueT2	sets the value of the second performance threshold	Table 6-14

Table 6-14 shows the threshold values for OC-3 line and section parameters.

—continued—

Procedure 6-13 (continued)
Provisioning OC-3 or OC-12 facility performance monitoring thresholds

Table 6-14
Threshold values for OC-3 line and section parameters

Parameter	Errors per 1-minute interval	Errors per 15-minute interval	Errors per day	Errors per untimed interval
SectCV	1 to 4,294,967,295	1 to 2,250,000	1 to 216,000,000	1 to 4,294,967,295
SectES	1 to 60	1 to 900	1 to 65,535	1 to 65,535
SectSES	1 to 60	1 to 900	1 to 65,535	1 to 65,535
SectSEFS	1 to 60	1 to 900	1 to 65,535	1 to 65,535
LineCV	1 to 4,294,967,295	1 to 2,250,000	1 to 216,000,000	1 to 4,294,967,295
LineES	1 to 60	1 to 900	1 to 65,535	1 to 65,535
LineSES	1 to 60	1 to 900	1 to 65,535	1 to 65,535
Line FC	No thresholds.			
LineUAS	1 to 60	1 to 63	1 to 4,095	1 to 65,535

Table 6-15 shows the threshold values for OC-12 line and section parameters.

Table 6-15
Default threshold 1 and threshold 2 values for OC-12

Parameter	Default threshold 1	Default threshold 2
SectCV	1772/15Min	4430/day
SectES	346/15Min	864/day
SectSES	2/15Min	4/day
SectSEFS	7/15Min	17/day
LineCV	1772/15Min	4430/day
LineES	346/15Min	864/day
LineSES	2/15Min	4/day
Line FC	No thresholds.	
LineUAS	10/15Min	10/day

—continued—

Procedure 6-13 (continued)
Provisioning OC-3 or OC-12 facility performance monitoring thresholds

Table 6-16 shows the threshold values for OC-12 line and section parameters.

Table 6-16
Threshold values for OC12 line and section parameters

Parameter	Errors per 1-minute interval	Errors per 15-minute interval	Errors per day	Errors per untimed interval
OC-12 section CV	1 to 4,294,967,29	1 to 7,920,000	1 to 760,320,000	1 to 4,294,967,295
OC-12 section ES	1 to 60	1 to 900	1 to 65,535	1 to 65,535
OC-12 section SES	1 to 60	1 to 900	1 to 65,535	1 to 65,535
OC-12 section SEFS	1 to 60	1 to 900	1 to 65,535	1 to 65,535
OC-12 line CV	1 to 4,294,967,295	1 to 9,000,000	1 to 864,000,000	1 to 4,294,967,295
OC-12 line ES	1 to 60	1 to 900	1 to 65,535	1 to 65,535
OC-12 line SES	1 to 60	1 to 900	1 to 65,535	1 to 65,535
OC-12 line UAS	1 to 60	1 to 900	1 to 65,535	1 to 65,535
OC-12 line FC	No thresholds.			

Requirements

The system administrator must supply the thresholds to be provisioned.

Action

Step	Action
1	From the Network Element Status screen, display the performance monitoring (PM) screen by entering: **pm**↵ *The active PM Thresholds screen appears.*

—continued—

Procedure 6-13 (continued)
Provisioning OC-3 or OC-12 facility performance monitoring thresholds

Step	Action

2 Display the optical facility performance monitoring thresholds screen by entering:

facperf <type> <group>; threshld; edit↵

where

<type>	**oc3** or **oc12**
<group>	See "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2.

The optical facility PerfMon Thresholds screen appears.

3 Set or change any or all optical facility performance monitoring parameters listed in the following table.

Make any number of settings or changes before proceeding to step 4.
If you are provisioning for the first time, then provision all the optical performance monitoring parameters.

If provisioning	Then enter
section report type to generate when a section threshold is crossed	**srpttype <type>**↵ where <type> type of section report to be generated: **alm** or **palrt** *The provisioned value appears in reverse video.*
line report type to generate when a line threshold is crossed	**lrpttype <type>**↵ where <type> type of line report to be generated: **alm** or **palrt** *The provisioned value appears in reverse video.*
status of threshold one	**statust1 <parameter #> <status>**↵ **y**↵ where <parameter #> for OC-3, OC-12 Rx: **1** to **8** <status> **on** or **off** *The provisioned values appear in reverse video.*
—continued—	

—continued—

Procedure 6-13 (continued)
Provisioning OC-3 or OC-12 facility performance monitoring thresholds

Step **Action**

If provisioning	**Then enter**
value and interval of threshold one	**valuet1 <parameter #> <threshold> <interval>**↵ where <parameter #> for OC-3, OC-12 Rx: **1** to **8** <threshold> positive integer to set the threshold. For valid ranges, refer to Table 6-14 or Table 6-16. <interval> time interval for the threshold: **min, 15Min**, **day**, or **unt** *The provisioned values appear in reverse video.*
status of threshold two	**statust2 <parameter #> <status>**↵ **y**↵ where <parameter #> for OC-3, OC-12 Rx: **1** to **8** <status> enables or disables the parameter: **on** or **off** *The provisioned values appear in reverse video.*
value and interval of threshold two	**valuet2 <parameter #> <threshold> <interval>**↵ where <parameter #> for OC-3, OC-12 Rx: **1** to **8** <value> positive integer to set the threshold. For valid ranges, refer to Table 6-14 or Table 6-16**.** <time> time interval for the threshold: **min, 15Min, day,** or **unt** *The provisioned values appear in reverse video.*
—end—	

4 Repeat steps 2 through 3 for each optical group.

5 Return to the Network Element Status screen by entering:

fwpui↵

—end—

Procedure 6-14
Provisioning STS path or VT path facility performance monitoring thresholds

Use this procedure to provision the performance monitoring thresholds for a synchronous transport signal (STS) path or virtual tributary (VT) path facility.

Table 6-17 lists the provisionable status and values for thresholds 1 and 2.

Table 6-17
Provisionable performance parameters for threshold 1 and 2

Parameter	Menu command	Setting and explanation	Default
Section report type	SRptType	sets type of section report generated: either alarm (alm) or performance alert (palrt)	palrt
Line report type	LRptType	sets type of line report generated: either alarm (alm) or performance alert (palrt)	palrt
Status threshold 1	StatusT1	sets the status of the first performance threshold: On or Off	off
Value threshold 1	ValueT1	sets the value of the first performance threshold	for STS path for VT path
Status threshold 2	StatusT2	sets the status of the second performance threshold: On or Off	off
Value threshold 2	ValueT2	sets the value of the second performance threshold	for STS path for VT path

—continued—

Procedure 6-14 (continued)
Provisioning STS path or VT path facility performance monitoring thresholds

Tables 6-18 and 6-19 show the threshold values for STS path and VT path performance monitoring parameters.

Table 6-18
Performance monitoring thresholds for a STS path facility

Parameter	Threshold values	Interval values	Default threshold 1	Default threshold 2
PathCV	1 to 4294967295	15Min, day, unt	15/15Min	125 day
PathES	1 to 4294967295	15Min, day, unt	12/15Min	100 day
PathSES	1 to 4294967295	15Min, day, unt	3/15Min	7 day
PathUAS	1 to 4294967295	15Min, day, unt	10/15Min	10 day

Table 6-19
Performance monitoring thresholds for a VT path facility

Parameter	Threshold values	Interval values	Default threshold 1	Default threshold 2
PathES	1 to 4294967295	15Min, day, unt	65/15Min	648 day
PathALS	1 to 4294967295	15Min, day, unt	2/15Min	17 day

—continued—

Procedure 6-14 (continued)
Provisioning STS path or VT path facility performance monitoring thresholds

Requirements

The system administrator must supply the thresholds to be provisioned.

Action

Step	Action

1 From the Network Element Status screen, display the performance monitoring (PM) screen by entering:

pm↵

The active PM Thresholds screen appears.

2 Determine what you want to do based on the information in the following table:

If you want to select	Then enter	
an STS path	**facperf path sts oc12 <circuit pack group> <sts#> <origin>**↵	
	where	
	<circuit pack group>	See "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2 for values.
	<sts #>	**1** to **12**
	<origin>	**near** or **far** (default is near)
a VT path	**facperf path vt ds1 <circuit pack group> <port>**↵	
	where	
	<circuit pack group>	See "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2 for values.
	<port>	**1** to **14**

—continued—

Procedure 6-14 (continued)
Provisioning STS path or VT path facility performance monitoring thresholds

Step	Action

3 Display the performance monitoring thresholds edit screen by entering:

threshld; edit.↵

The digital facility PerfMon Thresholds screen appears.

4 Set or change any or all facility performance monitoring parameters listed in the following table.

Make any number of settings or changes before proceeding to step 5.
If you are provisioning for the first time, then provision all facility performance monitoring parameters.

If provisioning	Then enter
line or path report type for DS1 when a line or path threshold is crossed	**rpttype <type>** where <type> type of line report to be generated: **alm** or **palrt** *The provisioned values appear in reverse video.*
status of threshold one	**statust1 <parameter #> <status>**↵ **y**↵ where <parameter #> for STS path: **1** to **4** for VT path: **1** to **2** <status> **on** or **off** *The provisioned values appear in reverse video.*
value and interval of threshold one	**valuet1 <parameter #> <threshold> <interval>** where <parameter #> for STS path: **1** to **4** for VT path: **1** to **2** <threshold> positive integer to set the threshold: **1** to **1388700** for 15Min **1** to **133315200** for day **1** to **4294967295** for untimed <interval> time interval for the threshold: **15Min**, **day**, or **unt** *The provisioned values appear in reverse video.*
—continued—	

—continued—

Procedure 6-14 (continued)
Provisioning STS path or VT path facility performance monitoring thresholds

Step **Action**

If provisioning	Then enter
status of threshold two	**statust2 <parameter #> <status>**↵ **y**↵ where <parameter #> for STS path: **1** to **4** for VT path: **1** to **2** <status> **on** or **off** The provisioned values appear in reverse video
value and interval of threshold two	**valuet2 <parameter #> <threshold> <interval>**↵ <parameter #> for STS path: **1** to **4** for VT path: **1** to **2** <threshold> positive integer to set the threshold: **1** to **1388700** for 15Min **1** to **133315200** for day **1** to **4294967295** for untimed <interval> time interval for the threshold: **15Min, day,** or **unt** The provisioned values appear in reverse video
—end—	

5 Repeat steps through 4 for each path.

6 Return to the Network Element Status screen by entering:

fwpui↵

—end—

Procedure 6-15
Provisioning the SDCC connections

Use this procedure to provision the SONET data communications channel (SDCC). Perform this procedure to set up the SDCC for OC-3 tributaries or any other equipment that requires SDCC. You must set up SDCC for single-ended AccessNodes that connect to the RFT of a point-to-point configuration.

Action

Step	Action

1 Use the following table to determine the port number for the group you are provisioning.

Table 6-20
Port and group number associations for SDCC

If you are provisioning this group	Then use this SDCC port number
G3	1
G4	2
G1S/G2S	3
G2S	4
G1	5
G2	6
G5	7
G6	8
G7	9
G8	10

2 From the Network Element Status screen, display the COMM Fac Port screen by entering:

fa comm; ports sdcc; dtlport <port>↵

where

<port> port number from step 1: **1** to **10**

—continued—

Procedure 6-15 (continued)
Provisioning the SDCC connections

Step	Action
	The COMM Fac Port screen appears for the specified communication channel.
	If you enter a port that cannot be used, the following message appears:
	`This facility does not exist.`
3	Select add.
	The system displays the following message:

	`Add command successful.`
	`Warning: Please ensure the SDCC of the connected optics is also provisioned on the far end.`
	`Otherwise it will not come in service.`

4	If you are installing a single-ended AccessNode, repeat steps 1 through 3 for the other network element.
	If you are connecting to other equipment that requires SDCC, enable the SDCC on that equipment.
5	Return to the Network Element Status screen by entering:
	fwpui.↵

—end—

Procedure 6-16
Deleting a facility

Use this procedure to delete a DS1, DS3, STS-1, OC-3 or OC-12 facility. If you delete a facility, it is no longer available for service. The equipment to provide that facility can still be installed.

Note: Delete all unused DS1, DS3, and STS-1 facilities.

Requirements

CAUTION
Loss of service
If you delete an OC-12 facility after provisioning both OC-12 facilities, ensure that a protection switch is not pending before re-adding the second OC-12 facility.

Action

Step	Action

1 From the Network Element Status screen, display the required Facility screen:

If deleting	Then enter
a DS1 facility	**fa ds1 <group> <port>**↵ where <group> group number of the DS1 equipment (see “Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12” on page 5-2) <port> port number of the facility being deleted: **1** to **14** *The DS1 Facility screen appears.*

—continued—

—continued—

Procedure 6-16 (continued)
Deleting a facility

Step Action

If deleting	Then enter
a DS3 facility	**fa ds3 <group> <port>**↵ where <group> group number of the DS3 equipment (see “Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12” on page 5-2) <port> port number of the facility being deleted: **1** to **3** *The DS3 Facility screen appears.*
an STS facility	**fa sts1 <group> <port>**↵ where <group> group number of the STS-1 equipment (see “Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12” on page 5-2) <port> port number of the facility being deleted: **1** to **3** The STS1 Facility screen appears.
an OC-3 facility that is a feeder	**fa oc3 <group>**↵ where <group> group number of the OC-3 circuit pack group: **all**, **g1**, or **g2** (see “Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12” on page 5-2) The OC-3 Facility screen appears.
an OC-3 facility that is an ABM tributary	**fa oc3 <group>**↵ where <group> group number of the OC-3 circuit pack group: **all**, **g1s**, **g2s**, **g3**, **g4 (**see “Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12” on page 5-2) The OC-3 Facility screen appears.
—continued—	

—continued—

Procedure 6-16 (continued)
Deleting a facility

Step **Action**

If deleting	**Then enter**
an OC-3 facility that is a TBM tributary	**fa oc3 <group>**↵ where <group> group number of the OC-3 circuit pack group: **all**, **g1s**, **g2s**, **g3**, **g4**, **g5**, **g6**, **g7**, **g8** (see "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2) The OC-3 Facility screen appears.
an OC-12 facility	**fa oc12 <group>**↵ where <group> group number of the OC-12 equipment: **g1** or **g2 (**see "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2) The OC-12 Facility screen appears.
—end—	

2 Change the operating state of the facility to out of service (OOS) by entering:

chgstate oos↵
yes↵

The state of the facility changes to OOS.

3 Delete the facility by entering:

delete↵

The system prompts for confirmation.

4 Confirm the deletion by entering:

y↵

The system confirms the deletion.

5 Repeat steps 1 through 4 for each facility to be deleted.

6 Display the Network Element Status screen by entering:

fwpui↵

—end—

Displaying and querying equipment parameters

This chapter contains procedures for querying and displaying information about AccessNode shelves and circuit packs.

Note: For information on querying and displaying information about Universal Edge 9000 (UE9000) systems, see the *UE9000 Voice OAM&P Guide*.

Chapter task list

This chapter includes the following tasks:

Procedure	Task	See
7-1	Displaying shelf parameters	page 7-2
7-2	Displaying the inventory for a shelf	page 7-3
7-3	Displaying circuit pack parameters	page 7-5
7-4	Querying all circuit packs	page 7-9

Note: If you cannot successfully complete these procedures, contact your next level of support.

Requirements for procedures

Read the command conventions in *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A.

Procedure 7-1
Displaying shelf parameters

Use this procedure to display the parameters for a shelf.

Action

Step	Action
1	From the Network Element Status screen, display the Shelf Equipment screen by entering: **eq sh**↵ *The Shelf Equipment screen appears.*
2	When finished with this screen, return to the Network Element Status screen by entering: **quit**↵

—end—

Procedure 7-2
Displaying the inventory for a shelf

Use this procedure to obtain an inventory of circuit packs on a common-equipment shelf or copper-distribution shelf (CDS). An inventory is a list of circuit packs in a shelf. The common-equipment inventory does not include the side interconnect left circuit pack and side interconnect right circuit pack.

Action

Step	Action

1 From the Network Element Status screen, display the Shelf Equipment screen by entering:

eq sh↵

The Shelf Equipment screen appears.

2 Determine which shelf inventory you want displayed:

If you want to display inventory for a	Then go to
common-equipment shelf	step 3
copper-distribution shelf	step 4

3 Based on the equipment type, display the common-equipment Shelf Inventory screen:

For this equipment type	Enter
TN_BLSR	**inventry**↵
all other equipment types	**inventry ce**↵

The Shelf Inventory screen for the common-equipment shelf appears.

If more than one screen of inventory is available, type **F** to scroll forward or **B** to scroll backward.

The **listcpks** command can also be used to list all circuit packs installed on the shelf. The system displays the information in the conversation area at the bottom of the screen.

Go to step 6.

—continued—

Procedure 7-2 (continued)
Displaying the inventory for a shelf

Step	Action
4	Display a CDS inventory by entering: **inventry cds <cds #>** ↵ where <cds #> number of the CDS to display: **1** to **7** *The CDS Shelf inventory screen appears.* If more than one screen of inventory is available, type **F** to scroll forward or **B** to scroll backward.
5	To display the inventory for another CDS shelf, type by entering: **select cds <cds #>** ↵ where <cds #> number of the CDS to display: **1** to **7** *The inventory for the selected CDS appears.*
6	When finished, return to the Network Element Status screen by entering: **fwpui.**↵ **—end—**

Procedure 7-3
Displaying circuit pack parameters

Use this procedure to display parameters for a common-equipment circuit pack or a copper-distribution shelf (CDS) circuit pack.

You can display parameters for the following circuit packs:

- access interface card (AIC)
- copper-distribution shelf power converter (CDSP)
- DS1/VT mapper
- DS3/STS mapper
- external synchronization interface (ESI)
- integrated remote test unit (IRTU)
- line card (LC)
- line interface card (LIC)
- maintenance interface card (MIC)
- metallic test access card (MTAC)
- OC-3 interface card
- OC-12 interface card
- operations controller (OPC)
- processor card (Proc)
- STS-1 interface card
- test access card (TAC)
- transport interface card (TIC)
- timing and cross-connect (TXC)

—continued—

Procedure 7-3 (continued)
Displaying circuit pack parameters

Action

Step	Action

1 From the Network Element Status screen, display the circuit pack equipment, detailed equipment, or line card equipment screen:

If you are working on this circuit pack	Then enter
DS1, DS3, STS-1, OC-3 or OC-12	**eq <type> <group>**↵ where <type> **ds1**, **ds3**, **sts1**, **oc3**, or **oc12** <group> See "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2. *The required equipment screen appears.*
ESI	**eq <type> <group>**↵ where <type> **esi** <group> **g1** (top card) or **g2** (bottom card) *The ESI Equipment screen appears.*
TIC, AIC, or Proc	**eq <type> <group>**↵ where <type> **tic**, **aic**, or **proc** <group> **a** or **b** *The required equipment screen appears.*
TXC	**eq <type> <group>**↵ where <type> **txc** <group> **g1**, **g2** *The required equipment screen appears.*
MIC, TAC, IRTU, or OPC	**eq <type> <group>**↵ where <type> **mic**, **tac**, **irtu**, or **opc** <group> (no group required) *The required equipment screen appears.*
—continued—	

—continued—

Procedure 7-3 (continued)
Displaying circuit pack parameters

Step Action

If you are working on this circuit pack	Then enter
LIC, MTAC, or CDSP	**eq <type>;<detail> <CDS #> <group>**↵ where <type> type of circuit pack: **lic, mtac,** or **cdsp** <detail> LIC, MTAC, or CDSP details screen: **dtllic**, **dtlmtac**, or **dtlcdsp** <CDS #> copper-distribution shelf housing the equipment: **1** to **7** <group> group number of the equipment: For a LIC: **a, b, c,** or **d** For an MTAC or CDSP: **a** or **b** *The detailed equipment screen appears.*
LC (for CDS-based line cards)	**eq lc <shelf #> <LC #>**↵ where <shelf #> shelf number: for AccessNode, copper-distribution shelf number**:1** to **7** <LC #> line card slot number: for AccessNode **1** to **96** ***Note:*** For Omega 4-wire and Omega 6/8-wire line cards, use the lowest even slot number occupied by the card. *The line card equipment screen appears.*
LC (for ANX-based line cards)	**eq anxlc <VM #> <LC #>** ↵ where <VM #> AccessNode Express voice module number**:1** to **28** <LC #> line card slot number**: 1** to **48** ***Note:*** For Omega 4-wire line cards, use the upper slot number occupied by the card (multiple of 3). *The line card equipment screen appears.*
—continued—	

—continued—

Procedure 7-3 (continued)
Displaying circuit pack parameters

Step **Action**

If you are working on this circuit pack	Then enter
LC (for AN or ANX with VLCM)	**eq lcmlc <VLCM #> <LSG #> <LC #>**↵ where <VLCM #> virtual line concentration module(VLCM) number**: 1** to **2** <LSG #> line subgroup number on DMS-10NA switch: **0** to **19** <LSG #> line card slot number on DMS-10NA switch within line subgroup: **0** to **31** ***Note:*** You can query AN line cards using “eq lc” or “eq lcmlc.” You can query ANX line cards using “eq anxlc” or “eq lcmlc.” *The line card equipment screen appears.*
—end—	

The appropriate circuit pack screen appears:

2 Return to the Network Element Status screen by entering:

quit↵

—end—

Procedure 7-4
Querying all circuit packs

Use this procedure to query the status for all circuit packs of a selected type on a common-equipment shelf or copper-distribution shelf. For example, after you select one DS1 circuit pack group and it is displayed on screen, you can query the remaining DS1 groups for their status.

You can query the status for the following circuit packs:

- access interface card (AIC)
- copper-distribution shelf power converter (CDSP)
- DS1/VT mapper
- DS3/STS mapper
- external synchronization interface (ESI)
- integrated remote test unit (IRTU)
- line card (LC)
- line interface card (LIC)
- maintenance interface card (MIC)
- metallic test access card (MTAC)
- OC-3 interface card
- OC-12 interface card
- operations controller (OPC)
- processor card (Proc)
- STS-1 interface card
- test access card (TAC)
- transport interface card (TIC)
- timing and cross-connect (TXC)

Action

Step	Action
1	From the Network Element Status screen, display the circuit pack equipment, detailed equipment, or line card equipment screen:

—continued—

Procedure 7-4 (continued)
Querying all circuit packs

Step	Action

If you are querying this circuit pack	Then enter
DS1, DS3, STS-1, OC-3 or OC-12	**eq <type> <group>**↵ where <type> **ds1**, **ds3**, **sts1**, **oc3**, or **oc12** <group> See "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2. *The required equipment screen appears.*
ESI	**eq <type> <group>**↵ where <type> **esi** <group> **g1** (top card) or **g2** (bottom card) *The ESI Equipment screen appears.*
TIC, AIC, or Proc	**eq <type> <group>**↵ where <type> **tic**, **aic**, or **proc** <group> **a** or **b** *The required equipment screen appears.*
TXC	**eq <type> <group>**↵ where <type> **txc** <group> **g1**, **g2** *The required equipment screen appears.*
MIC, TAC, IRTU, or OPC	**eq <type> <group>**↵ where <type> **mic**, **tac**, **irtu**, or **opc** <group> (no group required) *The required equipment screen appears.*
—continued—	

—continued—

Procedure 7-4 (continued)
Querying all circuit packs

Step Action

If you are querying this circuit pack	Then enter
LIC, MTAC, or CDSP	**eq <type>;<details> <CDS #> <group>**↵ where <type> type of circuit pack: **lic, mtac,** or **cdsp** <details> LIC, MTAC, or CDSP details screen: **dtllic**, **dtlmtac**, or **dtlcdsp** <CDS #> copper-distribution shelf housing the equipment: **1** to **7** <group> group number of the equipment: For a LIC: **a, b, c,** or **d** For an MTAC or CDSP: **a** or **b** *The detailed equipment screen appears.*
LC (for AN or ANX without VLCM)	**eq lc <shelf #> <LC #>**↵ where <shelf #> shelf number: for AccessNode, copper-distribution shelf number**:1** to **7;** for AccessNode Express, voice module number**: 1** to **28** <LC #> line card slot number: for AccessNode **1** to **96;** for AccessNode Express **1** to **48** ***Note:*** For Omega 4-wire and Omega 6/8-wire line cards, use the lowest even slot number occupied by the card. *The line card equipment screen appears.*
LC (for AN or ANX with VLCM)	**eq lcmlc <VLCM #> <LSG #> <LC #>**↵ where <VLCM #> virtual line concentrating module (VLCM) number: **1** to **2** <LSG #> line subgroup number on DMS-10NA switch: **0** to **19** <LC #> line card slot number on DMS-10NA switch within line subgroup: **0** to **31** *The line card equipment screen appears.*
—end—	

—continued—

Procedure 7-4 (continued)
Querying all circuit packs

Step	Action
2	Query all circuit packs of the same type by entering: **query**↵ *The bottom of the Equipment screen is updated with the state and status for all equipment of the same type.* *The appropriate equipment query screen appears.*

—end—

Displaying and querying facility parameters

This chapter contains procedures for displaying information about a DS1, DS3, STS-1, OC-3, OC-12, external synchronization interface (ESI), communication (COMM), virtual line concentrating module (VLCM), or transport interface card (TIC) facility.

Note: For information on querying and displaying information about Universal Edge 9000 (UE9000) systems, see the *UE9000 Voice OAM&P Guide*.

Chapter task list

This chapter includes the following topics:

Procedure	Task	See
8-1	Displaying facility parameters	page 8-2
8-2	Querying all facilities	page 8-5
8-3	Displaying the VLCM status	page 8-9
8-4	Displaying VLCM communications link status	page 8-11

Note: If you cannot successfully complete these procedures, contact your next level of support.

Requirements for procedures

Read the command conventions in *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A.

Procedure 8-1
Displaying facility parameters

Use this procedure to display information about a DS1, DS3, STS-1, OC-3, OC-12, external synchronization interface (ESI), communication (COMM), or transport interface card (TIC) facility.

Action

Step	Action
1	From the Network Element Status screen, display the required Facility screen:

If you want to display the	Then enter
DS1 Facility screen	**fa ds1 <group #> <port #>**↵ where <group #> circuit pack group number (see "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2) <port #> number of the DS1 port: **1** to **14** or **all** *A DS1 Facility screen appears.*
DS3 Facility screen	**fa ds3 <group #> <port #>**↵ where <group #> circuit pack group number (see "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2) <port #> number of the DS3 port: **1** to **3** or **all** A DS3 Facility screen appears.
STS1 Facility screen	**fa sts1 <group #> <port #>**↵ where <group #> circuit pack group number (see "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2) <port #> number of the DS3 port: **1** to **3** or **all** An STS1 Facility screen appears.
—continued—	

—continued—

Procedure 8-1 (continued)
Displaying facility parameters

Step Action

If you want to display the	**Then enter**
OC-3 Facility screen for a feeder	**fa oc3 <group #>**↵ where <group #> the number of the OC-3 circuit pack group: **all**, **g1**, or **g2** (see "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2) The OC-3 Facility screen appears.
OC-3 Facility screen for an ABM tributary	**fa oc3 <group #>**↵ where <group #> the number of the OC-3 circuit pack group: **all**, **g1s**, **g2s**, **g3**, **g4 (**see "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2) The OC-3 Facility screen appears.
OC-3 Facility screen for a TBM tributary	**fa oc3 <group #>**↵ where <group #> the number of the OC-3 circuit pack group: **all**, **g1s**, **g2s**, **g3**, **g4**, **g5**, **g6**, **g7**, **g8** (see "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2) The OC-3 Facility screen appears.
OC-12 Facility screen	**fa oc12 <group #>**↵ where <group #> OC-12 group number: **g1**, **g2**, or **all** (see "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2) *An OC-12 Facility screen appears.*
TIC Facility screen	**fa tic <sts #>**↵ where <sts #> STS number: **1** to **6** *A TIC Facility screen appears.*
	—continued—

—continued—

Procedure 8-1 (continued)
Displaying facility parameters

Step **Action**

If you want to display the	Then enter
ESI Facility screen	**fa esi <facility>**↵ where <facility> type of ESI facility: inputs: **bitsa** or **bitsb** outputs: **g1out** or **g2out** *The specified ESI Facility screen appears.*
COMM Fac Port screen	**fa comm; ports <type>**↵ where <type> specifies the type of COMM channel: **eoc, csc, tmc, omc, vlcm,** or **cnet** *The COMM FacPort screen appears.*
—end—	

2 After obtaining the required facility information, return to the Network Element Status screen by entering:

quit ↵

—end—

Procedure 8-2
Querying all facilities

Use this procedure to query the state and provisioned parameters for all facilities of a specified type such as DS1, DS3, STS-1, OC-3, OC-12, transport interface card (TIC), external synchronization interface (ESI), or communication (COMM). For example, after you select one DS1 facility and it is displayed on screen, you can query the remaining DS1 facilities for their state and provisioned parameters.

