

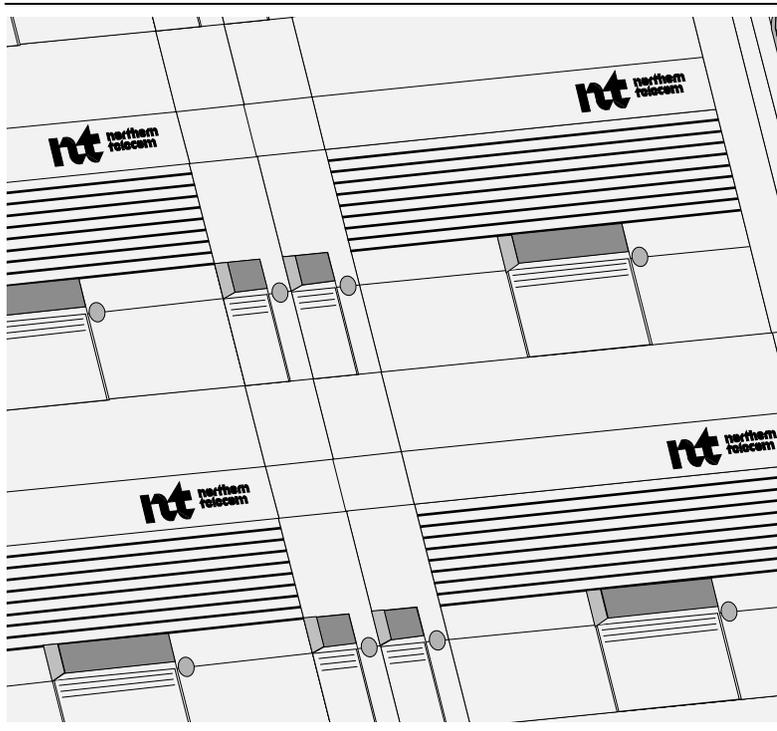
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SONET Products

## **AccessNode/AccessNode Express**

Mix & Match DFA Reconfiguration Quick Reference  
Guide

Issue 1.0 October 1999





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SONET Products

## **AccessNode/AccessNode Express**

### Mix & Match DFA Reconfiguration Quick Reference Guide

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Document release: Issue 1.0

Date: October 1999

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Printed in Canada

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## Publication history

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### October 1999

Standard Issue 1 release of this document for AN17.20.



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## About this document

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This reference guide summarizes the installation and provisioning tasks you perform when reconfiguring an existing DS1-fed AccessNode (DFA) into a Mix & Match DFA.

### Who should use this guide

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

### How this guide is organized

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

### For more information

Refer to the following documents for more information on AccessNode:

#### **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
- *Data Administration Procedures*, 323-3001-304

#### **Maintenance, Volume 5A**

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

x For more information

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# Reconfiguration Overview

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## Purpose

This Quick Reference Guide (QRG) describes the steps required to reconfigure an existing DS1-fed AccessNode (DFA) into a Mix & Match DFA. This in-service upgrade allows the coexistence of AccessNode Express (ANX) Voice Modules (VMs) and D-link based shelves (CDS, UE9000) fed by the same DFA access bandwidth manager (ABM) shelf. See Figure 1-1 on page 1-2.

The procedures in this guide contain the information required to perform each action. Where additional information is required, you will be referred to the appropriate AccessNode documentation.

## Chapter contents

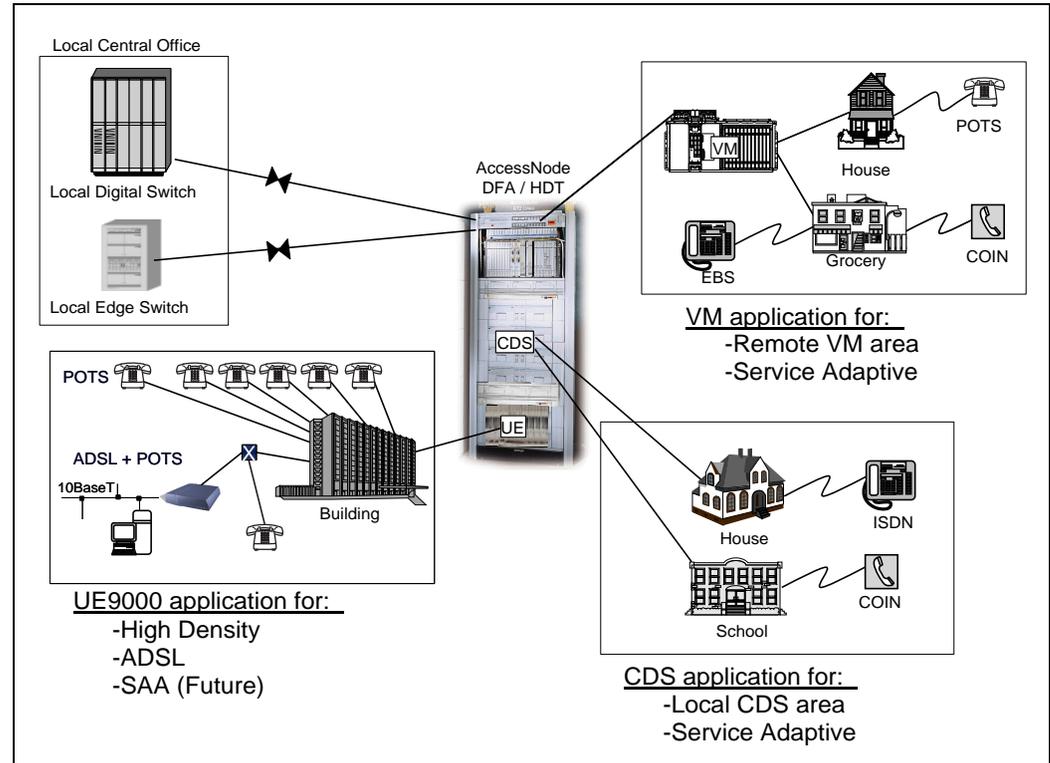
This chapter discusses the following topics:

Topic	See
Physical line size supported by Mix & Match DFA	page 1-3
Switch interfaces supported by Mix & Match DFA	page 1-4
Switch compatibility matrix	page 1-4
Requirements and limitations	page 1-6
Mix & Match DFA ABM shelf configurations	page 1-8
Reconfiguration paths	page 1-8
Tools and materials	page 1-9
Using the OPC and NE UIs	page 1-11

## 1-2 Reconfiguration Overview

**Figure 1-1**  
**Mix and Match DFA Typical application**

PG-1165



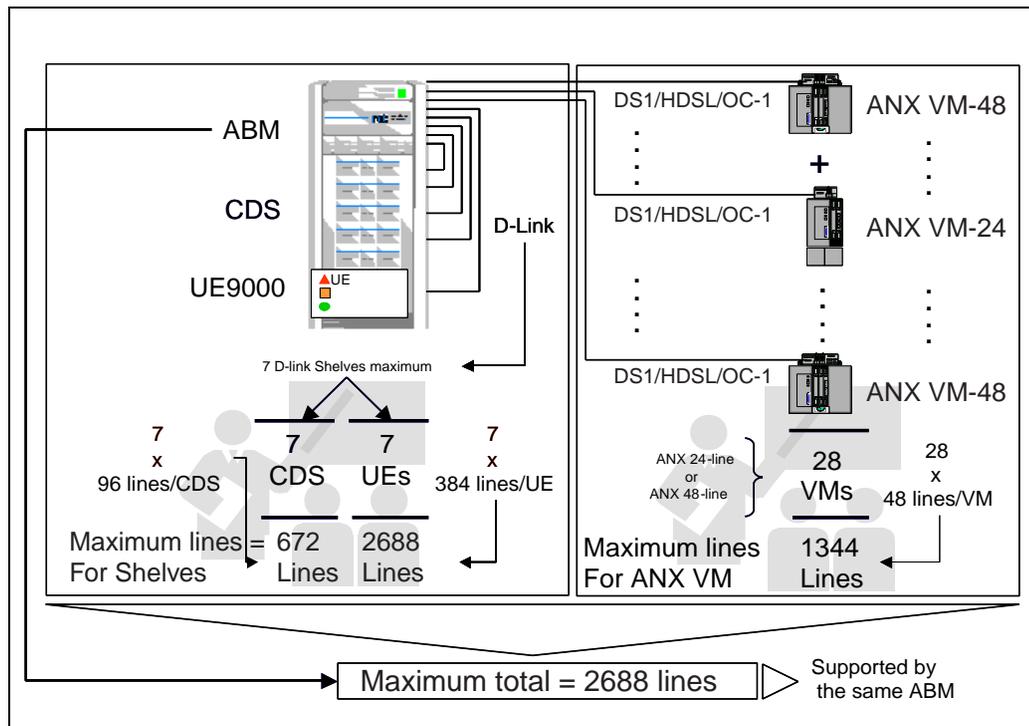
## Physical line size supported by Mix & Match DFA

The Mix & Match DFA supports a mix of up to 28 VMs (VM24 and VM48) and up to 7 CDS/UE9000 shelves (maximum of 2688 lines in total). See Figure 1-2. Maximum line sizes supported are as follows:

- 672 lines on CDS
- 2688 lines on UE9000
- 1344 lines on ANX VM
- 2048 lines on TR-303 digital multiplex system (DMS)
- 2688 lines on TR-303 multi-vendor interface (MVI)
- 2560 lines on DMS Access (DMS-10)

**Figure 1-2**  
Mix & Match physical line size

PG-1166



### Switch interfaces supported by Mix & Match DFA

The Mix & Match DFA Network Element (NE) provides the same interfaces as other AccessNode NEs (IDLC, Tandem and TR-08 DS1, UDLC VF) between the ANX VMs and other equipment (e.g. local digital switch or a channel bank). See Figure 1-3 on page 1-5.

Switch interfaces supported are as follows:

- Minimum one interface group (IG) for VM services on GR-303 MVI/DMS (maximum five IGs)
- Minimum one IG for CDS/UE9000 services on GR-303 MVI/DMS interface (maximum five IGs)
- Minimum one virtual line concentrating module (VLCM) for DMS-Access applications for DMS-10 (maximum four VLCMs) (VM services off the DMS-X interface to DMS-10 for Mix & Match is not supported)
- TR-08 offered on CDS/UE9000 only (TR-08 on VM for Mix & Match configuration is not supported)

### Switch compatibility matrix

The Mix & Match feature is compatible with the following DMS-100 releases and associated NAXX/XPMXX upgrade combinations:

- NA10/XPM10 and beyond (NA11, etc.)
- NA09/XPM09
- NA08/XPM08

**Note:** For 303 DMS the expanded IG size (from 672 to 2048) was developed in NA10 release. For NA09/XPM10 and NA08/XPM10 releases, functionality is provided via CM patches. Upon integrated digital terminal (IDT) definition, make sure that the VM IDT is defined to support at least 1344 lines (14 shelves).

The following are required patches if switch releases are NA08 or NA09:

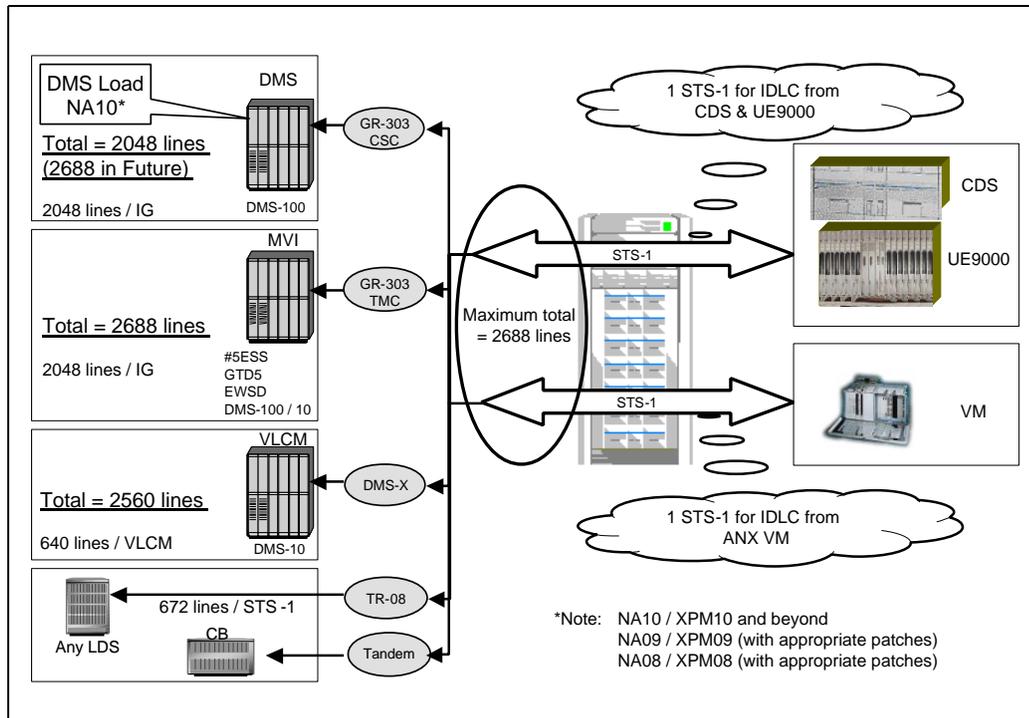
- XXJ00 for SMA/ESMA in XPM81 and APPM09.
- JAJA68 & JAJA75 for the CM in Rel.8 & Rel.9 i.e.NA008 or NA009.

**Note 1:** Maximum of 303 DMS lines per AccessNode ABM shelf is 2048, no matter the number of hosts and IG's.

**Note 2:** In the AN17.20 Mix & Match DFA configuration, VM services off the DMS-X interface to DMS-10 are not offered.

**Figure 1-3**  
Mix & Match logical line capacity

PG-1167



## Requirements and limitations

The Mix & Match DFA has the following requirements and limitations:

- Mix & Match DFA reconfiguration applies only to AccessNode NEs (and operations controller [OPC]) running the **AN17.20** software release in a **DFA** configuration.
- Mix & Match DFA **must be dual plane**; that is equipped with two processors and two each of the following circuit packs:
  - timing and cross connect (TXC)
  - enhanced transport interface card (ETIC)
  - access interface cards (AIC) (for use with CDS and UE9000)
  - loopback access interface cards (LAIC) (for use with ANX VMs)
- OPC and NEs must be alarm free and correctly configured before executing the reconfiguration.
- OPC may need to be relocated. (See “Reconfiguration paths” on page 1-8.)
- DFA **NE name** and **NE number** must remain the same during the reconfiguration.
- All OPC users and surveillance personnel should be informed about the replacement before it is initiated. No other operations, administration or maintenance (OA&M) procedures should be performed until the reconfiguration is completed.
- For the ANX line loop testing option, the integrated test bypass pair (ITBP) card is required. For deployment in a universal or integrated ANX application, the ITBP must be plugged into an auxiliary shelf in the central office (CO) and the associated auxiliary shelves in each remote terminal (RT). (See *AccessNode Express Installation Guide 323-3051-210*, for detailed information.)

**Note 1:** Use of the 64 M access processor card (APC) is mandatory with AN17.1 release and beyond.

**Note 2:** Mix & Match DFA reconfiguration is not service affecting. However, OAM&P of the network elements serviced by the OPC will be lost during the reconfiguration.

**Note 3:** Mix & Match DFA does not support in-service conversion of an existing host digital terminal (HDT) configured with ANX VMs. An existing HDT requires an out-of-service upgrade procedure to convert to a Mix & Match DFA.

**Note 4:** This QRG does not cover the commissioning or setup of VMs that will eventually be connected to the Mix & Match DFA. All procedures for commissioning VMs and interfacing with the HDT are covered in the AccessNode Express NTPs.

**Note 5:** This QRG does not cover the commissioning or setup of UE9000 shelves that will eventually be connected to the Mix & Match DFA. All procedures for commissioning and setup of the UE9000 are covered in the UE9000 NTPs.

**Note 6:** Mix & Match DFA does not provide VM services off of the DMS-X and TR-08 interfaces in AN17.20. These services are available on a regular HDT/ANX configuration.

**Note 7:** Mix & Match DFA requires the addition of two LAICs for use with the ANX VMs. Mix & Match LAICs require AN17.20 LAIC firmware load. If these loads are not present on the LAICs, a mismatch alarm is generated. For information on upgrading the LAICs, see “LAIC software upgrade” on page 4-1.

**Note 8:** Mix & Match DFA requires an upgrade of the transport interface card (TIC) hardware to the enhanced TIC (ETIC). See “Tools and materials” on page 1-9.

## Mix & Match DFA ABM shelf configurations

For Mix & Match DFA, as in previous DFA or HDT configurations, the only supported circuit pack in the primary feeders slot is the TXC. Contrary to previous DFA configurations, the Mix & Match DFA configuration supports DS1 circuit packs in tributary slots 07 and 08.

The following circuit packs are supported in the Mix & Match DFA ABM shelf Transport slots:

- TXC circuit packs (active and backup) are located in slots 09 and 10
- AICs (active and backup) for use with CDS and UE9000 are located in slots 13 and 16
- LAICs (active and backup) for use with ANX VMs are located in slots 12 and 15
- ETICs (active and backup) are located in slots 11 and 14
- DS1 circuit packs (as many as required) are located in slots 01, 02, 03, 04, 05, 06, 07, and 08
- OPC circuit pack can be optionally located in slots 05, 06, 07, 08 (only if the ABM shelf is in a DFA located in a central office)

*Note:* As in previous DFA/HDT configurations, Mix & Match DFA does not support DS3, OC-3 or STS-1 cards in the tributary transport slots.

## Reconfiguration paths

Reconfiguration options, and the considerations associated with those options, are as follows:

- **Relocate the OPC, if necessary:**  
If the ABM shelf houses an OPC, DS1/VT mapper groups G5/G6 and G7/G8 will not be available after the reconfiguration, unless the OPC is relocated. Relocate the OPC **prior** to the reconfiguration. See "Transferring OPC to another shelf" on page 3-11.

*Note:* If you have to relocate the OPC, you will lose all association with that OPC during the relocation procedure.

- **It is possible to move OMC links (used for OAM&P communication between an OPC and a remote DFA/HDT) from one DS1 facility to another (or from one DS1/VT mapper to another):**  
It is highly recommended to reserve DS1/VT mappers G1/G2 for traffic integration (TR-303 DMS/TR-303 MVI/TR-08/Tandem). If OMC links are present on the facilities associated with these mappers, it is possible to move them to DS1/VT mapper group G4.
- **Add new DS1/VT mappers, if necessary:**  
It may be necessary to add DS1/VT mappers to support traffic from the VMs (especially for groups G5/G6 and G7/G8) or if new facilities are used for the OMC links (on G1/G2). Up to eight DS1/VT mappers can be present in the Mix & Match DFA ABM shelf.

## Tools and materials

You need the following materials to reconfigure an existing DFA ABM shelf to a Mix & Match DFA ABM shelf:

- 2 NT4K56BA ETIC cards  
*Note:* 1 additional NT4K56BA is recommended for a spare.
- 2 NT4K55CA LAIC cards  
*Note:* 1 additional NT4K55CA is recommended for a spare.
- 1 NT7E24TA DDS blank cartridge (to save the database before the reconfiguration)
- NT7E04CA/EA DS1/VT mappers cards (if necessary)
  - NT4K32AA DS1 input cards (one required per DS1/VT mapper)
  - NT4K33AA DS1 output cards (one required per DS1/VT mapper)
- All associated cabling with DS1 input and output cards, if required
- NT4K52FB processor card
- As an option, 1 NTN516AA integrated test bypass pair (ITBP) card (see *Customer Ordering Guide 323-3051-032*, for detailed information)

## 1-10 Reconfiguration Overview

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- 1 A0336175 Static Wrist Strap (or equivalent) per person



### **CAUTION**

#### **Risk of damaging circuit packs**

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

- Access to the OPC either via a VT-100 compatible terminal or an X-Terminal  
*Note:* Lampar VT-100 compatible terminals are not fully compatible, and should not be used to perform this reconfiguration.
- Access to the Network Element User Interface (NEUI) of the C-Server via a VT-100 compatible terminal (VT-100 terminal connects to HMI port located on Local Craft Access Panel [LCAP])

Also, the following software access must be available:

- Access to the OPC: **root** user ID and password
- Access to the NEs: **admin** user ID and password

## Using the OPC and NE UIs

When performing provisioning functions at the OPC and NE, use the arrow or Tab keys to move from field to field on the screen. Once the required field is highlighted, press the **Space bar** or **Keypad 0** to select it.

To display the menu for a command in the main window, highlight the command and press **Ctrl\_L T** (or **Keypad,**).

You can enter information in a field in one of three ways:

- Type directly in the field
- Press **Ctrl\_L /** (or **Keypad 3**) to display the chooser menu associated with the field, move the cursor to the required entry, then press **Ctrl\_A** (or **Keypad 0**) to select it
- Press **Ctrl\_L** (or **Keypad Enter**) to display the list item menu associated with the field, move the cursor to the required entry, then press **Ctrl\_A** (or **Keypad 0**) to select it

In the OPC procedures in this guide, the keystrokes required to perform commissioning functions are included (in brackets) only when they differ from the keystrokes listed here.

“Appendix A: OPC and NE user interfaces” on page 7-1 provides an overview of log in and log out procedures for the OPC and network element user interfaces.

For detailed information about using the OPC UI and accessing the OPC tools, refer to *OPC User Interface Description*, 323-3001-301, in *Operations, Administration, and Provisioning*, Volume 4A.

For detailed information about using the NE UI, refer to *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A.



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## Current system verification

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The procedures in this chapter are used to verify the current DS1-fed AccessNode (DFA) system settings and connections before installing any Mix & Match DFA components.

### Chapter contents

This chapter includes the following procedures:

Procedure	Task	See
Procedure 2-1	Checking/clearing alarms	page 2-2
Procedure 2-2	Checking NE database backup	page 2-4
Procedure 2-3	Performing a manual NE database backup	page 2-6
Procedure 2-4	Saving OPC data to tape	page 2-8
Procedure 2-5	Checking OPC to NE associations	page 2-12
Procedure 2-6	Auditing connection data	page 2-14

## Procedure 2-1 Checking/clearing alarms

---

This section describes how to check the existing DFA system state and clear any alarms.

### Requirements

You must be logged into the operations controller (OPC) user interface. For login instructions, see “Appendix A: OPC and NE user interfaces” on page 7-1. For 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	Log in to the OPC interface User Session Manager main window, and tab to the Network Surv. tool box.
2	Scroll to Alarm Monitor.
3	Select the Alarm Monitor by pressing <b>Ctrl_A</b> . <i>The Alarm Monitor main window appears.</i>
4	Tab to the alarms list. <i>The current list item is highlighted.</i>
5	Move to an alarm you want more information about, then select it by pressing <b>Ctrl_A</b> . <i>The selected item appears in reverse video.</i> If you want more information about any other alarms (maximum 5), move to them and press <b>Ctrl_Y</b> . <i>Selected items appear in reverse video.</i>
6	Display the list item menu, by pressing <b>Ctrl_L</b> . <i>The list item menu appears.</i>
7	Move to the Details command, then press the <b>space bar</b> . <i>Alarm Details dialog(s) for the selected alarms appear.</i>

—continued—

Procedure 2-1 (continued)

**Checking/clearing alarms**

<b>Step</b>	<b>Action</b>
<b>8</b>	Note any relevant information, such as the type and location of the unit generating the alarm, or FacilityID.
<b>9</b>	To close the dialog, select the Done button by pressing <b>Ctrl_A</b> . <i>The Alarm Details dialog disappears.</i>
<b>10</b>	Take appropriate action to deal with the alarm, as described in <i>Alarm and Trouble Clearing Procedures</i> , 323-3001-543, in <i>Maintenance</i> , Volume 5A.
<b>11</b>	To close the tool: <b>a.</b> Display the window menu by pressing <b>Ctrl_L W</b> . <i>The window menu appears.</i> <b>b.</b> Select the Exit command by pressing the <b>space bar</b> . <i>The tool disappears.</i> <b>—end—</b>

## Procedure 2-2 Checking NE database backup

---

This section describes how to check that a fresh backup (less than a day) exists for the network element (NE) database. Make sure that you have a current backup before continuing with the Mix & Match DFA reconfiguration.

### Requirements

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

- Obtain a userID and password that permit access to the OPC and use the Backup/Restore Manager.
- Review OPC login instructions (see “Appendix A: OPC and NE user interfaces” on page 7-1)
- Review command conventions (see *OPC User Interface Description*, 323-3001-301, in *Operations, Administration, and Provisioning*, Volume 4A).

### Action

---

Step	Action
1	From the OPC interface User Session Manager main window, open the Backup/Restore Manager. <i>The Backup/Restore Manager main window appears.</i>
2	Move to the NE you want to see the backup files for, then select it by pressing <b>Ctrl_A</b> .
3	Display the list item menu by pressing <b>Ctrl_L</b> . <i>The list item menu appears.</i>
4	Select the Manage Backups option by pressing the <b>space bar</b> . <i>The Manage Backups dialog appears, displaying all backups currently stored on the OPC for the NE.</i>
5	Check that a current (less than a day) backup exists for the NE. If you need to create a new backup, refer to “Saving OPC data to tape” on page 2-8.

—continued—

Procedure 2-2 (continued)

**Checking NE database backup**

---

<b>Step</b>	<b>Action</b>
<b>6</b>	To close the dialog, tab to the Done button, then press <b>Ctrl_A</b> . <i>The dialog closes.</i>
<b>7</b>	To close the tool: <b>a.</b> Display the window menu by pressing <b>Ctrl_L W</b> . <i>The window menu appears.</i> <b>b.</b> Select the Exit command by pressing the <b>space bar</b> . <i>The tool closes.</i>

—end—

## Procedure 2-3 Performing a manual NE database backup

---

Use this procedure to make a backup copy of the network element (NE) database that includes all the provisioning data. NE database backups are stored on the hard drive of the OPC. Two copies of the database are stored: current and backup1. When you perform a backup, the oldest copy is deleted.

### Requirements

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

- Review the NE user interface (UI) login (see “Appendix A: OPC and NE user interfaces” on page 7-1).
- Review the NEUI command conventions (see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A).
- Perform this procedure from MAPCI;FWPUI screens.

### Action

---

Step	Action
1	From the NE Status screen, display the Shelf Equipment screen for the selected NE by entering the following command: <b>equipmnt sh</b> ↵ <i>The Shelf Equipment screen appears for the selected NE.</i>
2	Back up the database by entering the following command: <b>backupdb</b> ↵ <i>The system prompts for confirmation.</i>
3	Confirm the backup by entering the following command: <b>y</b> ↵ <i>The backup process can take up to 5 minutes to complete, depending on system use.</i>

—continued—

Procedure 2-3 (continued)

**Performing a manual NE database backup**

<b>Step</b>	<b>Action</b>
<b>4</b>	Confirm the backup by checking the logs buffer by entering the following commands: <b>logutil</b> ↵ <b>open FWDB</b> ↵ <i>The FiberWorld Database (FWDB) logs (or NE logs) show the status of the database backup and the elapsed time of the backup. An FWDB300-series log indicates a problem with the backup.</i>
<b>5</b>	Log out of the NE by entering the following command: <b>logout</b> ↵
<b>6</b>	Close the Login Manager by pressing <b>Ctrl_L W</b> .
<b>7</b>	Select the Exit command by pressing the <b>space bar</b> . <i>The system displays the User Session Manager main window.</i>

—end—

## Procedure 2-4 Saving OPC data to tape

---

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



### **CAUTION**

#### **Risk of damage to electrostatic-sensitive devices.**

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

You cannot select individual files to be saved. The OPC Save and Restore tool automatically selects and saves the appropriate files. When you open the tool, the “Save to tape” operation is selected by default.

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

The tool contains two action buttons:

- Display tape details
- Save OPC data to tape

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

## Requirements

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

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

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

- Obtain a user ID and password that allow you access to the OPC.
- Connect a terminal to the OPC.

—continued—

Procedure 2-4 (continued)  
**Saving OPC data to tape**

## Action

Step	Action
1	Log in to the OPC interface User Session Manager main window, and tab to the Available Tools menu.
1	Scroll to the Open the OPC Save, and then press <b>Ctrl_A</b> . <i>The OPC Save and Restore main window appears. The Save to tape button is selected and the buttons for saving OPC data to tape appear in the bottom half of the window.</i>
2	Insert a tape into the OPC tape drive.



**CAUTION**  
**All existing data on the tape will be overwritten by this procedure.**

3	Select the Display tape details button by pressing <b>Ctrl_A</b> . <i>The Tape Details dialog appears. It shows information about the tape.</i>
4	Check the fields in the dialog to confirm that the correct tape is in the tape drive. If you inserted the incorrect tape, remove it and insert the correct one.
5	When the correct tape is in the tape drive, select the Done button in the Tape Details dialog by pressing <b>Ctrl_A</b> . <i>The Tape Details dialog closes. In the OPC Save and Restore tool main window, the arrow moves to the Save OPC data to tape button.</i>
6	Select the Save OPC data to tape button by pressing <b>Ctrl_A</b> . <i>The Save confirmation dialog appears, prompting you to confirm your request.</i>

—continued—

## 2-10 Current system verification

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### Procedure 2-4 (continued) Saving OPC data to tape

---

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

---

- 7 Tab to the Yes button, then press **Ctrl\_A**.

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

- 8 Determine whether you want to continue or cancel the save operation.

If you want to	Then go to
cancel the save operation	step 10.
continue with the save operation	step 12 when the completion dialog appears.

- 9 Determine whether the tape contains a data archive or a software load.

If the tape contains a data archive, a dialog prompts you to confirm your request to overwrite the existing data on the tape.

If the tape contains a software load, a dialog prompts you to confirm your request to overwrite the existing data on the tape.

Tab to the OK button, then press **Ctrl\_A**.

*A progress dialog appears, indicating the progress of the save operation.*

—continued—

Procedure 2-4 (continued)  
**Saving OPC data to tape**

**Step Action**

If you want to	Then go to
cancel the save operation	step 10.
continue with the save operation	step 12 when the completion dialog appears.

- 10** To cancel the save operation, select the Cancel button by pressing **Ctrl\_A**.  
*A confirmation dialog appears, prompting you to confirm your request to cancel the save operation.*
- 11** Tab to the OK button, then press **Ctrl\_A**.  
*Another progress dialog appears that indicates the save operation is being canceled and the tape is being erased.*  
 When you cancel the save operation, a completion dialog appears.
- 12** To exit the completion dialog, select the Done button by pressing **Ctrl\_A**.  
*The completion dialog closes and the main window appears.*
- 13** Close the tool using the following steps:
- a.** Display the window menu by pressing **Ctrl\_L W**.  
*The window menu appears.*
  - b.** Select the Exit command by pressing the **space bar**.  
*The tool closes, and the User Session Manager main window is displayed.*
- 14** Tab to the Logout button and press **Ctrl\_A**.  
*A confirmation dialog box is displayed.*
- 15** Tab to the Logout button, and press **Ctrl\_A**.  
*The OPC prompt is displayed.*
- 16** Type **logout** and press Enter.  
*The Login prompt is displayed.*

—end—

## Procedure 2-5 Checking OPC to NE associations

---

This section describes how to check that there are no association problems between the OPC and the existing DFA system.

### Requirements

Log into the OPC user interface using the SLAT userID. For login instructions, see “Appendix A: OPC and NE user interfaces” on page 7-1. For 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 OPC interface User Session Manager main window, tab to the SLAT tool box.
2	Scroll to the Reboot/Load Manager and press <b>Ctrl_A</b> . <i>The Reboot/Load Manager main window appears.</i>
3	Verify that there are no questions marks (“?”) displayed next to the NE listed.  <i>A question mark to the left of a network element indicates loss of association between the OPC and the network element.</i>
4	Resolve any association loss.
5	From the OPC interface User Session Manager main window, tab to the Network Surv. tool box.
6	Scroll to the Event Browser and press <b>Ctrl_A</b> . <i>The Event Browser main window appears.</i>  When there are more network elements than can be displayed in the events list, press the up or down arrow key to scroll a line at a time, or press Keypad <b>5</b> followed by an arrow key to scroll a screen at a time.
7	To sort events, tab to the events list, and display the events list menu by pressing <b>Ctrl_L</b> . <i>The list menu appears.</i>

—continued—

---

Procedure 2-5 (continued)

### Checking OPC to NE associations

---

Step	Action
8	<p>Move to the Sort command, then press <b>Enter</b>.</p> <p><i>The Event Listing Sorting dialog appears.</i></p> <p>You can sort events by time (ascending or descending), network element (name or number), reason, unit, class, or severity.</p> <p><b>Note 1:</b> The Sort results reflect whatever filter you have determined for the events list. Only the types of events you included in the filter are sorted.</p> <p><b>Note 2:</b> If you update the list, the new events are added to the list at their proper sort position. This means that they might not be in view when the list is updated.</p>
9	<p>Check for any logs that indicate “association loss” events within the last two days.</p>
10	<p>Resolve any association loss events.</p>
11	<p>To close the Reboot/Load Manager and the Event Browser tools:</p> <ol style="list-style-type: none"><li>Display the window menu by pressing <b>Ctrl_L W</b>.</li></ol> <p><i>The window menu appears.</i></p> <ol style="list-style-type: none"><li>Select the Exit command by pressing the <b>space bar</b>.</li></ol> <p><i>The tool closes.</i></p> <p>—end—</p>

## Procedure 2-6 Auditing connection data

---

Use this procedure to perform an audit of the STS-1 connections data at the selected network element.

### Requirements

An audit connection is performed through the OPC interface. For login instructions, see “Appendix A: OPC and NE user interfaces” on page 7-1. For 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	Log in to the OPC interface User Session Manager main window, and tab to the Available Tools menu.
2	Scroll to the Connection Manager and press <b>Ctrl_A</b> . <i>The Connection Manager main window appears.</i>
3	To view the Options menu, press <b>Ctrl_L T</b> and then press <b>Shift+</b> . <i>The Options menu appears.</i>
4	Use the arrow keys to move to <b>Audit Connection...</b> and select it by pressing <b>Ctrl_A</b> . <i>The Connection Audit dialog appears.</i>
5	Decide if you want to exclude a network element from the audit:

If you want to	Then
exclude an NE from the audit	continue with this step.
audit all NEs in the list	go to step 6.

—continued—

Procedure 2-6 (continued)  
**Auditing connection data**

- | Step     | Action  |
|----------|---|
|          | <ul style="list-style-type: none"> <li>a. In the NE list, move to the NE that you want to exclude, then press <b>Ctrl_L</b> to display the List item menu.<br/><i>The List item menu appears.</i></li> <li>b. Move to the Remove from audit command, then press <b>Ctrl_A</b>.<br/><i>The word "Included" next to the list item changes to "Not included."</i></li> <li>c. Repeat steps 5a and 5b for each network element that you want to exclude.</li> </ul> |
| <b>6</b> | <p>Tab to the OK button, then press <b>Ctrl_A</b>.<br/> <i>The connection data for the specified NEs is audited. The Results dialog appears, indicating whether the audit was successful, or unsuccessful.</i></p>  |

If the audit finds	Then
no discrepancies between the OPC and DFA ABM NE connection data, the message "successful" is displayed	select the OK option by pressing the <b>Ctrl_A</b> . Go to step 8.
discrepancies, the message "failed: mismatch found" is displayed	<p>if you want to overwrite NE connection data, go to step 7.</p> <p>if you do not want to overwrite NE connection data, select the <b>NO</b> option by pressing <b>Ctrl_A</b>. Call your next level of support or your Nortel technical representative.</p>

—continued—

## 2-16 Current system verification

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### Procedure 2-6 (continued) Auditing connection data

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Step	Action
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7	Verify OPC data.
---	------------------



**CAUTION**  
**Mismatch message**

In performing the audit, if mismatches are found for the network element and the **Yes** option is selected to correct the mismatches, a traffic interruption may occur.

To overwrite NE connection data, do the following:

- a. Tab to the Yes button, then press **Ctrl\_A**.

*Connection data at the affected NEs 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**.

*The connection Manager main window appears.*

8	To close the Connection Manager tool:
---	---------------------------------------

- a. Display the window menu by pressing **Ctrl\_L W**.

*The window menu appears.*

- b. Select the Exit command by pressing the **space bar**.

*The tool closes.*

—end—

## Reconfiguring the Mix & Match DFA ABM shelf

This section discusses how to reconfigure an existing DS1-fed AccessNode (DFA) access bandwidth manager (ABM) shelf to a Mix & Match DFA ABM shelf.

### Chapter contents

This chapter discusses the following topics:

Topic	See
Reconfiguration considerations	page 3-2
DS1 mapper - ETIC bandwidth mapping	page 3-3
OPC Connectivity	page 3-6

This chapter contains the following procedures:

Procedure	Topic	See
Procedure 3-1	Transferring OPC to another shelf	page 3-11
Procedure 3-2	Replacing TICs with ETICs	page 3-22
Procedure 3-3	Installing LAIC circuit packs	page 3-28
Procedure 3-4	Adding DS1/VT mapper circuit packs	page 3-31

## Reconfiguration considerations

Before performing the reconfiguration, keep in mind the following considerations:

- Number of processor communication channels. There are 31 channels available, as follows:
  - each operations maintenance channel (OMC) link uses between three and six channels (a maximum of ten DFA can be controlled on the same operations controller [OPC] through OMC links)
  - each integrated digital terminal (IDT) (connected to either a TR-303 DMS or TR-303 MVI host) uses four channels
  - each data direct PRI trunk (if applicable) uses one channel



### CAUTION

#### Communication overhead (COH) channels limit

When new IDTS (hosts) are created for the Mix & Match DFA, make sure that the COH channel limit is not exceeded. If the COH channel limit is exceeded, it will prevent normal system operation.

- IDLC (both TR-303 DMS and MVI), DMS-X, TR-08 or Tandem (for CDS/UE9000) traffic and TR-303 DMS, TR-303 MVI or Tandem (for voice module [VM]) traffic has to be assigned on different pairs of DS1 mappers. All these types of traffic can be supported on mapper pairs G1/G2, G4, G5/G6, and G7/G8. Depending on the traffic expected, it is recommended to use the following:
  - G1/G2 for IDLC (both TR-303 DMS and MVI), TR-08, and Tandem DS1s.
  - G4 for OMC links
  - G5/G6 and G7/G8 for VM DS1s

**Note 1:** It is highly recommended to reserve DS1/VT mappers G1/G2 for traffic integration (TR-303 DMS/TR-303 MVI/TR-08/Tandem). If OMC links are present on the facilities associated with these mappers, you can move them to DS1/VT mapper G4. See "Provisioning DS1 facility parameters" on page 5-20.

**Note 2:** It may be necessary to add DS1/VT mappers. The Mix & Match DFA ABM shelf accommodates up to eight DS1/VT mappers. See "Adding DS1/VT mapper circuit packs" on page 3-31.

- If the ABM shelf houses an OPC, DS1/VT mapper groups G5/G6 and G7/G8 will not be available after the reconfiguration, unless the OPC is relocated. Relocate the OPC **prior** to the reconfiguration. See "Transferring OPC to another shelf" on page 3-11.

*Note:* If you have to relocate the OPC, you will lose all association with that OPC during the relocation procedure.

## DS1 mapper - ETIC bandwidth mapping

The timing and cross-connect (TXC) circuit pack connects bandwidth from the DS1 mappers, located in the tributary transport slots, to the enhanced transport interface card (ETIC), located in the access slots. It performs this connection at the synchronous transport signal (STS-1) and 1/2 STS-1 level. The ETIC controls six STS-1s worth of bandwidth as follows:

- three to a redundant pair of access interface cards (AICs) (for use with CDS/UE9000 shelves)
- three to a redundant pair of loopback access interface cards (LAICs) (for use with ANX VMs)

*Note:* Mix & Match DFA supports LDS, TR-08, Tandem and OMC link traffic on STS-1 #1 and STS-1 #4 only. (STS-1 #2 can be used for additional OMC links. STS-1 #5 and #6 can be used for ANX VMs.)

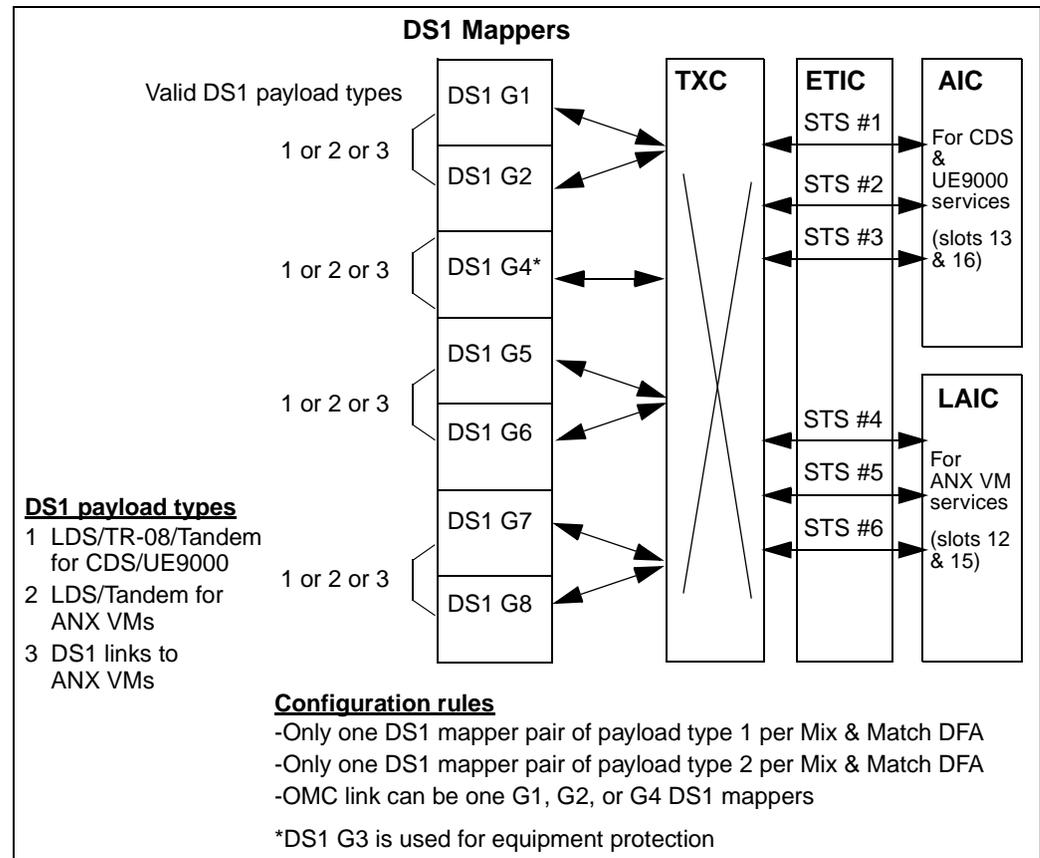
In any Mix & Match DFA, access bandwidth manager (ABM) tributary transport bandwidth allocation is segregated at the STS-1 or 1/2 STS-1 level when connected to ETIC-LAIC/AIC payload (i.e. VM, CDS, UE9000 services). Refer to Figure 3-1 on page 3-4.