Action

Step	Action
1	From the Network Element Status screen, display the required Facility screen:

If you want to display the	Then enter
DS1 Facility screen	**fa ds1 <group #> <port #>**↵ where <group #> circuit pack group number (see “Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12” on page 5-2) <port #> number of the DS1 port: **1** to **14** or **all** *A DS1 Facility screen appears.*
DS3 Facility screen	**fa ds3 <group #> <port #>**↵ where <group #> circuit pack group number (see “Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12” on page 5-2) <port #> number of the DS3 port: **1** to **3** or **all** A DS3 Facility screen appears.

—continued—

—continued—

Procedure 8-2 (continued)
Querying all facilities

Step **Action**

If you want to display the	Then enter
STS1 Facility screen	**fa sts1 <group #> <port #>**↵ where <group #> circuit pack group number (see "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2) <port #> number of the DS3 port: **1** to **3** or **all** An STS1 Facility screen appears.
OC-3 Facility screen for a feeder	**fa oc3 <group #>**↵ where <group #> the number of the OC-3 circuit pack group: **all**, **g1**, or **g2** (see "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2) The OC-3 Facility screen appears.
OC-3 Facility screen for an ABM tributary	**fa oc3 <group #>**↵ where <group #> the number of the OC-3 circuit pack group: **all**, **g1s**, **g2s**, **g3**, **g4 (**see "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2) The OC-3 Facility screen appears.
OC-3 Facility screen for a TBM tributary	**fa oc3 <group #>**↵ where <group #> the number of the OC-3 circuit pack group: **all**, **g1s**, **g2s**, **g3**, **g4**, **g5**, **g6**, **g7**, **g8** (see "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2) The OC-3 Facility screen appears.
—continued—	

—continued—

Procedure 8-2 (continued)
Querying all facilities

Step **Action**

If you want to display the	**Then enter**
OC-12 Facility screen	**fa oc12 <group #>**↵ **where** <group #> OC-12 group number: **g1** or **g2** or **all** (see "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2) *An OC-12 Facility screen appears.*
TIC Facility screen	**fa tic <sts #>**↵ where <sts #> STS number: **1** to **6** *A TIC Facility screen appears.*
ESI Facility screen	**fa esi <facility>**↵ where <facility> type of ESI facility: inputs: **bitsa** or **bitsb** outputs: **g1out** or **g2out** *The specified ESI Facility screen appears.*
COMM Fac Port screen	**fa comm; ports <type>**↵ where <type> specifies the type of COMM channel: **eoc, csc, tmc, omc, vlcm,** or **cnet** *The COMM FacPort screen appears.*
—end—	

2 From the Facility screen, query all facilities of the same type by entering:

query↵

The bottom of the equipment screen is updated with the state and status for all equipment of the same type.

—continued—

Procedure 8-2 (continued)
Querying all facilities

Step	Action
	The appropriate facility query screen appears.
	Note: At the COMM Fac Port screen, you cannot use the query command to display information about operations maintenance channel (OMC) links in a DS1-fed AccessNode (DFA) system. Instead, you must use the OMC query command of the OMC command interpreter. See Procedure 6-9, "Provisioning OMC DS1 facility parameters," in this volume for more information.
	—end—

Procedure 8-3
Displaying the VLCM status

Use this procedure to display the status of the virtual line concentrating module (VLCM) provisioned on a DS1-fed AccessNode (DFA) or a host digital terminal (HDT) in AccessNode Express. This procedure is performed from the VLCMCI tool on the network element user interface (NEUI). It applies only to systems connected to DMS-10NA switches.

Note: 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.

Requirements

You must be logged in to the VLCMCI tool. If you do not know how to do this, see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A.

Action

Step **Action**

1 Decide what you want to do based on the information in the following table.

If you want to	Then go to
display the status of the VLCM DS1s	step 2
translate DFA or HDT line parameters to switch parameters	step 3
display the status of the VLCMs	step 4

2 To display the status of all VLCM DS1 links provisioned on a DFA or an HDT, enter:

linkstatus <VLCM #> ↵

where

<VLCM #> number of the VLCM link: **1** to **4**

A tabular listing of the VLCM number to which the link is associated, switch port number (0 to 5) HDT VT number to which the link maps, the status of the link, and the type of line (PCM only, PCM/signal, or RMM/signal) is displayed.

—continued—

Procedure 8-3 (continued)
Displaying the VLCM status

Step	Action
3	To translate the shelf and slot number for the line into DMS line card parameters, enter: **tranlcm <shelf type> <shelf #> <slot #>** ↵ where <shelf type> **CDS** or **ANX** <shelf #> virtual shelf number: for AccessNode, copper distribution shelf number: **1** to **7** for AccessNode Express, voice module number: **1** to **28** <slot #> virtual line card slot number: for AccessNode, line card slot number: **1** to **96** for AccessNode Express, line card slot number: **1** to **48** *The bay, shelf, line subgroup (LSG), and line number associated with the voice port is displayed.*
4	To display the status of the VLCMs provisioned on a DFA or an HDT, enter: **vlcmstatus** ↵ *A tabular listing of the VLCM number, unit number within a VLCM, and the state for each unit is displayed.* **—end—**

Procedure 8-4
Displaying VLCM communications link status

Use this procedure to display the status of the virtual line concentrating module (VLCM) communications links associated with a DS1-fed AccessNode (DFA) or a host digital terminal (HDT) in AccessNode Express. This procedure is performed from the network element user interface (NEUI). It applies only to systems connected to DMS-10NA switches.

Requirements

You must be logged in to the NEUI. If you do not know how to do this, see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A.

Action

Step	Action
1	Display the VLCM ports COMM facility screen by entering: **fa comm;ports vlcm** ↵ *The status of the VLCM link is displayed.*
2	To display details on a specific VLCM link, enter: **dtlport <VLCM #>** ↵ where <VLCM #> VLCM link: **1** to **4** *The details for the specific VLCM are displayed.*

—end—

Using the PSTNCI tool

This chapter contains procedures for displaying and provisioning information about public switching telephone network (PSTN) compliance using the PSTN command interpreter (CI) tool.

Chapter task list

This chapter includes the following tasks.

Procedure	Task	See
9-1	Opening the PSTNCI tool	page 9-2
9-2	Displaying the help screen for PSTNCI	page 9-3
9-3	Selecting the Hong Kong PSTN software load	page 9-4
9-4	Selecting the Japan PSTN software load	page 9-6
9-5	Selecting the North American PSTN software load	page 9-8
9-6	Closing the PSTNCI tool	page 9-10

Note: If you cannot successfully complete these procedures, contact your next level of support.

Requirements for procedures

Read the command conventions for the type of interface you are using, either character-mode terminal (CMT) or graphical, in *OPC User Interface Description*, 323-3001-301, in *Operations, Administration, and Provisioning*, Volume 4A.

Procedure 9-1
Opening the PSTNCI tool

Use this procedure to open the public switching telephone network command interpreter (PSTNCI) tool.

Action

Step	Action
1	Log in to the operations controller (OPC). If you do not know how to log in to the OPC, see the procedure for logging in to the OPC located in *OPC User Interface Description*, 323-3001-301**,** *Operations, Administration, and Provisioning*, Volume 4A.
2	Open the NE Login Manager tool. If you do not know how to open this tool, see the procedure for opening an OPC tool located in *OPC User Interface Description*, 323-3001-301, *Operations, Administration, and Provisioning*, Volume 4A. *The NE Login Manager screen appears.*
3	Log in to the network element (NE) that you want to set the PSTN compliance for. *The Network Element User Interface (NEUI) screen appears.*
4	At the prompt, enter the following: **quit all** ↵ *The CI prompt appears.*
5	Open the PSTNCI tool by entering: **pstnci** ↵ *The PSTNCI tool software loads.*

—end—

Procedure 9-2
Displaying the help screen for PSTNCI

Use this procedure to display the help screen for public switching telecommunications network (PSTN) command interpreter (CI) tool.

Action

Step	Action
1	Open the PSTNCI tool. For instructions, see “Opening the PSTNCI tool” on page 9-2.

2	Display the list of commands for the PSTNCI tool by entering:
	help ↵
	The PSTN help screen appears.
	`----------`
	`Public Switched Telephone Network (PSTN) Compliance CI`
	`----------`
	`SELNA - Select North American PSTN compliance.`
	`SELHK - Select Hong Kong PSTN compliance.`
	`SELJP - Select Japan PSTN compliance.`
	`QPSTN - Query current PSTN compliancy selection.`
	`HELP - Displays this help.`
	`QUIT - Quits this CI.`
	`----------`

3	Close the PSTNCI tool (see “Closing the PSTNCI tool” on page 9-10 for instructions).

—end—

Procedure 9-3
Selecting the Hong Kong PSTN software load

Use this procedure to load the public switching telecommunications network (PSTN) software load for Hong Kong. Do not use this procedure unless you are installing a network element (NE) in Hong Kong. The North American software load is the default software load.

CAUTION
Affects service
Changing PSTN compliancy drops all active calls supplying loop-start residential (LSR) services and cancels all active line testing.

Requirements

Ensure the AccessNode system is not in service, and commission the NE that uses the Hong Kong PSTN software load.

Action

Step	Action
1	Open the PSTN command interpreter (CI) tool. For instructions, see "Opening the PSTNCI tool" on page 9-2.
2	Query the status of the PSTN software load by entering: **qpstn** ↵ *The PSTN tool displays the present status of the system.* `This system is currently configured for North America PSTN.` If the software load is correct, this procedure is complete. **—continued—**

Procedure 9-3 (continued)
Selecting the Hong Kong PSTN software load

Step	Action

3 If the current software load is the North America software load and you are in Hong Kong, change the PSTN software load to the Hong Kong PSTN software load by entering:

selhk ↵

The PSTNCI displays a warning and asks you to confirm the change.

```
******************** WARNING **********************
     Changing PSTN compliancy drops all active
     calls providing LSR services and aborts all active
     line testing.
***************************************************
```

If you want to	Then enter
confirm the change	**yes** ↵ *The PSTN tool displays the message:* `System now compliant to Hong Kong PSTN. Affected line cards are being downloaded.`
cancel the change	**no** ↵ *The PSTN tool cancels the action.*

4 Query the status of the PSTN software load by entering:

qpstn ↵

The PSTN tool displays the present status of the system.

```
This system is currently configured for Hong Kong PSTN.
```

5 Close the PSTNCI tool by entering:

quit ↵

The CI prompt appears.

—end—

Procedure 9-4
Selecting the Japan PSTN software load

Use this procedure to load the public switching telecommunications network (PSTN) software load for Japan. Do not use this procedure unless you are installing a network element (NE) in Japan. The North American software load is the default software load.

Note 1: If you select the Japan software load, you cannot change back to the North American load.

CAUTION
Affects service
Changing PSTN compliancy drops all active calls supplying loop-start residential (LSR) services and cancels all active line testing.

Requirements

Ensure the AccessNode system is not in service, and commission the NE that uses the Japan PSTN software load.

Action

Step	Action
1	Open the PSTN command interpreter (CI) tool. For instructions, see "Opening the PSTNCI tool" on page 9-2.
2	Query the status of the PSTN software load by entering: **qpstn** ↵ *The PSTN tool displays the present status of the system.* `This system is currently configured for North America PSTN.` If the software load is correct, this procedure is complete. **—continued—**

Procedure 9-4 (continued)
Selecting the Japan PSTN software load

Step	Action

3 If the current software load is the North America software load and you are in Japan, change the PSTN software load to the Japan PSTN software load by entering:

seljp ↵

The PSTNCI displays a warning and asks you to confirm the change.

```
******************** WARNING **********************
     Changing PSTN compliancy drops all active
     calls providing LSR services and aborts all active
     line testing.
***************************************************
```

If you want to	Then enter
confirm the change	**yes** ↵ *The PSTN tool displays the message:* `System now compliant to Japan PSTN. Affected line cards are being downloaded.`
cancel the change	**no** ↵ *The PSTN tool cancels the action.*

4 Query the status of the PSTN software load by entering:

qpstn ↵

The PSTN tool displays the present status of the system.

```
This system is currently configured for Japan PSTN.
```

5 Close the PSTNCI tool by entering:

quit ↵

The CI prompt appears.

—end—

Procedure 9-5
Selecting the North American PSTN software load

Use this procedure to load the public switching telecommunications network (PSTN) software load for North America. Because the default PSTN software load is the North American software load, you do not need to perform this procedure unless you accidentally selected Hong Kong for the PSTN software load.

CAUTION
Affects service
Changing PSTN compliancy drops all active calls supplying loop-start residential (LSR) services and cancels all active line testing.

Requirements

Ensure the AccessNode system is not in service, and commission the network element (NE) that uses the North America PSTN software load.

Action

Step	Action
1	Open the PSTN command interpreter (CI) tool. For instructions, see "Opening the PSTNCI tool" on page 9-2.
2	Query the status of the PSTN software load by entering: **qpstn** ↵ *The PSTN tool displays the present status of the system.* `This system is currently configured for Hong Kong PSTN.` If the software load is correct, this procedure is complete. **—continued—**

Procedure 9-5 (continued)
Selecting the North American PSTN software load

3 If the current software load is the Hong Kong software load and you are in North America, change the PSTN software load to the North America PSTN software load by entering:

selna ↵

The PSTNCI displays a warning and asks you to confirm the change.

```
******************** WARNING **********************
     Changing PSTN compliancy drops all active
     calls providing LSR services and aborts all active
     line testing.
***************************************************
```

If you want to	Then enter

confirm the change	**yes** ↵
	The PSTN tool displays the message:
	`System now compliant to North America PSTN.`
	`Affected line cards are being downloaded.`

cancel the change	**no** ↵ *The PSTN tool cancels the action.*

4 Query the status of the PSTN software load by entering:

qpstn ↵

The PSTN tool displays the present status of the system.

```
This system is currently configured for North America
PSTN.
```

5 Close the PSTNCI tool by entering:

quit ↵

The CI prompt appears.

—end—

Procedure 9-6
Closing the PSTNCI tool

Use this procedure to close the public switching telecommunications network (PSTN) command interpreter (CI) tool.

Action

Step	Action
1	Close the PSTNCI tool by entering: **quit** ↵ *The CI prompt appears.*
2	Logout of the network element (NE) by entering: **logout** ↵ *The NE Login Manager screen appears.*
3	Close the NE Login Manager tool: **a.** To display the window menu, press Ctrl_L W (or Keypad 6). *The window menu appears.* **b.** To select the Exit command, press Space (or Keypad 0). *The tool closes.*
4	Logout of the OPC. If you do not know how to logout of the OPC, see the procedure for logging out of the OPC located in *OPC User Interface Description*, 323-3001-301, *Operations, Administration, and Provisioning*, Volume 4A.

—end—

Using the LNADJCI tool

This chapter contains procedures for displaying and provisioning information about adjusting the transmit and receive gain using the LNADJ command interpreter (CI) tool.

Chapter task list

This chapter includes the following tasks.

Procedure	Task	See
10-1	Opening the LNADJCI tool	page 10-2
10-2	Displaying the help screen for LNADJCI	page 10-3
10-3	Selecting the Hong Kong PSTN software load	page 10-4
10-4	Closing the LNADJCI tool	page 10-6

Note: If you cannot successfully complete these procedures, contact your next level of support.

Requirements for procedures

Read the command conventions for the type of interface you are using, either character-mode terminal (CMT) or graphical, in *OPC User Interface Description*, 323-3001-301, in *Operations, Administration, and Provisioning*, Volume 4A.

Procedure 10-1
Opening the LNADJCI tool

Use this procedure to open the line adjustment command interpreter (LNADJCI) tool.

Requirements

Ensure the AccessNode system is not in service, and commission the NE that uses the Hong Kong PSTN software load.

Action

Step	Action
1	Log in to the operations controller (OPC). If you do not know how to log in to the OPC, see the procedure "Logging in to the OPC" in *OPC User Interface Description*, 323-3001-301**,** in *Operations, Administration, and Provisioning*, Volume 4A.
2	Open the NE Login Manager tool. If you do not know how to open this tool, see the procedure "Opening an OPC tool" in *OPC User Interface Description*, 323-3001-301, in *Operations, Administration, and Provisioning*, Volume 4A. *The NE Login Manager screen appears.*
3	Log in to the network element (NE) that you want to adjust the gain for. *The Network Element User Interface (NEUI) screen appears.*
4	At the prompt, enter the following: **quit all** ↵ *The CI prompt appears.*
5	Open the LNADJCI tool by entering. **lnadjci** *The LNADJCI tool software loads.*

—end—

Procedure 10-2
Displaying the help screen for LNADJCI

Use this procedure to display the help screen for the line adjustment (CI) tool.

Action

Step	Action
1	Open the LNADJCI tool (see “Opening the LNADJCI tool” on page 10-2 for instructions).

2	Display the list of commands for the LNADJCI tool by entering:
	help ↵
	The LNADJ help screen appears.
	`----------`
	`Line Adjustment CI`
	`----------`
	`SETPOTS - changes the transmit and receive gain to requested value.`
	`QUERYATTRIB - retrieves the current transmit and receive gain settings.`
	`DEFAULTPOTS - returns the transmit and receive gain to the default values.`
	`HELP - Displays help information on each LNADJCI command.`
	`QUIT - Exits the LNADJCI command increment.`
	`----------`

3	Close the LNADJCI tool (see “Closing the LNADJCI tool” on page 10-6 for instructions).

—end—

Procedure 10-3
Selecting the Hong Kong PSTN software load

Use this procedure to load the public switching telecommunications network (PSTN) software load for Hong Kong. Do not use this procedure unless you are installing a network element (NE) in Hong Kong. The North American software load is the default software load..

CAUTION
Affects service
Changing PSTN compliancy drops all active calls supplying loop-start residential (LSR) services and cancels all active line testing.

Requirements

Ensure the AccessNode system is not in service, and commission the NE that uses the Hong Kong PSTN software load.

Action

Step	Action
1	Open the PSTN command interpreter (CI) tool.
2	Query the status of the PSTN software load by entering: **qpstn** ↵ *The PSTN tool displays the present status of the system.* `This system is currently configured for North America PSTN.` If the software load is correct, this procedure is complete. **—continued—**

Procedure 10-3 (continued)
Selecting the Hong Kong PSTN software load

Step	Action

3 If the current software load is the North America software load and you are in Hong Kong, change the PSTN software load to the Hong Kong PSTN software load by entering:

selhk ↵

The PSTNCI displays a warning and asks you to confirm the change.

```
******************** WARNING **********************
     Changing PSTN compliancy drops all active
     calls providing LSR services and aborts all active
     line testing.
***************************************************
```

If you want to	Then enter
confirm the change	**yes** ↵ *The PSTN tool displays the message:* `System now compliant to Hong Kong PSTN. Affected line cards are being downloaded.`
cancel the change	**no** ↵ *The PSTN tool cancels the action.*

4 Query the status of the PSTN software load by entering:

qpstn ↵

The PSTN tool displays the present status of the system.

```
This system is currently configured for Hong Kong PSTN.
```

5 Close the PSTNCI tool by entering:

quit ↵

The CI prompt appears.

—end—

Procedure 10-4
Closing the LNADJCI tool

Use this procedure to close the line adjustment command interpreter (CI) tool.

Action

Step	Action
1	Close the LNADJCI tool by entering: **quit** ↵ *The CI prompt appears.*
2	Logout of the network element (NE) by entering: **logout** ↵ *The NE Login Manager screen appears.*
3	Close the NE Login Manager tool: **a.** To display the window menu, press Ctrl_L W (or Keypad 6). *The window menu appears.* **b.** To select the Exit command, press Space (or Keypad 0). *The tool closes.*
4	Logout of the OPC. If you do not know how to logout of the OPC, see the procedure “Logging out from the OPC” in *OPC User Interface Description*, 323-3001-301, in *Operations, Administration, and Provisioning*, Volume 4A.

—end—

Provisioning hosts for a remote fiber terminal

This chapter includes procedures that can be performed from the operations controller (OPC) user interface to support a multihosting environment. (Multihosting means one switch (host) switches some of the switched lines from a remote fiber terminal (RFT) and another switch switches other lines from the RFT. Each line has a fixed association with only one switch, but the lines from the RFT are allotted to multiple switches.)

Host Provisioning Manager tool

The Host Provisioning Manager tool on the OPC user interface identifies the switches (hosts) to which an AccessNode system is connected.

CAUTION

Risk of communication loss between the Subscriber Carrier Module-100 Access (SMA) and RFT

Ensure that Table OFCENG and RDTINV are correctly datafilled for each host switch in a multihosting application. Assign a unique NETWORK_ELEMENT_ID parameter value in Table OFCENG for each host switch. This value should be different from the AccessNode network element numbers. If datafill is incorrect, the OPC Provisioning Manager and Manage Facility Assignments dialog in the Connection Manager tool can display the same host name (common language location identifier or CLLI) for two or more switches.

Using the Host Provisioning Manager, you can select an RFT from the list of provisioned RFTs in the OPC span of control. After you select an RFT, the system displays the following:

- host names provisioned on the RFT
- interface group (IG) numbers
- integrated digital terminal (IDT) number

- interface types (GR-303 DMS or GR-303 MVI)
- the primary alarm recipient indicator

If the maximum number of hosts are not provisioned for the RFT, the Add button is enabled.

The system automatically assigns the IG number when you add the host. This number ranges from one to five. The CLLI (or host name) and the IDT number identify the IG to the system.

GR-303 DMS is an interface to digital multiplex system (DMS) switches. GR-303 multivendor interface (MVI) is a generic interface to switches. You can provision multiple GR-303 DMS and GR-303 MVI switches.

The Host Provisioning Manager also allows you to determine which host connected to the RFT is the primary alarm recipient of the RFT's alarm notifications. Only a DMS host can be the primary host. Therefore, the first DMS host added is designated the default primary host.

When the lines of an RFT are associated with more than one switch, the system allows you to determine which DS1s are connected to each switch.

For a brief description of the Host Provisioning tool, see *OPC User Interface Description*, 323-3001-301, in *Operations, Administration, and Provisioning*, Volume 4A.

Specific provisioning tasks allow you to change the default values the system assigns during initial installation. For lists of provisioning tasks, see Chapter 1, "Overview of provisioning."

Maximum IGs

If you are not on a DS1-fed AccessNode (DFA) system, you can provision up to five IGs between switches and an RFT. If you are on a DFA system, the number of DFA operations maintenance channels (OMC) affects the number of IGs you can assign.

A communication overhead (COH) channel has 31 available DS0s. Each OMC requires three to six DS0s. Each IG requires four DS0s. If four DS0s are not available, the operation to assign an IG aborts.

If you have no OMC links, you can assign up to five IGs (5 IGS x 4 DS0s = 20 DS0s). OMC links limit the number of assignable DS0s, and you must calculate how many IGs you can assign.

> ***Note:*** Even with OMC links, you can still add five IGs from the Host Provisioning Manager; however, the Connection Manager's Manage Facility Assignment tool will be limited to the number of DS0s.

Chapter task list

This chapter includes the following tasks.

Procedure	Task	See
11-1	Deleting an existing host from an RFT	page 11-4

Note: If you cannot successfully complete these procedures, contact your next level of support.

Requirements for procedures

Before performing these procedures, you must do the following:

- Have a userID and password that allow you to access the Host Provisioning Manager tool.
- Read the command conventions for the type of interface you are using, either character-mode terminal (CMT) or graphical, in *OPC User Interface Description*, 323-3001-301, in *Operations, Administration, and Provisioning*, Volume 4A.

Procedure 11-1
Deleting an existing host from an RFT

Use this procedure to delete a host switch that is no longer connected to a remote fiber terminal (RFT).

You cannot delete a host switch if the following conditions exist:

- the host owns any DS1
- the host is designated as the primary alarm host (unless you are deleting the last host)

Action

Step	Action
1	Log in to the operations controller (OPC) and open the Host Provisioning Manager tool. If you do not know how to do this, see the procedures in *OPC User Interface Description*, 323-3001-301. *The main window of the Host Provisioning Manager tool appears.*
2	To display the chooser menu, press **Ctrl_L** */* (or Keypad **3**). *The chooser menu appears showing the RFTs in the OPC span of control.*
3	Use the arrow keys to move to the RFT you want to delete a host from, then press **Space** (or Keypad **0**). *The list of hosts shows the hosts that have been provisioned on the selected RFT.*
4	Move to the host you want to delete, then press **Ctrl_A** (or Keypad **0**).
5	To display the list item menu, press **Ctrl_L** (or Keypad **Enter**). *The list item menu for the list appears.*
6	Move to the Delete Host command, the press **Space** (or Keypad **0**). *A confirmation dialog appears for you to confirm the deletion.*

—continued—

Procedure 11-1 (continued)
Deleting an existing host from an RFT

Step	Action
7	Tab to the OK button, then press **Ctrl_A** (or Keypad **0**) to delete the selected host. (If you do not want to delete the host, select the Cancel button.) *The selected host is deleted from the Provisioned Hosts list.*
8	To close the tool, complete the instructions in the following table:

To	Press
display the window menu	**Ctrl_L W** (or Keypad **6**) *The window menu appears.*
exit	**Space** (or Keypad **0**) *The tool closes.*

—end—

Setting up connections at the OPC

This chapter contains procedures for using the Connection Manager tool and the TL1 Configuration tool to set up STS, VT1.5, and TCP/IP connections.

Chapter task list

This chapter contains the following tasks. The tasks listed below are prerequisites for most other tasks listed in the table:

- Provisioning default connections
- Finding available channels and tributaries
- Adding an STS connection
- Adding a VT connection
- Configuring TL1 for Telnet or True TCP/IP

After you set up the connections, you can perform the other tasks at any time and in any order.