In AN17.20, the user can specify which ETIC/(L)AIC STS-1s (one of six ports) is used to "connect" to a specific DS1 mapper pair via the TXC. The user specifies this connection using the text-based TL1 Nodal Connection Manager user interface (UI) tool at the operations controller (OPC). For information on using the Nodal Connection Manager, see chapter 5, "Mix & Match DFA Provisioning." The Nodal Connection Manager provides enhanced flexibility for DS1 mapper pair connectivity to VM/CDS/UE9000 services.

### 3-4 Reconfiguring the Mix & Match DFA ABM shelf

As in previous releases, a maximum of one STS-1 (28 DS1s / 672 DS0s) can be used for the LDS/Tandem/TR-08 interface for CDS/UE9K services off of one pair of AIC. This STS-1 is STS-1 #1. Similarly, a maximum of one STS-1 (28 DS1s / 672 DS0s) can be used for the LDS/Tandem interface for ANX VM services off of one pair of LAIC. This STS-1 is STS-1 #4. In the case of ANX VM services, additional DS1s are needed for ABM-VM links. These DS1s can be from the STS-1 #4 providing the IDLC/Tandem interface for ANX VM services, or from the STS-1 #5 and STS-1 #6. Refer to Figure 3-1.

**Figure 3-1**  
**Mix & Match DFA bandwidth mapping**



Within the STS-1 allocation rules, the user has control over the DS1 facilities (except for the ones on the protection circuit pack). The user can specify whether the facilities are to be used for LDS (303 DMS, 303 MVI, DMS-X) connections, Tandem connections, TR-08 connections, OPC communication links (OMC links), or AccessNode Express ABM-VM links. The DS1 facilities within a given circuit pack may be used for different things.

Table 3-1 shows the valid usage selection of DS1s. There are 14 DS1s per DS1 mapper circuit pack. One DS1 circuit pack (G3) is used for protection. Without an OPC in the ABM shelf, there are up to 98 DS1s (7 \* 14) for VM links, an OMC link, and LDS/Tandem/TR-08 connections. If the OPC is installed in the ABM shelf, there are up to 42 DS1s (3 \* 14) for VM links and LDS/Tandem/TR-08 connections.

**Table 3-1**  
**DS1 Allocation options**

Circuit Pack	DS1 to carry OMC link(s)	DS1 to connect LDS, Tandem, TR-08	DS1 to connect ANX VMs	DS1 to be used as Mix & Match DFA timing source
DS1 G1	Yes	Yes	Yes	Yes
DS1 G2	Yes	Yes	Yes	Yes
DS1 G3*	not applicable	not applicable	not applicable	not applicable
DS1 G4	Yes	Yes	Yes	No
DS1 G5	No	Yes	Yes	No
DS1 G6	No	Yes	Yes	No
DS1 G7	No	Yes	Yes	No
DS1 G8	No	Yes	Yes	No

\*DS1 G3 is used for protection.

### 3-6 Reconfiguring the Mix & Match DFA ABM shelf

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For example, DS1 mapper circuit pack G1 can be connected as follows:

- four DS1s connecting to a 303 DMS LDS
- two DS1s to a 303 MVI LDS
- two DS1s to connect to a DMS-10 via DMS-X I/F
- four DS1s providing Tandem connections
- two DS1s providing TR-08 connections to a LDS

In this example, all these network interfaces are for CDS/UE9K access services. For the Mix & Match DFA, ANX VM supports GR-303 DMS, GR-303 MVI and Tandem connections.

*Note:* DS1s for CDS/UE9000 services and ANX VM services are always on different mapper pairs (G1/G2, G4, G5/G6, and G7/G8). One mapper pair cannot service both ANX VM and CDS/UE9K services at the same time.

## OPC Connectivity

The two categories of Mix & Match DFA ABM shelf configurations are as follows:

- with the OPC in the ABM shelf
- without the OPC in the ABM shelf

*Note:* The OPC can be installed in the ABM shelf of a DFA only if the DFA is located in a central office (CO).

In any AccessNode system, the ABM shelf must be under the control of an OPC. The OPC is the repository for the ABM shelf software load. It stores critical data for the ABM shelf, and helps the user configure the ABM shelf. The OPC can control up to 16 ABM shelves. Note that the ABM shelf access processor card (APC) is the circuit pack that communicates with the OPC.

The following are the communication link options between the OPC and the ABM shelf APC for Mix & Match DFA configurations:

- ABM shelf backplane (OPC resides in ABM shelf with APC)
- CNET Cable (OPC collocated in same facility as ABM shelf but does not reside in that ABM shelf)
- Operations Maintenance Channel (OMC) when OPC is not co-located with ABM shelf

## Mix & Match DFA with OPC in ABM shelf

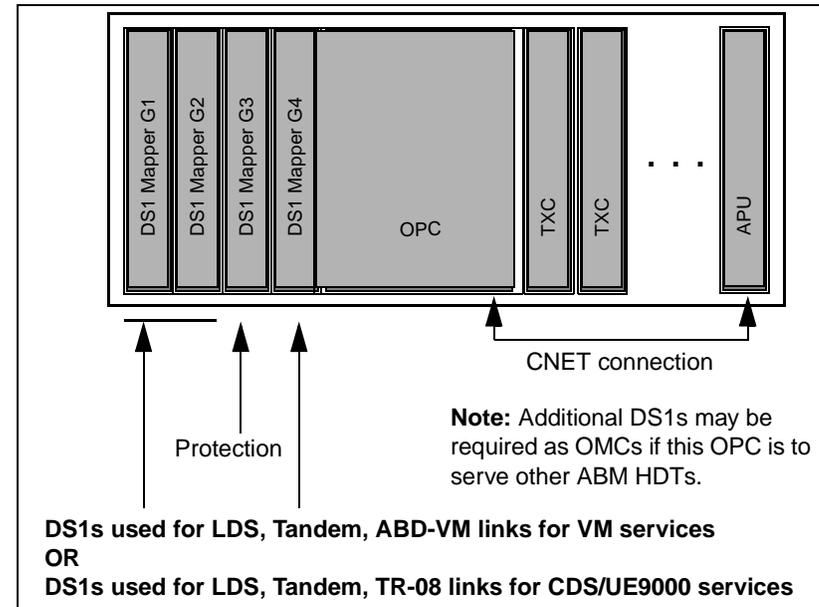
As shown in Figure 3-2 on page 3-8, the OPC can reside in the ABM shelf in tributary slots 05, 06, 07, and 08. (However, the OPC can only reside in the Mix & Match DFA ABM shelf if the DFA is located in the CO.) The OPC uses the backplane as its communication link to the APC. With the OPC resident within the ABM shelf, fewer DS1s (3 \* 14) are available for ANX VM links, and LDS/ Tandem connections.

In a Mix & Match DFA configuration, DS1 mappers are used as follows:

- G1/G2 DS1 mappers are used for DS0 services off of one of the following two redundant DS0 cross-connect packs:
  - AIC (for CDS/UE9000 services)
  - LAIC (for ANX VM services)
- G4 DS1 mapper is used for DS0 services off of one of the following two redundant DS0 cross-connect packs:
  - AIC (for CDS/UE9000 services)
  - LAIC (for ANX VM services)

For example, G1/G2 DS1 mappers can be used for CDS/UE9000 services. This would provide 28 DS1s for CDS/UE9000 services (Tandem, TR-08, and LDS I/F links). G4 DS1 mapper, would then be available to provide 14 DS1s for ANX VM services (ABM-VM, Tandem, and GR-303 DMS/GR-303 MVI I/F links).

**Figure 3-2**  
**Mix & Match DFA with on-shelf OPC**



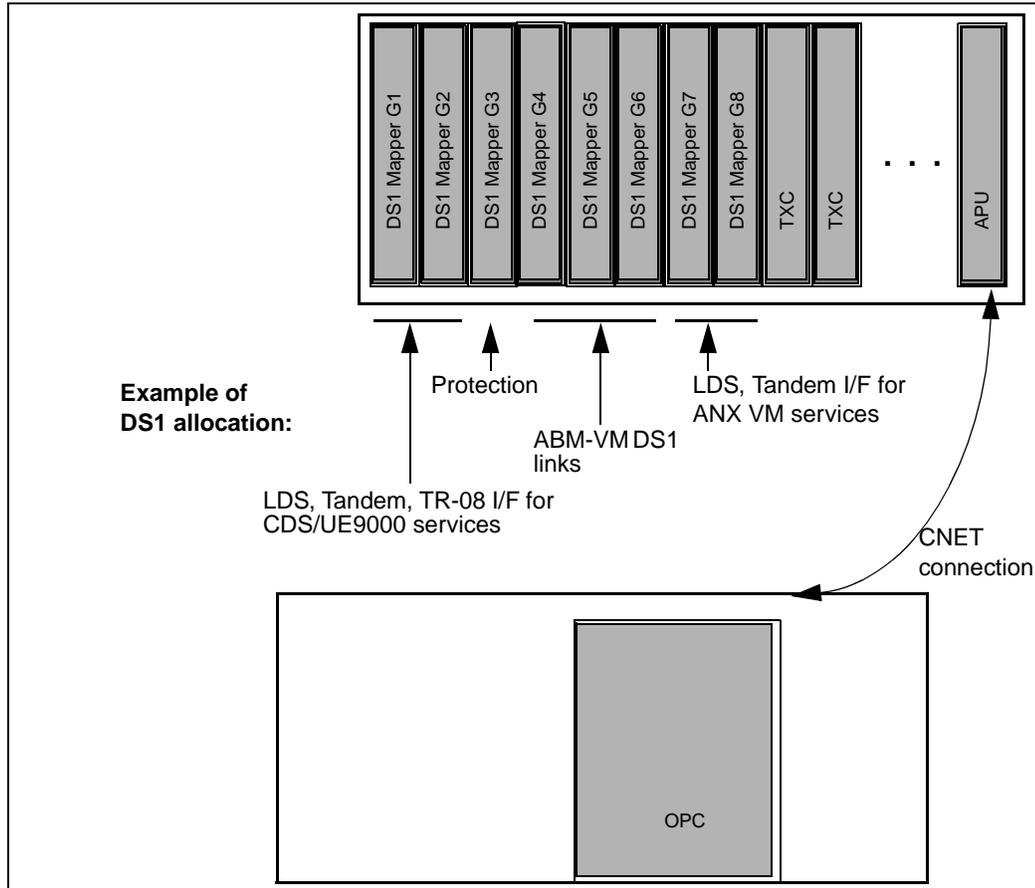
### CNET Link between OPC and ABM shelf

The OPC can reside in an AccessNode shelf in the same CO as the ABM shelf (not in the Mix & Match DFA ABM shelf). As shown in Figure 3-3 on page 3-9, the OPC is simply connected to the ABM shelf via an Ethernet CNET cable. This configuration provides the maximum number of DS1 facilities for LDS/Tandem/TR-08 connections and ABM- VM links. It provides 98 DS1s (7 \* 14).

In a Mix & Match DFA, ABM Tributary transport bandwidth allocation is segregated at the STS-1 or 1/2 STS-1 level for ANX/CDS/UE9000 services. DS1 mapper pairs (G1/G2, G5/G6, G7/G8) and DS1 mapper (G4) can be used for DS0 services off of two redundant DS0 cross-connect packs (LAIC or AIC). As in previous releases, a maximum of one STS-1 (28 DS1s / 672 DS0s) can be used for the IDLC/Tandem/TR-08 interface for services off of one pair of LAIC or AIC. In the case of ANX services, additional DS1s are needed for ABM-VM links. These DS1s can be from STS-1 #4 providing the IDLC/Tandem interface for ANX VM services, or from the STS-1 #5 and STS-1 #6.

For example, in Figure 3-3 on page 3-9, the DS1 mapper pair G1/G2 provide facilities for LDS, Tandem, TR-08 Connections for CDS/UE9000 services. Mapper pair G7/G8 provide facilities for LDS and Tandem connections for ANX VM services. Mappers G4, G5/G6 would be used to provide ABM-VM DS1 links. Mapper G3 is the DS1 equipment protection circuit pack. Mapper G3 is the DS1 equipment protection circuit pack.

**Figure 3-3**  
**Mix & Match DFA with CNET Connection between OPC and ABM shelf**

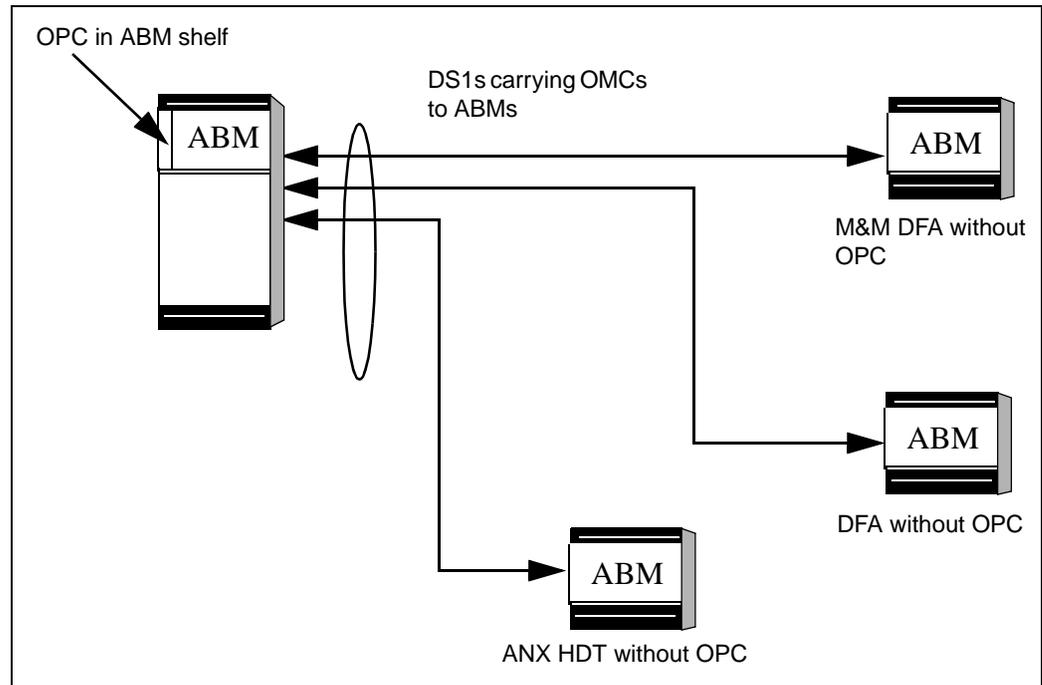


### OMC link between OPC and ABM shelf

As shown in Figure 3-4, the operations maintenance channel (OMC) provides operations, administration, maintenance and provisioning (OAM&P) communications between an OPC and remote ABM shelves via dedicated DS1s. The OMC is equivalent in functionality to the SONET overhead (SDCC) channel in a fiber-fed system. The OMC is designed to be carried across a DS1 link. In this configuration, an ABM shelf (possibly an ABM shelf) contains the OPC. The ABM shelves share the OPC. The OPC can control up to 16 ABM shelves.

This configuration does not have an OPC in the Mix & Match DFA ABM shelf. It is similar to the CNET connection configuration described in the previous section, with the exception that one DS1 is reserved for the OMC link. Thus, this configuration provides a maximum of 97 DS1 facilities for LDS/Tandem/TR-08 connections and ABM-VM links.

**Figure 3-4**  
**Mix & Match DFA with OMC link between OPC and ABM shelf**



## Procedure 3-1 Transferring OPC to another shelf

Use this procedure to move an in-service primary or secondary operations controller (OPC) from one common-equipment shelf to another. The procedure includes the following tasks:

- removing an in-service primary or secondary OPC from an access bandwidth manager (ABM) common-equipment shelf
- installing the OPC in another fiber central office terminal (FCOT) under the same span of control so that it continues to serve the same network elements

Use this procedure when slots 5 through 8 in an ABM common-equipment shelf are occupied by a primary or secondary OPC, but one or more of the slots is needed for DS1 equipment.

**CAUTION**

**Do not perform any actions that can affect service.**

Follow this procedure carefully to minimize any risk of loss of service.

## Requirements

### Required central office activities

This procedure requires the following activities at the central office:

- backing up the data from each network element within the primary OPC span of control to the OPC database
- backing up the OPC database to tape
- editing the network element (NE) commissioning data for current OPC shelf location

—continued—

### 3-12 Reconfiguring the Mix & Match DFA ABM shelf

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Procedure 3-1 (continued)

#### Transferring OPC to another shelf

---

- completing the following operations to transfer the OPC:
  - deleting the OPC equipment using the Fiberworld product user interface (FWPUI) for the current shelf
  - shutting down and removing the OPC equipment from the current shelf location
  - installing the OPC in the new shelf location
- testing the OPC on the new shelf location for proper functioning
- editing the network element commissioning data for the new OPC shelf location

#### Required conditions

This procedure requires the following conditions:

- The OPC clock battery is charged, and the OPC time and date are correct, so that the OPC time and date will not have to be reset after the transfer.
- The new shelf is either:
  - a co-located network element in the same OPC span of control as the C-Server to be reconfigured
  - a soon-to-be OPC shelf (a powered an ABM or a TBM shelf that is not equipped with any common equipment circuit packs)
- The new shelf is commissioned, tested, and ready for service.
- Slots 5 through 8 must be empty in the new shelf.
- The current shelf and the new shelf are served by the OPC located in the current shelf and are connected by a control network (CNET) cable. The CNET connection between the new shelf and the C-Server to be reconfigured must exist prior to the re-location.
- All required CNET termination plugs must be installed.
- The system type in the commissioning system-level data is, and must remain, AccessNode.

—continued—

Procedure 3-1 (continued)

**Transferring OPC to another shelf**

- The OPC slots in the new shelf are empty and not already provisioned. If this is not the case, refer to deprovisioning procedures in *Provisioning and Operations Procedures*, 323-3001-310, in *Operations, Administration, and Provisioning*, Volume 4B, and to removal procedures in *Module Replacement Procedures*, 323-3001-547, in *Maintenance*, Volume 5C.

**Required equipment and materials**

The following equipment and materials are required:

- one blank tape to back up the primary OPC database before the configuration is changed
- a VT100-compatible terminal connected to OPC port 1 on the current OPC shelf (see login procedures in “Appendix A: OPC and NE user interfaces” on page 7-1).
- the existing Commissioning Data Record form for the OPC, which should be on file for this network element

**Action**

---

**Step    Action**

---

This procedure is divided into the following sections:

- Backing up data
- Editing commissioning data for the current OPC shelf
- Transferring the OPC
- Testing the OPC on the new shelf
- Editing commissioning data for the new OPC shelf

Complete all sections from “Backing up data” through “Editing commissioning data for the new OPC shelf.” Do not pause between sections.

—continued—

### 3-14 Reconfiguring the Mix & Match DFA ABM shelf

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Procedure 3-1 (continued)

#### Transferring OPC to another shelf

---

Step	Action
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##### Backing up data

- 1 For each NE within the primary OPC span of control, log in to FWPUi and back up the network element's data to the OPC database.
- 2 Prepare a backup tape of the OPC database.  
See "Performing a manual NE database backup" on page 2-6 and "Saving OPC data to tape" on page 2-8.  
Go to step 3.

##### Editing commissioning data for the current OPC shelf

- 3 Log in to the OPC interface User Session Manager main window, and tab to the Available Tools menu.
- 4 Press the down arrow to scroll to the Commissioning Manager.
- 5 Select the Commissioning Manager by pressing **Ctrl\_A**.  
*The screen displays the Commissioning Manager main window.*
- 6 Select the NE representing the current shelf (primary or backup OPC, depending on which OPC you are relocating) from the list of network elements. Press **Ctrl\_L** to display the List item menu.
- 7 To select the Edit option in the List item menu, press the **space bar**.  
*The Network Element Commissioning Data dialog for the current shelf is displayed.*
- 8 Tab to the area of the screen named "This network element contains."
- 9 Use the arrow keys to move to the no OPC button, then press **Ctrl\_A** to select it.
- 10 Record the change in commissioning data for this network element on the Commissioning Data Record form.
- 11 To complete the entry of commissioning data, tab to the OK button, then press **Ctrl\_A**.

*The Commissioning Manager main window is displayed, showing the network element that was de-commissioned.*

**Note:** If any essential data is missing or entered incorrectly, an error dialog explaining the nature of the problem appears. In addition, the Network Element Commissioning Data dialog remains displayed, and each field that needs data or contains erroneous data displays an X.

—continued—

Procedure 3-1 (continued)

**Transferring OPC to another shelf**

<b>Step</b>	<b>Action</b>
12	Close the Commissioning Manager main window by pressing <b>Ctrl_L W</b> . <i>The Exit command appears.</i>
13	Select Exit by pressing the <b>space bar</b> . Go to step 14.
<b>Transferring the OPC</b>	
14	Open the network element login tool and log in to FWPUI for the current shelf (primary or backup OPC, depending on which OPC you are relocating).
15	In FWPUI at the current shelf, place the OPC equipment out of service by entering: <b>eq opc ↵</b> <i>The OPC Equipment screen appears.</i> Enter: <b>chgstate oos ↵</b> <b>y ↵</b> <i>The OPC Equipment is placed out of service.</i>
16	Delete the OPC equipment by entering: <b>del ↵</b> <i>The OPC Equipment is deleted (deprovisioned) from the current shelf.</i>
17	Log out of FWPUI for the current shelf and close the OPC network element login tool.

—continued—

### 3-16 Reconfiguring the Mix & Match DFA ABM shelf

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Procedure 3-1 (continued)

#### Transferring OPC to another shelf

---

Step	Action
18	<p>Shut down the OPC equipment on the current shelf, as follows:</p> <ol style="list-style-type: none"><li>Login to the OPC User Session Manager main window and open the OPC Shutdown tool. <i>The OPC Shutdown tool main window appears.</i></li><li>Move to the Shutdown button and select it by pressing <b>Ctrl_A</b>. <i>A confirmation dialog appears, indicating the amount of time required for the shutdown and giving you a final chance to abort the shutdown.</i></li><li>Tab to the Proceed button, then press <b>Ctrl_A</b>. <i>The confirmation dialog closes and the OPC shutdown process starts. A console message appears.</i></li><li>Select the OK button by pressing <b>Ctrl_A</b>. <i>A shutdown progress dialog appears. As the shutdown progresses, the dots on the dialog are replaced with Xs.</i> The progress dialog indicates that the OPC is shutting down normally. If the shutdown completes before you select the OK button, you will not see the progress message. <i>An "out of service" dialog appears when the shutdown is complete. This dialog appears to all users who are currently logged in to the OPC.</i></li><li>Select the Done button by pressing <b>Ctrl_A</b>. <i>An information dialog appears.</i></li><li>Select the OK button by pressing <b>Ctrl_A</b>. <i>The shutdown procedure continues. When it is complete, the green Activity Indicator LED turns off.</i></li><li>Immediately after the green LED turns off, remove the OPC. <i>If the OPC is still in place three minutes after the LED turns off, a start up is initiated. If you have not removed or powered down the OPC by this time, the red Unit Fail LED turns on and an alarm is raised.</i></li></ol>

—continued—

Procedure 3-1 (continued)

**Transferring OPC to another shelf**

**Step    Action**



**CAUTION**

**Risk of data corruption.**

Do not remove or power down the OPC after the red LED is on. If you do, you will corrupt the data on its hard drive. The shutdown process takes 5 to 10 minutes.

- 19    Re-locate the OPC as follows:
- a.    If applicable, disconnect the Ethernet cable from the Ethernet connector located on the faceplate of the OPC.
  - b.    Remove the OPC from the C-Server by gently pulling on the ejector latches until the OPC is completely disconnected from the C-Server shelf backplane connector.
  - c.    Bring the OPC to the new shelf.



**DANGER**

**Risk of injury or damage.**

The OPC module is heavy. To avoid personal injury or equipment damage, use two hands to support the module when you remove it.

- d.    Gently push the OPC into slot 5 until the ejector latches come into contact with the front of the shelf. Push the latches in toward the circuit pack to engage the OPC with the backplane connector.
  - e.    Re-route, if necessary, the Ethernet cable from the C-Server to the new shelf.
  - f.    Re-route, if necessary, the terminal cable connected to port B connector on the left-side of the C-Server shelf, to the new shelf.
- 20    Wait for the OPC initialization to complete. Once complete, the login prompt will appear.

*The OPC may take up to 15 minutes to initialize. When it is ready, the login prompt (login:) appears at the user terminal.*

—continued—

### 3-18 Reconfiguring the Mix & Match DFA ABM shelf

---

Procedure 3-1 (continued)

#### Transferring OPC to another shelf

---

- | Step | Action   |
|------|--|
| 21   | <p>Login to the OPC using the root user ID and password by entering the following command:</p> <pre>opcuid ↵</pre> <p><i>The User Session Manager main window opens. The OPC autoprovisions on the new shelf and sets up an association with each network element under its control.</i></p> <p>Go to step 22.</p> |

#### Testing the OPC on the new shelf

- |    |   |
|----|---|
| 22 | <p>Connect the VT100-compatible terminal to OPC Port 1 on the new shelf.</p>  |
| 23 | <p>Log in to the OPC and open the Reboot/Load Manager tool.</p> <p><i>The Reboot/Load Manager main window appears.</i></p> <p><b>Note:</b> Login may be denied because the OPC may not be active yet. If this happens, wait at least 3 minutes, then repeat this step.</p>  |
| 24 | <p>To make sure this OPC has an association with every network element within its span of control, verify that no question marks (?) appear in the margin to the left of any network element.</p> <p><i>A question mark to the left of a network element indicates loss of association between the OPC and the network element. It may take 5 to 10 minutes for the association to come up. When it does, the question mark disappears.</i></p> <p>If a question mark remains after 10 minutes, try one or more of the following actions:</p> <ul style="list-style-type: none"><li>• Check the CNET cable to the adjacent common-equipment shelf.</li><li>• Log in to the network element (new shelf) and perform a remote login to the OPC (in FWPUi, quit to the CI level, and use the <b>rlogin</b> command).</li><li>• Call your Nortel Networks technical representative.</li></ul> <p>Go to step 25.</p> |

—continued—

Procedure 3-1 (continued)

**Transferring OPC to another shelf**

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

**Editing commissioning data for the new OPC shelf**

- |    |   |
|----|---|
| 25 | Log in to the OPC interface User Session Manager main window, and tab to the Available Tools menu.  |
| 26 | Press the down arrow to scroll to the Commissioning Manager.  |
| 27 | Select the Commissioning Manager by pressing <b>Ctrl_A</b> .<br><i>The screen displays the Commissioning Manager main window.</i>                           |
| 28 | Select the network element representing the new shelf from the list of network elements, then press <b>Ctrl_L</b> to display the List item menu.            |
| 29 | To select the Edit option in the List menu, press the <b>space bar</b> .<br><i>The Network Element Commissioning Data dialog for the new shelf appears.</i> |
| 30 | Tab to the area of the screen named "This network element contains."  |

If	Then
you are relocating the primary OPC	use the arrow keys to move to the Primary OPC button, then press <b>Ctrl_A</b> to select it. Go to step 31.
you are relocating the backup OPC	use the arrow keys to move to the Backup OPC button, then press <b>Ctrl_A</b> to select it. Go to step 31.

- |    |  |
|----|--|
| 31 | Record the change in commissioning data for this network element on the Commissioning Data Record form.  |
| 32 | To complete the entry of commissioning data, tab to the OK button, then press <b>Ctrl_A</b> to select it.<br><i>The Commissioning Manager main window is displayed, showing the network element that was commissioned.</i><br><b>Note:</b> If any essential data is missing or entered incorrectly, an error dialog explaining the nature of the problem appears. In addition, the Network Element Commissioning Data dialog remains displayed, and each field that needs data or contains erroneous data displays an X. |

—continued—

### 3-20 Reconfiguring the Mix & Match DFA ABM shelf

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Procedure 3-1 (continued)

#### Transferring OPC to another shelf

---

Step	Action
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---

**33** Close the Commissioning Manager main window by pressing **Ctrl\_L W**.

*The Exit command appears.*

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

If	Then
you relocated a primary OPC	go to step 42.
you relocated a backup OPC	go to step 35.

**35** From the User Session Manager main window, tab to Available tools, then move to the OPC Save and Restore tool and select it by pressing **Ctrl\_A**.

*The OPC Save and Restore main window appears.*

**36** Tab to the Save to tape button at the top of the main window. Do not select it.

**37** Using the down arrow key, move to the Restore from tape button and select it by pressing **Ctrl\_A**.

*The buttons for restoring OPC data from tape appears in the main window.*

**38** Tab to the Transfer data to Backup OPC button and select it by pressing **Ctrl\_A**.

*A confirmation dialog appears, prompting you to confirm your request.*

**39** Tab to the Yes button and select it by pressing **Ctrl\_A**.

*The confirmation dialog closes. Progress dialogs appear, indicating that the data on the OPC disk is being copied to the backup OPC. This operation can take up to 30 minutes to complete. When the transfer is complete, a completion dialog appears.*

**40** To exit from the dialog, select the Done button by pressing **Ctrl\_A**.

*The dialog closes.*

—continued—

Procedure 3-1 (continued)

**Transferring OPC to another shelf**

---

<b>Step</b>	<b>Action</b>
<b>41</b>	To close the OPC Save and Restore tool: <b>a.</b> Press <b>Ctrl_L W</b> . <i>The window menu appears.</i> <b>b.</b> Select the Exit command by pressing the <b>space bar</b> . <i>The OPC Save and Restore tool closes.</i>
<b>42</b>	Save the OPC database to tape. See "Saving OPC data to tape" on page 2-8.
<b>43</b>	Log out of the OPC.

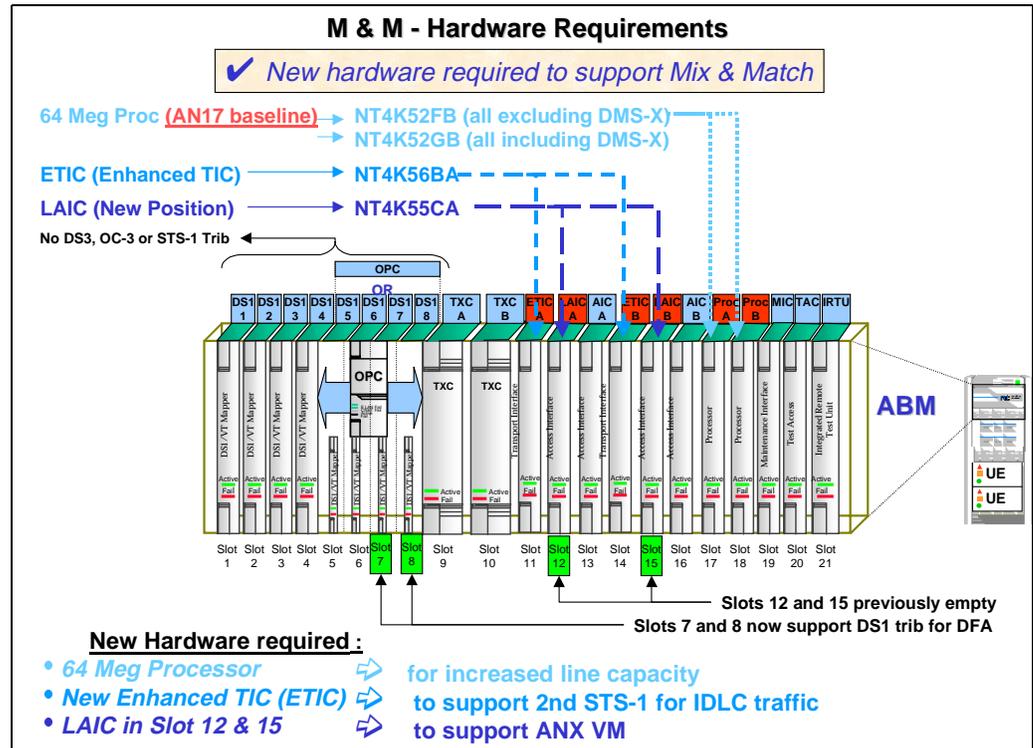
—end—

## Procedure 3-2 Replacing TICs with ETICs

Use this procedure to replace the existing transport interface cards (TICs) and replace them with the enhanced transport interface cards (ETICs) (NT4K56BA). Refer to Figure 3-5 for a layout of a Mix & Match DFA ABM shelf configuration.

**Figure 3-5**  
Mix & Match DFA ABM shelf hardware alignment

PG1168



—continued—

Procedure 3-2 (continued)  
Replacing TICs with ETICs



**CAUTION**

**Risk of circuit pack damage**

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



**CAUTION**

**Observe precautions for handling electrostatic sensitive devices.**

When handling circuit packs, wear an antistatic wrist strap grounded to the ESD ground jack on the right side of the local craft access panel (LCAP).



**CAUTION**

**Risk of improper installation**

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

## Requirements

You must be logged into the network element user interface (NE UI).

- Review the NE user interface (UI) login (see “Appendix A: OPC and NE user interfaces” on page 7-1).
- Review the NEUI command conventions (see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A).

—continued—

Procedure 3-2 (continued)  
Replacing TICs with ETICs

---

## Action

---

Step	Action
1	<p>Check the status of both TICs in plane A and plane B. The assumption is that the plane A TIC is the primary and the plane B TIC is secondary. To verify TIC status:</p> <p><b>a.</b> For the TIC in plane A, from the network element status screen, enter the following command:</p> <pre>eq tic a↵</pre> <p><i>The TIC equipment screen appears, showing the status of the TIC in plane A.</i></p> <p><b>b.</b> For the TIC in plane B, from the network element status screen, enter the following command:</p> <pre>eq tic b↵</pre> <p><i>The TIC equipment screen appears, showing the status of the TIC in plane B.</i></p> <p><b>Note:</b> After identifying which TIC (A or B) is the secondary card, proceed with the following steps. The secondary TIC is replaced first, then the primary TIC.</p>
2	<p>Take the secondary TIC out of service by entering the following command:</p> <pre>chgstate tic (a/b) oos↵</pre> <p><i>The system prompts for a confirmation of the state change.</i></p>
3	<p>Confirm the state change by entering the following:</p> <pre>Yes↵</pre> <p><i>The state changes to OOS.</i></p>
4	<p>Remove the secondary TIC (A or B) from slot 13 (A) or slot 16 (B). Pull the card ejector latches open and remove the card from its slot. Figure 3-6 on page 3-27 shows the open (unlocked) and closed (locked) circuit pack latch positions.</p>

—continued—

Procedure 3-2 (continued)  
**Replacing TICs with ETICs**

Step	Action
5	<p>Insert the new ETIC (NT4K56BA). With the ejector latches in the open (unlocked) position, carefully push the card in until the ejector latches come in contact with the shelf. Push the latches in toward the card (locked position) to engage the ETIC with the backplane connector.</p>
6	<p>Wait for the new ETIC to come back in-service.</p> <p><b>Note:</b> If the automatic-in-service feature is set to on, the ETIC state automatically changes to in-service (IS). If the ETIC does not come back in-service, from the ETIC equipment screen, change the state of the card by entering the following command:</p> <p><b>chgstate is.</b>↵</p> <p><i>The ETIC equipment screen shows the ETIC status as IS, and the new ETIC will be denoted as “secondary”.</i></p>
7	<p>Post the screen for the primary TIC. Enter:</p> <p><b>eq tic a/b</b> ↵</p> <p><i>The TIC equipment screen for the primary TIC appears.</i></p>
8	<p>Change the primary TIC to “secondary” by selecting the switch option.</p> <p><i>The system prompts for a confirmation of the state change.</i></p>
9	<p>Confirm the state change. Enter:</p> <p><b>Yes.</b>↵</p> <p><i>The TIC will be denoted as “secondary”.</i></p> <p><b>Note:</b> The new ETIC (inserted in step 4) will automatically be denoted as “primary”</p>
10	<p>Take the newly designated “secondary” TIC (A or B) out of service by entering the following command:</p> <p><b>chgstate tic (a/b) oos.</b>↵</p> <p><i>The system prompts for a confirmation of the state change.</i></p>
11	<p>Confirm the state change by entering the following command:</p> <p><b>Yes.</b>↵</p> <p><i>The state changes to OOS.</i></p>

—continued—

### 3-26 Reconfiguring the Mix & Match DFA ABM shelf

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#### Procedure 3-2 (continued) Replacing TICs with ETICs

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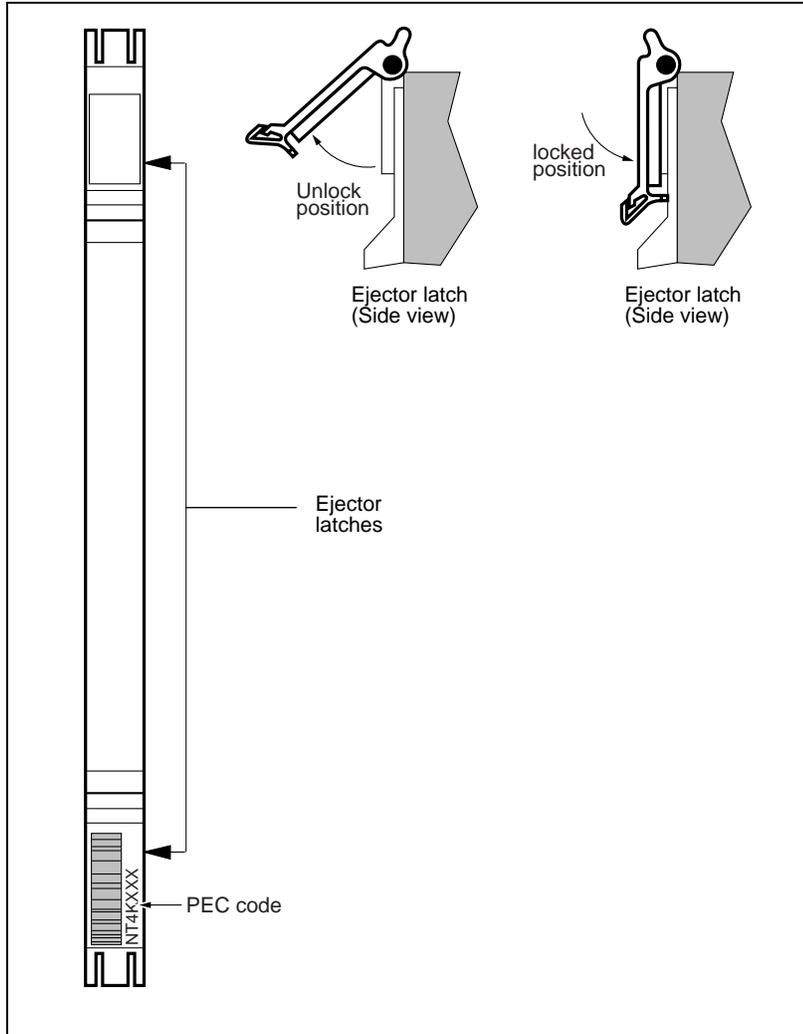
Step	Action
12	Remove the newly designated “secondary” TIC (A or B) out of slot 13 (A) or slot 16 (B). Pull the card ejector latches open and remove the card from its slot. Figure 3-6 on page 3-27 shows the open (unlocked) and closed (locked) circuit pack latch positions.
13	Insert the new ETIC (NT4K56BA). With the ejector latches in the open (unlocked) position, carefully push the card in until the ejector latches come in contact with the shelf. Push the latches in toward the card (locked position) to engage the ETIC with the backplane connector.
14	Wait for the new ETIC to come back in-service. <b>Note:</b> If the automatic-in-service feature is set to on, the ETIC state automatically changes to in-service (IS). If the ETIC does not come back in-service, from the ETIC equipment screen, change the state of the card by entering the following command: <b>chgstate is.</b> <i>The ETIC equipment screen shows the ETIC status as IS, and the new ETIC is denoted as “secondary”.</i>
15	Check that both ETICs are in-service and denote the appropriate ETIC as primary and secondary. <b>Note:</b> For information on creating/editing STS-1 cross connections to the ETIC, see chapter 5, “Mix & Match DFA Provisioning.”

—continued—

Procedure 3-2 (continued)  
Replacing TICs with ETICs

Figure 3-6  
Circuit pack latch positions

PC-16561



—end—

## Procedure 3-3 Installing LAIC circuit packs

---

Use the following procedure to install the LAIC circuit packs to support the ANX VMs you are adding to the Mix & Match DFA. Refer to Figure 3-5 on page 3-22 for the location of the LAICs in the Mix & Match DFA ABM shelf.



**CAUTION**

**Firmware compatibility issue**

The LAICs must have AN17.20 release firmware load. Older versions of the LAICs can be upgraded using Procedure 4-1, “LAIC Software Upgrade” on page 4-2.



**CAUTION**

**Risk of circuit pack damage**

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



**CAUTION**

**Risk of circuit pack damage**

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



**CAUTION**

**Risk of improper installation**

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

—continued—

Procedure 3-3 (continued)  
**Installing LAIC circuit packs**

**Requirements**

In order to perform this procedure, the following requirements must be met:

- LAICs must have AN17.20 release firmware load.
- You must be logged into the network element user interface (NE UI).  
 Review the NE user interface (UI) login (see “Appendix A: OPC and NE user interfaces” on page 7-1).
- Review the NEUI command conventions (see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A).