Procedure	Task	See
Basic tasks		
12-1	Provisioning default connections on single-ended systems	page 12-17
12-2	Finding available channels and tributaries	page 12-19
STS connections		
12-3	Editing an STS connection	page 12-24
12-4	Deleting an STS connection	page 12-26

—continued—

Procedure	Task	See
VT connections		
12-5	Deleting a VT1.5 connection	page 12-29
12-6	Deleting a VT-managed STS-1 connection	page 12-32
Maintaining connections		
12-7	Displaying connections	page 12-35
12-8	Modifying the list of connections	page 12-41
12-9	Scheduling an audit of connection data	page 12-47
12-10	Performing an audit of connection data	page 12-50
12-11	Changing the channel, route, VT group, and VT number of a connection	page 12-53
12-12		page 12-59
12-13	Converting an STS-managed connection to a VT-managed connection	page 12-62
	Performing a manual backup of connection data	
Provisioning TL1 over TCP/IP		
12-14	Enabling TL1 over TCP/IP for a Telnet connection	page 12-64
12-15	Configuring TL1 for Telnet or True TCP/IP	page 12-66
—end—		

Requirements for procedures

Before starting these procedures, you must do the following:

- Read the tool restrictions and limitations on page 12-14.
- Read the command conventions for the type of interface you are using, either character-mode terminal (CMT) or graphical, in *OPC User Interface Description,* 323-3001-301, in *Operations, Administration, and Provisioning,* Volume 4A.

Introduction to the Connection Manager tool

The Connection Manager tool is in the operations controller (OPC) Network Admin and Provisioning Admin toolsets. The tool allows end-to-end STS-1 provisioning for OC-12 bidirectional line-switched ring (BLSR) and OC-3/12 point-to-point linear configurations. The main purpose of the Connection Manager tool is to specify where STS and VT1.5 connections are added and dropped within a configuration. Only virtual tributary bandwidth manager (VTBM) 2-Fiber BLSR configurations (on network elements (NEs) with the VTBM transport interface) support VT-level bandwidth management.

For standard facility connections, use the Connection Manager tool. For nonstandard connections, use the Nodal Connection Manager tool (see *Nodal Connection Manager Quick Reference Guide*). Nonstandard connections include the following situations:

- TR-08 systems 8 to 21
- non-default provisioning for single-ended, DFA, or point-to-point systems
- mix-and-match systems

The Connection Manager tool allows you to:

- provision and deprovision STS-1, STS-3c, and VT1.5 connections
- display a list of provisioned connections
- display available bandwidth between two NEs
- initiate a connection audit of all NEs, whether or not they are in configurations
- manage facility assignments for
  - GR-303 digital multiplex switch (DMS)
  - GR-303 multi-vendor interface (MVI)
  - DS1 Tandem
  - TR-08 DS1 connections
  - another AccessNode-specific connection such as virtual line concentrating module (VLCM)
- provision default connections
- view tributary-to-transport, pass-through, and DS1-fed AccessNode (DFA) hairpin cross-connections within an NE

The main window of the Connection Manager tool lists all STS connections that have been set up, for all configurations (point-to-point or ring) in the OPC span of control.

Depending on the topology, STS-managed connections can be set up for 3 to 12 working channels (time slots), as shown below.

Topology	Number of working channels
OC-3 point-to-point	3
OC-12 point-to-point	12
OC-12 BLSR	6

An STS-1 connection keeps the same channel between each NE; however, the tool allows variable time slot assignment. That is, the mapping of STS-1 channels to tributary facilities is not fixed; therefore, any working channel can be assigned to any tributary facility (mapper slot and port). Variable time-slot assignment allows you to maximize the bandwidth usage of the STS-1 channels.

For connections to carry traffic, the appropriate tributary must also be provisioned at each NE. These tributary facilities can be provisioned either before or after the connections are set up.

Table 12-1 shows the alarms generated for tributary facilities. The alarms that can be generated depend on the provisioning and connection status of the tributary.

Table 12-1
Tributary facility alarms

If the tributary facility is	And connections are	These alarms are generated
provisioned	not set up	STS unequipped alarms
provisioned	set up	if not yet carrying traffic, loss of signal (LOS) and alarm indication signal (AIS) alarms
not provisioned	set up	no alarms

Tributaries are composed of tributary facilities and tributary equipment (circuit packs).

When two DS1 tributary groups are assigned in the same STS-1 connection, the Connection Manager displays both circuit pack groups (for example, DS1 G1, G2).

For VT-managed connections, the main window of the Connection Manager displays <VTMan> for the tributary. The tributary is provisioned on the VT1.5 connection and is shown in the Manage VT Connections dialog.

Note: The following VTBM cards support OC-3 concatenated (OC-3c) tributaries. They are listed by product engineering code (PEC) and common product code (CPC).

PEC	CPC	Description
NT7E05AF	A0657272	OC-12 VTBM Enhanced Long Reach (FC)
NT7E05AG	A0657273	OC-12 VTBM Enhanced Long Reach (ST)
NT7E05AH	A0657274	OC-12 VTBM Enhanced Long Reach (SC)
NT7E05BF	A0657275	OC-12 VTBM Enhanced Long Reach (FC)
NT7E05BG	A0657276	OC-12 VTBM Enhanced Long Reach (ST)
NT7E05BH	A0657277	OC-12 VTBM Enhanced Long Reach (SC)

Engineering rules for connection services

Bidirectional line-switched ring systems

- You can set up STS-3c, STS-managed STS-1, VT-managed STS-1, and VT1.5 connections.
- You cannot provision default connections.
- You can provision a VT1.5 connection between two nodes only if a complete VT-managed STS-1 path exists between the nodes on the selected channel along the selected route.
- You must delete all virtual tributary (VT) connections passing through a VT-managed STS-1 connection to delete the connection.
- Only the following tributary combinations are allowed for STS-managed STS-1 connections:

End network element (NE) A	End network element (NE) Z
DS1 mapper pair	DS1 mapper pair, STS-1 interface card port, OC-3 channel, or TIC STS-1 #1 (RFT only)
DS3 mapper port	DS3/STS mapper port, STS-1 interface port, or OC-3 channel

—continued—

End network element (NE) A	End network element (NE) Z
STS-1 interface port	OC-3 channel, DS3/STS mapper port, DS1 mapper pair, STS-1 interface port, or TIC STS-1 #1 (RFT only)
OC-3 channel	OC-3 channel, DS3/STS mapper port, DS1 mapper pair, STS-1 interface port, or TIC STS-1 #1 (RFT only)
transport interface card (TIC) STS-1 #1 (remote fiber terminal (RFT) only)	DS1 mapper pair, STS-1 interface port, or OC-3 channel
—end—	

- Only the following tributary combinations are allowed for VT1.5 connections:

End NE A	End NE Z
DS1 mapper port	DS1 mapper port, VT1.5 in OC-3 channel, VT1.5 in STS-1 port, or subport of TIC STS-1 #1 (RFT only)
VT1.5 in OC-3 channel	VT1.5 in OC-3 channel, VT1.5 in STS-1 port, DS1 mapper port, or subport of TIC STS-1 #1 (RFT only)
VT1.5 in STS-1 port	VT1.5 in OC-3 channel, VT1.5 in STS-1 port, DS1 mapper port, or subport of TIC STS-1 #1 (RFT only)
VT1.5 of TIC port 1 (RFT only)	VT1.5 in OC-3 channel, VT1.5 in STS-1 #1, or DS1 mapper port

- Software can treat OC-3 and STS-1 tributaries as VT-managed. However, OC-3 and STS-1 tributaries in reality can only be STS-managed. Therefore, the following rules apply for VT connections on OC-3 and STS-1 tributaries:
  - — The VT group/number in the tributary must equal the VT group/number in the feeder STS-1 channel.

— For a particular node, if a VT from a certain feeder STS-1 channel is cross-connected to a VT on an OC-3 or STS-1 tributary, the remaining VTs in that feeder STS-1 channel can be cross-connected only to that OC-3 or STS-1 tributary channel.

— For a particular node, if a VT from a certain feeder STS-1 channel is cross-connected to a DS1 port or TIC VT1.5, the remaining VTs in that feeder STS-1 channel cannot be cross-connected to an OC-3 or STS-1 tributary.

- A VT connection cannot originate or terminate on the same node (either by hairpinning or by routing through the entire ring).
- A VT-managed STS-1 pipe must terminate on adjacent nodes. The user interface (UI) automatically provisions the necessary number of single-hop pipes to create a full VT-managed path between selected NEs.

  Note: You can select the same NE for the A and Z endpoints (using the long route) to automatically provision a series of VT-managed STS-1 pipes on a single STS-1 channel all the way around the ring.

Point-to-point systems

The following information pertains to point-to-point systems:

- You can only set up STS-managed STS-1 connections.
- You can provision a set of default end-to-end connections if no other connections have been provisioned.
- Only the following tributary combinations are allowed for end-to-end connections:

Fiber central office terminal (FCOT)	**Remote fiber terminal (RFT)**
DS1 mapper pair	DS1 mapper pair, OC-3 channel, or TIC STS-1 #1
DS3 mapper port	DS3 mapper port or OC-3 channel
OC-3 channel	OC-3 channel, DS3 mapper port, or DS1 mapper pair
TIC STS-1 #2 (access bandwidth manager (ABM) only)	TIC STS-1 #2

- Connections cannot terminate on the same node (that is, no hairpinning).

DS1/DS3 mappers

The following information pertains to DS1/DS3 mappers for point-to-point systems:

- An STS-1 can be mapped between
  - — any odd/even pair of DS1 mappers at the FCOT and RFT.
  - — any DS3 port on any DS3 mapper at the FCOT and any DS3 mapper at the RFT.
  - — any pair of DS1 mappers at the FCOT and STS-1 #1 of the TIC at the RFT. These DS1 interfaces are used for integrated and tandem services. (If the DS1 mapper is next to the protection mapper, the STS-1 is only half-used and only 14 DS1s are supported.)
- An STS-1 can be mapped to the mappers. The protection mapper at the FCOT should be mapped to the mappers that include the protection mapper at the RFT. A pair of mappers without a protection mapper would lose the bandwidth from one of its mappers if mapped to a pair with a protection mapper.

DFA and single-ended AccessNode

- You can provision nodal default connections for a DS1-fed AccessNode (DFA) RFTs, CServers, and single-ended RFTs. (For DFA RFTs and CServers, the default connections are hairpin connections.)
- End-to-end connection provisioning is not supported for DFA RFTs, CServers, or single-ended RFTs.

Transport interface card

- In the UDLC configuration, TIC STS-1 #1 at the FCOT is unavailable. This is because TIC STS-1 #1 at the RFT is used for integrated and Tandem services that terminate on DS1 mappers at the FCOT.
- TIC STS-1 #2 at the RFT can be connected only to TIC STS-1 #2 at the FCOT. STS-1 #2 is used for universal digital loop carrier (UDLC) services that terminate on the TIC at both FCOT and RFT. UDLC is supported only on point-to-point configurations.
- The TIC supports only the TR-08 message extraction from the first STS-1 it receives. Therefore mappers carrying TR-08 services must be mapped to TIC STS-1 #1. In addition, TR-08 messages can be accessed only for TIC VT1.5s 1, 5, 9, 13, 17, 21, and 25.

Default maps

Using the Manage Default/STS-1 Cross Connects dialog, you can provision:

- nodal default cross connects for terminal network elements (NEs) that are not in any configuration, for example, a DS1-fed AccessNode (DFA) remote fiber terminal (RFT), CServer, or single-ended RFT.

  Terminal NEs are AccessNodes with shelf function of RFT or fiber central office terminal (FCOT) and transmission rates of None, DS1, OC3, or OC12. However, you cannot provision default connections for a transport bandwidth manager (TBM) operations controller (OPC) shelf (TBM FCOT with transmission rate None).

- end-to-end default connections for NEs in a point-to-point configuration if non-default connections have not been provisioned

  Note: To access options other than the defaults, see instructions in the *Nodal Manager Quick Reference Guide.*

Default connections depend on the type of NE. Each tributary endpoint of a default connection corresponds to a particular STS-1 path termination and not a physical tributary. Therefore, these connections can be pre-provisioned before inserting equipment.

For point-to-point systems, end-to-end default connections are determined from the nodal connections tables for the FCOT and RFT. For each STS-1 channel with a nodal default connection on both the FCOT and the RFT, an end-to-end default connection is provisioned. If an STS-1 channel has a nodal default connection on either the FCOT or RFT, but not both, that nodal connection is not provisioned.

The following NE types are supported:

- access bandwidth manager (ABM) FCOTs in point-to-point systems
- TBM FCOTs in point-to-point systems
- ABM RFTs in point-to-point systems
- DFA RFTs or CServer in standalone configuration
- ABM RFTs (FCOT-less RFT) in standalone configuration

  Note: No default connection maps exist for ring ADM nodes.

Table 12-2 shows the default map for an ABM shelf in an FCOT.

Table 12-2
Default map for an access bandwidth manager shelf in an FCOT

Slot number	STS-1 carrying			
	DS1s to/from a DS1/VT mapper in the slot	DS1s to/from a transport interface card in the slot	DS3s to/from a DS3/STS mapper in the slot	OC-3 tributaries
1	STS-1 #1 low			STS-1 #1 (applies only to first channel of OC-3 tributary)
2	STS-1 #1 high			
3			STS-1 #4, #7, #8	
4	STS-1 #4 high			
5	STS-1 #5 low		STS-1 #5, #9, #10	STS-1 #5, #9, #10
6	STS-1 #5 high			
7	STS-1 #6 low		STS-1 #6, #11, #12	
8	STS-1 #6 high			
11 and 14		STS-1 #2 (UDLC DS1s)		

Note 1: No default mapping exists for DS1s going to and from a DS1/VT mapper in slot 3 because only the protection mapper can be installed in that slot.

Note 2: The universal digital loop carrier (UDLC) traffic is mapped in STS-1 #2 of theTICs in the RFT. The UDLC traffic is mapped to STS-1 #22 in slot 11 and to STS-1 #2 in slot 14 because either of the two transport interface circuit packs can be the working unit.

Note 3: If the FCOT and RFT are equipped with feeder OC-3 interface circuit packs, only STS-1 #1, #2, and #3 are available. Therefore, the default maps do not support DS3s in such a subnetwork.

Note 4: The slots for OC-tributaries, shown in Table 12-2 are the first of four slots. Each OC-3 tributary card occupies two slots, and if there is optional protection, an OC-3 protection card occupies another two slots. For example, the “slot 1” OC-3 tributary occupies slots 1 to 2 if there is no protection card or slots 1 to 2 and 3 to 4 if there is a protection card.

Table 12-3 shows the default map for a TBM shelf in an FCOT.

Table 12-3
Default map for a transport bandwidth manager shelf in an FCOT

Slot number	STS-1 carrying		
	DS1s to/from a DS1/VT mapper in the slot	DS3s to/from a DS3/STS mapper in the slot	OC-3 tributaries
1			
2			
3	STS-1 #1 low		
4	STS-1 #1 high		
11	STS-1 #3 low	STS-1 #3 (applies only to first port of DS3 tributary)	STS-1 #3 (applies only to first channel of OC-3 tributary)
12	STS-1 #3 high		
13			
14	STS-1 #4 high		
15	STS-1 #5 low	STS-1 #5, #9, #10	STS-1 #5, #9, #10
16	STS-1 #5 high		
17	STS-1 #6 low	STS-1 #6, #11, #12	
18	STS-1 #6 high		

Note 1: No default mapping exists for DS1s going to and from a DS1/VT mapper in slot 13 because only the protection mapper can be installed in that slot.

Note 2: The DS1s in STS-1 #1 carry tandem traffic and integrated traffic. The assignment of the DS1s is flexible. All 28 DS1s in the STS-1 can be tandem DS1s. Alternatively, up to 20 of the 28 DS1s in the STS-1 can be GR-303 DMS/MVI DS1s. The limit of 20 is imposed by the SMA.

Note 3: If the FCOT and RFT are equipped with feeder OC-3 interface circuit packs, only STS-1 #1, #2, and #3 are available. Therefore, the default maps do not support DS3s in such a subnetwork. However, you can specify a nondefault map that supports DS3s.

Note 4: The slots for OC-tributaries, shown in Table 12-3, are the first of four slots. Each OC-3 tributary card occupies two slots, and if there is optional protection, an OC-3 protection card occupies another two slots.

Table 12-4 shows the default map for an ABM shelf in an RFT.

Table 12-4
Default map for an access bandwidth manager shelf in an RFT

Slot number	STS carrying			
	DS1s to/from a DS1/VT mapper in the slot	**DS1s to/from a transport interface card in the slot**	**DS3s to/from a DS3/STS mapper in the slot**	**OC-3 tributaries**
1	STS-1 #3 low			STS-1 #3 (applies only to first channel of OC-3 tributary)
2	STS-1 #3 high			
3			STS-1 #4, #7, #8	
4	STS-1 #4 high			
5	STS-1 #5 low		STS-1 #5,# 9, #10	STS-1 #5, #9, #10
6	STS-1 #5 high			
7	STS-1 #6 low		STS-1 #6, #11, #12	
8	STS-1 #6 high			
11 and 14		STS-1 #1 (GR-303 DMS/MVI, tandem and TR-08) STS-1 #2 (UDLC)		

Note 1: No default mapping exists for DS1s going to and from a DS1/VT mapper in slot 3 because only the protection mapper can be installed in that slot.

Note 2: The DS1s in STS-1 #1 carry tandem traffic, GR-303 traffic and TR-08 traffic. The assignment of the DS1s is flexible. All 28 DS1s in the STS-1 can be tandem DS1s or GR-303 DS1s. STS-1 #1 is mapped to a pair of DS1/VT mappers in the FCOT.

Note 3: The UDLC traffic is mapped on STS-1 #2 of the TICs in the RFT. The UDLC traffic is mapped to STS-1 #2 in slot 11 and to STS-1 #2 in slot 14 because either of the two TICs can be the working unit.

Note 4: The slots for OC-tributaries, shown in Table 12-4, are the first of four slots. Each OC-3 tributary card occupies two slots, and if there is optional protection, an OC-3 protection card occupies another two slots. For example, the “slot 1” OC-3 tributary occupies slots 1-2 if there is no protection card, or slots 1–2 and 3–4 if there is a protection card.

Note 5: An RFT in a single-ended system is fed by an OC-3 tributary. Only STS-1 #1, #2, and #3 are available. Therefore, the default map does not support DS3s in a single-ended system. You cannot specify a non-default map for an RFT in a single-ended system because you do not run the configuration manager when commissioning a single-ended RFT.

Note 6: If the FCOT and RFT in a basic fiber-fed system are equipped with OC-3 interface circuit packs, only STS-1 #1, #2, and #3 are available. Therefore, the default maps do not support DS3s in such a system. However, in a basic fiber-fed system, you can specify a non-default map that allows DS3s.

Table 12-5 shows the default connections for DFA RFTs and CServers.

Table 12-5
DFA RFT and CServer Default Connections

Endpoint 1	Endpoint 2
DS1 mappers G1 and G2 (slots 1 and 2)	TIC STS-1 #1 (slot 11)
DS1 mapper G4 (slot 4)	TIC STS-1 #2 (slot 11)
DS1 mapper G5, G6 (slots 5 and 6)	TIC STS-1 #3 (slot 11)

Single-ended NEs do not support STS-1 connection services. As a result, the following guidelines apply to the default maps:

- All DS1 tandem, TR-08 DS1, and GR-303 traffic must be on STS-1 #1 of the incoming tributary.
- DS1 transport traffic can only be on STS-1 #3, #4 (upper half only), #5, and #6.
- DS3 transport traffic can only be on STS-1 #4 and #12. DS3 transport traffic cannot be supported with OC-3 tributaries.

Restrictions and limitations

The Connection Manager cannot be opened unless the system has been commissioned. For more information, see *Commissioning and Testing*, Volume 3.

While the Connection Manager is open, you cannot open the Configuration Manager. This ensures that configuration data does not change while connections are being set up. Similarly, you cannot open the Connection Manager while the Configuration Manager is open.

Editing the connection ID can be done in service. Editing the facility assignment of a VT connection terminating on a TIC STS-1 #1 is also allowed, but affects service. Editing of other information is not allowed—you must delete and re-add the connection instead.

Connection data is synchronized between operations controllers (OPCs) in one direction only, from the primary OPC to its backup. Therefore, if you change connections on an active backup OPC, you must repeat these changes on the primary OPC when the primary becomes active again.

CAUTION
Risk of traffic loss
Failure to repeat changes made on the backup OPC to the primary OPC results in loss of connection data and may eventually lead to loss of traffic.

For connections to carry traffic, the appropriate tributary facilities must also be installed and provisioned at each end of the connection. These tributary facilities can be provisioned either before or after the connections are set up.

See Table 12-1, “Tributary facility alarms,” on page 12-4 for a summary of alarms and when they are generated.

Connection data tables

Use Table 12-6 or Table 12-7 to record the connection data for the STS-1 and VT connections you want to provision or modify. Make a copy of the appropriate table for each series of connections.

Table 12-6
STS connection information

Configuration name						
Connection ID	**STS channel(s)**	**End NE A**	**Tributary at End NE A** (CPG and slot)	**End NE Z**	**Tributary at End NE Z** (CPG and slot)	**Route**

Table 12-7
VT connection information

Configuration name								
STS connection ID	**STS channel**	**VT connection ID**	**VT group and number**	**End NE A**	**Tributary at End NE A** (CPG and slot)	**End NE Z**	**Tributary at End NE Z** (CPG and slot)	**Route**

Procedure 12-1
Provisioning default connections on single-ended systems

Use this procedure to provision nodal default cross connections for terminal network elements (NE) that are not in any configuration, for example, a DS1-fed AccessNode (DFA) remote fiber terminal (RFT), CServer, or single-ended RFT.

Note: For provisioning other than default connections on a single-ended system, see the *Nodal Connection Manager Quick Reference Guide.*

Requirements

Before starting this procedure, you must do the following:

- have a userID and password that allow you to access the operations controller (OPC) and open the Commissioning Manager and Connection Manager tools with read/write privileges
- perform the following:
  - — open the Commissioning Manager tool and commission the NE
  - — download the software to the NE

Action

Step	Action
1	Log in to the OPC and open the Connection Manager tool. If you do not know how to do this, see the procedures in *OPC User Interface Description,* 323-3001-301, in *Operations, Administration, and Provisioning,* Volume 4A. *The Connection Manager main window appears.*
2	To display the Options menu, press **Ctrl_L T**, then press **Shift +**. *The View Options menu appears.*
3	Move to the **Manage default/STS-1 cross connects** command, then press **Space** (or Keypad **0**). *The Manage Default/STS-1 Cross Connects dialog appears.*
4	In the Network Element field, press **Ctrl_L /** (or Keypad **3**) to display the chooser menu. *The chooser menu appears, listing the available NEs.*

—continued—

Procedure 12-1 (continued)
Provisioning default connections on single-ended systems

Step	Action
5	Use the down arrow key to move to the NE you want, then press **Space** (or Keypad **0**). *The NE appears in the Network Element field. The Shelf Function and Transmission Rate fields are automatically filled in for the selected NE.*
6	Tab to the Provision Nodal Default Connections button, then press **Ctrl_A** (or Keypad **0**). *A confirmation dialog appears.*
7	Tab to the Yes button, then press **Ctrl_A** (or Keypad **0**). *After the default connections have been provisioned, a dialog appears.*
8	Tab to the OK button, then press **Ctrl_A** (or Keypad **0**). *The Manage Default/STS-1 Cross Connects dialog appears listing the default connections.*
9	Tab to the Done button, then press **Ctrl_A** (or Keypad **0**). *The Connection Manager main window appears.*
10	To close the Connection Manager tool, press **Esc)**, or do the following:

To	Press
display the window menu	**Ctrl_L W** (or Keypad **6**). *The window menu appears.*
exit	**Space** (or Keypad **0**) *The User Session Manager appears.*

—end—

Procedure 12-2
Finding available channels and tributaries

Use this procedure to find an available channel and tributary before you add or modify an STS-1 or VT1.5 connection.

Requirements

Before starting this procedure, you must have a user ID and password that allow you to do the following:

- access the operations controller (OPC)
- open the Connection Manager tool with read/write privileges

Action

Step	Action

1 Log in to the OPC and open the Connection Manager tool.

If you do not know how to do this, see the procedures in *OPC User Interface Description,* 323-3001-301*,* in *Operations, Administration, and Provisioning,* Volume 4A.

The Connection Manager main window appears.

2 To display the Options menu, press **Ctrl_L T**, then press **Shift +**.

The Options menu appears.

If you want to	Then go to
find an available STS-1 channel	step 3
find an available tributary	step 18

Find an available channel

3 To select the **Show STS-1 channel usage** command, press **Space** (or Keypad **0**).

An STS-1 Channel Usage dialog appears.

4 In the Configuration field, press **Ctrl_L /** (or Keypad **3**) to display the chooser menu.

The chooser menu appears, listing the available configurations.

5 Use the down arrow key to move to the configuration you want, then press **Space** (or Keypad **0**).

The configuration name appears in the Configuration field.

—continued—

Procedure 12-2 (continued)
Finding available channels and tributaries

Step	Action
6	Tab to the End NE A field, then press **Ctrl_L /** (or Keypad **3**) to display the chooser menu. *The chooser menu appears, displaying the available network elements.*
7	Move to one of the end network elements that terminates the connection, then press **Space** (or Keypad **0**). *The network element ID appears in the field.*
8	Tab to the End NE Z field and repeat steps 6 and 7 for the other end network element. *The network element ID appears in the field. The STS-1 channels between the two network elements appear in the STS-1 Usage list.* ***Note:*** For STS-3c connections on VTBM rings, STS-1 channels 1-3 or 4-6 are displayed. (Three contiguous STS-1 channels must be available for an STS-3c. The channels must be 1–3 or 4–6.) If the configuration is an OC-12 ring, the Complete VT-Managed STS-1 Channel column appears indicating if a VT-managed channel is available.
9	To select a short connection or long connection for a VTBM ring, complete the following substeps: **a.** Press **Tab** to move to the Route fields. **b.** Press the **arrow keys** to select Short or Long. *The channels for the selected connection appear in the appropriate channel column.*

If you are provisioning an	Then go to
STS-1 or STS-3c connection	step 10
VT1.5 connection	step 11

10	For an STS-1 connection, locate an available STS-1 channel, in the STS-1 Usage list, and write the channel number down. You need this channel number to add or edit an STS-1 connection. ***Note:*** If necessary, tab to the STS-1 Usage list and use the scroll bar to display any channels that do not initially appear. Go to step 16.

—continued—

Procedure 12-2 (continued)
Finding available channels and tributaries

Step	Action
11	If the Usage column shows “Not available” and the Complete VT-Managed STS-1 Channel column shows “Available,” this channel provides contiguous VT-managed STS-1 bandwidth. To find out if a VT channel bandwidth is available, tab to the STS-1 Usage list and use the arrow keys to move to an STS-1 channel that shows “Not Available” in the Usage column and “Available” in the Complete VT-Managed STS-1 Channel column. To select the channel, press **Ctrl_A** (or Keypad **0**). *The channel is highlighted.*
12	To display the List item menu, press **Ctrl_L** (or Keypad **Enter**). *The List item menu appears.*
13	To select the Show VT channel usage command, press **Space** (or Keypad **0**). *The VT Channel Usage dialog appears. The list shows available and provisioned VT channels between the two network elements on the STS-1 channel and the specified route.*
14	Locate an available VT group and number and write this information down. You need this information to add or edit a VT1.5 connection. ***Note:*** If necessary, tab to the VT Group/Number list and use the scroll bar to display any groups and numbers that do not initially appear.
15	To close the VT Channel Usage dialog, press **Ctrl_A** (or Keypad **0**) to select the Done button. *The STS-1 Channel Usage dialog appears.*
16	Tab to the Done button, then press **Ctrl_A** (or Keypad **0**). *The Connection Manager main window appears.*

If you	Then go to
want to find an available tributary	step 17
do not need to find an available tributary	step 35

17	To display the Options menu again, press **Ctrl_L T**, then press **Shift** +. *The Options menu appears.*

—continued—

Procedure 12-2 (continued)
Finding available channels and tributaries

Step	Action
	Find an available tributary
18	Move to the Show tributary usage command, then press **Space** (or Keypad **0**). *The Tributary Usage dialog appears.*
19	In the Configuration field, press **Ctrl_L /** (or Keypad **3**) to display the chooser menu. *The chooser menu appears, listing the available configurations.*
20	Use the down arrow key to move to the configuration you want, then press **Space** (or Keypad **0**). *The configuration name appears in the Configuration field.*

If you are provisioning	Then go to
an STS-1 or STS-3c connection	step 21
a VT1.5 connection	step 25

21	Tab to the NE field, then press **Ctrl_L /** (or Keypad **3**) to display the chooser menu. *The chooser menu appears, displaying the available network elements.*
22	Move to an end network element in the connection, then press **Space** (or Keypad **0**). *The network element ID appears in the field. All tributary facilities for the selected network element appear in the Tributary list.*
23	Locate an available tributary facility and write down the card type, circuit pack group (CPG) numbers, and port number. You need this information to add or edit an STS connection.
24	Repeat steps 21 to 23 for the second end network element in the connection. Go to step 34.
25	Tab to the Network Element field, then press **Ctrl_L /** (or Keypad **3**) to display the chooser menu. *The chooser menu appears, displaying the available network elements.*
26	Move to an end network element in the connection, then press **Space** (or Keypad **0**). *The network element ID appears in the Network Element field. All tributary facilities for the selected network element appear in the Tributary list.*

—continued—

Procedure 12-2 (continued)
Finding available channels and tributaries

Step	Action

27 Locate an available DS-1, TIC, or OC-3 or STS-1 tributary facility or a DS1 or TIC VT-managed facility and write down the card type and CPG number. You need this information to add or edit a VT1.5 connection.

If the tributary facility is	Then
available	you can use any port for the VT1.5 connection. Repeat steps 25 to 27 for the second network element in the connection
VT-managed	you need to view the tributary subrate usage to find an available port on the tributary. Go to step 28.

28 Tab to the tributary usage list. Use the arrow keys to move to a VT-managed tributary, then press **Space** (or Keypad **0**).

The tributary is highlighted.

29 To display the List item menu, press **Ctrl_A** (or Keypad **Enter**).

The List item menu appears.

30 To select the View subrate usage command, press **Space** (or Keypad **0**).

The Subrate Usage dialog appears, showing the usage of the tributary subrate terminations for each port.

31 Locate an available port and write down the port number. You need this information to add or edit a VT1.5 connection.

Note: If necessary, tab to the list and use the scroll bar to display any port numbers that do not initially appear.

32 To close the Subrate Usage dialog, press **Ctrl_A** (or Keypad **0**) to select the Done button.

The Tributary Usage dialog appears.

33 Repeat steps 25 to 26 for the other end network element in the connection.

34 Tab to the Done button, then press **Ctrl_A** (or Keypad **0**).

The Connection Manager main window appears.

35 Continue with other procedures you wish to perform using the Connection Manager tool.

—end—

Procedure 12-3
Editing an STS connection

Use this procedure to modify an existing synchronous transport signal (STS) connection. Only the connection ID can be edited. To change any other field, delete and add the connection again.

This procedure applies to both ring and point-to-point configurations. For consistency, screens using a ring configuration are shown. Screens differ slightly for a point-to-point configuration.

Requirements

Before starting this procedure, you must have a userID and password that allow you to access the operations controller (OPC) and open the Connection Manager tool with read/write privileges.

Action

Step	Action
1	Log in to the OPC and open the Connection Manager tool. If you do not know how to do this, see the procedures in *OPC User Interface Description,* 323-3001-301*,* in *Operations, Administration, and Provisioning,* Volume 4A. *The Connection Manager main window appears followed by a warning dialog.*
2	Select the OK button to close the dialog.
3	Move to the connection you want to edit. To display the List item menu, press **Ctrl_L** (or Keypad **Enter**). *The List item menu appears.*
4	Move to the Edit command, then press **Space** (or Keypad **0**). *The Edit Connection dialog appears.*
5	In the Connection ID field, enter a unique name for the connection.
6	Tab to the OK button, then press **Ctrl_A** (or Keypad **0**). *A confirmation dialog appears.*
7	Tab to the Yes button, then press **Ctrl_A** (or Keypad **0**). *A confirmation dialog appears.*
8	Tab to the OK button, then press **Ctrl_A** (or Keypad **0**). *The revised connection is listed in the main window with a + to the left of the connection ID to indicate the connection data has been changed.*

—continued—

Procedure 12-3 (continued)
Editing an STS connection

Step	Action

9 To close the Connection Manager tool, press **Esc)**, or do the following:

To	Press
display the window menu	**Ctrl_L W** (or Keypad **6**) *The window menu appears.*
exit	**Space** (or Keypad **0**)

If a backup OPC	Then
does not exist	*The User Session Manager appears.*
does exists	*A confirmation dialog appears prompting you to transfer any connection changes to the backup OPC.* Tab to the **Yes** button, then press **Ctrl_A** (or Keypad **0**). *The User Session Manager appears.*

—end—

Procedure 12-4
Deleting an STS connection

Use this procedure to delete an STS connection between two network elements (NEs) in the operations controller (OPC) span of control. The connection is removed permanently from the OPC and NE connection data.

To delete a VT connection, see Procedure 12-5 on page 12-29.

This procedure applies to both ring and point-to-point configurations. For consistency, screens using a ring configuration are shown. Screens differ slightly for a point-to-point configuration.

CAUTION
Risk of traffic loss
This procedure affects any traffic being carried by the connection. Ensure that the equipment is out of service before you delete a connection.

When deleting an STS-1 connection that terminates on transport interface card (TIC) STS-1 #1, if the association to the remote fiber terminal (RFT) containing the TIC is up, facility assignments are checked. If facilities are assigned for GR-303 DMS/MVI, TR-08, or Tandem services on that connection, the Connection Manager does not allow you to delete that connection. See Procedure 12-8 on page 12-41 to remove the facility assignment.

CAUTION
Risk of traffic loss
The Connection Manager allows connections to be deleted when the association to the RFT containing the TIC is down. If the association to the RFT containing the TIC is down, you cannot check facility assignments. To avoid deleting a connection that might still have STS-1/OC-3/DS1 facility assignments, do not delete a connection when the association to the RFT containing the TIC is down.

—continued—

Procedure 12-4 (continued)
Deleting an STS connection

Requirements

Before starting this procedure, you must have a userID and password that allow you to access the operations controller (OPC) and open the Connection Manager tool with read/write privileges.

Action

Step	Action
1	Log in to the OPC and open the Connection Manager tool. If you do not know how to do this, see the procedures in *OPC User Interface Description,* 323-3001-301*,* in *Operations, Administration, and Provisioning, Volume 4A*. *The Connection Manager main window appears.*
2	Move to the connection you want to delete, then press **Ctrl**_**A** (or Keypad **0**).
3	To display the List item menu, press **Ctrl**_**L** (or Keypad **Enter**). *The List item menu appears.*
4	Move to the Delete command, then press **Space** (or Keypad **0**). *A confirmation dialog appears.*
5	Tab to the Yes button, then press **Ctrl**_**A** (or Keypad **0**). *The connection is deleted from the OPC and network element connection data. The connection is removed from the main window.*

—continued—

Procedure 12-4 (continued)
Deleting an STS connection

Step	Action

6 To close the Connection Manager tool, press **Esc)**, or do the following:

To	Press
display the window menu	**Ctrl_L W** (or Keypad **6**) *The window menu appears.*
exit	**Space** (or Keypad **0**)

If a backup OPC	Then
does not exist	*The User Session Manager appears.*
does exist	*A confirmation dialog appears prompting you to transfer any connection changes to the backup OPC.* Tab to the Yes button, then press **Ctrl_A** (or Keypad **0**). *The User Session Manager appears*

—end—

Procedure 12-5
Deleting a VT1.5 connection

Use this procedure to delete a VT connection between two network elements (NEs) in the operations controller (OPC) span of control. The connection is removed permanently from the OPC and network element connection data.

CAUTION
Risk of traffic loss
This procedure affects any traffic being carried by the connection. Ensure that the equipment is out of service before you delete a connection.

When deleting a VT connection that terminates on transport interface card (TIC) STS-1 #1, if the association to the remote fiber terminal (RFT) containing the TIC is up, facility assignments are checked. If any facilities are assigned for GR-303 DMS, GR-303 MVI, TR-08, or Tandem services on that connection, the Connection Manager does not allow you to delete that connection. See Procedure 12-8, “Modifying the list of connections,” on page 12-41 to remove the facility assignment.

CAUTION
Risk of traffic loss
The Connection Manager allows connections to be deleted when the association to the RFT containing the TIC is down. If the association to the RFT containing the TIC is down, you cannot check facility assignments. To avoid deleting a connection that might still have STS-1/OC-3/DS1 facility assignments, do not delete a connection when the association to the RFT containing the TIC is down.

—continued—

Procedure 12-5 (continued)
Deleting a VT1.5 connection

Requirements

Before starting this procedure, you must have a userID and password that allow you to access the operations controller (OPC) and open the Connection Manager tool with read/write privileges.

Action

Step	Action
1	Log in to the OPC and open the Connection Manager tool. If you do not know how to do this, see the procedures in *OPC User Interface Description,* 323-3001-301*,* in *Operations, Administration, and Provisioning,* Volume 4A. *The Connection Manager main window appears.*
2	To display the Options menu, press **Ctrl**_**L T,** then press **Shift +**. *The Options menu appears.*
3	Move to the Manage VT connections command, then press **Space** (or Keypad **0**). *The Manage VT Connections dialog appears.*
4	In the Configuration field, press **Ctrl**_**L /** (or Keypad **3**) to display the chooser menu. *The chooser menu appears, listing the available configurations.*
5	Use the down arrow key to move to the configuration you want, then press **Space** (or Keypad **0**). *The configuration name appears in the Configuration field.*
6	Tab to the STS-1 Channel field, then enter the STS-1 channel for the connection you want to delete.
7	Tab to the End NE A field, then press **Ctrl**_**L /** (or Keypad **3**) to display the chooser menu. *The chooser menu appears, displaying the available network elements.*
8	Move to one of the end network elements that terminates the VT-managed STS-1 connection you want to delete, then press **Space** (or Keypad **0**). *The network element ID appears in the field.*
9	Tab to the End NE Z field. Repeat steps 7 and 8 for the other end network element of the VT-managed STS-1 connection you want to delete. *The network element ID appears in the field. The VT1.5 connections that have been provisioned appear in the connection list.*

—continued—

Procedure 12-5 (continued)
Deleting a VT1.5 connection

Step	Action
10	Tab to the Route buttons. Move to the correct route, then press **Ctrl_A** (or Keypad **0**).
11	Tab to the connection list, then use the arrow keys to move to the VT1.5 connection you want to delete. To display the List item menu, press **Ctrl_L** (or Keypad **Enter**). *The List item menu appears.*
12	Move to the Delete command, then press **Space** (or Keypad **0**). *A confirmation dialog appears.*
13	Tab to the Yes button, then press **Ctrl_A** (or Keypad **0**). *The VT1.5 connection is deleted from the connection data in the Manage VT Connections dialog.*
14	To close the Manage VT Connections dialog, tab to the Done button, then press **Ctrl_A** (or Keypad **0**). *The Connection Manager main window appears.*
15	To close the Connection Manager tool, press **Esc)**, or do the following:

To	**Press**
display the window menu	**Ctrl_L W** (or Keypad **6**). *The window menu appears.*
exit	**Space** (or Keypad **0**)

If a backup OPC	**Then**
does not exist	*The User Session Manager appears.*
does exist	*A confirmation dialog appears prompting you to transfer any connection changes to the backup OPC.* Tab to the Yes button, then press **Ctrl_A** (or Keypad **0**). *The User Session Manager appears.*

—end—

Procedure 12-6
Deleting a VT-managed STS-1 connection

Use this procedure to delete a VT-managed STS-1 connection between two network elements in the operations controller (OPC) span of control. The connection is removed permanently from the OPC and network element connection data.

Before you can delete a VT-managed STS-1 connection, you have to delete all VT1.5 add-drop and pass-through connections.

CAUTION
Risk of traffic loss
This procedure affects any traffic being carried by the connection. Ensure that the equipment is out of service before you delete a connection.

When deleting an STS-1 or VT connection that terminates on transport interface card (TIC) STS-1 #1, if the association to the remote fiber terminal (RFT) containing the TIC is up, facility assignments are checked. If any facilities are assigned for GR-303 DMS, GR-303, TR-08, or Tandem services on that connection, the Connection Manager does not allow you to delete that connection. See Procedure 12-8 on page 12-41 to remove the facility assignment.

CAUTION
Risk of traffic loss
The Connection Manager allows connections to be deleted when the association to the RFT containing the TIC is down. If the association to the RFT containing the TIC is down, you cannot check facility assignments. To avoid deleting a connection that might still have STS-1/OC-3/DS1 facility assignments, do not delete a connection when the association to the RFT containing the TIC is down.

—continued—

Procedure 12-6 (continued)
Deleting a VT-managed STS-1 connection

Requirements

Before starting this procedure, you must have a userID and password that allow you to access the operations controller (OPC) and open the Connection Manager tool with read/write privileges.

Action

Step	Action
1	Log in to the OPC and open the Connection Manager tool. If you do not know how to do this, see the procedures in *OPC User Interface Description,* 323-3001-301*,* in *Operations, Administration, and Provisioning,* Volume 4A. *The Connection Manager main window appears.*
2	Move to the VT-managed STS-1 connection you want to delete, then press **Ctrl_L** (or Keypad **Enter**) to display the List item menu. *The List item menu appears.*
3	Move to the Show Contained VTs command, then press **Space** (or Keypad **0**). *The Show Contained VTs dialog appears showing the VT connections contained in the selected connection.*
4	To display the List item menu, press **Ctrl_L** ***/*** (or Keypad **3**). *The List item menu appears.*
5	Move to the Delete command, then press **Space** (or Keypad **0**). *A confirmation dialog appears.*
6	Tab to the Yes button, then press **Ctrl_A** (or Keypad **0**). *The connection is deleted from the OPC and network element connection data. The connection is removed from the Show Contained VTs list.*
7	Repeat steps 4 through 6 until you have deleted all the VTs in the list.
8	To select the Done button, press **Ctrl_A** (or Keypad **0**). *The Connection Manager main window appears. The VT-managed STS-1 connection you want to delete is still selected.*
9	To display the List item menu, press **Ctrl_L** (or Keypad **Enter**). *The List item menu appears.*

—continued—

Procedure 12-6 (continued)
Deleting a VT-managed STS-1 connection

Step	Action

10 Move to the Delete command, then press **Space** (or Keypad **0**).

A confirmation dialog appears.

11 Tab to the Yes button, then press **Ctrl_A** (or Keypad **0**).

The VT managed STS-1 connection is deleted from the OPC and network element connection data. The connection is removed from the main window.

If you have	Then
other VT-managed STS-1 connections to delete	repeat steps 2 through 11
no other VT-managed STS-1 connections to delete	go to step 12

12 To close the Connection Manager tool, press **Esc)**, or do the following:

To	Press
display the window menu	**Ctrl_L W** (or Keypad **6**) *The window menu appears.*
exit	**Space** (or Keypad **0**)

If a backup OPC	Then
does not exist	*The User Session Manager appears.*
does exist	*A confirmation dialog appears prompting you to transfer any connection changes to the backup OPC.* Tab to the Yes button, then press **Ctrl_A** (or Keypad **0**). *The User Session Manager appears.*

—end—

Procedure 12-7
Displaying connections

Use this procedure to display information about STS and VT1.5 connections. Using this procedure, you can display the following information:

- a summary of all STS-1, STS-3c, and VT1.5 connections that were provisioned using the operations controller (OPC) Connection Manager tool
- details for an individual connection, including the end and pass-through network elements (NEs), the tributary facilities, and the STS or VT channel that the connection has been assigned to
- STS and VT channels between specified NEs (both available and not available)
- tributary facilities at a specified NE (both available and not available).

Requirements

Before starting this procedure, you must have a userID and password that allow you to access the operations controller (OPC) and open the Connection Manager tool with read/write privileges.

Action

Step	Action
1	Log in to the OPC and open the Connection Manager tool. If you do not know how to do this, see the procedures in *OPC User Interface Description,* 323-3001-301, in *Operations, Administration, and Provisioning,* Volume 4A. *The Connection Manager main window appears followed by a warning dialog.*
2	Select the OK button to close the dialog.
3	In the connection list, move to a connection for which you want details, then press **Ctrl_A** (or Keypad **0**). *The connection is highlighted.*
4	To display the List item menu, press **Ctrl_L** (or Keypad **Enter**). *The List item menu appears.*
5	To select the Show connection details command, press **Space** (or Keypad **0**). *The Connection Details dialog appears.*

—continued—

Procedure 12-7 (continued)
Displaying connections

Step	Action

6 To select the Done button, press **Ctrl_A** (or Keypad **0**).

The Connection Manager main window appears.

If you want to	Then go to
display the available STS-1 channels between two NEs	step 7
display the available tributary facilities at a NE	step 14
display all VT1.5 connections that a VT-managed STS-1 connection carries	step 30
close the tool	step 37

Display the available STS-1 channels between two network elements

7 In the main window, press **Ctrl_L T**, then press **Shift** + to display the Options menu.

The View Options menu appears.

8 To select the Show STS-1 channel usage command, press **Space** (or Keypad **0**).

The STS-1 Channel Usage dialog appears.

9 In the Configuration field, press **Ctrl_L** / (or Keypad **3**) to display the chooser menu.

The chooser menu appears, listing the available configurations.

10 Use the down arrow key to move to the configuration you want, then press **Space** (or Keypad **0**).

The configuration name appears in the Configuration field.

11 Tab to the End NE A field, then press **Ctrl_L /** (or Keypad **3**) to display the chooser menu.

The chooser menu appears, displaying the available network elements.

12 Move to one of the network elements that terminates the STS-1 channel, then press **Space** (or Keypad **0**).

The network element ID appears in the field.

—continued—

Procedure 12-7 (continued)
Displaying connections

Step	Action

13 Tab to the End NE Z field and repeat steps 11 and 12 for the second end network element.

The network element ID appears in the field. The STS-1 channels between the two network elements appear in the Usage list.
If the configuration is an OC-12 ring, the Complete VT-Managed STS-1 Channel column appears indicating if a VT-managed channel is available.

If you want to	Then go to
find an available VT channel	step 14
close the STS-1 channel usage dialog	step 18

Display the available tributary facilities at a network element

14 Tab to the channel usage list and use the arrow keys to move to an STS-1 channel that shows “Not Available” in the Usage column and “Available” in the Complete VT-Managed STS-1 Channel column. To select the channel, press **Ctrl_A** (or Keypad **0**).

The channel is highlighted.

15 To display the List item menu, press **Ctrl_L** (or Keypad **Enter**).

The List item menu appears.

16 To select the Show VT channel usage command, press **Space** (or Keypad **0**).

The VT Channel Usage dialog appears. The list shows VT channels that are available and not available between the two network elements on the STS-1 channel and the specified route.

17 To close the VT Channel Usage dialog, press **Ctrl_A** (or Keypad **0**) to select the Done button.

The STS-1 Channel Usage dialog appears.

18 To close the STS-1 Channel Usage dialog, tab to the Done button, then press **Ctrl_A** (or Keypad **0**).

The Connection Manager main window appears.

If you want to	Then go to
display the available tributary facilities at a NE	step 19
close the tool	step 37

—continued—

Procedure 12-7 (continued)
Displaying connections

Step	Action
19	In the main window, press **Ctrl_L T** to display the Options menu, then press **Shift** +. *The View Options menu appears.*
20	Move to the Show tributary usage command, then press **Space** (or Keypad **0**). *The Tributary Usage dialog appears.*
21	In the Configuration field, press **Ctrl_L /** (or Keypad **3**) to display the chooser menu. *The chooser menu appears, listing the available configurations.*
22	Use the down arrow key to move to the configuration you want, then press **Space** (or Keypad **0**). *The configuration name appears in the Configuration field.*
23	Tab to the NE field, then press **Ctrl_L /** (or Keypadþ**3**) to display the chooser menu. *The chooser menu appears, displaying the available network elements.*
24	Move to the network element that you want to display, then press **Space** (or Keypad **0**). *The network element ID appears in the field. All tributary facilities for the selected network element appear in the Tributary list.* *If a VT1.5 connection uses tributaries, the Usage column shows <VTMan>.* You can view the subrate usage of that tributary from the View subrate usage command in the List item menu. If a tributary is not available, you can view the details of the tributary from the **Show connection details** command in the List item menu.

If you want to	Then go to
view the subrate usage of a tributary	step 25
close the Tributary Usage dialog	step 29

25	Tab to the tributary usage list, use the arrow keys to move to a tributary with <VTMan>, then press **Space** (or Keypad **0**). *The Tributary is highlighted.*

—continued—

Procedure 12-7 (continued)
Displaying connections

Step	Action

26 To display the List item menu, press **Ctrl_L** (or Keypad **Enter**).

The List item menu appears.

27 To select the View Subrate Usage command, press **Space** (or Keypad **0**).

The Subrate Usage dialog appears.

28 To close the Subrate Usage dialog, press **Ctrl_A** (or Keypad **0**) to select the Done button.

The Tributary Usage dialog appears.

29 To close the Tributary Usage dialog, tab to the Done button, then press **Ctrl_A** (or Keypad **0**).

The Connection Manager main window appears.

If you want to	Then go to
display all VT1.5 connections that a VT-managed STS-1 connection carries	step 30
close the tool	step 37

Display all VT1.5 connections that a VT-managed STS-1 connection carries

30 To display the List item menu, press **Ctrl_L** (or Keypad **Enter**).

The List item menu appears.

31 Move to the Show Contained VTs command, then press **Space** (or Keypad **0**).

The VT Connections dialog appears showing the VT connections contained in the selected connection.

32 Determine what action you want to perform.

If you want to	Then go to
scroll through the connection list	step 33
sort the items in the list (by connection ID, end network element, or channel)	step 34
close the VT Connections dialog	step 36

33 To scroll through the connection list, tab to the connection list, then use the arrow keys to move through the list.

—continued—

Procedure 12-7 (continued)
Displaying connections

Step	Action
34	To sort the connections in the list, tab to the connection list, then press **Ctrl_L /** (or Keypad **3)** to display the list menu. *The list menu appears with a cascade menu displaying the sort options.*
35	Move to the sort option you want using the arrow keys, then press **Space** (or Keypad **0**). *Items in the connection list are sorted according to the selected option.*
36	To close the VT Connections dialog, tab to the Done button, then press **Ctrl_A** (or Keypad **0**). *The Connection Manager main window appears.*
Close the tool	
37	To close the Connection Manager tool, press **Esc)**, or do the following:

To	Press
display the window menu	**Ctrl_L W** (or Keypad **6**) *The window menu appears.*
exit	**Space** (or Keypad **0**) *The User Session Manager appears.*

—end—

Procedure 12-8
Modifying the list of connections

Use this procedure to modify the connection list in the main window. For example, you can modify the list to show only the new or modified STS-managed connections.

This procedure displays a dialog that allows you to filter the connection list as follows:

- excluding or including specified connections
- excluding or including connection changes that have occurred since the tool was opened
- excluding or including a combination of both

The filter changes are not saved when you exit the Connection Manager.

Connections appear in the main window if one end network element for the connection displays the word “Included” in the filter list. To remove an STS connection from the main window, both end network elements must display “Not included” in the filter list.

This procedure describes how to filter the list using the Filter command in the View menu. A second filter command in the connection list menu performs the same function.

Requirements

Before starting this procedure, you must have a userID and password that allow you to access the operations controller (OPC) and open the Connection Manager tool with read/write privileges.

—continued—

Procedure 12-8 (continued)
Modifying the list of connections

Action

Step	Action

1 Log in to the OPC and open the Connection Manager tool.

If you do not know how to do this, see the procedures in *OPC User Interface Description,* 323-3001-301*,* in *Operations, Administration, and Provisioning,* Volume 4A.

The Connection Manager main window appears followed by a warning dialog.

2 Select the OK button to close the dialog.

3 Determine what action you want to perform.

If you want to	Then go to
sort the connections in the list (by connection ID, end network element, or STS channel)	step 4
filter connections from the list	step 7
close the tool	step 13

Sort the connections in a list

4 To display the View menu, press **Ctrl**_**L T** (or Keypad **,**).

The View menu appears.

5 To sort the items in the connection list, move to the Sort command.

A cascade menu appears, displaying the sort options.

6 Move to the sorting option you want using the arrow keys and select it by pressing **Space** (or Keypad **0**).

Items in the connection list are sorted according to the option you selected.

Go to step 3.

Filter connections from the list

7 To exclude connections from the connection list, press **Ctrl**_**L T** (or Keypad **,**) to display the View menu.

The View menu appears.

—continued—

Procedure 12-8 (continued)
Modifying the list of connections

Step	Action

8 To select the **Filter** command, press **Space** (or Keypad **0**).

The Filter dialog appears. By default, all network elements in the OPC span of control are included in the filter.

If you want to	Then go to
exclude STS connections from the main window	step 9
display revised connections	step 12
display only new or modified connections	step 12
display STS- and VT-managed connections	step 12
display only STS-managed connections	step 12
display only VT-managed connections	step 12

9 In the Network Element list, move to an end network element for the connection you want to exclude, then press **Ctrl_L** (or Keypad **Enter**) to display the List item menu.

The List item menu appears.

10 Move to the Remove command, and use the right arrow key to move to the cascade menu. To select either **This NE** or This Configuration, press **Space** (or Keypad **0**).

If you selected This NE, the word "Included" changes to "Not included" for the selected network element. If you selected This Configuration, the word "Included" changes to "Not included" for all network elements in the ring.