**Action**

Step	Action
1	<p>Insert the new LAIC circuit pack (NT4K55CA) in slot 15 for plane B. With the ejector latches in the open (unlocked) position, carefully push the card in until the ejector latches come in contact with the shelf. Push the latches in toward the card (locked position) to engage the LAIC with the backplane connector.</p> <p>Figure 3-6 on page 3-27 shows the open (unlocked) and closed (locked) circuit pack latch positions.</p>
2	<p>Post the LAIC in plane B and add the equipment by entering the following commands:</p> <pre>eq aic d-1</pre> <p><i>The newly inserted LAIC comes in service (IS).</i></p> <p><b>Note:</b> The LAIC in plane B, ABM slot 15, is designated as “<b>aic d</b>”.</p>
3	<p>Insert the new LAIC circuit pack in slot 12 for plane A. With the ejector latches in the open (unlocked) position, carefully push the card in until the ejector latches come in contact with the shelf. Push the latches in toward the card (locked position) to engage the LAIC with the backplane connector.</p>

—continued—

### 3-30 Reconfiguring the Mix & Match DFA ABM shelf

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Procedure 3-3 (continued)

#### Installing LAIC circuit packs

---

- | Step | Action   |
|------|--|
| 4    | <p>Post the LAIC in plane A and add the equipment by entering the following the following commands:</p> <p><b>eq aic c</b>↵</p> <p><i>The newly inserted LAIC comes in service (IS).</i></p> <p><b>Note:</b> The LAIC in plane A, ABM slot 12, is designated as “<b>aic c</b>”.</p>  |
| 5    | <p>Check the LAIC firmware load as follows:</p> <p>a. At the NEUI prompt enter the following command:</p> <p><b>anxupgci</b>↵</p> <p><i>ANXUPGCI is used to upgrade the LAIC and the shelf processor. Please type HELP for more information. The ANXUPGCI utility is displayed.</i></p> <p>b. Check that the LAICs have the proper firmware for a Mix &amp; Match DFA by entering the following command:</p> <p><b>laicloads</b>↵</p> <p><i>The following firmware load names should be displayed for the LAICs:</i></p> <p><i>LAIC FW load: LAICL17BE</i></p> <p><i>LAIC Boot load: LAICBL17BE</i></p> <p><b>Note:</b> A “mismatch alarm” is generated if the correct LAIC firmware is not present. In this case, you must upgrade the LAICs. See chapter 4, “LAIC software upgrade.”</p> |

—end—

## Procedure 3-4 Adding DS1/VT mapper circuit packs

Use the following procedure to install the additional DS1/VT mapper circuit packs and the corresponding DS1 input and output cards and cables to the Mix & Match DFA. Refer to Figure 3-5 on page 3-22 for the location of the DS1 mappers in the Mix & Match DFA ABM shelf.



**CAUTION**  
**Risk of circuit pack damage**

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



**CAUTION**  
**Risk of circuit pack damage**

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



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

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

—continued—

Procedure 3-4 (continued)

**Adding DS1/VT mapper circuit packs**

---

**Requirements**

*Note:* You must commission the slot locations for each DS1/VT mapper circuit pack that you install. You can commission the slot locations either before or after you install the circuit packs. See the instructions for commissioning a network element in *Commissioning and Testing*, Volume 3.

Make sure you have the following equipment and materials:

- Facility record indicating the slot locations for each circuit pack. For DS1 slot planning and equipping rules, see *Commissioning and Testing*, Volume 3.
- To add a working mapper:
  - DS1/VT mapper circuit pack (NT7E04CA/EA)
  - DS1 input (NT4K32AA) cards and cables (one per DS1/VT mapper)
  - DS1 output (NT4K33AA) cards and cables (one per DS1/VT mapper)

**Coordination requirements**

You must inform telephone company maintenance personnel before you insert a new DS1/VT mapper. Tell maintenance personnel to expect alarms to be generated because of the autoprovisioning of DS1 ports.

—continued—

Procedure 3-4 (continued)

**Adding DS1/VT mapper circuit packs****Action**

- | Step | Action   |
|------|--|
| 1    | <p>Install one DS1 input card (NT4K32) and one DS1 output card (NT4K33) in the I/O slots that correspond to the DS1/VT mapper being installed. Use a slotted screwdriver to fasten the cards securely.</p> <p>The following table shows the slot association between I/O cards and DS1/VT mappers:</p> |

Group	DS1/VT mapper	DS1 input	DS1 output
1	slot 1	slot 30	slot 32
2	slot 2	slot 31	slot 33
4	slot 4	slot 35	slot 37
5	slot 5	slot 38	slot 40
6	slot 6	slot 39	slot 41
7	slot 7	slot 42	slot 43
8	slot 8	slot 44	slot 45
Protection	slot 3	DS1 protection bridge cards in slots 34 and 36.	

- 2 With the top and bottom latches of the DS1/VT mapper circuit pack in the closed position, carefully insert each DS1/VT mapper into its slot, but leave it disengaged (not inserted into the backplane pins).
- Note:** A circuit pack is in the disengaged position when the latches are closed (locked) and prevent full insertion of the circuit pack. See Figure 3-6 on page 3-27 for ejector latch locked (closed) and unlocked (open) positions. Do not force a disengaged circuit pack when you insert it. Push it in only as far as the closed latches allow it to go.

—continued—

### 3-34 Reconfiguring the Mix & Match DFA ABM shelf

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Procedure 3-4 (continued)

#### Adding DS1/VT mapper circuit packs

---

- | Step | Action  |
|------|---|
| 3    | <p>Fully engage each circuit pack, as follows:</p> <ol style="list-style-type: none"><li>Pull open the top and bottom latches.</li><li>Press on the circuit pack faceplate to slide the circuit pack fully into its slot and seat it on the backplane pins. When the circuit pack is seated, the tabs on the top and bottom latches are positioned opposite the grooves in the shelf.</li><li>Close the latches to rotate the tabs into the grooves in the shelf. This seats the circuit pack firmly.</li></ol> <p><i>A circuit pack is engaged when it is fully inserted into the backplane pins.</i></p> <p><b>Note:</b> The system raises a major alarm (Rx Loss of Signal) for each of the 14 DS1 facilities that are autoprovisioned when you insert the circuit pack.</p> |
| 4    | <p>Check that all DS1/VT mapper circuit packs and all I/O cards required for your application are present and inserted in the correct slots.</p>  |
| 5    | <p>Set the facility parameters for the new DS1 equipment and add the DS1 facility assignments. Refer to chapter 5, "Mix &amp; Match DFA Provisioning."</p>  |

—end—

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## LAIC software upgrade

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This chapter describes upgrading the loopback access interface circuit card (LAIC) software.

*Note:* A “mismatch alarm” is generated if the correct firmware load for your system is not present on the LAICs. If you receive a mismatch alarm, upgrade the LAICs using the procedure documented in this chapter.

### **Important**

An LAIC software upgrade cannot be canceled once the upgrade process is started.

### **Chapter contents**

This chapter contains the following procedures:

<b>Procedure</b>	<b>Topic</b>	<b>See</b>
Procedure 4-1	LAIC Software Upgrade	page 4-2
Procedure 4-2	Resetting the ANXUPGCI tool	page 4-18

## Procedure 4-1 LAIC Software Upgrade

---

The following procedure is used to upgrade LAIC circuit packs to a newer firmware load.

For the Mix & Match DS1-fed AccessNode (DFA) the following LAIC “value” (C, or D) designates the following location in the access bandwidth manager (ABM) shelf:

- AIC C is the LAIC in plane A, slot 12
- AIC D is the LAIC in plane B, slot 15

### Requirements

In order to perform this procedure, the following requirements must be met:

- You must be logged into the network element user interface (NEUI).
- Review the network element (NE) user interface (UI) login (see Appendix A: OPC and NE user interfaces).
- Review the NEUI command conventions (see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A).

### Action

---

Step	Action
1	From the OPC interface User Session Manager main window, tab to Available Tools.
2	Using the arrow keys, move to the NE Login Manager and press <b>Ctrl_A</b> . <i>The NE Login Manager main window is displayed.</i>
3	Tab to the Avail Nodes window.
4	Use the arrow keys to move to the network element to be updated, and press <b>Ctrl_A</b> . <i>The NE ID and NE Name are displayed in the Network element:&gt;field.</i>

—continued—

Procedure 4-1 (continued)  
**LAIC software upgrade**

- | Step | Action   |
|------|--|
| 5    | Tab to the [Login •L] button and press <b>Ctrl_A</b> .<br><i>The login window is displayed.</i>  |
| 6    | Enter your <b>admin</b> level userid and then enter your <b>admin</b> level password.<br><i>The FWPUI menu is displayed.</i><br><br>A Warning! message displayed. Read this message then press <return> to see the end of the message and get the NEUI prompt. |

**Verify TIC and LAIC states**

- 7 At the NEUI prompt enter the following command:  
**eq tic a ↵**  
*The equipment screen appears for the selected TIC.*  
 Observe the State field:

If state is	Then
no state (blank) or IS Trbl	TIC needs to be equipped or replaced. Insert a new TIC and wait until it comes back in the IS state (approx 1 min.) Then go to step 8.
IS	go to step 8.

- 8 At the NEUI prompt enter the following command:  
**eq aic c ↵**  
*The equipment screen appears for the LAIC in ABM slot 12 is displayed.*  
**Note:** In the Mix & Match DFA, the LAIC in plane A (ABM slot 12) is designated as “**aic c**”.  
 Observe the State field:

If state is	Then
no state (blank) or IS Trbl	LAIC needs to be equipped or replaced. Insert a new LAIC and wait until it comes back in the IS state (approx 5 min.) Then go to step 9.
IS	go to step 9.

—continued—

#### 4-4 LAIC software upgrade

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Procedure 4-1 (continued)  
**LAIC software upgrade**

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Step	Action
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- 9** At the NEUI prompt enter the following command:  
**eq tic b ↵**  
*The equipment screen appears for the selected TIC.*  
Observe the State field:

If state is	Then
no state (blank) or IS Trbl	TIC needs to be equipped or replaced. Insert a new TIC circuit pack and wait until it comes back in the IS state (approx 1 min.) Then go to step 10.
IS	go to step 10.

- 10** At the NEUI prompt enter the following command:  
**eq aic d ↵**  
*The equipment screen appears for the LAIC in ABM slot 15 is displayed.*  
**Note:** In the Mix & Match DFA, the LAIC in plane B (ABM slot 15) is designated as "aic d".  
Observe the State field:

If state is	Then
no state (blank) or IS Trbl	LAIC needs to be equipped or replaced. Insert a new LAIC circuit pack and wait until it comes back in the IS state (approx 5 min.) Then go to step 11.
IS	go to step 11.

—continued—

Procedure 4-1 (continued)  
**LAIC software upgrade**

Step	Action								
11	Determine which LAICs need upgrading:								
	<table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>LAICs in plane A and plane B need upgrading</td> <td>go to step 12.</td> </tr> <tr> <td>only LAIC in plane A needs upgrading</td> <td>go to step 30.</td> </tr> <tr> <td>only LAIC in plane B needs upgrading</td> <td>go to step 12.</td> </tr> </tbody> </table>	If	Then	LAICs in plane A and plane B need upgrading	go to step 12.	only LAIC in plane A needs upgrading	go to step 30.	only LAIC in plane B needs upgrading	go to step 12.
If	Then								
LAICs in plane A and plane B need upgrading	go to step 12.								
only LAIC in plane A needs upgrading	go to step 30.								
only LAIC in plane B needs upgrading	go to step 12.								

**Upgrade LAIC in plane B**

- 12** At the NEUI prompt enter the following command:  
**chgstate oos** ↵  
*The NEUI prompts with a confirmation question (Y or N).*
- 13** If the LAIC in plane B (“**aic d**”) is IS, then enter the following command:  
**y** ↵  
*The following message is displayed:*  
 The ChgState command has been received. It will be processed.  
*The AIC screen indicates OOS for the LAIC in ABM slot 15 after a couple of seconds.*
- 14** At the NEUI prompt enter the following command:  
**anxupgci** ↵  
*The following message appears:*  
 ANXUPGCI is used to upgrade the Loopback AIC and the Shelf Processor. Please type HELP for more information.  
*The ANXUPGCI utility is displayed.*  
**Note:** In the event the tool is in use by another user see “Resetting the ANXUPGCI tool” on page 4-18.

—continued—

## 4-6 LAIC software upgrade

---

### Procedure 4-1 (continued) LAIC software upgrade

---

- | Step | Action  |
|------|---|
| 15   | <p>At the NEUI prompt enter the following command:<br/><b>upgrade laic d fw</b> ↵</p> <p><i>The following message is displayed:</i></p> <pre>Upgrade the firmware - are you sure? Please confirm ("Yes" or "No"):</pre>           |
| 16   | <p>To confirm, enter the following command:<br/><b>y</b> ↵</p> <p><i>The following message is displayed:</i></p> <pre>The Loopback AIC upgrade has been initiated. Use the LAICSTATUS command to obtain status information.</pre> |



#### **CAUTION**

**Do not attempt to change LAIC state during the upgrade.**

Attempting to change the LAIC state during the upgrade can impact traffic and possibly damage the card.

- 17 Wait 2 minutes. At the NEUI prompt enter the following command:  
**laicstatus** ↵

If message is	Then
"---Loopback AIC D Status: Loopback AIC upgrade completed successfully!"	go to step 18.
different from the message listed above	the upgrade has probably failed. If this is the first try, wait 5 minutes, then go back to step 15. If this is the second time the upgrade failed, note the error message, and contact your Nortel Networks technical representative.

—continued—

Procedure 4-1 (continued)  
**LAIC software upgrade**

Step	Action
18	<p>At the NEUI prompt enter the following command:  <b>upgrade laic d boot</b> ↵</p> <p><i>The following message is displayed:</i></p> <pre>Upgrade the boot load - are you sure? Please confirm ("Yes" or "No"):</pre>
19	<p>To confirm, enter the following command:  <b>y</b> ↵</p> <p><i>The following message is displayed:</i></p> <pre>The Loopback AIC upgrade has been initiated. Use the LAICSTATUS command to obtain status information.</pre>



**CAUTION**  
**Do not attempt to change LAIC state during the upgrade.**  
 Attempting to change the LAIC state during the upgrade can impact traffic and possibly damage the card.

20	<p>Wait 2 minutes. At the NEUI prompt enter the following command:  <b>laicstatus</b> ↵</p>
----	---

If message is	Then
<pre>"---Loopback AIC D Status: Loopback AIC upgrade completed successfully!"</pre>	go to step 21.
different from the message listed above	the upgrade has probably failed. If this is the first try, wait 5 minutes, then go back to step 18. If this is the second time the upgrade failed, note the error message, and contact your Nortel Networks technical representative.

—continued—

## 4-8 LAIC software upgrade

---

### Procedure 4-1 (continued) LAIC software upgrade

---

- | Step | Action   |
|------|--|
| 21   | At the NEUI prompt enter the following command:<br><b>chgstate is</b> ↵  |
| 22   | At the NEUI prompt enter the following command:<br><b>chgstate oos</b> ↵<br><i>The NEUI prompts with a confirmation question (Y or N).</i> |



#### **CAUTION**

The LAIC state has to be changed from OOS to IS and then to OOS again to activate the LAIC software BOOT. This will ensure correct download of the new CPLD load in the LAIC.

- |    |   |
|----|---|
| 23 | If the LAIC in plane B (“ <b>aic d</b> ”) is IS, confirm by entering the following command:<br><b>y</b> ↵<br><i>The following message is displayed:</i><br><br>The ChgState command has been received. It will be processed.<br><br><i>The AIC screen indicates OOS for the LAIC in ABM slot 15 is displayed after couple of seconds.</i> |
| 24 | Reopen the ANXUPGCI tool (if it has timed-out) by entering the following command from the NEUI prompt:<br><b>anxupgci</b> ↵<br><i>The ANXUPGCI tool opens.</i>  |

—continued—

Procedure 4-1 (continued)  
**LAIC software upgrade**

Step	Action								
25	<p>At the NEUI prompt enter the following command:  <b>upgrade laic d cpld</b> ↵</p> <p><b>Note:</b> The LAIC rel 08 or higher does not require a CPLD upgrade since it is already at the correct level.</p> <p><i>The following message is displayed:</i></p> <table border="1"> <thead> <tr> <th>If the message is</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>The LAIC to be upgraded is release 08 or higher and does not require a CPLD. CPLD upgrade aborted.</td> <td>go to step 30.</td> </tr> <tr> <td>Could not determine card information. CPLD upgrade aborted.</td> <td>Wait for 5 minutes, the then repeat step 25.</td> </tr> <tr> <td>Upgrade the cpld - are you sure? Please confirm ("Yes" or "No"):</td> <td>go to step 26.</td> </tr> </tbody> </table>	If the message is	Then	The LAIC to be upgraded is release 08 or higher and does not require a CPLD. CPLD upgrade aborted.	go to step 30.	Could not determine card information. CPLD upgrade aborted.	Wait for 5 minutes, the then repeat step 25.	Upgrade the cpld - are you sure? Please confirm ("Yes" or "No"):	go to step 26.
If the message is	Then								
The LAIC to be upgraded is release 08 or higher and does not require a CPLD. CPLD upgrade aborted.	go to step 30.								
Could not determine card information. CPLD upgrade aborted.	Wait for 5 minutes, the then repeat step 25.								
Upgrade the cpld - are you sure? Please confirm ("Yes" or "No"):	go to step 26.								

26 Confirm by entering the following command:  
**y** ↵

*The following message is displayed:*

The Loopback AIC upgrade has been initiated.  
 Use the LAICSTATUS command to obtain status information.  
 The CPLD upgrade will take approximately 10 minutes.

	<p><b>CAUTION</b>  <b>Do not attempt to change LAIC state during the upgrade.</b>          Attempting to change the LAIC state during the upgrade can impact traffic and possibly damage the card.</p>
---	--

—continued—

## 4-10 LAIC software upgrade

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### Procedure 4-1 (continued) LAIC software upgrade

---

- | Step | Action  |
|------|---|
| 27   | Wait 1 minute. At the NEUI prompt enter the following command:<br><b>laicstatus</b> ↵ |

If message is	Then
"---Loopback AIC D Status: Loopback loading completed successfully!"	go to step 28.
different from the message listed above	the upgrade has probably failed. If this is the first try, wait 5 minutes, then go back to step 25. If this is the second time the upgrade failed, note the error message, and contact your Nortel Networks technical representative.

- 28 At the NEUI prompt enter the following command:  
**chgstate is** ↵
- Note:** Discard any of the intermediate states. Wait 5 minutes then observe the State field:

If state is	Then
IS	the upgrade has completed successfully. Wait 1 minute. Go to step 29.
IS Trbl	LAIC ("aic d") cannot be upgraded and needs to be replaced. Interrupt the LAIC upgrade procedure and replace the LAIC before resuming the procedure. Restart the LAIC upgrade of the new LAIC. Begin at step 12 of this procedure.

—continued—

Procedure 4-1 (continued)  
**LAIC software upgrade**

**Step Action**

**29** Determine if the LAIC in plane A needs upgrading:

If	Then
the LAIC in plane A needs to be updated	go to step 30.
the LAIC in plane A does not need to be updated	go to step 47.

**Upgrade LAIC in plane A**

**30** At the NEUI prompt type: **2 c ↵**

*The equipment screen is updated for LAIC in ABM slot 12 ("aic c").*

Observe the State field:

If state is	Then
IS	go to step 31.
IS Trbl	LAIC ("aic c") cannot be upgraded and needs to be replaced. Interrupt the LAIC upgrade procedure and replace the LAIC before resuming the procedure. Restart the LAIC upgrade of the new LAIC. Begin at step 30 of this procedure.

**31** At the NEUI prompt enter the following command:

**chgstate oos ↵**

*The NEUI prompts with a confirmation question (Y or N).*

**32** If the LAIC ("aic c") is IS, confirm by entering the following command:

**y ↵**

*The following message is displayed:*

The ChgState command has been received. It will be processed.

*The AIC screen indicates OOS after a couple of seconds.*

—continued—

## 4-12 LAIC software upgrade

---

### Procedure 4-1 (continued) LAIC software upgrade

---

Step	Action
33	Reopen the ANXUPGCI tool (if it has timed-out) by entering the following command from the NEUI prompt: <b>anxupgci</b> ↵ <i>The ANXUPGCI tool opens.</i>
34	At the NEUI prompt enter the following command: <b>upgrade laic c fw</b> ↵ <i>The following message is displayed:</i> Upgrade the firmware - are you sure? Please confirm ("Yes" or "No"):
35	Confirm by entering the following command: <b>y</b> ↵ <i>The following message appears:</i> The Loopback AIC upgrade has been initiated. Use the LAICSTATUS command to obtain status information.



#### **CAUTION**

**Do not attempt to change LAIC state during the upgrade.**

Attempting to change the LAIC state during the upgrade can impact traffic and possibly damage the card.

36	Wait 2 minutes. At the NEUI prompt enter the following command: <b>laicstatus</b> ↵
----	--

—continued—

Procedure 4-1 (continued)  
**LAIC software upgrade**

**Step Action**

If message is	Then
<pre> "---Loopback AIC C Status: Loopback AIC upgrade completed successfully!"                     </pre>	go to step 37.
different from the message listed above	the upgrade has probably failed. If this is the first try, wait 5 minutes, then go back to step 30. If this is the second time the upgrade failed, note the error message, and contact your Nortel Networks technical representative.