11 Move to the other end network element for the connection you want to exclude and repeat steps 9 and 10.

—continued—

Procedure 12-8 (continued)
Modifying the list of connections

Step	Action

12 Determine what action you want to perform.

If you want to	Then complete the following
display revised connections without closing the Filter dialog	**a.** Tab to the Apply button, then press **Ctrl_A** (or Keypadþ**0**). *The STS connections in the main window are revised according to the options specified in the Filter dialog. The Filter dialog remains open.* **b.** Confirm the revisions have been applied. To display the main window, press **Ctrl_W** +. *The main window appears, displaying the revised connection list.* **c.** To display the Filter dialog again, press **+**. *The Filter dialog appears.*
display only new or modified connections	**a.** Tab to the New or modified connections only button, then press **Ctrl_A** (or Keypad **0**). *The button is selected.* **b.** Confirm the changes have been applied. To display the main window, press **Ctrl_W** +. *The main window appears, displaying the revised connection list.* **c.** To display the Filter dialog again, press **+**. *The Filter dialog appears.*
display STS-managed and VT-managed connections	**a.** Tab to the All button, then press **Ctrl_A** (or Keypad **0**). *The button is selected.* **b.** Confirm the changes have been applied. To display the main window, press **Ctrl_W** +. *The main window appears, displaying the revised connection list.* **c.** To display the Filter dialog again, press **+**. *The Filter dialog appears.*
—continued—	

—continued—

Procedure 12-8 (continued)
Modifying the list of connections

Step **Action**

If you want to	Then complete the following
display only STS-managed connections	**a.** Tab to the STS-Managed connections only button, then press **Ctrl_A** (or Keypad **0**). *The button is selected.* **b.** Confirm the changes have been applied. To display the main window, press **Ctrl_W** +. *The main window appears, displaying the revised connection list.* **c.** To display the Filter dialog again, press **+**. *The Filter dialog appears.*
display only VT-managed connections	**a.** Tab to the VT-Managed connections only button, then press **Ctrl_A** (or Keypad **0**). *The button is selected.* **b.** Confirm the changes have been applied. To display the main window, press **Ctrl_W** +. *The main window appears, displaying the revised connection list.* **c.** To display the Filter dialog again, press **+**. *The Filter dialog appears.*
revise the connection list and close the Filter dialog	**a.** Tab to the OK button, then press **Ctrl_A** (or Keypad **0**). *The Filter dialog closes. The STS connections in the main window are revised according to options in the dialog.*
—end—	

—continued—

Procedure 12-8 (continued)
Modifying the list of connections

Step **Action**

Close the tool

13 To close the Connection Manager tool, press **Esc)**, or do the following:

To	Press
display the window menu	**Ctrl_L W** (or Keypad **6**) *The window menu appears.*
exit	**Space** (or Keypad **0**) *The User Session Manager appears.*

—end—

Procedure 12-9
Scheduling an audit of connection data

Use this procedure to specify the frequency, time, and date for a connection data audit.

The operations controller (OPC) data is compared with the data from all network elements (NEs) in the OPC span of control. Results of the audit are found in the Event Browser.

> ***Note:*** The start date for a scheduled audit must be either today or tomorrow. Any other date that you enter is invalid and the tool prompts you to enter another date.

To conduct an immediate audit of all or selected network elements, see Procedure 12-10, "Performing an audit of connection data," on page 12-50.

> ***Note:*** Audits do not audit facility assignment data.

Requirements

Before starting this procedure, you must have a userID and password that allow you to access the operations controller (OPC) and open the Connection Manager tool with read/write privileges.

Action

Step	Action
1	Log in to the OPC and open the Connection Manager tool. If you do not know how to do this, see the procedures in *OPC User Interface Description,* 323-3001-301*,* in *Operations, Administration, and Provisioning,* Volume 4A. *The Connection Manager main window appears followed by a warning dialog.*
2	Select the OK button to close the dialog.
3	To display the Options menu, press **Ctrl_L T**, then press **Shift** +. *The Options menu appears.*
4	Move to the Schedule connection audits command, then press **Space** (or Keypad **0**). *The Schedule Connection Data Audit dialog appears, displaying the previously entered settings.*

—continued—

Procedure 12-9 (continued)
Scheduling an audit of connection data

Step **Action**

If you want to enter	Then go to
default settings (every day, starting at 7 a.m. today, or tomorrow, if today's time is later than 7 a.m.)	step 5
nondefault frequency, time, or date	step 6

5 Tab to the Default button, then press **Ctrl_A** (or Keypad **0**).

Fields in the dialog are set to conduct an audit once a day, at 7 a.m., starting today. If the current time is past 7 a.m., the audit start date is set to tomorrow's date.

Go to step 12.

6 To change the frequency of the audit, tab to the Run every field and enter how often you want the audit to be conducted. Valid values for this field differ, according to which time button is selected.

If the button selected is	Then the valid values are
minute(s)	15–59
hour(s)	1–23
day(s)	1–7

7 Tab to the Time buttons. Using the arrow keys, move to the button you want to select (minutes, hours, or days).

8 To select the Time button, press **Ctrl_A** (or Keypad **0**).

A diamond appears beside the button you have selected.

9 Tab to the Next run fields, then enter the hour and minutes.

Remember to enter a colon (:) between the hours and minutes.

10 Tab to the Date fields, then press **Ctrl_L /** (or Keypad **3**) to display the chooser menu.

The chooser menu appears.

11 Select today, or use the down arrow key to move to tomorrow, then press **Space** (or Keypad **0**).

12 Tab to the OK button, then press **Ctrl_A** (or Keypad **0**).

The Schedule Connection Data Audit dialog closes. The audit is conducted at the time and date specified in the dialog.

—continued—

Procedure 12-9 (continued)
Scheduling an audit of connection data

Step	Action

13 To close the Connection Manager tool, press **Esc)**, or do the following:

To	Press
display the window menu	**Ctrl_L W** (or Keypad **6**) *The window menu appears.*
exit	**Space** (or Keypad **0**) *The User Session Manager appears.*

—end—

Procedure 12-10
Performing an audit of connection data

Use this procedure to perform a data audit of some or all network elements (NEs) in the operations controller (OPC) span of control.

The Connection Manager displays the results of the audit as soon as the audit is complete. The tool then allows you to overwrite the NE connection data if the audit finds discrepancies between the OPC and NEs.

To schedule an audit for a later date, see Procedure 12-9, "Scheduling an audit of connection data," on page 12-47.

Note: Audits do not audit facility assignment data.

Requirements

Before starting this procedure, you must have a userID and password that allow you to access the operations controller (OPC) and open the Connection Manager tool with read/write privileges.

Action

Step	Action
1	Log in to the OPC and open the Connection Manager tool. If you do not know how to do this, see the procedures in *OPC User Interface Description,* 323-3001-301*,* in *Operations, Administration, and Provisioning*, Volume 4A. *The Connection Manager main window appears followed by a warning dialog.*
2	Select the OK button to close the dialog.
3	To display the Options menu, press **Ctrl_L T**, then press **Shift** +. *The Options menu appears.*
4	Move to the Audit connections command, then press **Space** (or Keypad **0**). *The Connection Audit dialog appears.*

—continued—

Procedure 12-10 (continued)
Performing an audit of connection data

Step	Action

5 Decide if you want to exclude a network element from the audit:

If you want to	Then
exclude a network element from the audit	continue with this step
audit all network elements in the list	go to step 6

a. In the Network Element list, move to the network element that you want to exclude, then press **Ctrl_L** (or Keypad **Enter**) to display the List item menu.

The List item menu appears.

b. Move to the Remove from audit command, then press **Ctrl_A** (or Keypad **0**).

Beside the list item, the word "Included" changes to "Not included."

c. Repeat steps 5a. and 5b. for each network element that you want to exclude.

6 Tab to the OK button, then press **Ctrl_A** (or Keypad **0**).

The connection data for the specified network elements is audited. The Results dialog appears, indicating whether the audit was successful or unsuccessful.

If the audit finds	Then
no discrepancies between the OPC and NE connection data	Select the OK button by pressing **Ctrl_A** (or Keypad **0**). *The Connection Manager main window appears.* Go to step 7.
discrepancies and you want to overwrite NE connection data	Go to step 7.
discrepancies, but you do not want to overwrite NE connection data	Select the No button by pressing **Ctrl_A** (or Keypad **0**). *The Connection Manager main window appears. All network elements retain their original connection data.* Go to step 8.

—continued—

Procedure 12-10 (continued)
Performing an audit of connection data

Step	Action

7 Verify OPC data.

CAUTION
Risk of traffic loss
Before overwriting the NE connection data, be certain that the information on this OPC is correct. If the OPC data is incorrect, do not overwrite the NE data (contact your Nortel Networks representative).

To overwrite network element connection data, do the following:

a. Tab to the Yes button, then press **Ctrl_A** (or Keypad **0**).

Connection data at the affected network elements is overwritten by the OPC connection data. A dialog appears, indicating the results of the operation.

b. Select the OK button by pressing **Ctrl_A** (or Keypad **0**).

The Connection Manager main window appears.

8 To close the Connection Manager tool, press **Esc)**, or do the following:

To	Press
display the window menu	**Ctrl_L W** (or Keypad **6**) *The window menu appears.*
exit	**Space** (or Keypad **0**) *The User Session Manager appears.*

—end—

Procedure 12-11
Changing the channel, route, VT group, and VT number of a connection

Use this procedure to change any or all of the following for a connection:

- channel
- route
- VT group
- VT number

Limitations on changing channels

You cannot change a channel for a connection if any of the following conditions exists.

- The connection is a VT-managed STS pipe.
- The channel you are changing is in a multi-hop connection, and the selected channel is already in use somewhere in the connection.
- The connection is a matched node connection.
- The configuration is not a VTBM ring.

Suspending the rollover process

At each of the three rollover steps on the Rollover Connection In-Service dialog, you can suspend the rollover process by clicking the Close button on the dialog. When you click the Close button, the process is suspended at that step, and the Edit Connection window is redisplayed. You can later return to the process and resume it from where you left off.

If you exit the Connection Manager tool with a rollover in progress, the system displays the following message:

The Connection Manager is closing with one or more connections in progress of a rollover. You may wish to complete these rollover(s) where possible. To find these connections, use the In Service Roll in progress option on the Filter dialog of the main connection inventory.

Do you wish to continue closing the Connection Manager?

—continued—

Procedure 12-11 (continued)
Changing the channel, route, VT group, and VT number of a connection

Continuing a suspended rollover process

After you have suspended the rollover process for a connection, you can continue the process in either of two ways, depending on which screen you exited to after you suspended the process.

If you exited the Connection Manager tool, you can continue the rollover process by opening the Connection Manager tool. Select the connection and click the right mouse button to select the Rollover Connection In-Service option.

If you returned to the Edit Connections dialog, but you did not exit the Connection Manager tool, you resume the rollover process by selecting the Continue IS Rollover button on the Edit Connections dialog.

Icons on the Connection Manager main window

During the rollover process, the status icons for the connection you are changing are updated on the Connection Manager main window to show the status of the connection.

Action

Step	Action
1	Log on to the OPC and open the Connection Manager tool. *The Connection Manager main window appears.*
2	From the list of connections, select the connection you want to change. To select the connection, point the mouse to the connection and click the right mouse button. *The Connection Manager menu is displayed.*

—continued—

Procedure 12-11 (continued)
Changing the channel, route, VT group, and VT number of a connection

Step	Action

3 From the Connection Manager menu, select Rollover Connection In-Service.

The system checks to make sure that the appropriate associations are available for the network elements in the connection path. If the associations are not available, the system displays the following message:

This step of the In-Service rollover operation was not attempted due to one or more NE associations being down in this connection path. This step may be retried when the associations are restored.

The system also checks to see that there are no connection audit data mismatches. If there are, it displays the following message:

This step of the In-Service rollover operation was not attempted due to connection audit data mismatches or the inability to successfully audit. Please use the "Audit Connections" option in the Connection Manager (AC) to evaluate and correct any mismatches.

If there are no mismatches and the appropriate associations are available, the Edit Connection (Enabled for In-Service Rollover Only) window is displayed, showing information about the connection you selected.

4 Do one or all of the following.

To	Then
change the connection ID	type a new connection ID into the Connection ID field.
change the channel of the selected connection	either type a channel number in the Channel field and press the tab key; or place the mouse pointer on the Channel field, click the right mouse button, and select a channel number from the displayed list.
change the route of the selected connection	click on the Short or the Long button beside Route.
change the VT group of the selected connection	either type a VT group number in the VT Group field and press the tab key; or place the mouse pointer on the VT Group field, click the right mouse button, and select a number from the displayed list.
change the VT number of the selected connection	either type a VT number in the VT Number field and press the tab key; or place the mouse pointer on the VT Number field, click the right mouse button, and select a number from the displayed list.

—continued—

Procedure 12-11 (continued)
Changing the channel, route, VT group, and VT number of a connection

Step	Action
5	Click **OK**. *The Rollover Connection In-service dialog is displayed.*
6	Click Step 1, Provision Bridges and Passthroughs (on new path). *The system checks to make sure the appropriate associations are available and that there are no connection audit data mismatches. If the associations are not available or if there are mismatches, the system displays the relevant message as described in step 3 of this procedure.* *The system displays a message informing you that it is initiating the next step of the rollover process.* *Your changes for the connection are made but are not displayed on the Connection Manager main window. The system displays the following message:* *This step of the In-Service rollover operation has completed successfully.*
7	Click **OK** in the message box. *The Connection Manager main window is updated and shows the in progress icon beside the connection.*
8	Do one of the following.

To	Then
continue the rollover process	go to step 9 of this procedure.
stop the rollover process	Click **Backout to previous step**. The system reverses the result of the Provision Bridges and Passthroughs step. The Edit Connection dialog is redisplayed, and the Continue IS Rollover button is changed back to OK. Go back to step 4 of this procedure.
suspend the rollover process	click the **Close** button. The Rollover Connection In-Service dialog is displayed.

—continued—

Procedure 12-11 (continued)
Changing the channel, route, VT group, and VT number of a connection

Step	Action

9 Select step 2, Switch.

The system checks to make sure the appropriate associations are available and that there are no connection audit data mismatches. If the associations are not available or if there are mismatches, the system displays the relevant message as described in step 3 of this procedure.

The system displays a message informing you that it is initiating the next step of the rollover process.

The following message is displayed:

This requested rollover step will switch each point at which traffic is being received from the old channel and/or route. Traffic will thus be affected to the extent of a protection switch.

10 Do one of the following.

To	Then
continue the rollover process	click the **Yes** button. The traffic is switched from the old connection to the new connection. The system displays a message informing you that the step has been completed successfully. On the Connection Manager main window the new connection is displayed in the list of connections, and the old connection is removed from the list. Also, the in-progress icon is displayed to the left of the new connection. Continue at step 11 of this procedure.
return to the Switch step in the process	Click the **No** button. Go back to step 9 of this procedure.

—continued—

Procedure 12-11 (continued)
Changing the channel, route, VT group, and VT number of a connection

Step	Action

11 Do one of the following.

To	Then
continue the rollover process	go to step 12 of this procedure.
return to the Switch step	click **Backout to previous step**. The system displays the following message: This is a request to backout the switched connection from the new channel and/or route to the old. Do you wish to proceed with this backout? If you want to back out the Switch step, click **Yes**, and go back to step 9 of this procedure. If you do not want to back out the Switch step, click **No**, and go to step 12 of this procedure.
suspend the rollover process	click the **Close** button. The Rollover Connection In-Service dialog is displayed.

12 Select step 3, Deprovision Bridges and Passthroughs (on old path).

The system displays a message informing you that it is initiating the next step and then displays the following message:

This In-Service rollover operation has completed successfully.

The Connection Manager main window is updated with the new connection information.

13 Click **OK** in the message box.

The system displays the Connection Manager main window.

—end—

Procedure 12-12
Converting an STS-managed connection to a VT-managed connection

Use this procedure to change an STS-managed STS-1 connection into one or more VT-managed STS-1 pipes carrying 28 end-to-end VT1.5 connections.

Requirements

The STS connection you are converting must be carrying VT-organized traffic. Also, STS-1 pipes span only one hop; therefore, if you are converting a multi-hop STS connection, it will be converted into multiple single-hop pipes, all of which will use the same channel.

Restrictions on converting connections

You cannot convert a connection if any of the following conditions exist:

- Configuration is not a VTBM ring.
- End point tributaries are not provisioned, or are provisioned as DS3.
- Connection is a matched node connection.
- Transmission rate of the connection is something other than STS-1.

Converting connections that have mismatches

If you convert a connection that has mismatches, the conversion process will correct these mismatches. Therefore, before you convert a connection, you should audit the connection to make sure there are no mismatches and to correct any mismatches that do exist.

Service interruptions

During the conversion, service could be interrupted for up to eight milliseconds for each network element in the STS connection you are converting.

No reversal allowed

After you have converted an STS-managed connection to a VT-managed connection, you cannot convert it back.

—continued—

Procedure 12-12 (continued)
Converting an STS-managed connection to a VT-managed connection

Action

Step	Action

1 Log on to the OPC, and open the Connection Manager tool.

The Connection Manager main window appears.

2 From the list of connections, select the connection you want to convert. To select the connection, click on it.

3 Right click on the connection.

The Connection Manager menu is displayed.

4 From the Connection Manager menu, select Convert to VT Managed.

If the connection is not valid, that is, it violates any of the restrictions on converting connections, the system displays a message saying that invalid conditions exist. If the connection is valid, the system displays a confirmation dialog.

5 Do one of the following

To	Then
convert the selected connection	click **Yes**. The system displays a series of in-progress messages. When the conversion is completed, the system displays an information dialog showing the network elements that have been corrected. Click **OK**. The Connection Manager main window is displayed with the connections list, and the newly created VT pipes are displayed in the list. Continue at step 6 of this procedure.
stop the conversion	click **No**. The Connection Manager main window is displayed.

—continued—

Procedure 12-12 (continued)
Converting an STS-managed connection to a VT-managed connection

Step	Action

6 Do one of the following.

To	Then
view the VT connections that have been created	select Show Contained VTs from the Connection Manager menu.
delete VT connections	either click the Manage VT Connections button, or select Manage VT connections from the Connection Manager menu. Refer to Procedure 12-5 on page 12-29 for instructions on deleting VT1.5 connections.
end the procedure	close the Connection Manager tool.

—end—

Procedure 12-13
Performing a manual backup of connection data

Use this procedure to transfer connection data for all network elements (NEs) in the operations controller (OPC) span of control to the backup OPC.

Connection data is backed up in the following two ways:

- automatically, during the daily OPC data synchronization
- manually (optional) at the following times:
  - — before the Connection Manager tool closes
  - — using this procedure

Therefore, this procedure should be performed only after you have made some connection changes, but want to leave the tool open.

Requirements

Before starting this procedure, you must have a userID and password that allow you to access the operations controller (OPC) and open the Connection Manager tool with read/write privileges.

Action

Step	Action
1	Log in to the OPC and open the Connection Manager tool. If you do not know how to do this, see the procedures in *OPC User Interface Description,* 323-3001-301*,* in *Operations, Administration, and Provisioning,* Volume 4A. *The Connection Manager main window appears.*
2	To display the Options menu, press **Ctrl_L T**, then press **Shift** +. *The Options menu appears.*
3	Use the down arrow key to move to the Transfer data to backup OPC command, then press **Space** (or Keypad **0**). *A confirmation dialog appears, prompting you to confirm your request.*
4	Tab to the Yes button, then press **Ctrl_A** (or Keypad **0**). *An information dialog appears, indicating that the current connection data is being transferred to the backup OPC.*
5	To select the OK button, press **Ctrl_A** (or Keypad **0**). *The Connection Manager main window appears.*

—continued—

Procedure 12-13 (continued)
Changing the channel, route, VT group, and VT number of a connection

Step	Action
6	To close the Connection Manager tool, press **Esc)**, or do the following:

To	Press
display the window menu	**Ctrl_L W** (or Keypad **6**) *The window menu appears.*
exit	**Space** (or Keypad **0**) *The User Session Manager appears.*

—end—

Procedure 12-14
Enabling TL1 over TCP/IP for a Telnet connection

Use this procedure to access TL1 surveillance and provisioning interfaces on the OPC through the TCP/IP Telnet session. This procedures lets you directly log in to either the NMA (surveillance), OPS (provisioning), or BTH (surveillance and provisioning) interface.

You can access additional features if you perform Procedure 12-15, "Configuring TL1 for Telnet or True TCP/IP" on page 12-66, in addition to this procedure when you set up a Telnet connection.

Requirements

Before you start, you must do the following:

- Obtain the password for the root userID of the OPC.
- Log in to the OPC with access privileges for the Centralized User Administration tool. For log-in instructions and an overview, see *OPC User Interface Description*, 323-3001-301, in *Operations, Administration, and Provisioning*, Volume 4A.

Action

Step	Action
1	From the User Session Manager, open the Centralized User Administration tool. Move the cursor to the tool name, then press **CTRL_A** (or Keypad **0**).
2	Create a new userID according to *System Administration Procedures*, 323-3001-302, in *Operations, Administration, and Provisioning*, Volume 4A. Name the userID the same as the interface you want to access. (For example, if you want to access the NMA interface, call the userID "nma".) Place this userID in the slat group and use it to access the TL1 interface.
3	Close the Centralized User Administration tool by pressing **Esc**.
4	Log out of the OPC.
5	Log in again to the OPC using the root userID.
6	Make a backup copy of the password file by entering: **cp -p /etc/passwd /etc/passwd.backup**

—continued—

Procedure 12-14 (continued)
Enabling TL1 over TCP/IP for a Telnet connection

Step	Action

7 Choose an option from the following table:

If you want to access the	Then enter
TL1 surveillance interface (NMA)	**tl1usrsh nma** ↵
TL1 provisioning interface (OPS)	**tl1usrsh ops** ↵
TL1 surveillance and provisioning interface (BTH)	**tl1usrsh bth** ↵
Enhanced TL1 surveillance interface (NMA)	**tl1usrsh -e nma** ↵
Enhanced TL1 provisioning interface (OPS)	**tl1usrsh -e ops** ↵
Enhanced surveillance and provisioning interface (BTH)	**tl1usrsh -e bth** ↵

8 Log in again to the OPC through Telnet over the TCP/IP network or through a VT100-compatible terminal connected to OPC port B. Login in using the appropriate userID:

If you want to start the	Then use this userID
Surveillance interface	nma
Provisioning interface	ops
Surveillance and provisioning interface	bth

—end—

Procedure 12-15
Configuring TL1 for Telnet or True TCP/IP

Use this procedure to configure TL1 over TCP/IP for either Telnet or true TCP/IP connections. Telnet connections require the user to log in when accessing the OPC through TL1. True TCP/IP automatically establishes a user session when the user activates the TL1 session with the **act-user** command.

If you use this procedure in addition to "Enabling TL1 over TCP/IP for a Telnet connection" on page 12-64, you access the following additional features:

- enhanced security
- character return is not required at the end of commands
- local echo is turned off

Requirements

Before starting this procedure, you must log in to the OPC with access privileges for the TL1 Configuration tool. For log-in instructions and an overview of the OPC user interface, see *OPC User Interface Description*, 323-3001-301, in *Operations, Administration, and Provisioning*, Volume 4A.

Action

Step	Action
1	From the User Session Manager, open the TL1 Configuration tool. Move the cursor to the tool name, then press **Ctrl_A** (or Keypad **0**). *The TL1 Configuration Main Menu appears.*

2	Configure TL1 over TCP/IP by entering:
	7 ↵
	The following message appears:
	`This option will update the files /etc/services,/etc/inetd.conf and /usr/adm/inetd.sec. You can take a backup of the above files with extension .backup before proceeding further. Choose Yes/No.`
	
	`Do you wish to take the backup? (Yes/No):`

3	Confirm the backup request by entering: **yes** ↵ *The TL1 Over TCP/IP Port Configuration menu appears.*

—continued—

Procedure 12-15 (continued)
Configuring TL1 for Telnet or True TCP/IP

Step	Action

4 Choose an option from the following table.

If you want to	Then
configure TL1 over Telnet/TCP/IP	go to step 5
configure TL1 over true TCP/IP	go to step 8
unconfigure TL1 over Telnet/TCP/IP	go to step 16
unconfigure TL1 over true TCP/IP	go to step 19
display TL1 TCP/IP port configuration	enter **5** ↵
return to the main menu	enter **8** ↵
exit	enter **9** ↵

Configure TL1 over Telnet/TCP/IP

5 Configure TL1 over Telnet/TCP/IP by entering:

1 ↵

The following message appears:

```
This option allows for configuring a port for Telnet
operations. Select a pr number > 5000 && <= 65535.

Enter port number.
```

6 Enter the port number for your Telnet operations and press:

↵

A message prompts you to confirm your request.

7 Confirm your request by entering:

yes ↵

The TL1 over TCP/IP Port Configuration menu appears.

Go to step 4.

Configure TL1 over true TCP/IP

8 Configure TL1 over true TCP/IP by entering:

2 ↵

The following message appears:

```
This option allows for configuring a port for TL1 over
TRUE TCP/IP
operations. Select a port number >5000 and <= 65535.

Enter port number:
```

—continued—

Procedure 12-15 (continued)
Configuring TL1 for Telnet or True TCP/IP

Step	Action
9	Enter the port number for your true TCP/IP operations and press: ↵ *A message prompts you to enter the operations system type:* `Enter OSS type [NMA, OPS, or BTH]:`
10	Enter an operations system type and press: ↵ *A message appears asking whether you want to allow connections from all operations system hosts.*
11	Choose an option from the following table.

If	Then
you want to allow connections from all operations system hosts	enter **yes** ↵ and go to step 14.
do not want to allow connections from all operations system hosts	enter **no** ↵ and go to step 12.

12	Enter an IP address where you want to allow connections and press: ↵
13	If you have more IP addresses to enter, go to step 12. Otherwise, enter: **0** ↵
14	Enter **yes** ↵ to confirm the configuration or **no** ↵ to cancel the configuration, and press: ↵ *The TL1 over TCP/IP Port Configuration menu appears.*
15	Go to step 4.

Unconfigure TL1 over Telnet/TCP/IP

16	Unconfigure TL1 over Telnet/TCP/IP by entering:
	3 ↵
	The following message appears:
	`This option allows for Unconfiguring a port for TL1 TCP/IP operations. Select a port number >5000 && <= 65535.`
	
	`Enter port number:`

17	Enter the port number that you want to unconfigure and press: ↵ *A message prompts you to confirm whether you want to continue.*

—continued—

Procedure 12-15 (continued)
Configuring TL1 for Telnet or True TCP/IP

Step	Action
18	Confirm the request by entering: **yes** ↵ *The TL1 over TCP/IP Port Configuration menu appears.* Go to step 4.
	Unconfigure TL1 over true TCP/IP

19	Unconfigure TL1 over true TCP/IP by entering:
	4 ↵
	The following message appears:
	`This option allows for Unconfiguring a port for TL1 TCP/IP operations. Select a port number > 5000 && <= 65535.`
	
	`Enter port number:`

20	Enter the port number that you want to unconfigure and press: ↵ *A message prompts you to confirm that you want to continue.*
21	Confirm the request by entering: **yes** ↵ *The TL1 over TCP/IP Port Configuration menu appears.* Go to step 4.

—end—

Provisioning OPC alarms

The chapter describes how to provision the alarms generated by the operations controller (OPC). These alarms appear in the OPC Alarm Monitor and Event Browser tools.

The OPC alarms are included in the various user interface alarm counts and indicators, including the following:

- network view banner line of the network element (NE)
- OPC network view banner line
- OPC Alarm Monitor
- OPC Network Summary
- OPC Network Browser

You can provision a pointer alarm to be raised on an AccessNode NE, such as the NE in which the OPC is installed. This pointer alarm can support network surveillance functions through telemetry. The pointer alarm is raised whenever an active OPC alarm or alarms occur.

The alarms raised by the OPC are not the same as the alarms related to the OPC as a circuit pack on the NE. The OPC alarms relate to the tools and functions of the OPC, such as provisioning errors. The OPC circuit pack alarms are reported by the NE as common equipment alarms.

Chapter task list

This chapter includes the following tasks.

Procedure 13-1
Enabling or disabling OPC alarms

Use this procedure to enable or disable alarms generated by the OPC. Use the OPC Alarm Monitor tool to display active alarms. To view active and historical alarms, use the Event Browser tool.

> ***Note:*** See *Alarm and Trouble Clearing Procedures*, 323-3001-543, in *Maintenance*, Volume 5A, for information about clearing active OPC alarms.

You can copy the provisioning information as part of the regular data synchronization from the primary to the backup OPC, but not from the backup OPC to the primary OPC. Therefore, if you provision alarms on the backup OPC, you must manually reprovision the information on the primary OPC.

Requirements

Before starting this procedure, you must log in to the OPC with access privileges for the OPC Alarm Provisioning tool. For log-in instructions and an overview of the OPC user interface, see *OPC User Interface Description*, 323-3001-301, in *Operations, Administration, and Provisioning*, Volume 4A.

Action

Step	Action
1	From the User Session Manager, open the OPC Alarm Provisioning tool by moving the cursor to the tool name and pressing **Ctrl_A** (or Keypad **0**). *The OPC Alarm Provisioning main window appears.*
2	Tab to the list of all OPC alarms.
3	Using the arrow keys, move to the alarm you want to enable or disable.
4	Display the list item menu by pressing **Ctrl_L** (or Keypad **Enter**). *The list item menu appears with the Change status command highlighted and the Inhibit/Enable submenu appears.*
5	Use the following table to determine your next step:

If you want to	Then go to
enable the alarm	step 6
disable the alarm	step 9

6	Use the arrow keys to move to the **Enable** command, then press **Space** (or Keypad **0**). *A confirmation dialog appears.*

—continued—

Procedure 13-1 (continued)
Enabling or disabling OPC alarms

Step	Action
7	Tab to the **Yes** button, then press **Ctrl_A** (or Keypad **0**).
8	Go to step 10a.
9	Use the arrow keys to move to the **Inhibit** command, then press **Space** (or Keypad **0**). *A confirmation dialog appears.*
10	Tab to the **Yes** button, then press **Ctrl_A** (or Keypad **0**). **a.** Use the following table to determine your next step:

If you are	Then go to
logged in to the primary OPC	step 11
logged in to the backup OPC	step 14

Note: If you are logged in to the backup OPC, you cannot transfer the alarm provisioning data. Instead, you must manually reprovision the data on the primary OPC according to this procedure. If you do not reprovision the data on the primary OPC, it is lost during the next database backup (synchronization) from the primary OPC to the backup OPC.

11	In the main window, display the Utilities menu by pressing **Ctrl_L T**. *The Utilities menu appears.*
12	Select the **Transfer data to backup OPC** command by pressing Space (or Keypad 0). *A confirmation dialog appears notifying you that the changed alarm data is being transferred to the backup OPC.* ***Note:*** The state of the root1 user on the primary OPC at the time of the most recent data synchronization from primary to backup determines the state of the root1 user on the backup OPC. For example, if the root1 user is disabled on the backup OPC and enabled on the primary OPC, a data synchronization enables the root1 user on the backup OPC. Unless it is manually changed, the state of the root1 user on the backup OPC remains as set by the most recent data synchronization until the next data synchronization occurs.

—continued—

Procedure 13-1 (continued)
Enabling or disabling OPC alarms

Step	Action

13 You can continue or stop the transfer.

If you want to	Then
stop the transfer	Tab to the No button and select it by pressing **Ctrl_A** (or Keypad **0**).
continue the process	Tab to the Yes button and select it by pressing **Ctrl_A** (or Keypad **0**).

14 Close the tool by pressing **Esc)**.

Note: If you close the tool after you make provisioning changes, but you do not transfer the changes to the backup OPC, a prompt appears. You can transfer the changes by tabbing to the Yes button and by pressing **Ctrl_A** (or Keypad **0**).

—end—

Procedure 13-2
Provisioning the OPC pointer alarm

Use this procedure to enable or disable the “OPC alarm(s) active” alarm, specify the network element (NE) on which the alarm is to appear, and to change the severity of the alarm. The alarm, when enabled, appears on the specified NE when one or more OPC alarms is active on the resident OPC and the resident OPC is the active OPC for the span of control. It acts as a pointer alarm to indicate an active alarm on the OPC.

This procedure is optional. Use it when you want local surveillance or when you are using external surveillance systems, such as serial telemetry.

The pointer alarm can be provisioned to appear only on one NE. Typically, this NE is the one in which the OPC resides. Because the data communications link between the OPC and the NE in which it resides uses the NE backplane, it is the most reliable link.

You can provision one pointer alarm to be raised on an NE for the primary OPC (for example, the one in which the primary OPC resides). The NE then raises an alarm if

- the primary OPC is active for the span of control, and
- the primary OPC has an active alarm

You can provision another pointer alarm to be raised on a NE for the backup OPC (for example, the one in which the backup OPC resides). The NE then raises an alarm if

- the backup OPC is active for the span of control, and
- the backup OPC has an active alarm

You can copy the provisioning information as part of the regular data synchronization from the primary to the backup OPC, but not from the backup OPC to the primary OPC. Therefore, if you provision the information on the backup OPC, you must manually reprovision it on the primary OPC.

—continued—

Procedure 13-2 (continued)
Provisioning the OPC pointer alarm

Requirements

Before starting this procedure, you must log in to the OPC with access privileges for the OPC Alarm Provisioning tool. For log-in instructions and an overview of the OPC user interface, see *OPC User Interface Description*, 323-3001-301, in *Operations, Administration, and Provisioning*, Volume 4A.

Action

Step	Action

1 From the User Session Manager, open the OPC Alarm Provisioning tool by moving the cursor to the tool name and pressing Ctrl_A (or Keypad 0).

The OPC Alarm Provisioning main window appears.

2 Use the following table to determine your next step:

If you	Then go to
want to set the NEs that are to raise the pointer alarms (one NE each for the primary and backup OPCs)	step 3
want to enable the pointer alarm (if the NE that is to raise the pointer alarm has already been set)	step 10
want to disable the pointer alarm	step 14
want to change the severity of the pointer alarm	step 18
have completed the provisioning	step 22

3 With the cursor highlighting the pointer alarm in the Showing Pointer Alarm area of the screen, display the list item menu by pressing **Ctrl_L** (or Keypad **Enter**).

The list item menu appears with the Change status command highlighted and the Inhibit/Enable submenu appears.

4 Before enabling the pointer alarm, you must first set the NEs that are to raise the alarm for the primary or backup OPCs, respectively. Move to the Set NE command by using the arrow keys then press **Space** (or Keypad **0**).

The Set NE dialog appears with the cursor in the Set NE for primary OPC field.

5 Specify the NE on which the pointer alarm is to be raised for the primary OPC by typing in a NE number or as follows:

a. Display the chooser menu by pressing **Ctrl_L** / (or Keypad **3**).

b. Use the arrow keys to move to the desired NE number, then press **Space** (or Keypad **0**).

The NE number appears in the field.

—continued—

Procedure 13-2 (continued)
Provisioning the OPC pointer alarm

Step	Action
6	If a backup OPC exists for the span of control, tab to the Set NE for backup OPC field. (Otherwise, go to step 8.)
7	Specify the NE on which the pointer alarm is to be raised for the backup OPC by typing in a NE number or as follows: **a.** Display the chooser menu by pressing **Ctrl_L** / (or Keypad **3**). **b.** Use the arrow keys to move to the desired NE number, then press **Space** (or Keypad **0**). *The NE number appears in the field.*
8	Tab to the OK button, then press **Ctrl_A** (or Keypad **0**). *The Set NE dialog closes.*
9	Return to step 2.
10	With the cursor highlighting the pointer alarm in the Showing Pointer Alarm area of the screen, display the list item menu by pressing **Ctrl_L** (or Keypad **Enter**).
11	Use the arrow keys to move to the Enable command, then press **Space** (or Keypad **0**). *A confirmation dialog appears.*
12	Tab to the Yes button, then press **Ctrl_A** (or Keypad **0**).
13	Return to step 2.
14	With the cursor highlighting the pointer alarm in the Showing Pointer Alarm area of the screen, display the list item menu by pressing **Ctrl_L** (or Keypad **Enter**).
15	Use the arrow keys to move to the Inhibit command, then press **Space** (or Keypad **0**). *A confirmation dialog appears.*
16	Tab to the Yes button, then press **Ctrl_A** (or Keypad **0**).
17	Return to step 2.
18	With the cursor highlighting the pointer alarm in the Showing Pointer Alarm area of the screen, display the list item menu by pressing **Ctrl_L** (or Keypad **Enter**).
19	Use the arrow keys to move to the Change severity command. *The list of severities appears.*
20	Use the arrow keys to move to Critical, Major, minor, or warning, as required, and select the severity by pressing **Space** (or Keypad **0**). *A confirmation dialog appears.*
21	Tab to the Yes button, then press **Ctrl_A** (or Keypad **0**).

—continued—

Procedure 13-2 (continued)
Provisioning the OPC pointer alarm

Step	Action

22 Use the following table to determine your next step:

If you are	Then go to
logged in to the primary OPC	step 23
logged in to the backup OPC	step 26

Note: If you are logged in to the backup OPC, you cannot transfer the alarm provisioning data. Instead, you must manually reprovision the data on the primary OPC according to this procedure. If you do not reprovision the data on the primary OPC, it is lost during the next database backup (synchronization) from the primary OPC to the backup OPC.

23 In the main window, display the Utilities menu by pressing **Ctrl_L T**.

The Utilities menu appears.

24 Select the Transfer data to backup OPC command by pressing **Space** (or Keypad **0**).

A confirmation dialog appears notifying you that the changed alarm data is being transferred to the backup OPC.

Note: The state of the root1 user on the primary OPC at the time of the most recent data synchronization from primary to backup determines the state of the root1 user on the backup OPC. For example, if the root1 user is disabled on the backup OPC and enabled on the primary OPC, a data synchronization enables the root1 user on the backup OPC. Unless it is manually changed, the state of the root1 user on the backup OPC remains as set by the most recent data synchronization until the next data synchronization occurs.

25 You can continue or stop the transfer.

If you want to	Then
stop the transfer	Tab to the No button and select it by pressing **Ctrl_A** (or Keypad **0**).
continue the process	Tab to the Yes button and select it by pressing **Ctrl_A** (or Keypad **0**).

26 Close the tool by pressing **Esc)**.

Note: If you close the tool after you make provisioning changes, but you do not transfer the changes to the backup OPC, a prompt appears. You can transfer the changes by tabbing to the Yes button and by pressing **Ctrl_A** (or Keypad **0**).

—end—

Managing VTBM ring configurations

This chapter contains procedures for managing virtual tributary bandwidth manager (VTBM) rings using the Configuration Manager tool. The tool is in the operations controller (OPC) Network Admin toolset and the System Lineup and Test (SLAT) toolset. You can use the Configuration Manager tool to create and modify ring configuration data for 2-fiber, bidirectional line-switched rings (BLSRs).

For a brief description of the Configuration Manager tool, see *OPC Interface Description*, 323-3001-301, in *Operations, Administration, and Provisioning*, Volume 4A.

Restrictions and limitations

You can open only one instance of the Configuration Manager tool at a time.

Configuration changes cannot be made when the backup OPC is active. Although you can open the Configuration Manager, you cannot change the configuration data until the primary OPC becomes active again.

Chapter task list

This chapter includes the following tasks.

Procedure	Task	See
14-1	Auditing configuration data for all ADMs in a ring	page 14-3
14-2	Auditing configuration data at a ring ADM	page 14-6
14-3	Scheduling an audit of configuration data	page 14-9
14-4	Transferring configuration data to the backup OPC	page 14-12
14-5	Sending configuration data to a ring ADM	page 14-14

Requirements for procedures

Before performing these procedures, you must do the following:

- Have a userID and password that allow you access to the OPC and the Configuration Manager tool.
- Read the tool restrictions and limitations at the beginning of this chapter.
- Read the command conventions for the type of interface you are using, either character-mode terminal (CMT) or graphical, in *OPC User Interface Description*, 323-3001-301, in *Operations, Administration, and Provisioning,* Volume 4A.

Procedure 14-1
Auditing configuration data for all ADMs in a ring

Use this procedure to conduct an immediate audit of all add-drop multiplexers (ADMs) in the ring under the operations controller (OPC) span of control. Configuration data at all ring ADMs are compared with data stored at the OPC.

The Configuration Manager displays the results of the audit in the tool and then prompts you to overwrite the ring ADM configuration data if discrepancies exist.

To audit a selected ring ADM, see the procedure "Auditing configuration data at a ring ADM" on page 14-6. To schedule an audit for a later time and date, see the procedure "Scheduling an audit of configuration data" on page 14-9.

Action

Step	Action
1	Log in to the OPC and open the Configuration Manager tool. If you do not know how to do this, see the procedure in *OPC User Interface Description*, 323-3001-301, in *Operations, Administration, and Provisioning,* Volume 4A. *The Configuration Manager main window appears, showing the ring configuration.*
2	Move to the ring you want to display, then press **Ctrl_A** (or Keypad **0**). *The ring is highlighted.*
3	To display the list item menu, press **Ctrl_L** (or Keypad **Enter**). *The list item menu appears.*
4	To select the Edit configuration command, press **Space** (or Keypad **0**). *The Configuration Manager: Ring window appears, displaying all ADMs in the ring. The Configured ADMs field identifies the starting ring ADM and direction around the ring.*
5	To display the Options menu, press **Ctrl_L T** (or Keypad **,**). *The Options menu appears.*
6	To select the Audit configuration command, press **Space** (or Keypad **0**). *A confirmation dialog appears.*
7	Tab to the Yes button, then press **Ctrl_A** (or Keypad **0**). *When the audit is complete, a dialog appears, indicating the results.*

—continued—

Procedure 14-1 (continued)
Auditing configuration data for all ADMs in a ring

Step	Action

8 Complete the following based on the results of the audit.

If the configuration audit is a	And you	Then complete the following
success or failure	want to end this procedure	To select the Done button, press **Ctrl_A** (or Keypad **0**). *The Configuration Manager: Ring window appears.* Go to step 9. **a.** ***Note:*** You cannot overwrite the data on a failure. Try the audit again later.
mismatch	want to overwrite the ring ADM configuration data	**a.** Tab to the Yes button, then press **Ctrl_A** (or Keypad **0**). *Configuration data at the network element is overwritten and an information dialog appears.* **b.** To select the Done button, press **Ctrl_A** (or Keypad **0**). *The Configuration Manager: Ring window appears.*
	do not want to overwrite the ring ADM configuration data	To select the No button, press **Ctrl_A** (or Keypad **0**). *The Configuration Manager: Ring window appears. All ring ADMs retain their original configuration data.*

9 To close the Configuration Manager: Ring window, press **Esc)**, or do the following:

a. To display the window menu, press **Ctrl_L W** (or Keypad **6**).

The window menu appears.

b. To select the Exit command, press **Space** (or Keypad **0**).

The Configuration Manager main window appears.

—continued—

Procedure 14-1 (continued)
Auditing configuration data for all ADMs in a ring

Step	Action
10	To close the Configuration Manager tool, press **Esc)**, or do the following: **a.** To display the window menu, press **Ctrl_L W** (or Keypad **6**). *The window menu appears.* **b.** To select the Exit command, press **Space** (or Keypad **0**). *The User Session Manager appears.* **—end—**

Procedure 14-2
Auditing configuration data at a ring ADM

Use this procedure to initiate an audit of configuration data at a selected ring add-drop multiplexer (ADM). Configuration data at that ring ADM is compared with data stored at the operations controller (OPC).

The Configuration Manager displays the results of the audit in the tool. If the discrepancies exist on that ADM, the tool allows you to overwrite the existing configuration data at that node.

To initiate an audit of all ring ADMs in the OPC span of control see the procedure "Auditing configuration data for all ADMs in a ring" on page 14-3. To schedule an audit for a later time and date, see the procedure "Scheduling an audit of configuration data" on page 14-9.

Action

Step	Action
1	Log in to the OPC and open the Configuration Manager tool. If you do not know how to do this, see the procedure in *OPC User Interface Description*, 323-3001-301, in *Operations, Administration, and Provisioning,* Volume 4A. *The Configuration Manager main window appears, showing the ring configuration.*
2	Move to the ring you want to display, then press **Ctrl_A** (or Keypad **0**). *The ring is highlighted.*
3	To display the list item menu, press **Ctrl_L** (or Keypad **Enter**). *The list item menu appears.*
4	To select the Edit configuration command, press **Space** (or Keypad **0**). *The Configuration Manager: Ring window appears, displaying all ADMs in the ring. The Configured ADMs field identifies the starting ring ADM and direction around the ring.*
5	Tab to the Configured Ring ADM list, then use the arrow keys to move to the ring ADM to be audited. To select the ring ADM, press **Ctrl_A** (or Keypad **0**). *The ring ADM is highlighted.*
6	To display the list item menu, press **Ctrl_L** (or Keypad **Enter**). *The list item menu appears.*

—continued—

Procedure 14-2 (continued)
Auditing configuration data at a ring ADM

Step	Action
7	Use the arrow keys to move to the Audit command, then press **Space** (or Keypad **0**). *A confirmation dialog appears.*
8	Tab to the Yes button, then press **Ctrl_A** (or Keypad **0**). *When the audit is complete, a dialog appears, indicating the results.*
9	Complete the following based on the results of the audit.

If the configuration audit is a	And you	Then complete the following
success or failure	want to end this procedure	To select the Done button, press **Ctrl_A** (or Keypad **0**). *The Configuration Manager: Ring window appears.* Go to step 10. ***Note:*** You cannot overwrite the data on a failure. Try the audit again later.
mismatch	want to overwrite the ring ADM configuration data	**a.** Tab to the Yes button, then press **Ctrl_A** (or Keypad **0**). *Configuration data at the network element is overwritten and an information dialog appears.* **b.** To select the Done button, press **Ctrl_A** (or Keypad **0**). *The Configuration Manager: Ring window appears.*
	do not want to overwrite the ring ADM configuration data	To select the No button, press **Ctrl_A** (or Keypad **0**). *The Configuration Manager: Ring window appears. All ring ADMs retain their original configuration data.*

—continued—

Procedure 14-2 (continued)
Auditing configuration data at a ring ADM

Step	Action
10	To close the Configuration Manager: Ring window, press **Esc)**, or do the following: **a.** To display the window menu, press **Ctrl_L W** (or Keypad **6**). *The window menu appears.* **b.** To select the Exit command, press **Space** (or Keypad **0**). *The Configuration Manager main window appears.*
11	To close the Configuration Manager tool, press **Esc)**, or do the following: **a.** To display the window menu, press **Ctrl_L W** (or Keypad **6**). *The window menu appears.* **b.** To select the Exit command, press **Space** (or Keypad **0**). *The User Session Manager appears.*

—end—

Procedure 14-3
Scheduling an audit of configuration data

Use this procedure to specify the start time and date as well as the frequency for a ring configuration data audit.

The operations controller (OPC) configuration data is compared with data from all ring add-drop multiplexers (ADMs) in the OPC span of control. The results of the audit and any discrepancies are recorded in the Event Browser. The Configuration Manager does not automatically correct discrepancies.

Note 1: The start date for a scheduled audit must be either today or tomorrow. Any other date is invalid and the tool prompts you to enter another date.

Note 2: If an audit is scheduled, it is performed on all ring configurations in the OPC span of control.

Note 3: Only ring configurations are audited.

To initiate an immediate audit of all ring ADMs in a ring configuration that exists, see the procedure "Auditing configuration data for all ADMs in a ring" on page 14-3. To initiate an immediate audit of a selected ring ADM, see the procedure "Auditing configuration data at a ring ADM" on page 14-6.

Action

Step	Action
1	Log in to the OPC and open the Configuration Manager tool. If you do not know how to do this, see the procedure in *OPC User Interface Description*, 323-3001-301, in *Operations, Administration, and Provisioning*, Volume 4A. *The Configuration Manager main window appears, showing the ring configuration.*
2	To display the list item menu, press **Ctrl_L** (or Keypad **Enter**). *The list item menu appears.*
3	To select the Edit configuration command, press **Space** (or Keypad **0**). *The Configuration Manager: Ring window appears, displaying all ADMs in the ring. The Configured ADMs field identifies the starting ring ADM and direction around the ring.*
4	To display the Options menu, press **Ctrl_L T** (or Keypad **,**). *The Options menu appears.*

—continued—

Procedure 14-3 (continued)
Scheduling an audit of configuration data

Step	Action

5 Use the arrow keys to move to the Schedule configuration audits command, then press **Space** (or Keypad **0**).

The Schedule Configuration Data Audit dialog appears, displaying the previously entered settings.

If you want to	Then go to
enter the default settings (every day, starting at 6:30 a.m. today)	step 6
enter a nondefault frequency, time, or date	step 7

6 Tab to the Default button, then press **Ctrl_A** (or Keypad **0**).

Fields in the dialog are set to run an audit once a day, at 6:30 a.m., starting today. If the current time is past 6:30 a.m., the audit start date is set to tomorrow's date.

Go to step 13.

7 To change the frequency of the audit, tab to the Run every field and enter how often you want the audit to run. Valid values for this field differ, according to which time button you select.

If the selected time button is	Then the valid values are
minute(s)	15—59
hour(s)	1—23
day(s)	1—7

8 Tab to the time buttons. Using the arrow keys, move to the button you want to select (minutes, hours, or days).

9 To select the time button, press **Ctrl_A** (or Keypad **0**).

The button is selected.

10 Tab to the Next run field, then enter the hours and minutes.

Remember to enter a colon (:) between the hours and minutes.

11 Tab to the date fields, then press **Ctrl_L /** (or Keypad **3**) to display the chooser menu.

12 Select today, or use the down arrow key to move to tomorrow, then press **Space** (or Keypad **0**).

13 Tab to the OK button, then press **Ctrl_A** (or Keypad **0**).

The Configuration Manager: Ring window appears. The audits run according to the time, date, and frequency specified in the dialog.

—continued—

Procedure 14-3 (continued)
Scheduling an audit of configuration data

Step	Action

14 To close the Configuration Manager: Ring window, press **Esc)**, or do the following:

To	Press
display the window menu	**Ctrl_L W** (or Keypad **6**). *The window menu appears.*
exit	**Space** (or Keypad **0**) *The Configuration Manager main window appears.*

15 To close the Configuration Manager tool, press **Esc)**, or do the following:

To	Press
display the window menu	**Ctrl_L W** (or Keypad **6**). *The window menu appears.*
exit	**Space** (or Keypad **0**) *The User Session Manager appears.*

—end—

Procedure 14-4
Transferring configuration data to the backup OPC

Use this procedure to transfer all data from the primary operations controller (OPC) to the backup OPC, including configuration data for all add-drop multiplexers (ADMs) in the ring.

Configuration data is backed up as follows:

- automatically, during the OPC data synchronization
- manually (optional) at the following times:
  - — before the Configuration Manager closes
  - — using this procedure

Therefore, this procedure is likely to be performed only after you have changed the configuration, but want to leave the tool open.

Requirements

Before starting this procedure, you must save the configuration changes to the primary OPC using the Save and send configuration button in the main window.

Action

Step	Action
1	Log in to the OPC and open the Configuration Manager tool. If you do not know how to do this, see the procedure in *OPC User Interface Description*, 323-3001-301*,* in *Operations, Administration, and Provisioning,* Volume 4A. *The Configuration Manager main window appears, showing the ring configurations.*
2	To display the list item menu, press **Ctrl_L** (or Keypad **Enter**). *The list item menu appears.*
3	To select the Edit configuration command, press **Space** (or Keypad **0**). *The Configuration Manager: Ring window appears, displaying all ADMs in the ring. The Configured ADMs field identifies the starting ring ADM and direction around the ring.*
4	To display the Options menu, press **Ctrl_L T** (or Keypad **,**). *The Options menu appears.*

—continued—

Procedure 14-4 (continued)
Transferring configuration data to the backup OPC

Step	Action
5	Use the arrow keys to move to the Transfer data to backup OPC command, then press **Space** (or Keypad **Enter**). *A confirmation dialog appears.*
6	Tab to the Yes button, then press **Ctrl_A** (or Keypad **0**). *An information dialog appears, displaying the results of the transfer.*
7	To select the Done button, press **Ctrl_A** (or Keypad **0**). *The Configuration Manager: Ring window appears.*
8	Continue with other procedures you want to perform using the Configuration Manager tool.

—end—

Procedure 14-5
Sending configuration data to a ring ADM

Use this procedure to send the current configuration data to a selected ring add-drop multiplexer (ADM).

Action

Step	Action
1	Log in to the operations controller (OPC) and open the Configuration Manager tool. If you do not know how to do this, see the procedure in *OPC User Interface Description*, 323-3001-301, in *Operations, Administration, and Provisioning*, Volume 4A. *The Configuration Manager main window appears, showing the ring configurations.*
2	Use the arrow keys to move to the ring that contains the ring ADM. To select the ring, press **Ctrl_A** (or Keypad **0**). *The ring is highlighted.*
3	To display the list item menu, press **Ctrl_L (**or Keypad **Enter**). *The list item menu appears.*
4	To select the Edit configuration command, press **Space** (or Keypad **0**). *The Configuration Manager: Ring window appears, displaying all ADMs in the ring. The Configured ADMs field identifies the starting ring ADM and the direction around the ring.*
5	Tab to the Configured Ring ADM list. Use the arrow keys to move to the ring ADM that requires new/updated configuration data.
6	To display the list item menu, press **Ctrl_L** (or Keypad **Enter**). *The list item menu appears.*
7	Move to the Send node map to N**E** command, then press **Space** (or Keypad **0**). *A confirmation dialog appears.*
8	Tab to the Yes button, then press **Ctrl_A** (or Keypad **0**). *The configuration data is sent to the ring ADM and an information dialog appears.*
9	To select the Done button, press **Ctrl_A** (or Keypad **0**). *The Configuration Manager: Ring window appears.*

—continued—

Procedure 14-5 (continued)
Sending configuration data to a ring ADM

Step	Action
10	To close the Configuration Manager: Ring window, press **Esc)**, or do the following: **a.** To display the window menu, press **Ctrl_L W** (or Keypad **6**). *The window menu appears.* **b.** To select the Exit command, press **Space** (or Keypad **0**). *The Configuration Manager main window appears.*
11	To close the Configuration Manager tool, press **Esc)**, or do the following: **a.** To display the window menu, press **Ctrl_L W** (or Keypad **6**). *The window menu appears.* **b.** To select the Exit command, press **Space** (or Keypad **0**). *The User Session Manager appears.*

—end—

Monitoring alarms

This chapter contains procedures for monitoring and investigating alarms. It also explains the presentation and classification of the alarms.

Chapter task list

This chapter includes the following tasks.

Procedure	Task	See
15-1	Turning off audible central-office alarms	page 15-2
15-2	Turning off screen blinking and reverse video	page 15-3
15-3	Displaying active alarms	page 15-4
15-4	Displaying a subset of active alarms	page 15-9
15-5	Displaying new alarms	page 15-10
15-6	Displaying an alarm report	page 15-11
15-7	Displaying a detailed alarm report	page 15-12

Note: If you cannot successfully complete these procedures, contact your next level of support.

Requirements for procedures

Read the command conventions in *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A.

For detailed procedures on how to troubleshoot an alarm, see *Alarm and Trouble Clearing Procedures*, 323-3001-543, in *Maintenance*, Volume 5A.

For detailed procedures on how to troubleshoot alarms on Universal Edge 9000 (UE9000) systems, see the*UE9000 Voice OAM&P User Guide*.

Procedure 15-1
Turning off audible central-office alarms

Use this procedure to silence audible alarms from the network element user interface (NEUI).

The aco command (Alarm Cut Off) is available at each screen even though it does not appear in the menu.

Audible alarms can also be silenced by pressing the alarm cut off/light test (ACO/LT) button on the local craft access panel (LCAP).

> ***Note:*** The alarm cut off can fail if the MIC equipment fails. If the alarm cut off does not work, removing the alarm relay card from the breaker interface panel (BIP) will silence the alarm.

Requirements

To use the aco user interface command, you must be logged in to the network element (NE) that has the active audible alarm.