**37** At the NEUI prompt enter the following command:

**upgrade laic c boot** ↵

*The following message is displayed:*

```

Upgrade the boot load - are you sure?
Please confirm ("Yes" or "No"):
                    
```

**38** Confirm by entering the following command:

**y** ↵

*The following message appears:*

```

The Loopback AIC upgrade has been initiated.
Use the LAICSTATUS command to obtain status
information.
                    
```



**CAUTION**

**Do not attempt to change the LAIC state during the upgrade.**

Attempting to change the LAIC state during the upgrade can impact traffic and possibly damage the card.

—continued—

## 4-14 LAIC software upgrade

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### Procedure 4-1 (continued) LAIC software upgrade

---

- | Step | Action  |
|------|---|
| 39   | Wait 1 minute. At the NEUI prompt enter the following command:<br><b>laicstatus</b> ↵ |

If message is	Then
"---Loopback AIC C Status: Loopback AIC upgrade completed successfully!"	go to step 40.
different from the message listed above	the upgrade has probably failed. If this is the first try, wait 5 minutes, then go back to step 37. If this is the second time the upgrade failed, note the error message, and contact your Nortel Networks technical representative.

- 40 At the NEUI prompt enter the following command:  
**chgstate is** ↵

- 41 At the NEUI prompt enter the following command:  
**chgstate oos** ↵

*The NEUI prompts with a confirmation question (Y or N).*



#### **CAUTION**

The LAIC state must be changed from OOS to IS, then back to OOS again to activate the LAIC software BOOT. This ensures correct download of the new CPLD load to the LAIC.

—continued—

Procedure 4-1 (continued)  
**LAIC software upgrade**

- | Step | Action   |
|------|--|
| 42   | <p>If the LAIC in ABM slot 12 (“aic c”) is IS, confirm by entering the following command:</p> <p><b>y ↵</b></p> <p><i>The following message is displayed:</i></p> <p>The ChgState command has been received. It will be processed.</p> <p><i>The AIC screen indicates OOS after couple of seconds.</i></p> |
| 43   | <p>Reopen the ANXUPGCI tool (if it has timed-out) by entering the following command from the NEUI prompt:</p> <p><b>anxupgci ↵</b></p> <p><i>The ANXUPGCI tool opens.</i></p>  |
| 44   | <p>At the NEUI prompt enter the following command:</p> <p><b>upgrade laic c cpld ↵</b></p> <p><b>Note:</b> The LAIC rel 08 or higher does not require a CPLD upgrade since it is already at the correct level.</p> <p><i>The following message is displayed:</i></p>                                       |

If the message is	Then
The LAIC to be upgraded is release 08 or higher and does not require a CPLD. CPLD upgrade aborted.	go to step 46.
Could not determine card information. CPLD upgrade aborted.	Wait for 5 minutes, the then repeat step 44.
Upgrade the cpld - are you sure? Please confirm ("Yes" or "No") :	go to step 45.

—continued—

## 4-16 LAIC software upgrade

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### Procedure 4-1 (continued) LAIC software upgrade

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

---

- 45 Confirm by entering the following command:  
`y ↵`  
*The following message appears:*  
The Loopback AIC upgrade has been initiated.  
Use the LAICSTATUS command to obtain status information.  
The CPLD upgrade will take approximately 10 minutes.



#### **CAUTION**

**Do not attempt to change LAIC state during the upgrade.**

Attempting to change the LAIC state during the upgrade can impact traffic and possibly damage the card.

- 46 Wait 1 minute. At the NEUI prompt enter the following command:  
`laicstatus ↵`

If message is	Then
"---Loopback AIC C Status: Loopback loading completed successfully!"	go to step 47.
different from the message listed above	the upgrade has probably failed. If this is the first try, wait 5 minutes, then go back to step 44. If this is the second time the upgrade failed, note the error message, and contact your Nortel Networks technical representative.

—continued—

Procedure 4-1 (continued)  
**LAIC software upgrade**

Step	Action						
47	<p>At the NEUI prompt enter the following command:  <b>chgstate is</b> ↵</p> <p>Discard any of the intermediate states. Wait 5 minutes then observe the State field:</p> <table border="1"> <thead> <tr> <th>If state is</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>IS</td> <td>The upgrade has complete successfully. Wait 1 minute, and then go to step 48.</td> </tr> <tr> <td>IS Trbl</td> <td>LAIC (“<b>aic c</b>”) cannot be upgraded and needs to be replaced. Interrupt the LAIC upgrade procedure and replace the LAIC before resuming the procedure. Restart the LAIC upgrade of the new LAIC. Begin at step 30 of this procedure.</td> </tr> </tbody> </table>	If state is	Then	IS	The upgrade has complete successfully. Wait 1 minute, and then go to step 48.	IS Trbl	LAIC (“ <b>aic c</b> ”) cannot be upgraded and needs to be replaced. Interrupt the LAIC upgrade procedure and replace the LAIC before resuming the procedure. Restart the LAIC upgrade of the new LAIC. Begin at step 30 of this procedure.
If state is	Then						
IS	The upgrade has complete successfully. Wait 1 minute, and then go to step 48.						
IS Trbl	LAIC (“ <b>aic c</b> ”) cannot be upgraded and needs to be replaced. Interrupt the LAIC upgrade procedure and replace the LAIC before resuming the procedure. Restart the LAIC upgrade of the new LAIC. Begin at step 30 of this procedure.						
48	<p>At the NEUI prompt enter the following command:  <b>quit all</b> ↵</p> <p><i>The CI prompt appears.</i></p>						
49	<p>At the CI prompt enter the following command:  <b>logout</b> ↵</p> <p style="text-align: center;">—end—</p>						

## Procedure 4-2 Resetting the ANXUPGCI tool

---

Use this procedure to reset the ANXUPGCI command interface (CI) tool so that it can be used by the person performing an upgrade.

The ANXUPGCI tool can be used by only one user at a time. If the ANXUPGCI tool is being used, the person using the CI tool must log off the CI tool before another user can use the CI tool. Another option is to reset the ANXUPGCI tool. Resetting the CI tool removes any active users on the CI tool.

### Requirements

In order to perform this procedure, the following requirements must be met:

- You must be logged into the network element user interface (NEUI).
- Review the operations controller (OPC) user interface (UI) and NEUI logins (see Appendix A: OPC and NE user interfaces).
- Review the OPC command conventions (see *OPC User Interface Description*, 323-3001-301, in *Operations, Administration, and Provisioning*, Volume 4A).
- Review the NEUI command conventions (see *Network Element User Interface Description*, 323-3001-300, in *Operations, Administration, and Provisioning*, Volume 4A).

—continued—

Procedure 4-2 (continued)  
**Resetting the ANXUPGCI tool**

**Action**

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

- 1 Check the message displayed by the ANXUPGCI tool when you try to log on to the tool:

If the following message appears	Then
User count exceeded; ANXUPGCI in use by...	the CI tool is currently in use. Go to step 2.
another message	call your Nortel Networks technical representative. When the problem is cleared, go to step 3.

- 2 Determine if the user displayed in the message is using the CI tool.

If the user	Then
is using the CI tool	ask the user to quit the CI tool and log out from the CI tool.
is not using the CI tool	go to step 3.

- 3 Is an LAIC or SP software upgrade in progress?

If a software upgrade is	Then
in progress	wait until the software upgrade is finished before you log in to the ANXUPGCI tool. Then go to step 7.
not in progress	the last user closed the CI tool session incorrectly and the user's CI tool session remains active. Go to step 4.

—continued—

## 4-20 LAIC software upgrade

---

Procedure 4-2 (continued)

### Resetting the ANXUPGCI tool

---

- | Step | Action  |
|------|---|
| 4    | At the NEUI prompt, enter the following command:<br><b>toolsup</b> ↵<br><i>The following message appears:</i><br>TOOLSUP - Tool Supervisor<br>Type HELP to display available commands<br>TOOLSUP: |
| 5    | At the prompt, enter the following command:<br><b>reset anxupgci</b> ↵<br><i>The NE user interface displays:Ok</i>  |
| 6    | Enter the following command:<br><b>anxupgci</b> ↵<br><i>The CI:&gt; prompt appears.</i>   |
| 7    | Return to the procedure where the ANXUPGCI tool login was attempted and log in to the CI tool.  |

—end—

---

## Mix & Match DFA Provisioning

---

This chapter gives an overview of the steps required to provision STS-1-level cross-connects and VT-level facilities on the Mix and Match DFA system using the new Nodal Connection Manager user interface (UI). The Nodal Connection Manager UI is a text-based TL1 interface provisioning tool. The Nodal Connection Manager tool is used to set up connections between the switch and the remote equipment, as well as to provision a particular DS1 facility with a specific protocol, such as TR-08, GR-303, Tandem, or VCLM. Information on provisioning DS1 facility parameters is also included in this chapter.

Make sure you fully understand how to use the new Nodal Connection Manager provisioning tool prior to using it. A complete description of this tool is provided in the *Nodal Connection Manager Quick Reference Guide*.

This chapter also provides a procedure to provision/deprovision OMC links. It is highly recommended to reserve DS1/VT mappers G1/G2 for traffic integration (TR-303 DMS/TR-303 MVI/TR-08/tandem). If OMC links are present on the facilities associated with these mappers, it is possible to move them to DS1/VT mapper G4. See “Provisioning OMC DS1 facility parameters” on page 5-26.

**Note:** For setting up, commissioning, and provisioning AccessNode Express (ANX) voice modules (VMs), refer to the *AccessNode Express Commissioning and OAM&P*, 323-3051-220.

## Chapter contents

This chapter includes the following procedures:

<b>Procedure</b>	<b>Topic</b>	<b>See</b>
Procedure 5-1	Displaying existing STS-1 cross connects	page 5-3
Procedure 5-2	Creating new STS-1 cross-connects	page 5-7
Procedure 5-3	Deleting STS-1 cross-connects	page 5-9
Procedure 5-4	Creating a GR-303 facility assignment	page 5-13
Procedure 5-5	Provisioning DS1 facility parameters	page 5-20
Procedure 5-6	Provisioning OMC DS1 facility parameters	page 5-26

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## Procedure 5-1 Displaying existing STS-1 cross connects

---

The cross-connects that can be provisioned on a DS1-fed AccessNode (DFA) system are STS-1 cross-connects between the DS1 mapper circuit packs and the enhanced transport interface card (ETIC). The default cross connections set by the Connection Manager are as follows:

- 1-CE1-S1TIC-1,1-CE1-S1G1
- 1-CE1-S1TIC-2,1-CE1-S1G4
- 1-CE1-S1TIC-3,1-CE1-S1G5

where:

1-CE1-S1TIC-(1...6) the administrative identifier (AID) for the ETIC port number (1, 2, 3, 4, 5, or 6)  
1-CE1-S1G(1,4,5,7) AID for the DS1 mapper group (G1/G2, G4, G5/G6, G7/G8)

**Note 1:** Mix & Match DFA supports LDS, TR-08, Tandem and OMC link traffic on STS-1 #1 and STS-1 #4 only. (STS-1 #2 can be used for additional OMC links. STS-1 #5 and #6 can be used for ANX VMs.) You must use the Nodal Connection Manager to create non-default cross-connects to the appropriate STS-1 for the desired traffic. See "Creating new STS-1 cross-connects" on page 5-7.

**Note 2:** This procedure can be used to pre-provision a Mix & Match DFA cross-connects even if the DS1 mapper circuit packs are not installed in G7/G8. If there are no DS1 mappers plugged into a pair of slots, the AID shown by the retrieve cross-connect command (**RTRV-CRS-STS1**) will show "Unequipped" for the DS1 mapper rather than its group number.

—continued—

Procedure 5-1 (continued)

### Displaying existing STS-1 cross connects

---

## Requirements

In order to perform this procedure, the following requirements must be met:

- a VT-100 compatible terminal or laptop computer with a VT-100 emulation package
- an OPC user ID and password to allow you access to the OPC tools
- the NE user ID and password for the admin security level for each NE to be commissioned
- for detailed information about using the OPC UI and accessing the OPC tools, refer to *OPC User Interface Description, 323-3001-301*, in *Operations, Administration, and Provisioning, Volume 4A*
- for detailed information about using the NEUI, refer to *Network Element User Interface Description, 323-3001-300*, in *Operations, Administration, and Provisioning, Volume 4A*

## Action

Use the following procedure to display the existing STS-1 cross connections.

---

Step	Action
1	From the Unix prompt in a Unix shell window, start the Nodal Connection Manager by entering the following command: <b>stpltxui</b> ↵
2	Wait for the program to initialize. Progress of initialization is shown by a set of autonomous messages that appear.
3	Get help on the Nodal Connection Manager tool by entering the following command: <b>help;</b> ↵

—continued—

Procedure 5-1 (continued)

**Displaying existing STS-1 cross connects**

Step	Action
4	<p>Retrieve the existing STS-1 cross connections for the Network Element by entering the following command (see Figure 5-1 on page 5-6):</p> <p><b>RTRV-CRS-STS1:NEA:AID:CTAG;</b>␣</p> <p>where:</p> <p>NEA      the NE number of the target NE</p> <p>AID      the administrative identifier (AID) of the target tributaries. AID is one of the following commands:</p> <ul style="list-style-type: none"> <li>• <b>ALL</b> for all existing cross connections</li> <li>• <b>1-CE1-S1G[1,4,5,7]</b> for DS1 mapper group (G1/G2, G4, G5/G6, G7/G8)</li> <li>• <b>1-CE1-S1TIC-[1...6]</b> for ETIC port</li> </ul> <p>ctag      the correlation tag</p>

Example:

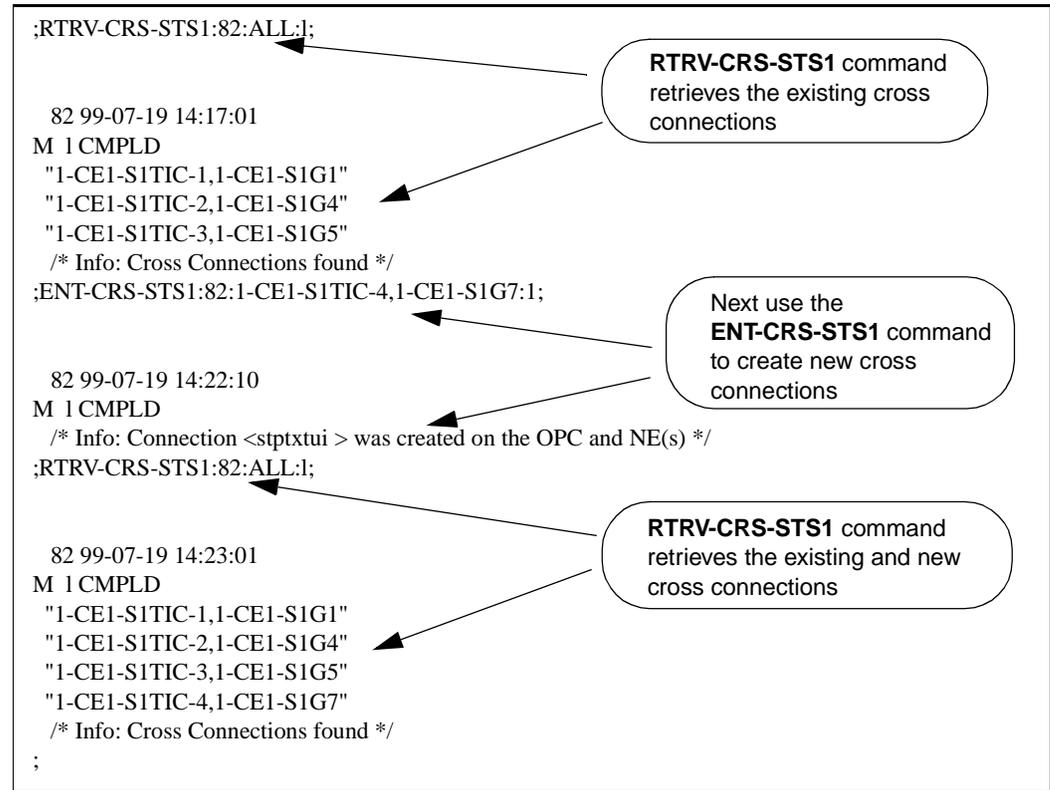
**RTRV-CRS-STS1:82:ALL:1;**␣

*Retrieves all the existing STS-1 cross connections for NE "82".*

*The cross-connects displayed will be the default STS-1 cross connections as created by the Connection Manager tool.*

—end—

**Figure 5-1**  
Retrieving/creating STS-1 cross-connects



---

## Procedure 5-2

### Creating new STS-1 cross-connects

---

This procedure is used to create new STS-1 cross connections. Mix & Match DFA supports LDS, TR-08, Tandem and OMC link traffic on STS-1 #1 and STS-1 #4 only. (STS-1 #2 can be used for additional OMC links. STS-1 #5 and #6 can be used for ANX VMs.) You must use the Nodal Connection Manager to change the cross-connects to the appropriate STS-1 for the desired traffic.

Perform this procedure after first checking the existing STS-1 cross connections (see “Displaying existing STS-1 cross connects” on page 5-3). See Figure 5-1 on page 5-6 for an example of displaying/creating STS-1 cross connections.

## Requirements

In order to perform this procedure, the following requirements must be met:

- a VT-100 compatible terminal or laptop computer with a VT-100 emulation package
- an OPC user ID and password to allow you access to the OPC tools
- the NE user ID and password for the admin security level for each NE to be commissioned
- for detailed information about using the OPC UI and accessing the OPC tools, refer to *OPC User Interface Description, 323-3001-301*, in *Operations, Administration, and Provisioning, Volume 4A*
- for detailed information about using the NEUI, refer to *Network Element User Interface Description, 323-3001-300*, in *Operations, Administration, and Provisioning, Volume 4A*

—continued—

## 5-8 Mix & Match DFA Provisioning

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Procedure 5-2 (continued)

### Creating new STS-1 cross-connects

---

## Action

Step	Action
1	<p>From the Nodal Connection Manager tool, create a new STS-1 cross connection for the Network Element by entering the following command:</p> <p><b>ENT-CRS-STS1:NEA:AID:CTAG;↵</b></p> <p>where:</p> <p>NEA        the NE number of the target NE</p> <p>AID        the administrative identifier (AID) of the target tributaries. AID consists of a comma separate pair of the following commands:</p> <ul style="list-style-type: none"><li>• <b>1-CE1-S1G[1,4,5,7]</b> for DS1 mapper group (G1/G2, G4, G5/G6, G7/G8)</li><li>• <b>1-CE1-S1TIC-[1...6]</b> for ETIC port</li></ul> <p>ctag        the correlation tag</p> <p><b>Note:</b> Specify the ETIC port first, and then the DS1 mapper.</p> <p>Example:</p> <p><b>ENT-CRS-STS1:82:1-CE1-S1TIC-4,1-CE1-S1G7;1;↵</b></p> <p><i>Creates an STS-1 cross connection for NE "82" between the DS1 mapper circuit pack in G7/G8 and the fourth port on the ETIC.</i></p>
2	<p>Display the newly created cross-connects, by entering the following command:</p> <p><b>RTRV-CRS-STS1:NEA:ALL:1;↵</b></p> <p>(where NEA is the NE number of the target NE)</p> <p><i>All cross-connects for the NE are displayed.</i></p>
3	<p>Exit the Nodal Connection Manager by entering the following command:</p> <p><b>quit;</b> (quit followed by the semicolon ";")</p>
4	<p>If a message is displayed concerning auditing the connections, see "Auditing connection data" on page 2-14 for the procedure to audit connections.</p>

—end—

## Procedure 5-3 Deleting STS-1 cross-connects

Use this procedure to delete STS-1 cross connections for the Mix & Match DFA.

### Requirements

In order to perform this procedure, the following requirements must be met:

- a VT-100 compatible terminal or laptop computer with a VT-100 emulation package
- an OPC user ID and password to allow you access to the OPC tools
- the NE user ID and password for the admin security level for each NE to be commissioned
- for detailed information about using the OPC UI and accessing the OPC tools, refer to *OPC User Interface Description, 323-3001-301*, in *Operations, Administration, and Provisioning, Volume 4A*
- for detailed information about using the NEUI, refer to *Network Element User Interface Description, 323-3001-300*, in *Operations, Administration, and Provisioning, Volume 4A*

### Action

Step	Action
1	From the Unix prompt in a Unix shell window, start the Nodal Connection Manager by entering the following command: <b>stpltxui</b> ↵
2	Wait for the program to initialize. Progress of initialization is shown by a set of autonomous messages that appear.
3	Retrieve all of the existing VT facility assignments for the Network Element by entering the following command: <b>RTRV-VT1:NEA:ALL:1;</b> ↵ (where NEA is the NE number of the target NE) <i>All VT facility assignments for the NE are displayed.</i>

—continued—

## 5-10 Mix & Match DFA Provisioning

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Procedure 5-3 (continued)

### Deleting STS-1 cross-connects

---

- | Step | Action   |
|------|--|
| 4    | Retrieve all the existing cross-connects for the Network Element by entering the following command:<br><b>RTRV-CRS-STs1:NEA:ALL:1;</b><br>(where NEA is the NE number of the target NE)<br><i>All STS-1 cross-connections are displayed.</i> |
| 5    | Use the RTRV-VT1 command with ranging to determine if VT facilities associated with the cross-connections you want to delete are of TYPE=UNASSIGNED by entering the following command:<br><b>RTRV-VT1:NEA:AID:CTAG;</b>                      |

where:

NEA the NE number of the target NE

AID the administrative identifier (AID) of the target tributaries. AID is one of the following commands:

- **1-CE1-S1TIC[1...6]-[1...28]** for ETIC port [1...6] and facility [1...28] for a specific VT1.5 facility
- **1-CE1-S1TIC[1...6]-[1...28]&&1-CE1-S1TIC[1...6]-[1...28]** for ETIC port [1...6] and facility [1...28] for a range of VT1.5 facilities

ctag the correlation tag

Example:

**RTRV-VT1:82:1-CE1-S1TIC-4-1&&1-CE1-S1TIC-4-8:1;**

*VT facilities 1 through 8 on ETIC port 4 are displayed.*

Check if the facilities are UNASSIGNED.