Action

Step	Action
1	From any screen, cut off the audible alarm by entering: **aco**↵ *The audible alarm stops. The screen displays the message:* `ACO command successful.` *Your original screen is unaffected by this command.* **—end—**

Procedure 15-2
Turning off screen blinking and reverse video

Use this procedure to turn off blinking and reverse video on your network element user interface (NEUI) screen. Blinking indicates that one or more Critical or Major alarms have occurred on the network. Always investigate these alarms.

Screen blinking remains off only until another event occurs that warrants blinking.

The sil command stands for Silent and is available at each NEUI screen, even though it does not appear in the command menu.

Action

Step	Action
1	From any screen, turn off screen blinking and reverse video by entering: **sil**↵ *The screen alarm information stops blinking and reverse video disappears.* *Your original screen is unaffected by this command.* Investigate the new active alarm with the procedure described in Procedure 15-3, “Displaying active alarms,” on page 15-4. **—end—**

Procedure 15-3
Displaying active alarms

Use this procedure to display alarms that are currently active for a network element (NE).

The alarm information appears on the screen in order of severity.

Tables 15-1 through 15-3 describe the information displayed on the alarm screen.

Alarm severity

Alarms are categorized and presented according to their severity: critical, major, minor and warning. The different alarm severities let you prioritize clearing an alarm.

Table 15-1
Alarm severities

Severity screen symbols	What they mean	What to do about them
C (Critical)	The most severe alarm. A critical alarm has the potential to affect 128 (DS0) customers, for example, loss of an unprotected OC-12 facility.	Repair immediately
M (Major)	Not as severe as critical alarms, but require immediate attention. A major alarm has the potential to affect 24 to 127 (DS0) customers, for example, loss of a DS1/VT sync mapper circuit pack.	Investigate immediately
m (minor)	Not as severe as major alarms, but indicate a problem that may escalate. A minor alarm has the potential to affect 2 to 23 (DS0) customers, for example, failure of a common-equipment circuit pack.	Investigate at next opportunity
w (warning)	The least severe alarms. A warning indicates a degradation of service, the completion of an event, or a problem at an upstream site.	Investigate during next maintenance activity
SA (service-affecting)	Service to one or more clients is interrupted.	Investigate and repair immediately
nsa (not service-affecting)	Clients are unaware of the fault.	Investigate and repair at next opportunity
Clear	The alarm has been cleared.	

—continued—

Procedure 15-3 (continued)
Displaying active alarms

Alarm classes and types

Alarms are further categorized according to class and type, as in Table 15-2 and Table 15-3. The different alarm classes and types let you focus on the specific alarms.

Table 15-2
Alarm classes

Class	What they mean
Fac	Facility alarm
Eqp	Equipment alarm
Env	Environment alarm

—continued—

Procedure 15-3 (continued)
Displaying active alarms

Table 15-3
Alarm types

Alarm class	Alarm type	Description
Eqp	AIC	Access interface card
	ANX	AccessNode Express shelf
	ATM	Asynchronous transfer mode card (UE9000)
	CDS	Copper-distribution shelf
	CDSP	Copper-distribution shelf power
	CE	Common-equipment (refers to shelf)
	DS1	DS1 transport (1.544 Mb/s)
	DS3	DS3 transport (44.736 Mb/s)
	STS1	STS-1 transport (51.84 Mb/s)
	ESI	External synchronization interface
	IRTU	Integrated remote test unit
	ITU	Integrated test unit
	LC	Line card
	LIC	Line interface card
	MIC	Maintenance interface card
	MLC	Multi-circuit line card (UE9000)
	MTAC	Metallic test access card
	OC3	OC-3 transport (155.520 Mb/s)
	OC12	OC-12 transport (622.080 Mb/s)
	OPC	Operations controller
	Proc	Processor circuit pack
	PSU	Power supply unit
	SI	Shelf interface card (UE9000)
	SPX	Shelf processor
—continued—		

—continued—

Procedure 15-3 (continued)
Displaying active alarms

Table 15-3 (continued)
Alarm Types

Alarm class	Alarm type	Description
Eqp (cont'd)	STS1	STS circuit pack
	TAC	Test access card
	TDM	Time division multiplexing card (UE9000)
	TIC	Transport interface card
	TXC	Timing and cross-connect card
	UE	Universal Edge 9000 shelf
Fac	COMM	Communication channel or link
	DS1	DS1 traffic
	STS1	STS-1 traffic
	DS3	DS3 traffic
	ESI	External synchronization interface
	OC-3	OC-3 transport
	OC-12	OC-12 transport
	Path	Communication path
	STSn	STS path
	STS1	STS1 path
	TIC	STS1, TR08, and VT facilities
Env	ANX	AccessNode Express Shelf
	CE	Common equipment
—end—		

—continued—

Procedure 15-3 (continued)
Displaying active alarms

The alarm information appears on the screen in order of severity.

Action

Step	Action
1	From any screen, display the alarm screen by entering: **alarms**↵ *The appropriate alarm screen appears.*
2	To update the list of alarms displayed on the screen, enter: **update**↵ *The alarm screen refreshes and shows the latest alarms in the list of one-line alarm reports.*
3	When finished with the alarm screen, return to the Network Element Status screen by entering: **quit**↵

—end—

Procedure 15-4
Displaying a subset of active alarms

Use this procedure to display alarms of a particular class or severity as follows:

- list all facility (fa) alarms
- list all equipment (eq) alarms
- list all environment (en) alarms
- list all critical (c) alarms
- list all major (ma) alarms
- list all minor (mi) alarms
- list all warnings (w)
- list all alarms (all)

Alarms are listed in order of severity.

Action

Step	Action
1	From any screen, display the alarm screen for a specific network element (NE) by entering: **al**↵ *The alarm screen appears.*
2	Specify the criteria for the alarms in which you are interested by entering: **filter <criteria>**↵ where <criteria> criteria for the alarms to display: **fa, eq, en, c, ma, mi, w,** or **all** *A subset list of alarms appears.*
3	When finished with the subset of alarms, redisplay the full list of alarms by entering: **filter <all>**↵ *All alarms appear.*
4	To return to the Network Element Status screen, enter: **quit**↵

—end—

Procedure 15-5
Displaying new alarms

Use this procedure to display information on up to ten (10) new alarms. The alarm information appears in order of severity. Each new alarm has its information displayed on a separate single line.

The new alarms command is available at each screen even though it does not always appear as a menu command.

Action

Step	Action
1	From any screen, display the list of new alarms by entering: **new**↵ *Any new alarms appear at the bottom of the screen.*
2	To return to the Network Element Status screen, enter: **quit**↵

—end—

Procedure 15-6
Displaying an alarm report

Use this procedure to display an alarm report which contains detailed information about a current or historical alarm. The detailed report contains more information about the alarm than the single-line report that appears on the alarm screen.

Each alarm is identified on screen by a unique alarm report number. Use this number to identify a specific alarm.

Action

Step	Action
1	From any screen, display the alarm screen by entering: **al**↵ *The alarm summary screen appears.*
2	Display the alarm report by entering: **almrpt <alarm #>**↵ where <alarm #> the number corresponding to the 1-line alarm report or a historical alarm *The alarm report appears.*
3	When you are finished with the alarms, return to the Network Element Status screen by entering: **quit**↵

—end—

Procedure 15-7
Displaying a detailed alarm report

Use this procedure to display a detailed alarm report. A detailed alarm report contains the most information about a specific alarm. It shows all the information for an alarm report, and whether the alarm is raised, lowered, or unchanged.

The detailed alarm report also allows you to access a menu of commands that let you directly access the port, equipment, or facility causing the alarm.

Action

Step	Action
1	From any screen, display the alarm screen by entering: **al**↵ *The alarm screen appears.*
2	Display the detailed alarm report by entering: **dtlalms <alarm #>**↵ where <alarm #> optional; the number corresponding to the one-line alarm report under the heading `Alm`. If you do not specify an alarm number, the most severe alarm is selected. *The alarm report appears.*
3	When you are finished with the alarms, return to the Network Element Status screen by entering: **quit**↵

—end—

Changing operating states

This chapter contains procedures for changing the operating state of equipment or facilities. Equipment and facilities can be placed in service (IS) or out of service. When equipment or a facility is out of service, it can not be used to provide service.

Note: For information on changing operating states for Universal Edge 9000 (UE9000) equipment or facilities, see the *UE9000 Voice OAM&P User Guide*.

Chapter task list

This chapter includes the following tasks.

Procedure	Task	See
16-1	Changing an equipment operating state	page 16-2
16-2	Changing an IRTU test-head operating state	page 16-6
16-3	Changing a facility operating state	page 16-7

Note 1: If you cannot successfully complete these procedures, contact your next level of support.

Note 2: To avoid the generation of "VT Rx AIS" and "VT Rx unequipped" alarms, take unused VT1.5s out of service, as described in Procedure 16-3, "Changing a facility operating state," on page 16-7.

Requirements for procedures

Read the command conventions in *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A.

Procedure 16-1
Changing an equipment operating state

Use this procedure to change the operating state of a circuit pack or circuit pack group. The state can be changed to in service (IS) or out of service (OOS).

You can change the operating state of the following circuit packs or circuit pack groups:

- access interface card (AIC)
- copper-distribution shelf power converter (CDSP)
- DS1/VT mapper
- DS3/STS mapper
- external synchronization interface (ESI)
- integrated remote test unit (IRTU)
- line card (LC)
- line interface card (LIC)
- maintenance interface card (MIC)
- metallic test access card (MTAC)
- OC-3 interface card
- OC-12 interface card
- operations controller (OPC)
- processor card (Proc)
- STS-1 interface card
- test access card (TAC)
- transport interface card (TIC)
- timing and cross-connect (TXC)

Requirements

Take DS1, DS3, STS-1, OC-3, and OC-12 facilities out of service before taking the corresponding circuit pack group out of service. See Procedure 16-3, “Changing a facility operating state,” on page 16-7 for details.

Take subscriber lines out of service at the host switch in an AccessNode configuration before taking the corresponding line card in the remote fiber terminal (RFT) out of service.

—continued—

Procedure 16-1 (continued)
Changing an equipment operating state

Action

Step	Action

1 From the Network Element Status screen, display the required equipment screen.

If changing an operating status for	Then enter
DS1, DS3, STS-1, OC-3, or OC-12	**eq <type> <group>**↵ where <type> **ds1**, **ds3**, **sts1**, **oc3**, or **oc12** <group> See "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2. *The required equipment screen appears.*
ESI	**eq <type> <group>**↵ where <type> **esi** <group> **g1** (top card) or **g2** (bottom card) *The required equipment screen appears.*
TXC	**eq <type> <group>**↵ where <type> **txc** <group> **g1** or **g2** *The required equipment screen appears.*
TIC, AIC, or Proc	**eq <type> <group>**↵ where <type> **tic**, **aic**, or **proc** <group> **a** or **b** *The required equipment screen appears.*
—continued—	

—continued—

Procedure 16-1 (continued)
Changing an equipment operating state

Step **Action**

If changing an operating status for	Then enter
MIC, IRTU, TAC, or OPC	**eq <type> <group>**↵ where <type> **mic**, **irtu**, **tac**, or **opc** <group> (no group required) *The required equipment screen appears.*
LIC, MTAC, or CDSP	**eq <type>;<detail> <CDS #> <group>**↵ where <type> type of circuit pack: **lic, mtac,** or **cdsp** <detail> LIC, MTAC, or CDSP detail screen: **dtllic, dtlmtac**, or **dtlcdsp** <CDS #> copper-distribution shelf housing the equipment: **1** to **7** <group> group number of the equipment: For a LIC: **a, b, c,** or **d** For an MTAC or CDSP: **a** or **b** *The detailed equipment screen appears.*
LC (for CDS-based line cards)	**eq lc <CDS #> <LC #>** ↵ where <CDS #> AccessNode copper-distribution shelf number**:1** to **7** <LC #> line card slot number: **1** to **96** ***Note**:* For Omega 4-wire and Omega 6/8-wire line cards, use the lowest even slot number occupied by the card. *The equipment screen for the specified equipment appears.*
—continued—	

—continued—

Procedure 16-1 (continued)
Changing an equipment operating state

Step Action

If changing an operating status for	Then enter
LC (for ANX-based line cards)	**eq anxlc <VM #> <LC #>** ↵ where <VM #> AccessNode Express voice module number: **1** to **28** <LC #> line card slot number: **1** to **48** ***Note*:** For Omega 4-wire line cards, use the upper slot number occupied by the card (multiple of 3). *The line card equipment screen appears.*
LC (for AN or ANX with VLCM)	**eq lcmlc <VLCM #> <LSG #> <LC #>**↵ where <VLCM #> virtual line concentration module (VLCM) number: **1** to **2** <LSG #> line subgroup number on DMS-10NA switch: **0** to **19** <LC #> line card slot number on DMS-10NA switch within line subgroup: **0** to **31** ***Note*:** You can query AN line cards using “eq lc” or “eq lcmlc.” You can query ANX line cards using “eq anxlc” or “eq lcmlc.” *The line card equipment screen appears.*
—end—	

2 Change the state by entering:

chgstate <state> [force]↵

where

<state> the operating state: **is** or **oos**

[force] the force option, in conjunction with the **is** or **oos** operating state options, applies to the TAC, TIC, LIC, AIC, and MTAC, and forces the equipment in service or out of service regardless of its traffic load or condition.

If you change state from in service to out of service, the system prompts for confirmation (yes or no). Confirm the change to OOS by entering yes. The equipment screen is updated with the new operating state.

3 Return to the Network Element Status screen by entering: **quit**↵

—end—

Procedure 16-2
Changing an IRTU test-head operating state

Use this procedure to change the operating state of an integrated remote test unit (IRTU) test head. The state of the test head can be changed to in service (IS) or out of service (OOS). Two independent test heads exist on the IRTU.

Action

Step	Action
1	From the Network Element (NE) Status screen, display the IRTU equipment screen by entering: **eq irtu** ↵ *The IRTU equipment screen appears.*
2	Change the operating state of the test head by entering: **chgstth <test head #> <state>**↵ where <test head #> is the number of the test head: **1** or **2** <state> the operating state: **is** or **oos** *If you change state from in service to out of service, the system prompts for confirmation (yes or no). Confirm the change to OOS by entering yes.* *The equipment screen is updated with the new operating state of the test head.*
3	Return to the Network Element Status screen by entering: **quit**↵

—end—

Procedure 16-3
Changing a facility operating state

Use this procedure to change the operating state of a DS1, DS3, STS-1, OC-3, OC-12, external synchronization interface (ESI) or VT1.5 (VT) facility. The state can be changed to in service (IS) or out of service (OOS). For VT1.5s, a state change can be performed on a single VT1.5 or on a range of VT1.5s.

Before you change the operating state of a DS1, DS3, STS-1, or OC-3/OC-12 facility to in-service, the corresponding circuit pack group must be in service. For details, see Procedure 16-1, "Changing an equipment operating state," on page 16-2.

Note: To avoid the generation of "VT Rx AIS" and "VT Rx unequipped" alarms, take unused VT1.5s out of service, as described in this procedure.

Action

Step	Action

1 From the Network Element Status screen, display the required facility screen by completing the instructions in the following table.

If changing an operating status for	Then enter
a DS1 facility	**fa ds1 <group #> <port #>**↵ where <group #> DS1 circuit pack group number (see "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2) <port #> number of the DS1 port: **1** to **14**, or **all** *The DS1 Facility screen appears.*
a DS3 facility	**fa ds3 <group #> <port #>**↵ where <group #> DS3 circuit pack group number (see "Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12" on page 5-2) <port #> number of the DS3 port: **1** to **3**, or **all** *The DS3 Facility screen appears.*
—continued—	

—continued—

Procedure 16-3 (continued)
Changing a facility operating state

Step **Action**

If changing an operating status for	Then enter
an STS-1 facility	**fa sts1 <group #> <port #>**↵ where <group #> STS-1 circuit pack group number (see “Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12” on page 5-2) <port #> number of the STS-1 port: **1** to **3**, or **all** *The STS1 Facility screen appears.*
an OC-3 facility that is a feeder	**fa oc3 <group #>**↵ where <group> the number of the OC-3 circuit pack group**: all**, **g1**, or **g2** (see “Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12” on page 5-2) *The OC-3 Facility screen appears.*
an OC-3 facility that is an ABM tributary	**fa oc3 <group #>**↵ where <group> the number of the OC-3 circuit pack group**: all**, **g1s**, **g2s**, **g3**, **g4** (see “Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12” on page 5-2) *The OC-3 Facility screen appears.*
an OC-3 facility that is a TBM tributary	**fa oc3 <group #>**↵ where <group> the number of the OC-3 circuit pack group**: all, g1s, g2s, g3, g4, g5, g6, g7, g8** (see “Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12” on page 5-2) *The OC-3 Facility screen appears.*
—continued—	

—continued—

Procedure 16-3 (continued)
Changing a facility operating state

Step Action

If changing an operating status for	Then enter
an OC-12 facility	**fa oc12 <group #>**↵ where <group #> OC-12 group number: **g1** or **g2** (see “Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12” on page 5-2) *The OC-12 Facility screen appears*.
an ESI	**fa esi <type>**↵ **where** <type> type of ESI: **bitsa, bitsb, g1out**, or **g2out** *The ESI Facility screen appears.*
a VT1.5	**fa tic <port #>**↵ where <port #> number of the STS-1 corresponding to the VT1.5: **1** or **2** *The TIC Facility screen appears.*
—end—	

—continued—

Procedure 16-3 (continued)
Changing a facility operating state

Step	Action
2	Change the operating state of the facility.

CAUTION
Risk of loss of service
If you take VT1.5 #1 and #2 on STS-1 #1 out of service, you take down a CSC/EOC pair.
If you take VT1.5s on STS-1 #2 out of service, associated UDLC service is lost.

CAUTION
Risk of loss of service
If you take VT1.5s on STS-1 #1 out of service, associated GR-303 DMS or GR-303 MVI service is lost.

CAUTION
If you take VT1.5 #1 and #2 on STS-1 #1 out of service, you take down a CSC/EOC pair.
If you take VT1.5s on STS-1 #2 out of service, associated UDLC service is lost.

—continued—

Procedure 16-3 (continued)
Changing a facility operating state

Step **Action**

Determine the type of facility and complete the instructions in the following table:

If changing an operating status for	**Then enter**
a DS1, a DS3, a STS-1, an OC-3, an OC-12, or an ESI	**chgstate <state>**↵ where <state> in-service or out-of-service operating state: **is** or **oos** If you change state from in service to out of service, the system prompts for confirmation (**yes** or **no**). Confirm the change to OOS by entering **yes**. *The facility screen is updated with the new operating state in reverse video.*
a single VT1.5	**vtselect <subport #>** ↵ where <subport> the number of the VTs: **1** to **28** **chgstate <state>** ↵ where <state> in-service or out-of-service operating state: **is** or **oos** If you change state from in service to out of service, the system warns of a possible loss of service and prompts for confirmation (**yes** or **no**). Confirm the change to OOS by entering **yes**. *The facility screen is updated with the new operating states in reverse video.*
—continued—	

—continued—

Procedure 16-3 (continued)
Changing a facility operating state

Step **Action**

If changing an operating status for	Then enter
a range of VT1.5s	**chgstate <state> <first VT> <last VT>**↵ where <state> in-service or out-of-service operating state: **is** or **oos** <first VT> the number of the first VT in a range of VTs: **1** to **28** <last VT> the number of the last VT in a range of VTs: **1** to **28** If you change state from in service to out of service, the system warns of a possible loss of service and prompts for confirmation (**yes** or **no**). Confirm the change to OOS by entering **yes**. *The facility screen is updated with the new operating states in reverse video.*
—end—	

3 Return to the Network Element Status screen by entering:

quit↵

—end—

Testing equipment and setting loopback

This chapter contains procedures for performing tests on AccessNode equipment and facilities, and for setting up DS1 and DS3 facility loopbacks.

Note: For information on testing Universal Edge 9000 (UE9000) systems, see the *UE9000 Voice OAM&P User Guide*.

Chapter task list

This chapter includes the following tasks.

Procedure	Task	See
17-1	Manually testing the protection groups on a shelf	page 17-3
17-2	Manually exercising the processor	page 17-5
17-3	Performing a lamp test from the NEUI	page 17-7
17-4	Performing a lamp test using the ACO/LAMP TEST button	page 17-9
17-5	Performing a manual diagnostic test	page 17-12
17-6	Setting or releasing a loopback on a DS1 or DS3 facility	page 17-16
17-7	Manually switching processor activity from active to standby	page 17-19
17-8	Manually restarting the processor	page 17-21
17-9	Manually restarting the shelf	page 17-26
17-10	Resetting a line card	page 17-30
17-11	Generating alarms for testing purposes	page 17-33

Note: If you cannot successfully complete these procedures, contact your next level of support.

For details on testing line cards, see *Line Card Testing Procedures,* 323-3001-316, in *Operations, Administration, and Provisioning,* Volume 4B.

Requirements for procedures

Read the command conventions in *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A.

Procedure 17-1
Manually testing the protection groups on a shelf

Use this procedure to manually test OC-3, OC-12, DS1, DS3, and STS-1 protection paths on a shelf without affecting service. The exerciser tests the condition of each protection path to ensure no failures exist that would otherwise not be detected until a protection switch occurred. This procedure is for a manual exerciser. However, the exerciser can be run automatically by scheduling it as a network event. See *System Administration Procedures*, 323-3001-302, in *Operations, Administration, and Provisioning*, Volume 4A, for details.

This procedure uses the shelf exercise command.

Requirements

The exerciser does not perform a test if equipment is locked out, out of service, deleted, or unequipped. An active protection switch cannot be in effect when performing this test. For an OC-3/OC-12 exercise test, receive (Rx) traffic must be on G1.

Action

Step	Action
1	From the Network Element Status screen, display the equipment shelf screen by entering: **eq sh**↵ *The equipment shelf screen appears.*
2	Run the exercise test by entering: **exercise**↵ *The system displays the following message:* `The shelf exerciser has been initiated. Please refer to EQP608 logs for results.` *The results of the test are output to equipment (EQP) log reports.*
3	To view the log report, display the Log Utility screen by entering: **admin nep;logs**↵ *The Log Utility screen appears.* ***Note:*** The command logutil can also be used to access the Log Utility screen.

—continued—

Procedure 17-1 (continued)
Manually testing the protection groups on a shelf

Step	Action
4	Display the last EQP log generated by entering: **open eqp**↵ If the last EQP log is not the EQP608 log, type back↵ until the EQP608 log appears. Each log report is explained in the *Log Report Manual,* 323-3001-840, in *Maintenance*, Volume 5B.
5	Return to the Network Element Status screen by entering: **quit**↵

—end—

Procedure 17-2
Manually exercising the processor

Use this procedure to manually exercise (test) the inactive processor in a duplex configuration.

Requirements

Before manually exercising the inactive processor in a duplex configuration, both processors must be in-service normal (IS-NR).

The routine exercise must be enabled (on). If not enabled, use the command RexEna on the Proc equipment screen to toggle the value from off to on.

Action

Step	Action
1	From the Network Element Status screen, display the processor equipment screen by entering: **eq proc <group>**↵ where <group> processor group number: **a** or **b** *The processor equipment screen appears.*
2	Check that the state of the active and redundant processor are in service (IS). ***Note:*** Do not perform this test if both processors are out of service (OOS).
3	Perform the exercise test by entering: **exercise**↵ *The results of the exercise test are reported in the EQP612 log report.*
4	To view the log report, display the Log Utility screen by entering: **admin nep;logs**↵ *The Log Utility screen appears.* ***Note:*** The command logutil can also be used to access the Log Utility screen.

—continued—

Procedure 17-2 (continued)
Manually exercising the processor

Step	Action
5	Display the last EQP log generated by entering: **open eqp**↵ If the last EQP log is not the EQP612 log, type back↵ until the EQP612 log appears. Each log report is explained in the *Log Report Manual,* 323-3001-840, in *Maintenance*, Volume 5B.
6	Return to the Network Element Status screen by entering: **quit**↵

—end—

Procedure 17-3
Performing a lamp test from the NEUI

Use this procedure to test for defective lamps on the AccessNode equipment, by entering commands at the network element user interface (NEUI). During a lamp test from the NEUI, all functional lamps light for 30 seconds.

When you perform a lamp test on an access bandwidth manager (ABM) shelf, all lamps on the breaker interface panel (BIP) and on the shelf circuit packs are tested. When you perform a lamp test on the transport bandwidth manager (TBM) shelf, only the circuit pack light-emitting diodes (LEDs) are tested. The lamps on the TBM BIP are not tested. To test the lamps on the TBM BIP, see Procedure 17-4, "Performing a lamp test using the ACO/LAMP TEST button," on page 17-9.

> ***Note:*** The "Active" LED on the standby processor does not light if a restart is in progress, or if communication to the standby processor is down. The "Active" LED on the standby processor may turn off before other LEDs if the active processor undergoes a restart; or it may turn off after other LEDs, if the standby processor undergoes a restart during the lamp test.

Action

Step	Action
1	From the Network Element Status screen, display the equipment shelf screen by entering: **eq sh**↵ *The equipment shelf screen appears.*

—continued—

Procedure 17-3 (continued)
Performing a lamp test from the NEUI

Step	Action
2	Perform the lamp test by entering: **lamptest** ↵ *For ABM shelves, the lamps on the circuit packs and the lamps on the BIP light for 30 seconds.* *For TBM shelves, only the circuit pack lamps light for 30 seconds. The BIP lamps do not light.* If a circuit pack LED does not light during the test, replace the circuit pack. See *Module Replacement Procedures*, 323-3001-547 in *Maintenance*, Volume 5C. If an ABM BIP lamp does not light during the test, replace the lamp. See *Routine Maintenance Procedures*, 323-3001-546 in *Maintenance*, Volume 5C. For NT4K14AB BIPs with an LED card, see *Module Replacement Procedures*, 323-3001-547 in *Maintenance*, Volume 5C.
3	Return to the Network Element Status screen by entering: **quit**↵

—end—

Procedure 17-4
Performing a lamp test using the ACO/LAMP TEST button

Use this procedure to test for defective lamps using the ACO/LAMP TEST button.

> ***Note:*** The primary function of the ACO/LAMP TEST button is to silence alarms. If an audible alarm occurs while you are pressing the button, the alarm is silenced. You will have to press the button again to perform a lamp test.

When you perform a lamp test on an access bandwidth manager (ABM) shelf, using the ACO/LAMP TEST button on the local craft access panel (LCAP), all lamps on the breaker interface panel (BIP) and the shelf circuit packs are tested for 30 seconds.

When you perform a lamp test on the transport bandwidth manager (TBM) shelf, using the ACO/LAMP TEST button on the LCAP, only the circuit pack light-emitting diodes (LEDs) are tested for 30 seconds. The lamps on the TBM BIP are not tested. To test the lamps on the TBM BIP, you must press the ACO/LAMP TEST button on the BIP. The TBM BIP lamps light as long as the button is depressed.

> ***Note:*** The “Active” LED on the standby processor does not light if a restart is in progress, or if communication to the standby processor is down. The “Active” LED on the standby processor may turn off before other LEDs if the active processor undergoes a restart; or it may turn off after other LEDs if the standby processor undergoes a restart during the lamp test.

—continued—

Procedure 17-4 (continued)
Performing a lamp test using the ACO/LAMP TEST button

Action

Step	Action

1 Determine the type of lamp test necessary, then perform the lamp test by completing the instructions in the following table.