If	Then
any are not TYPE=UNASSIGNED	go to step 6.
they are TYPE=UNASSIGNED	go to step 7.

—continued—

Procedure 5-3 (continued)

**Deleting STS-1 cross-connects**

Step	Action
6	<p>Set the facility to TYPE=UNASSIGNED by entering the following command:</p> <p><b>ED-VT1:NEA:AID:CTAG::TYPE=UNASSIGNED,HOSTID=15,SYSTEMID=0,LINK=NULL,RDT=0;</b></p> <p>where:</p> <p>NEA            the NE number of the target NE</p> <p>AID            the administrative identifier (AID) of the target tributaries. AID is composed of the following command:</p> <ul style="list-style-type: none"> <li>• <b>1-CE1-S1TIC[1...6]-[1...28]</b> for ETIC port [1...6] and facility [1...28]</li> </ul> <p>ctag            the correlation tag</p> <p>TYPE            <b>TYPE=UNASSIGNED</b> for unassigned facilities</p> <p>HOSTID        the host ID number of the facility (vtHostId). For TYPE=UNASSIGNED, set HOSTID equal to 15.</p> <p>SYSTEMID     for TYPE=UNASSIGNED, set SYSTEMID to zero.</p> <p>LINK            the link number of the facility (systemLinkId). For TYPE=UNASSIGNED, set LINK to NULL.</p> <p>RDT            for TYPE=UNASSIGNED, set RDT to zero.</p>

Example:

**ED-VT1:82:1-CE1-S1TIC-4-1:1::TYPE=UNASSIGNED,HOSTID=15,SYSTEMID=0,LINK=NULL,RDT=0;**

*VT facilities 1 on ETIC port 4 is now set to UNASSIGNED.*

**Note:** If the ED-VT1 command is DENIED, check to see if there are any DS0 level cross-connections using the facility.

—continued—

## 5-12 Mix & Match DFA Provisioning

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Procedure 5-3 (continued)

### Deleting STS-1 cross-connects

---

- | Step | Action  |     |                                |     |   |      |                     |
|------|---|-----|--------------------------------|-----|---|------|---------------------|
| 7    | <p>Once you are satisfied that there is no traffic on the STS-1 cross-connect, enter the following delete command:</p> <pre><b>DLT-CRS-STS1:NEA:AID:CTAG;</b></pre> <p>where:</p> <table><tr><td>NEA</td><td>the NE number of the target NE</td></tr><tr><td>AID</td><td>the administrative identifier (AID) of the target tributaries. AID consists of a comma separate pair of the following commands:</td></tr></table> <ul style="list-style-type: none"><li>• <b>1-CE1-S1G[1,4,5,7]</b> for DS1 mapper group (G1/G2, G4, G5/G6, G7/G8)</li><li>• <b>1-CE1-S1TIC-[1...6]</b> for ETIC port</li></ul> <table><tr><td>ctag</td><td>the correlation tag</td></tr></table> <p><b>Note:</b> Specify the DS1 mapper first, and then the ETIC port.</p> <p>Example:</p> <pre><b>DLT-CRS-STS1:82:1-CE1-S1G7,1-CE1-S1TIC-4;1;</b></pre> <p><i>Deletes the STS-1 cross-connection for NE "82" between the DS1 mapper circuit pack in G7/G8 and the fourth port on the ETIC.</i></p> | NEA | the NE number of the target NE | AID | the administrative identifier (AID) of the target tributaries. AID consists of a comma separate pair of the following commands: | ctag | the correlation tag |
| NEA  | the NE number of the target NE  |     |                                |     |   |      |                     |
| AID  | the administrative identifier (AID) of the target tributaries. AID consists of a comma separate pair of the following commands:   |     |                                |     |   |      |                     |
| ctag | the correlation tag   |     |                                |     |   |      |                     |
| 8    | <p>Exit the Nodal Connection Manager by entering the following command:</p> <pre><b>quit;</b></pre>   |     |                                |     |   |      |                     |
| 9    | <p>If a message is displayed concerning auditing the connections, see "Auditing connection data" on page 2-14 for the procedure to audit connections.</p>   |     |                                |     |   |      |                     |

—end—

## Procedure 5-4 Creating a GR-303 facility assignment

This procedure is to create a GR-303 facility assignment for the Mix & Match DFA.

### Requirements

The user must know the following information before executing this procedure:

- which DS1 Mapper the physical DS1 line is attached to
- the host name and the remote digital terminal (RDT) link number of the DS1



#### **CAUTION**

##### **RDT on facility must match RDTLink in switch**

The RDT number assigned to the facility must match the RDT link number assigned to the port (SMA port for a DMS) to which it is physically connected.

Table RDTINV on the host contains the RDT link number to the port pairings. This number is the next available logical line number for the host.



#### **CAUTION**

##### **Minimum of two (2) GR303 links required**

The first two GR-303 links (RDTs) created for a specific host carry both the communication messaging for call setup/teardown as well as traffic. Other GR-303 links (RDTs) created carry only traffic.

A minimum of two GR-303 links must be created to a switch host for proper communication functioning. When changing GR-303 facilities to UNASSIGNED, edit the traffic only links before editing the messaging/traffic links (RDT=1 and RDT=2).

—continued—

## 5-14 Mix & Match DFA Provisioning

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Procedure 5-4 (continued)

### Creating a GR-303 facility assignment

---



#### CAUTION

**Maximum of thirty-one (31) GR-303 links per host**

Each host provisioned through the Host Provisioning Manager UI may have no more than 31 RDTs.

## Action

---

Step	Action
1	From the Unix prompt in a Unix shell window, start the Nodal Connection Manager by entering the following command: <b>stpltxui.</b>
2	Wait for the program to initialize. Progress of initialization is shown by a set of autonomous messages that appear.
3	Retrieve all the cross connect information by entering the following command: <b>RTRV-CRS-STS1:NEA:ALL:1;.</b> (where NEA is the NE number of the target NE) <i>All STS-1 cross connections for the NE are displayed.</i> Check that there is an STS-1 cross connection between the DS1 mapper circuit pack and the ETIC port on which the new GR-303 facility will be provisioned.

—continued—

Procedure 5-4 (continued)

**Creating a GR-303 facility assignment**

Step	Action
4	<p>A default cross connect is not set up by the Nodal connection Manager for ETIC ports 4, 5, and 6. For a Mix &amp; Match system, create a cross connect between 1-CE1-S1TIC-4 (fourth port of the ETIC), and the desired mapper group.</p> <p><b>Note:</b> Mix &amp; Match DFA supports LDS, TR-08, Tandem and OMC link traffic on STS-1 #1 and STS-1 #4 only. (STS-1 #2 can be used for additional OMC links. STS-1 #5 and #6 can be used for ANX VMs.)</p> <p>If the appropriate cross connect is not in place, create it using the ENT-CRS-STS1:NEA:AID:CTAG; command (see Figure 5-1 on page 5-6).</p> <p>where:</p> <p>NEA        the NE number of the target NE</p> <p>AID        the administrative identifier (AID) of the target tributaries. AID consists of a comma separate pair of the following commands:</p> <ul style="list-style-type: none"> <li>• <b>1-CE1-S1G[1,4,5,7]</b> for DS1 mapper group (G1/G2, G4, G5/G6, G7/G8)</li> <li>• <b>1-CE1-S1TIC-[1...6]</b> for ETIC port</li> </ul> <p>ctag        the correlation tag</p> <p><b>Note:</b> Specify the ETIC port first, and then the DS1 mapper.</p> <p>Example:  <b>ENT-CRS-STS1:82:1-CE1-S1TIC-4,1-CE1-S1G7:1;↵</b></p> <p><i>Creates an STS-1 cross connection for NE "82" between the DS1 mapper circuit pack in G7/G8 and the fourth port on the ETIC.</i></p> <p style="text-align: center;">—continued—</p>

## 5-16 Mix & Match DFA Provisioning

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Procedure 5-4 (continued)

### Creating a GR-303 facility assignment

---

Step	Action				
5	<p>Retrieve all of the existing VT facility assignments (see Figure 5-2) for the Network Element by entering the following command:</p> <pre>RTRV-VT1:NEA:AID:CTAG;↓</pre> <p>where:</p> <table><tr><td>NEA</td><td>the NE number of the target NE</td></tr><tr><td>AID</td><td>the administrative identifier (AID) of the target tributaries. AID is one of the following commands:</td></tr></table> <ul style="list-style-type: none"><li>• <b>ALL</b> for all ETIC ports and VT1.5s</li><li>• <b>1-CE1-S1TIC[1...6]-[1...28]</b> for ETIC port [1...6] and facility [1...28] for a specific VT1.5 facility</li><li>• <b>1-CE1-S1TIC[1...6]-[1...28]&amp;&amp;1-CE1-S1TIC[1...6]-[1...28]</b> for ETIC port [1...6] and facility [1...28] for a range of VT1.5 facilities</li></ul> <p>ctag            the correlation tag</p> <p>Example1: <pre>RTRV-VT1:82:ALL:1;↓</pre><i>Retrieves all VT facility assignments for NE "82".</i></p> <p>Example2: <pre>RTRV-VT1:82:1-CE1-S1TIC-4-1&amp;&amp;1-CE1-S1TIC-4-8:1;↓</pre><i>Retrieves a range of VT facility assignments for NE "82". In this example, VT facilities 1 through 8 on ETIC port 4 are displayed.</i></p>	NEA	the NE number of the target NE	AID	the administrative identifier (AID) of the target tributaries. AID is one of the following commands:
NEA	the NE number of the target NE				
AID	the administrative identifier (AID) of the target tributaries. AID is one of the following commands:				
6	<p>To retrieve the current host provisioning as set by the Host Provisioning UI, enter the following command:</p> <pre>RTRV-HOST:NEA:ALL:1;↓</pre> <p>(where NEA is the NE number of the target NE)</p> <p><i>All hosts are displayed, showing the type of host and hostid.</i></p>				

—continued—

Procedure 5-4 (continued)

**Creating a GR-303 facility assignment**

Step	Action
7	<p>Set the facility to GR-303 (see Figure 5-2 on page 5-19) by entering the following command:</p> <p><b>ED-VT1:NEA:AID:CTAG::TYPE=t,HOSTID=h,SYSTEMID=s,LINK=i,RDT=r;↵</b></p> <p>where:</p> <p>NEA      the NE number of the target NE</p> <p>AID      the administrative identifier (AID) of the target tributaries. AID is composed of the following command:</p> <ul style="list-style-type: none"> <li>• <b>1-CE1-S1TIC[1...6]-[1...28]</b> for ETIC port [1...6] and facility [1...28]</li> </ul> <p>ctag      the correlation tag</p> <p>TYPE      one of the following:</p> <ul style="list-style-type: none"> <li>• <b>TYPE=TR08</b> for TR-08 facilities</li> <li>• <b>TYPE=TANDEM</b> for Tandem facilities</li> <li>• <b>TYPE=UNASSIGNED</b> for unassigned facilities</li> <li>• <b>TYPE=GR303DMS</b> for DMS IDLC facilities</li> <li>• <b>TYPE=GR303MVI</b> for MVI IDLC facilities</li> <li>• <b>TYPE=VLCM</b> for DSX facilities</li> <li>• <b>TYPE=VLCMSIGNAL</b> for DSX facilities that use non-RMM signaling</li> <li>• <b>TYPE=VLCMSIGNALRMM</b> for DSX facilities that use RMM signaling</li> </ul> <p>HOSTID   the host ID number of the facility (vtHostId), which identifies the GR-303 switch host to which the VTn belongs. HOSTID is set to non-zero for GR-303 DMS and GR-303 MVI. For all other services except UNASSIGNED, set HOSTID equal to zero. For UNASSIGNED, set HOSTID equal to 15.</p>

—continued—

## 5-18 Mix & Match DFA Provisioning

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Procedure 5-4 (continued)

### Creating a GR-303 facility assignment

---

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

---

where:

SYSTEMID	the TR-08 system ID number of the facility (systemId). SYSTEMID is set to non-zero for TR-08 or DMSX only. For all other services, set SYSTEMID equal to zero.
LINK	the link number of the facility (systemLinkId). LINK is set to non-NULL for TR-08 and DMSX only. For all other services, set LINK to NULL.
RDT	the remote identifier for GR-303 facilities and contains the number representing the link to the host switch. RDT represents the RDT link number from the switch provisioning, and is set to non-zero for GR-303 only. For all other services, set RDT equal to zero.

Example:

```
ED-VT1:82:1-CE1-S1TIC-4-1:1::TYPE=GR303MVI,HOSTID=2,  
RDT=1
```

```
ED-VT1:82:1-CE1-S1TIC-4-2:1::TYPE=GR303MVI,HOSTID=2,  
RDT=2
```

**Note:** Each facility is given its own RDT. RDT must match switch provisioning.

*VT facilities 1 and 2 on ETIC port 4 are now set to support GR-303 MVI.*

**8** Exit the Nodal Connection Manager by entering the following command:

```
quit; (quit followed by the semicolon “;”)
```

**9** If a message is displayed concerning auditing the connections, see “Auditing connection data” on page 2-14 for the procedure to audit connections.

—continued—

Procedure 5-4 (continued)  
**Creating a GR-303 facility assignment**

**Figure 5-2**  
**Setting the facility to GR-303**

```

;RTRV-VT1:82:1-CE1-S1TIC-4-1&&1-CE1-S1TIC-4-8:1;

82 99-07-19 14:24:48
M 1 CMPLD
"1-CE1-S1TIC-4-1,TYPE=UNASSIGNED,HOSTID=15,RDT=0,LINK=NULL,SYSTEMID=0"
"1-CE1-S1TIC-4-2,TYPE=UNASSIGNED,HOSTID=15,RDT=0,LINK=NULL,SYSTEMID=0"
"1-CE1-S1TIC-4-3,TYPE=UNASSIGNED,HOSTID=15,RDT=0,LINK=NULL,SYSTEMID=0"
"1-CE1-S1TIC-4-4,TYPE=UNASSIGNED,HOSTID=15,RDT=0,LINK=NULL,SYSTEMID=0"
"1-CE1-S1TIC-4-5,TYPE=UNASSIGNED,HOSTID=15,RDT=0,LINK=NULL,SYSTEMID=0"
"1-CE1-S1TIC-4-6,TYPE=UNASSIGNED,HOSTID=15,RDT=0,LINK=NULL,SYSTEMID=0"
"1-CE1-S1TIC-4-7,TYPE=UNASSIGNED,HOSTID=15,RDT=0,LINK=NULL,SYSTEMID=0"
"1-CE1-S1TIC-4-8,TYPE=UNASSIGNED,HOSTID=15,RDT=0,LINK=NULL,SYSTEMID=0"
/* Info: vtn found. */
;

;RTRV-HOST:82:ALL:1;

82 99-07-19 14:27:35
M 1 CMPLD
"HOST=WWPA,HOSTID=1,TYPE=GR303DMS"
"HOST=WWPB,HOSTID=2,TYPE=GR303MVI"
/* Info: hostinfo found. */
;ED-VT1:82:1-CE1-S1TIC-4-1:1:TYPE=GR303MVI,HOSTID=2,RDT=1;

82 99-07-19 14:27:55
M 1 CMPLD
/* Info: Facility was edited on the OPC and NE */
;ED-VT1:82:1-CE1-S1TIC-4-2:1:TYPE=GR303MVI,HOSTID=2,RDT=2;

82 99-07-19 14:28:14
M 1 CMPLD
/* Info: Facility was edited on the OPC and NE */
;

```

Use AID ranging to retrieve only a portion of the VTs. A previous **RTRV-VT1** has been used so the response is immediate

Use **RTRV-HOST** command to determine the HOSTID associated with each host. Response also shows the type of host.

Use **ED-VTI** command to modify the facilities from UNASSIGNED to GR303MVI. Each facility is given its own RDT. **RDT must match switch provisioning.**

—end—

## Procedure 5-5 Provisioning DS1 facility parameters

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

**Note:** For operations maintenance channel (OMC) DS1 facility parameters, see “Provisioning OMC DS1 facility parameters” on page 5-26.

Table 5-1 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 5-2 on page 5-24 lists the parameters for provisioning a DS1 facility.

**Table 5-1  
Provisioning DS1 parameters**

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 5-5 (continued)

**Provisioning DS1 facility parameters**

**Requirements**

Before you perform this procedure, use the facility records to get the values for each of the DS1 parameters.

**Action**

Step	Action
1	<p>From the Network Element Status screen, display the provisioning screen for the DS1 facility by entering the following command:</p> <p><b>fa ds1 &lt;group&gt; &lt;port&gt;</b> ↵</p> <p>where:</p> <p>&lt;group&gt;    DS1 group number</p> <p>&lt;port&gt;     number of the DS1 port: <b>1 to 14, or all</b></p>
2	<p>Take the facility out of service by entering the following command:</p> <p><b>chgstate oos</b> ↵</p> <p><b>y</b> ↵</p> <p><i>The state of the facility changes to out of service (OOS).</i></p>
3	<p>To change the parameters, display the Edit Facility screen by entering the following command:</p> <p><b>edit</b> ↵</p> <p><i>The Edit Facility screen appears.</i></p> <p style="text-align: center;">—continued—</p>

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Procedure 5-5 (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 going to step 5. If you are provisioning for the first time, then provision all the facility parameters.

<b>If provisioning</b>	<b>Then enter</b>
DS1 facility identifier	<b>facid&lt;identifier&gt;</b> ↵ where: <identifier> is an alphanumeric string up to 38 characters. <b>Note:</b> AccessNode translates lowercase characters to uppercase. The facility ID can contain uppercase and lowercase characters or characters that are not alphanumeric such as spaces, hyphens, or slash marks. Begin the identifier string with a single quotation mark ('). <i>The provisioned value appears in reverse video.</i>
line coding	<b>lcoding &lt;type&gt;</b> ↵ where: <type> is the type of line coding: <b>b8zs</b> , <b>ami</b> or <b>amizcs</b> <i>The provisioned value appears in reverse video.</i>
line buildout range	<b>lbo &lt; range &gt;</b> ↵ where: <range> is the line buildout range: <b>short</b> , <b>medium</b> , or <b>long</b> <i>The provisioned value appears in reverse video.</i>
framing format	<b>framefmt &lt;format&gt;</b> ↵ where: <format> is the framing format: <b>null</b> , <b>superframe</b> , <b>extended</b> , or <b>dlc</b> <i>The provisioned value appears in reverse video.</i>
—continued—	

Procedure 5-5 (continued)  
**Provisioning DS1 facility parameters**

**Step Action**

If provisioning	Then enter
alarm encoding	<b>alarmenc &lt;encoding&gt;</b> ␣ where: <encoding> is the type of alarm encoding: <b>ones</b> or <b>zeros</b> . <i>The provisioned value appears in reverse video.</i>
synchronization mode	<b>synchr &lt;mode&gt;</b> ␣ where: <mode> is the synchronization mode: <b>bytesynchronous</b> or <b>asynchronous</b> . <i>The provisioned value appears in reverse video.</i> <b>Note:</b> 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	<b>pmprov &lt;status&gt;</b> ␣ where: <status> is the status of the DS1 facility performance monitoring: <b>enable</b> or <b>disable</b> <i>The provisioned value appears in reverse video.</i>
—end—	

- 5 Return the facility to in service by entering the following command:  
**chgstate is**␣  
*The state changes to in service (IS).*
- 6 Repeat steps 1 through 5 for each DS1 facility (port) and each DS1 group to that requires provisioning.
- 7 Return to the Network Element Status screen by entering:  
**fwpu**␣

—end—

**Table 5-2**  
**Parameters for DS1s**

Parameter and menu command	Setting	Explanation	Default
facility identifier, <b>facid</b>		An alphanumeric string up to 38 characters.	no entry
line coding, <b>lcoding</b>	ami amizcs b8zs	<p>Line coding is a binary format that allows regenerators to separate valid input from line noise.</p> <p>Alternate mark inversion (AMI) is a format where the binary value of 1, represented by a square wave (pulse), switches positive and negative polarity.</p> <p>A DS1 facility requires a DS1 signal that uses AMI line coding and appears at a DS1 interface to meet specific ones density standards. These standards require the DS1 signal to transmit at least one pulse within any 8-bit sequence.</p> <p>Because AMI does not provide any type of pulse density assurance, use the AMI line code with applications guaranteed to meet the standards.</p> <p>For example, voice applications meet ones density requirements because of the consistent bit patterns that represent speech. However, computer data applications do not always meet ones density requirements because computer data varies in size and content.</p> <p>AMI zero code suppression (amizcs) allows for the ones density requirements. AMI zero code suppression requires the insertion (at the DS1 source) of a "1" in bit 7 of any all-zeros DS0 byte.</p> <p>Bipolar 8-bit zero code substitution (b8zs) allows for the ones density requirements. This replacement 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.</p>	ami
—continued—			

**Table 5-2 (Continued)  
Parameters for DS1s**

Parameter and menu command	Setting	Explanation	Default
line build-out, <b>lbo</b>	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, <b>framefmt</b>	superframe extended dlc null	Framing provides the controlled 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 the 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, the superframe reserves 18 bits for the evaluation of circuit performance and 6 bits provide frame and signal management.  Digital loop carrier (DLC) setting is used mainly with TR-08 DS1s associated with span A.  Null setting ensures that no framing bits are added.	superframe
alarm encoding, <b>alarmenc</b>	ones zeros	You can provision the facility output to send an all 1's or an all 0's signal on the output port when the facility receives an all 1's signal.	ones
synchronization mode, <b>synchr</b>	byte-synchronous asynchronous	Synchronous systems lock all clocks to a reference frequency. The elements of the system synchronize 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 transmitted 24 DS0 channels.  Asynchronous systems require pulse stuffing because the bit rates vary from equipment to equipment. An asynchronous setting has no direct payload visibility	byte-synchronous
performance monitoring, <b>pmprov</b>	enable disable	Enables or disables DS1 facility performance monitoring	enabled
—end—			

## Procedure 5-6 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. You must perform OMC provisioning separately 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. You can add, delete, or query OMC links. Also, you can set the OMC download channel.