If you are testing	Then complete the following
lamps on a TBM BIP	To test the TBM BIP lamps, press the **ACO/LAMP TEST** button on the TBM BIP. *The functional BIP lamps light while the button is pressed.* If a BIP lamp does not light during the test, replace the lamp. See *Routine Maintenance Procedures*, 323-3001-546, in *Maintenance*, Volume 5C.
LEDs on a TBM shelf circuit packs	To test the LEDs on circuit packs mounted in the TBM shelf, press the **ACO/LAMP TEST** button on the LCAP twice. *The functional circuit pack LEDs light for 30 seconds.* If a circuit pack LED does not light during the test, replace the circuit pack. See *Module Replacement Procedures*, 323-3001-547, in *Maintenance*, Volume 5C. If you do not have additional ABM lamp tests to perform, end the procedure. If you have additional ABM lamp tests to perform, go to the “LEDs on ABM shelf circuit packs and lamps on the ABM BIP” portion of this table on page 17-11.
—continued—	

—continued—

Procedure 17-4 (continued)
Performing a lamp test using the ACO/LAMP TEST button

Step **Action**

If you are testing	Then complete the following
LEDs on ABM shelf circuit packs and lamps on the ABM BIP	To test the LEDs on circuit packs mounted in the ABM shelf and to test lamps on the ABM BIP, press the **ACO/LAMP TEST** button on the LCAP twice. *The functional circuit pack LEDs and BIP lamps light for 30 seconds.* If a BIP lamp does not light during the test, replace the lamp. See *Routine Maintenance Procedures,* 323-3001-546, in *Maintenance*, Volume 5A. For NT4K14AB BIPs with an LED card, see *Module Replacement Procedures*, 323-3001-547, in *Maintenance*, Volume 5C. If a circuit pack LED does not light during the test, replace the circuit pack. See *Module Replacement Procedures*, 323-3001-547, in *Maintenance*, Volume 5C.
—end—	

—end—

Procedure 17-5
Performing a manual diagnostic test

Use this procedure to manually run a diagnostic test on any of the following circuit packs:

- processor (PROC)
- transport interface card (TIC)
- access interface card (AIC)
- maintenance interface card (MIC)
- test access card (TAC)
- narrowband line interface card (NLIC)
- integrated remote test unit (IRTU)
- metallic test access card (MTAC)
- line card (LC)

Diagnostics can be run on an in-service or out-of-service PROC, TIC, AIC, MIC, IRTU, LIC or MTAC.

Diagnostics can be run only on an out-of-service TAC or LC.

Out-of-service diagnostics are more extensive than in-service diagnostics. Diagnostic failures appear in log report EQP322; log EQP609 reports passes.

Requirements

When you perform a manual diagnostic test on an AIC or an NLIC, the operating state must not be Parent Eqpt Unavail (PEU). If the operating state is PEU, you cannot run the manual diagnostic.

—continued—

Procedure 17-5 (continued)
Performing a manual diagnostic test

Action

Step	Action

1 From the Network Element Status screen, display the required equipment screen by completing the instructions in the following table:

If diagnosing	Then enter
TIC, AIC, Proc, MIC, TAC, or IRTU	**eq <type> <group>**↵ where <type> circuit pack: **aic, proc, tic, mic, tac,** or **irtu** <group> number of the group: For a TIC, AIC, or Proc: **a** or **b** For MIC, TAC, or IRTU: no group required *The required equipment screen appears.*
LIC or MTAC	**eq <type>;<detail> <CDS #> <group>**↵ where <type> type of circuit pack: **lic** or **mtac** <detail> LIC or MTAC detail screen: **dtllic** or **dtlmtac** <CDS #> copper-distribution shelf housing the LIC: **1** to **7** <group> group number of the LIC: **a, b, c,** or **d** group number of the MTAC: **a** or **b** *The detailed equipment screen appears.*
LC (for CDS-based line cards)	**eq lc <CDS #> <LC #>** ↵ where <CDS #> AccessNode copper-distribution shelf number**:1** to **7** <LC #> line card slot number: for AccessNode **1** to **96** ***Note****:* For Omega 4-wire and Omega 6/8-wire line cards, use the lowest even slot number occupied by the card. *The equipment screen for the specified equipment appears.*
—continued—	

—continued—

Procedure 17-5 (continued)
Performing a manual diagnostic test

Step **Action**

If diagnosing	Then enter
LC (for ANX-based line cards)	**eq anxlc <VM #> <LC #>** ↵ where <VM #> AccessNode Express voice module number: **1** to **28** <LC #> line card slot number: **1** to **48** ***Note*:** For Omega 4-wire line cards, use the upper slot number occupied by the card (multiple of 3). *The line card equipment screen appears.*
LC (for AN or ANX with VLCM)	**eq lcmlc <VLCM #> <LSG #> <LC #>**↵ where <VLCM #> virtual line concentrating module (VLCM) number: **1** to **2** <LSG #> line subgroup number on DMS-10NA switch: **0** to **19** <LC #> line card slot number on DMS-10NA switch within line subgroup: **0** to **31** ***Note*:** You can query AN line cards using “eq lc” or “eq lcmlc.” You can query ANX line cards using “eq anxlc” or “eq lcmlc.” *The line card equipment screen appears.*
—end—	

2 If you are performing a diagnostic on a TAC or a line card, change the state to out of service by entering the following command; otherwise, go to step 3:

chgstate oos↵
y↵

3 Start the manual diagnostic test by entering:

diagnose↵

The system displays the following response:

```
The diagnostics may take some time.
Do you want to continue?
Please confirm (yes or no)
```

—continued—

Procedure 17-5 (continued)
Performing a manual diagnostic test

Step	Action
4	Confirm or cancel the request: To continue with the test, enter: **yes**↵ To cancel the test, enter: **no**↵ *For line cards, diagnostic failures are reported in log LC307; passes are reported in log LC602.*
5	To view the log report, enter: **admin nep;logs;open lc** ↵ ***Note:*** You can also use the command **logutil** to access the Log Report utility. ***Note:*** If you cannot successfully complete this procedure, please contact your next level support.
6	From the network element status screen, display the line card or TAC equipment screen for the line card or TAC being diagnosed (refer to step 1). *The line card or TAC equipment screen appears.*
7	Change the state of the line card or TAC to in-service (IS): **chgstate is** *The state is changed to IS.*
8	Return to the Network Element Status screen by entering: **quit**↵

—end—

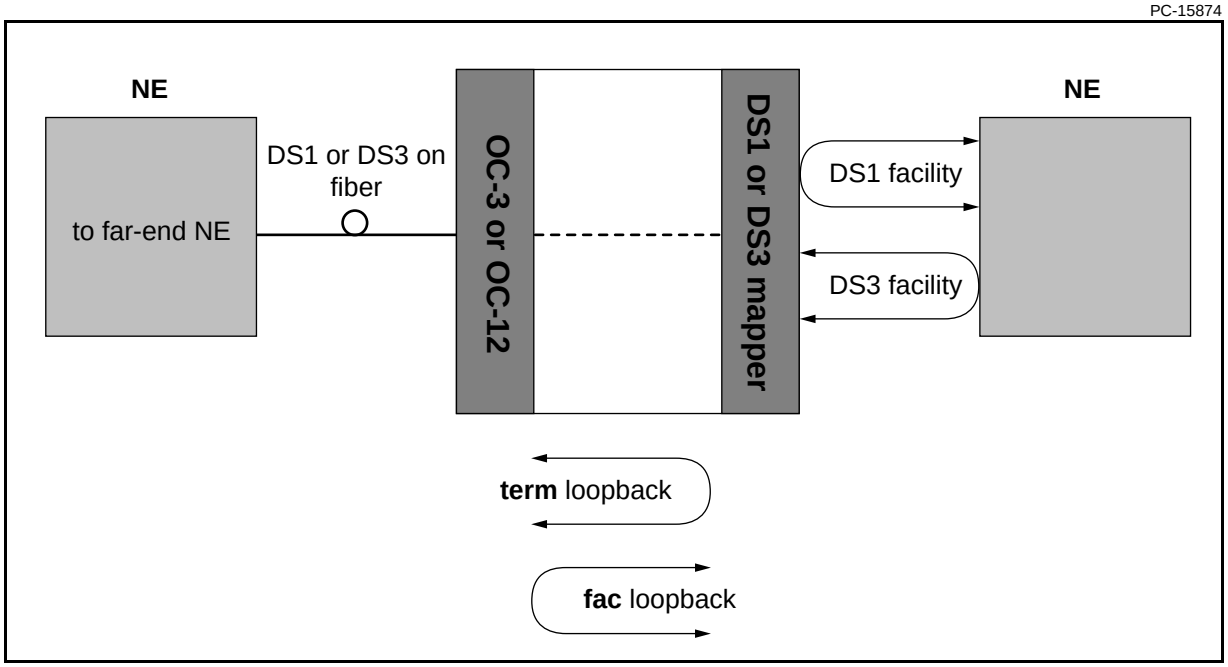
Procedure 17-6
Setting or releasing a loopback on a DS1 or DS3 facility

Use this procedure to set or release a loopback on a DS1 or DS3 facility. Two types of loopback can be set: facility (fac) and terminal (term).

Figure 17-1 shows a facility loopback that takes the incoming (copper) DS1 or DS3 and loops it back to the source. A terminal loopback takes the incoming (optical) DS1 or DS3 and loops it back to the far-end network element.

Figure 17-1
Facility loopback on a DS1 or DS3 facility

PC-15874



CAUTION
Risk of loss of traffic
If you are testing DS1s using loopbacks and your system is provisioned for superframe frame format, alternate mark inversion (AMI) line coding, and bytesynchronous synchronization mode, do not use the 3 in 24 or 1 in 8 test patterns. If you do use these patterns, traffic is not restored if you remove the loopback and re-insert it. To restore traffic, place the facility out of service and then back in service.

—continued—

Procedure 17-6 (continued)
Setting or releasing a loopback on a DS1 or DS3 facility

Action

Step	Action
1	From the Network Element Status screen, display the DS1 or DS3 facility screen by entering: **fa <type> <group> <port>**↵ where <type> — type of DS facility: **ds1** or **ds3** <group> — number of the circuit pack group (see “Group and slot associations for DS1, DS3, STS-1, OC-3, and OC-12” on page 5-2) <port #> — number of the port: For DS1**: 1** to **14**; For DS3: **1, 2,** or **3** *The DS1 or DS3 Facility screen appears.*
2	Take the facility out of service by entering: **chgstate oos**↵ **y**↵ *The operating state changes to out of service (OOS).*

—continued—

Procedure 17-6 (continued)
Setting or releasing a loopback on a DS1 or DS3 facility

Step	Action

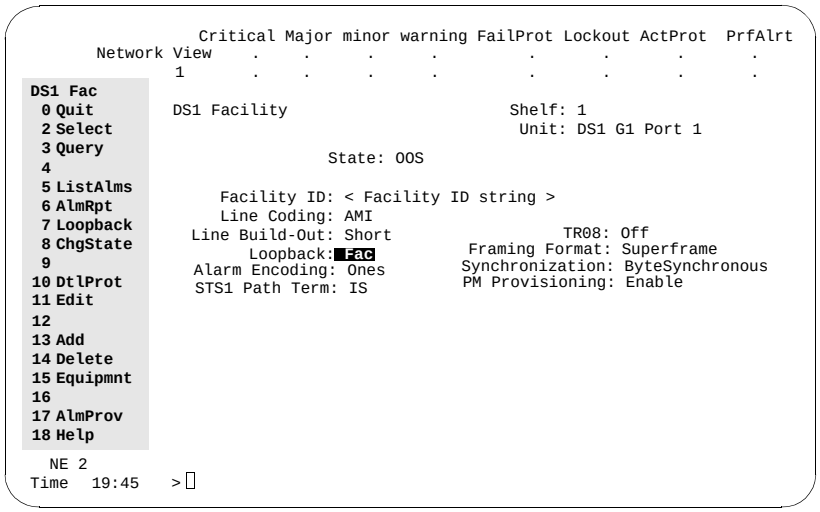
3 Operate or release the loopback by entering:

loopback <action> <type>↵

where

<action>	operates or releases the loopback: **op** or **re**
<type>	for the *operate* action, specifies the type of loopback: **fac** or **term** Do not specify type for *release* action.

The following DS1 Facility screen shows the status of the loopback in reverse video.



4 If you released the loopback in step 3, return the facility to in service (IS) by entering:

chgstate is↵

The operating state changes to in service (IS).

—end—

Procedure 17-7
Manually switching processor activity from active to standby

Use this procedure to switch processor activity from the currently active processor to the standby processor. There must be a backup processor in the in-service state with valid data and an initialized software load.

Use the force option in this procedure only when both processors are faulty, and you want to switch activity to the processor with the less severe fault. This procedure affects GR-303 digital multiplex system (DMS) and GR-303 multi vendor interface (MVI) calls in progress for a period of about 30 seconds.

Action

Step	Action
1	From the Network Element Status screen, display the processor equipment screen by entering: **eq proc <group>**↵ where <group> processor group number: **a** or **b**

CAUTION
Possible loss of service
DS1, DS3, and STS-1 protection switching is unavailable during a switch of activity (SWACT) of the processor cards. If a DS1/VT mapper or a DS3/STS mapper fails during a SWACT, traffic cannot be switched to the protection mapper. Protection switching is available after the SWACT when you are prompted to log in to the network element.

CAUTION
Use the force option in the following command string only when both processors are faulty, and you want to force activity to the processor with the less severe fault.

—continued—

Procedure 17-7 (continued)
Manually switching processor activity from active to standby

Step	Action
2	Switch activity to the backup (redundant unit) processor by entering: **switch [force]**↵ *The system prompts for confirmation of the switch request.* ***Note:*** During a processor card SWACT, the green active light-emitting diode (LED) on working DS1/VT mappers, DS3/STS mappers, and STS-1 interface cards goes out for approximately 20-seconds. The DS1/DS3 mappers are fully functional during this 20-second interval and no loss of traffic occurs.
3	Confirm or cancel the switch request: To confirm the switch, enter: **y**↵ To cancel the switch, enter: **n**↵ *Processor activity switches to the backup processor within 5 seconds and the Active LED on the card is updated. After logging back in to the network element (NE), the Protection State field on the screen changes from standby to active.* If you switch activity from a trouble-free processor to a faulty processor, the system automatically switches activity back to the trouble-free processor.
4	You must log back in to the network element user interface (NEUI). ***Note:*** You must wait 7 minutes before performing another protection switch on the same processor cards. **—end—**

Procedure 17-8
Manually restarting the processor

Use this procedure to perform a warm, cold, or reload restart on the active processor card or a reload restart on the inactive processor card.

CAUTION
Loss of service
Nortel Networks AccessNode Technical Support strongly recommends that you use cold, warm, and reload restarts only at the request of Nortel Networks Technical Support personnel after all other available fault-finding methods have been exhausted.

A reload restart or a cold restart on the active processor drops all locally switched calls. A restart, in any form, is a potentially service-affecting command. In addition to the risk to working traffic, restarts can erase history/event logs that might be needed for analyzing the root cause of the problem at hand, as well as for preventing similar problems from recurring in the future.

Observing history/event logs before exercising a restart command can help Nortel Networks support personnel discover and eliminate technical issues.

CAUTION
Loss of service
During a restart of the active processor, DS1 protection is unavailable and service may be affected. The restart does not switch activity from one processor to the other.

Warm restart

A warm restart is the least severe restart type. A warm restart re-initializes the current software load residing on the processor card. The effects of a warm restart are as follows:

- Stable locally switched calls in the talking state are maintained.
- Nonlocally switched calls are maintained.
- Nonswitched calls are maintained.
- Equipment is maintained in its current state; however, all transient maintenance actions are dropped.

—continued—

Procedure 17-8 (continued)
Manually restarting the processor

- The system is not reprovisioned.
- The current session on the user interface is dropped and the user is logged in again by the system after the restart is completed.
- Current performance monitoring information is maintained.
- All active alarms are maintained.
- All data link ports for embedded operations channel (EOC), common signaling channel (CSC), embedded maintenance channel (EMC), token bus line (TBL), and SONET overhead bus (SOH) data communications channel (DCC) are initialized.

Note: The processor is not reloaded.

Cold restart

A cold restart is more severe than a warm restart but less severe than a reload restart. A cold restart re-initializes the current software load residing on the processor card. The effects of a cold restart are as follows:

- All locally switched calls are dropped.
- Nonlocally switched calls are maintained.
- Nonswitched calls are maintained.
- Equipment is maintained in its current state; however, all transient maintenance actions are dropped.
- The system is not reprovisioned.
- The current session on the user interface is dropped and the user is logged off.
- Current performance monitoring information is maintained.
- All active alarms are maintained.
- All data link ports for EOC, CSC, EMC, TBL, and SOH DCC are initialized.

Note: The processor is not reloaded.

Reload restart

A reload restart is the most severe form of restart. A reload restart downloads the current network element database to the network element and performs a warm restart. The system effects of a reload restart are as follows:

- The shelf is reprovisioned.
- All locally switched calls are dropped.

—continued—

Procedure 17-8 (continued)
Manually restarting the processor

- Nonlocally switched calls are maintained.
- Nonswitched calls are maintained.
- All equipment is restored to the provisioned state.
- The current session on the user interface is dropped and the user is logged off.
- The current performance monitoring information is lost (including logs).
- The system reevaluates active alarms.
- All data link ports for EOC, CSC, EMC, TBL, and SOH DCC are initialized.

Requirements

Log in the network element (NE). You cannot restart the process if one of the following alarms is raised: “Loss of mate communication” or “Circuit pack missing.”

Action

Step	Action

1 Complete the following steps based on where you are initiating the restart.

If entering command at	Then complete the following
Command interpreter (CI) level	**a.** From the CI level, perform the restart on the active processor by entering: **restart <type>ø** *The system prompts for confirmation.* **b.** Confirm the restart by entering: **y**↵ *The processor restarts. The restart time depends on the type of restart.* End the procedure here.
—continued—	

—continued—

Procedure 17-8 (continued)
Manually restarting the processor

Step Action

If entering command at	Then complete the following
the Proc equipment screen	**a.** From the network element status screen, display the processor screen for the working processor by entering: **eq proc <group>**↵ where <group> group number of the working processor: **a** or **b** *The processor equipment screen appears.* **b.** Restart the processor by entering: **restart <type>**↵ where <type> type of restart to be performed: **warm, cold,** or **reload** *The system prompts for confirmation of the restart.*
—continued—	

—continued—

Procedure 17-8 (continued)
Manually restarting the processor

Step **Action**

If entering command at	Then complete the following
the Proc equipment screen, *continued*	**c.** Confirm or cancel the restart: To confirm the restart, enter: **yes**↵ To cancel the restart, enter: **no**↵ *On the active processor, the restart is delayed by 5 seconds to allow the user interface (UI) response to be displayed. On the standby processor, the restart begins immediately. The restart time depends on the type of restart.* When the network element user interface session closes during a restart of the active processor, the following text appears on the screen if you are accessing the NE from the operations controller (OPC): `Press Return to exit.` **d.** Log in to the NE again. **e.** If you cannot successfully complete this procedure, contact your next level of support.
—end—	

—end—

Procedure 17-9
Manually restarting the shelf

Use this procedure to restart the processor software for a network element common equipment shelf.

CAUTION
Loss of service
Nortel Networks AccessNode Technical Support strongly recommends that you use cold, warm, and reload restarts only at the request of Nortel Networks Technical Support personnel after all other available fault-finding methods have been exhausted.

A reload restart or a cold restart on the active processor drops all locally switched calls. A restart, in any form, is a potentially service-affecting command. In addition to the risk to working traffic, restarts can erase history/event logs that might be needed for analyzing the root cause of the problem at hand, as well as for preventing similar problems from recurring in the future.

Observing history/event logs before exercising a restart command can help Nortel Networks support personnel discover and eliminate technical issues.

Shelf Restart Types

The three types of shelf restarts are reload restart, cold restart and warm restart.

Warm restart

A warm restart is the least severe restart type. A warm restart re-initializes the current software load residing on the processor card. The effects of a warm restart are as follows:

- Stable locally switched calls in the talking state are maintained.
- Nonlocally switched calls are maintained.
- Nonswitched calls are maintained.
- Equipment is maintained in its current state, however, all transient maintenance actions are dropped.
- The system is not reprovisioned.

—continued—

Procedure 17-9 (continued)
Manually restarting the shelf

- The current session on the user interface is dropped and the user is logged in again by the system after the restart is completed.
- Current performance monitoring information is maintained.
- All active alarms are maintained.
- All data link ports for embedded operations channel (EOC), common signaling channel (CSC), embedded maintenance channel (EMC), token bus line (TBL), and SONET overhead bus (SOH) data communications channel (DCC) are initialized.

Cold restart

A cold restart is more severe than a warm restart but less severe than a reload restart. A cold restart re-initializes the current software load residing on the processor card. The effects of a cold restart are as follows:

- All locally switched calls are dropped.
- Nonlocally switched calls are maintained.
- Nonswitched calls are maintained.
- Equipment is maintained in its current state, however, all transient maintenance actions are dropped.
- The system is not reprovisioned.
- The current session on the user interface is dropped and the user is logged off.
- Current performance monitoring information is maintained.
- All active alarms are maintained.
- All data link ports for EOC, CSC, EMC, TBL, and SOH DCC are initialized.

Reload restart

A reload restart is the most severe form of restart. A reload restart downloads the current network element database to the network element and performs a warm restart. The system effects of a reload restart are as follows:

- The processor software for the shelf is reloaded with a new software load.
- The shelf is reprovisioned.
- All locally switched calls are dropped.
- Nonlocally switched calls are maintained.
- Nonswitched calls are maintained.

—continued—

Procedure 17-9 (continued)
Manually restarting the shelf

- All equipment is restored to the provisioned state.
- The current session on the user interface is dropped and the user is logged off.
- The current performance monitoring information is lost (including logs).
- The system reevaluates active alarms.
- All data link ports for EOC, CSC, EMC, TBL, and SOH DCC are initialized.

Requirements

Log in to the network element (NE). You cannot restart the shelf if one of the alarms is raised: “Loss of mate communication” or “Circuit pack missing.”

Action

Step	Action
1	From the Network Element status screen, display the Shelf Equipment screen by entering: **eq sh**↵ *The Shelf Equipment screen appears.*
2	Perform a shelf restart by entering: **restart <type>**↵ where <type> type of restart to be performed: **warm, cold,** or **reload**

CAUTION
Loss of service
Exercise caution when performing a restart from the Shelf Equipment screen. When performing a restart from the Shelf Equipment screen, you are not prompted for the level of restart desired (warm, cold, or reload). If you enter Yes without stating warm, cold, or reload, then a restart reload is the default.

The system prompts for confirmation of the restart.

—continued—

Procedure 17-9 (continued)
Manually restarting the shelf

Step	Action
3	Confirm or cancel the restart: To confirm the restart, enter: **yes**↵ To cancel the restart, enter: **no**↵
4	The restart is delayed by 5 seconds to allow the user interface (UI) response to be displayed. The restart time depends on the type of restart. When the network element user interface session closes, the following text appears on screen if you are accessing the NE from the operations controller (OPC): `Press Return to exit.`
5	Log in to the NE again.
6	If you cannot successfully complete this procedure, contact your next level of support.

—end—

Procedure 17-10
Resetting a line card

Use this procedure to reset a line card in the copper-distribution shelf. The reset reloads the line card, if appropriate, and performs a long diagnostic on the line card.

Note: 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.

Action

Step	Action

1 Display the line card equipment screen by entering the appropriate command.

If you are working on a line card	Then go to
for AccessNode (AN) that does not use a virtual line concentrating module (VLCM)	step 1a
for AccessNode Express (ANX) that does not use a VLCM	step 1b
for AN or ANX that uses a VLCM	step 1c

a. Enter this command:

eq lc <shelf #> <LC #>↵

where

<shelf #> shelf number:
for AccessNode, copper-distribution shelf number**:1** to **7**

<LC #> line card slot number:
for AccessNode **1** to **96**
Note: For Omega 4-wire and Omega 6/8-wire line cards, use the lowest even slot number occupied by the card.

The line card equipment screen appears.

—continued—

Procedure 17-10 (continued)
Resetting a line card

Step	Action

b. Enter this command:

eq anxlc <VM #> <LC #> ↵

where

<VM #>	voice module number: for AccessNode Express, voice module number**: 1** to **28**
<LC #>	line card slot number: for AccessNode Express: **1** to **48** ***Note:*** For Omega 4-wire line cards, use the upper slot number occupied by the card (multiple of 3).

The line card equipment screen appears.

c. Enter this command:

eq lcmlc <VLCM #> <LSG #> <LC #>↵

where

<VLCM #>	virtual line concentrating module (VLCM) number: **1** to **2**
<LSG #>	line subgroup number on DMS-10NA switch: **0** to **19**
<LC #>	line card slot number on DMS-10NA switch within line subgroup: **0** to **31**

Note: You can also use the eq lc command to display the line card equipment screen for a VLCM system.

The line card equipment screen appears.

2 Reset the line card by entering:

resetlc ↵

The system prompts for confirmation with the following message:

```
ResetLC
Note: RESETLC command will reboot the software.
Do you wish to proceed?
Please confirm (“Yes” or “No”):
```

—continued—

Procedure 17-10 (continued)
Resetting a line card

Step	Action
3	Confirm the reset by entering: **yes** ↵ *The system confirms the reset with the following message:* `The ResetLC command has been received.It will be processed. Please refer to LC logs for results.` ***Note:*** After you confirm the reset command, the system reloads the line card, if appropriate, then performs a long diagnostic. Diagnostic failures are reported in log LC307. Diagnostic passes are reported in log LC602.
4	View the log report by entering: **admin nep;logs;open <type>** ↵ where <type> the type of log report**:** for equipment other than line cards: **eqp** for line cards: **lc**

—end—

Procedure 17-11
Generating alarms for testing purposes

Use this procedure to generate critical, major, minor, or warning alarms to test the operation of the alarm system.

Action

Step	Action
1	Access the FiberWorld Alarm Test CI (fwaltsci) tool from the command interpreter (CI) level of the user interface, or from any FWPUI screen by entering: **fwaltsci** ↵ *The following prompt appears: waltsci.*
2	Complete the following steps based on the alarms you want to test.

If you want to	Then enter

display the current state of the test alarms	**display** ↵
	A list appears showing the state of each alarm severity. A list is shown in the following example:
	`Status of test alarms:`
	`Warning:  Clear`
	`Minor:  Clear`
	`Major:  Raised`
	`Critical:  Clear`

generate a test alarm	**raise <severity>** ↵ where <severity> is the severity of the test alarm to be raised: **warning, minor, major,** or **critical** *A test alarm of the specified severity is raised. This alarm appears in the list of alarms on the user interface and activates the appropriate alarm relay contacts.*
—continued—	

—continued—

Procedure 17-11 (continued)
Generating alarms for testing purposes

Step **Action**

If you want to	Then enter
clear a test alarm	**clear <severity>** ↵ where <severity> is the severity of the test alarm to be cleared: **warning, minor, major,** or **critical** *The test alarm of the specified severity is cleared.*
—end—	

3 Quit from the fwaltsci tool by entering:

quit↵

—end—

Index

A

C

D

E

F

H

I

L

M

N

O

P

R

S

T

V

SONET Products

AccessNode

Provisioning and Operations Procedures

Document number: 323-3001-310
Document release: Issue 2.0
Date: June 1999
Printed in Canada

NORTEL NETWORKS™