*Note:* You can provision multiple OMC links only on a DFA RFT that transmits traffic and acts as a communication server for other DFA RFTs.

Table 5-3 lists the DS1 parameters for provisioning an OMC.

**Table 5-3**  
**Provisioning DS1 parameters for an OPC**

Parameter	Menu command	Setting and explanation
OMC facility identifier	<b>omc add</b>	link number DS1 group number: G1, G2, or G4 DS1 port number: 1 to 14 number of DS0s used: 3 to 6 link name: maximum 20 character string
OMC software download channel	<b>omc setdlchan</b>	link number
OMC delete	<b>omc delete</b>	link number
line coding	<b>lcoding</b>	use the b8zs setting. See "Provisioning DS1 facility parameters" on page 5-20.

—continued—

Procedure 5-6 (continued)

**Provisioning OMC DS1 facility parameters**

**Requirements**

The equipment must exist for you to add an OMC DS1. You can provision only DS1s not assigned to transmit traffic as OMC links. However, you can use an OMC link for synchronization at a DFA RFT or OPC shelf.

Each OMC link requires a dedicated DS1 facility. Make sure that you provision the OMC bandwidth and DS1 facility parameters 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 the following command: <b>quit all.</b>
2	Access the OMC command interpreter (OMC CI) by entering the following command: <b>omcci.</b> <i>The OMCCI prompt appears.</i>
3	Determine the OMC links that now exist by entering the following command: <b>omc query all.</b> <i>A list of 10 OMC links appears (both assigned and not assigned).</i> <b>Note:</b> If the system has an OMC link assigned as the software download channel for an RFT, an asterisk appears under the D/L header.

—continued—

Procedure 5-6 (continued)

**Provisioning OMC DS1 facility parameters**

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

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 operation, administration and maintenance communication**

If you delete an OMC link, you can 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 you establish a new download channel.

If you want to	Then complete the following
delete an OMC link	From the Network Element Status screen, enter: <b>omc delete &lt;link #&gt;</b> <b>y</b> where: <link #>      OMC link number: 1 to 10 <i>The system indicates that it has deleted the OMC link.</i> Go to step 5.
—continued—	

—continued—

Procedure 5-6 (continued)

Provisioning OMC DS1 facility parameters

Step Action

If you want to	Then complete the following
add an OMC link	<p>From the Network Element Status screen, enter:  <b>omc add &lt;link #&gt; &lt;group&gt; &lt;port&gt;            &lt;bandwidth&gt; &lt;linkname&gt;</b>↵</p> <p>where:</p> <p>&lt;link #&gt; OMC link number: <b>1 to 10</b></p> <p>&lt;group&gt; DFA DS1 group number: <b>g1, g2, or g4</b></p> <p>&lt;port&gt; number of the DS1 port: <b>1 to 14</b></p> <p>&lt;bandwidth &gt; number of DS0s used for OMC data link: <b>3, 4, 5, or 6</b></p> <p>&lt;linkname&gt; optional link name (character string up to 20 characters)</p> <p><i>The system indicates that it has added a link. To add more data links, repeat this step.</i></p> <p>Go to step 5.</p>
assign a software download channel	<p>From the Network Element Status screen, enter:  <b>omc setdlchan &lt;link #&gt;</b>↵</p> <p>where</p> <p>&lt;link #&gt; OMC link number: 1 to 10</p> <p><i>The system indicates that it has established the OMC data link.</i></p> <p><b>Note:</b> 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 <b>omc setdlchan</b> command.</p> <p>Go to step 5.</p>
—end—	

5 Quit the OMC command interpreter by entering the following:  
**quit**↵

—end—



---

## Provisioning slot assignments

---

This chapter describes the assignment of DMS line equipment numbers (LENs) to network element (NE) shelves. Only NEs that use a GR-303 DMS host switch use LENs. The AccessNode allocates LENs based on the types, configurations, and positions of CDS, UE9000, and ANX shelf types that it detects. This allocation method results in large numbers of unused LENs if shelves of different types or configurations are present. The DMSPROV command interface (CI) tool allows you to assign all DMS LENs to any subscriber circuits without the loss of addressable lines.

**Note 1:** Using the DMSPROV tool is necessary only if you have a DMS host and you need to consolidate LENs.

**Note 2:** For provisioning GR-303 MVI, 3 DS0 ISDN, or IDSL card services, see *Line Card Provisioning Procedures*, 323-3001-315, in *Operations, Administrations, and Provisioning*, Volume 4B.

When the first GR-303 DMS host is provisioned, the AccessNode sets up a preprovisioning table (NE slot association table) for all slots on the NE. The default mapping is shown in Table 6-1 on page 6-2. You can use the DMSPROV CI tool to display or modify the slot assignments as follows:

- Display the subscriber circuit assignments for one or more DMS LEN slots. The list includes the following information: DMS shelf and slot number, NE shelf type, and the NE shelf, slot, and circuit number.

**Note:** The NE circuit number applies only to UE9000 circuits.

- Unassign DMS LENs by setting them to “NIL.” DMS LENs can be assigned to a subscriber circuit only when the current shelf type in the association table is “NIL.”

## 6-2 Provisioning slot assignments

- Change the DMS LENSs for one or more NE slots homing on the GR-303 DMS host switch. The DMS LENS, assigned at the AccessNode, is the logical address of the subscriber circuit. The DMS LENS range is 1 to 2048.

**Note 1:** You cannot assign or unassign a DMS LENS if a line termination exists. For information on deprovisioning a line, see *Line Card Provisioning Procedures*, 323-3001-315, in *Operations, Administrations, and Provisioning*, Volume 4B.

**Note 2:** For the Mix & Match DFA, VM services cannot be provided using the default DMS-VM mapping. The VM number range for a Mix & Match DFA is 29 to 56. As you can see in Table 6-1, the default VM number range is 1-28. Thus, the DMSPROV tool must be used to map VMs 29-56 to the DMS logical location.

**Table 6-1**  
Default mapping between logical and physical location for GR-303 DMS

GR-303 DMS logical location		Default CDS physical location		Default VM physical location		Default UE9000 physical location				
Shelf #	LC #	Shelf #	LC #	Shelf #	LC #	Shelf #	LC #			
1	1-96	1	1-96	1	1-48	1	1-96			
				2	1-48					
2	1-96	2	1-96	3	1-48		1	97-192		
				4	1-48					
3	1-96	3	1-96	5	1-48			1	193-288	
				6	1-48					
4	1-96	4	1-96	7	1-48				1	289-384
				8	1-48					
5	1-96	5	1-96	9	1-48	2				1-96
				10	1-48					
6	1-96	6	1-96	11	1-48		2			97-192
				12	1-48					
7	1-96	7	1-96	13	1-48			2		193-288
				14	1-48					
8	1-96			15	1-48				2	289-384
				16	1-48					
—continued—										

**Table 6-1 (Continued)**  
**Default mapping between logical and physical location for GR-303 DMS**

GR-303 DMS logical location		Default CDS physical location		Default VM physical location		Default UE9000 physical location	
9	1-96			17	1-48	3	1-96
				18	1-48		
10	1-96			19	1-48		97-192
				20	1-48		
11	1-96			21	1-48		193-288
				22	1-48		
12	1-96			23	1-48		289-384
				24	1-48		
13	1-96			25	1-48	4	1-96
				26	1-48		
14	1-96			27	1-48		97-192
				28	1-48		
15	1-96						193-288
16	1-96						289-384
17	1-96					5	1-96
18	1-96						97-192
19	1-96						193-288
20	1-96						289-384
21	1-96					6	1-96
22	1-32						97-128
—end—							

## 6-4 Provisioning slot assignments

For example, suppose you are adding ANX VMs and a UE9000 shelf to your Mix & Match DFA that currently has CDS and UE9000 shelves. You can use the DMSPROV tool to display the current LEN assignments and reallocate unused LENs to the new shelves. This action is necessary, for example, if the default allocation method has consumed all the available LENs. The DMSPROV tool must also be used to map VMs 29-56 to the DMS logical location.

Table 6-2 shows the result of using the DMSPROV CI tool to reassign unused LENs so that enough LENs are available to add a new shelf. Using Table 6-2 as an example, you can unassign all the slots on DMS shelves 4 to 12. Next, assign all the slots on DMS shelves 4 to 19 to the appropriate subscriber circuits.

**Table 6-2**  
Using the DMSPROV CI tool to consolidate LENs

Before DMSPROV		After DMSPROV	
DMS Shelf, Slot	Type of NE shelf	DMS Shelf, Slot	Type of NE shelf
1, 1-96	CDS-1	1, 1-96	CDS-1
2, 1-96	CDS-2	2, 1-96	CDS-2
3, 1-96	CDS-3	3, 1-96	CDS-3
4, 1-96	unused	4, 1-96	UE-4
5, 1-96		5, 1-96	
6, 1-96		6, 1-96	
7, 1-96		7, 1-96	
8, 1-96		UE-5	8, 1-96
9, 1-96			9, 1-96
10, 1-96			10, 1-96
11, 1-96			11, 1-96
—continued—			

**Table 6-2 (Continued)**  
**Using the DMSPROV CI tool to consolidate LENS**

Before DMSPROV		After DMSPROV	
DMS Shelf, Slot	Type of NE shelf	DMS Shelf, Slot	Type of NE shelf
12, 1 to 96		12, 1 to 96	UE-6
13, 1 to 96	UE-4	13, 1 to 96	
14, 1 to 96		14, 1 to 96	
15, 1 to 96		15, 1 to 96	
16, 1 to 96		16, 1 to 96	
17, 1 to 96	UE-5	17, 1 to 96	VM30/VM31
18, 1 to 96		18, 1 to 96	VM32/VM33
19, 1 to 96		19, 1 to 96	unused
20, 1 to 96		20, 1 to 96	
21, 1 to 96	unused	21, 1 to 96	
22, 1 to 32		22, 1 to 32	
—end—			

## Chapter contents

This chapter includes the following tasks:

Procedure	Task	See
Procedure 6-1	Displaying DMS line equipment numbers	page 6-6
Procedure 6-2	Unassigning DMS line equipment numbers	page 6-10
Procedure 6-3	Assigning DMS line equipment numbers	page 6-12

## Procedure 6-1 Displaying DMS line equipment numbers

---

Use this procedure to display a list of all the DMS line equipment numbers (LENs) and the subscriber circuits they have been assigned to.

### Requirements

A GR-303 DMS host switch has been added to the NE data using the OPC Host Provisioning Manager tool.

You must be logged in to the network element as described in Appendix A: OPC and NE user interfaces.

### Action

---

Step	Action
1	From the NE interface S/DMS Nodes screen, open the DMSPROV CI tool by entering the following command: <b>dmsprov</b> ↵
2	View a list of command options by entering the following command: <b>help</b> ↵ <i>The list of options appears.</i>

—continued—

Procedure 6-1 (continued)

Displaying DMS line equipment numbers

- | Step | Action  |
|------|---|
| 3    | Display the DMS LENSs by entering the following command:<br><b>display_len [option]</b> ↵ |

where [option] is:	
<b>DMS_LEN [display method]</b>	
	where [display method]
is:	<b>all</b> displays subscriber circuit assignments for all DMS LENSs
or:	<b>range [DMS LEN start shelf] [DMS LEN start slot] [DMS LEN end shelf] [DMS LEN end slot]</b>  where:  [DMS LEN start shelf] 1 to 22 [DMS LEN end shelf]  [DMS LEN start slot] 1 to 96 [DMS LEN end slot]  <b>Note 1:</b> The “start” number must be less than or equal to the corresponding “end” number. <b>Note 2:</b> The 22nd DMS shelf has only 32 slots.
or:	<b>slot [DMS LEN shelf] [DMS LEN slot]</b>  where:  [DMS LEN shelf] 1 to 22 [DMS LEN slot] 1 to 96  <b>Note:</b> The 22nd DMS shelf has only 32 slots.
<b>OR</b>	
—continued—	

—continued—

## 6-8 Provisioning slot assignments

Procedure 6-1 (continued)

### Displaying DMS line equipment numbers

NE_position [display method]	
where [display method]	
is:	<b>all</b> displays NE shelf positions
or:	<p><b>range [shelf type] [NE start shelf] [NE start slot] [NE start circuit] [NE end shelf] [NE end slot] [NE end circuit]</b></p> <p>where:</p> <p>[shelf type]                   <b>CDS, ANX, or UE</b></p> <p>[NE start shelf]               <b>1 to 7</b> for CDS, <b>1 to 28</b> for ANX, <b>1 to 7</b> for UE</p> <p>[NE end shelf]</p> <p>[NE start slot]                 <b>1 to 96</b> for CDS, <b>1 to 56</b> for ANX, <b>1 to 16</b> for UE</p> <p>[NE end slot]</p> <p>[NE start circuit]              <b>1 to 4</b> for the ADSL 4+4 or <b>1 to 24</b> for the POTS-24 and UVG-24. These parameters do not apply to CDS or ANX.</p> <p>[NE end circuit]</p>
or:	<p><b>slot [shelf type] [NE shelf] [NE slot] [NE circuit]</b></p> <p>where:</p> <p>[shelf type]                   <b>CDS, ANX, or UE</b></p> <p>[NE shelf]                     <b>1 to 7</b> for CDS, <b>1 to 28</b> for ANX, <b>1 to 7</b> for UE</p> <p>[NE slot]                       <b>1 to 96</b> for CDS, <b>1 to 56</b> for ANX, <b>1 to 16</b> for UE</p> <p>[NE circuit]                   <b>1 to 4</b> for the ADSL 4+4 or <b>1 to 24</b> for the POTS-24 and UVG-24. These parameters do not apply to CDS or ANX</p>
—end—	

—continued—

Procedure 6-1 (continued)

**Displaying DMS line equipment numbers**

Step	Action
	Example 1: <b>display_len DMS_LEN all.</b> ↵ <i>A display appears that lists subscriber circuit assignments for all DMS LENS.</i>
	Example 2: <b>display_len NE_position all.</b> ↵ <i>A display appears showing all NE shelf positions.</i>
4	When finished, close the tool by entering the following command: <b>quit</b> ↵ <i>The tool closes and the S/DMS Nodes screen appears.</i>

—end—

## Procedure 6-2 Unassigning DMS line equipment numbers

---

Use this procedure to unassign DMS line equipment numbers (LENs) from subscriber circuits. The result of this procedure is that DMS LENs are set to “NIL.” DMS LENs can be assigned to a subscriber circuit only when the current shelf type in the association table is “NIL.”

*Note:* You cannot assign or unassign a DMS LEN if a line termination exists. For information on deprovisioning a line, see *Line Card Provisioning Procedures*, 323-3001-315, in *Operations, Administrations, and Provisioning*, Volume 4B.

### Requirements

A GR-303 DMS host switch has been added to the NE data using the OPC Host Provisioning Manager tool.

You must be logged in to the network element as described in Appendix A: OPC and NE user interfaces.

### Action

---

Step	Action
1	From the NE interface S/DMS Nodes screen, open the DMSPROV CI tool by entering the following command: <b>dmsprov ↵</b>
2	View a list of command options by entering the following command: <b>help ↵</b> <i>The list of options appears.</i>

—continued—

Procedure 6-2 (continued)

**Unassigning DMS line equipment numbers**

- | Step | Action  |
|------|---|
| 3    | Unassign the DMS LENS by entering the following command:<br><b>nil_len [display method] ↵</b> |

where [display method]	
is:	<b>range [DMS LEN start shelf] [DMS LEN start slot] [DMS LEN end shelf] [DMS LEN end slot]</b> where: [start DMS LEN shelf] <b>1 to 22</b> [end DMS LEN shelf]  [start DMS LEN slot] <b>1 to 96</b> [end DMS LEN slot]  <b>Note 1:</b> The “start” number must be less than or equal to the corresponding “end” number. <b>Note 2:</b> The 22nd shelf on the DMS has only 32 slots.
or:	<b>slot [DMS LEN shelf] [DMS LEN slot]</b> where: [DMS LEN shelf] <b>1 to 22</b> [DMS LEN slot] <b>1 to 96</b>  <b>Note:</b> The 22nd DMS shelf has only 32 slots.

Example:

**nil\_len range 1 1 2 4 ↵**

*DMS LEN shelf 1, slot 1 through DMS LEN shelf 2 slot 4 are set to “NIL”, and the screen displays “command successful.”*

- |   |   |
|---|---|
| 4 | When finished, close the tool by entering the following command:<br><b>quit ↵</b> |
|---|---|

*The tool closes and the S/DMS Nodes screen appears.*

—end—

## Procedure 6-3 Assigning DMS line equipment numbers

---

Use this procedure to assign DMS line equipment numbers (LENs) to subscriber circuits. The result of this procedure is that the DMS LEN is associated with a physical subscriber circuit. DMS LENs can be assigned to a subscriber circuit only when the current shelf type in the association table is “NIL.”

**Note:** You cannot assign or unassign a DMS LEN if a line termination exists. For information on deprovisioning a line, see *Line Card Provisioning Procedures*, 323-3001-315, in *Operations, Administrations, and Provisioning*, Volume 4B.

The DMSPROV tool works in a multi-interface group (IG) environment. However, you must decide which LENS will be used for each switch. For the AN17.2 release, the same LEN cannot be used twice. Once a shelf and slot have been used in a switch, that particular shelf and slot cannot be used again for any CDC switch associated with that Mix & Match DFA.

For example, you provision service as follows:

- CDS 1 1 on shelf 1, slot 2 from switch A
- CDS 1 5 on shelf 1, slot 4 from switch B

Service on shelf 1 slot 2 must be assigned from switch A. Service on shelf 1 slot 4 must be assigned from switch B. Using the example above, you cannot assign service on shelf 1 slot 2 from switch B, since you have already assigned that particular shelf/slot combination to switch A. Likewise, you cannot assign service on shelf 1 slot 4 from switch A, since you have already assigned that shelf/slot combination to switch B.

—continued—

Procedure 6-3 (continued)

### Assigning DMS line equipment numbers



#### CAUTION

#### Possible LENS assignment confusion at the switch

Make sure you keep a reference list at the switch for which shelf and slot is mapped to which ANX/CDS/UE9000 line card. DMS LENS assignments are viewable from the NE interface, not at the switch.

## Requirements

A GR-303 DMS host switch has been added to the NE data using the OPC Host Provisioning Manager tool.

You must be logged in to the network element as described in Appendix A: OPC and NE user interfaces.

## Action

Step	Action
1	From the NE interface S/DMS Nodes screen, open the DMSPROV CLI tool by entering the following command: <b>dmsprov</b> ↵
2	View a list of command options by entering the following command: <b>help</b> ↵ <i>The list of options appears.</i>
3	Assign the DMS LENSs by entering: <b>assign_len [display method]</b> ↵

—continued—

## 6-14 Provisioning slot assignments

Procedure 6-3 (continued)

### Assigning DMS line equipment numbers

**Step Action**

where [display method]	
is:	<b>range [DMS LEN start shelf] [DMS LEN start slot] [DMS LEN end shelf] [DMS LEN end slot] [shelf type] [NE start shelf] [NE start slot] [NE start circuit] [NE end shelf] [NE end slot] [NE end circuit]</b>
	where:
[start DMS LEN shelf]	<b>1 to 22</b>
[end DMS LEN shelf]	
[start DMS LEN slot]	<b>1 to 96</b>
[end DMS LEN slot]	
[shelf type]	<b>CDS, ANX, or UE</b>
[start NE shelf]	<b>1 to 7 for CDS, 1 to 28 for ANX,</b>
[end NE shelf]	<b>1 to 7 for UE</b>
[start NE slot]	<b>1 to 96 for CDS, 1 to 56 for</b>
[end NE slot]	<b>ANX, 1 to 16 for UE</b>
[start NE circuit]	<b>1 to 4 for ADSL 4+4 or 1 to 24</b>
[end NE circuit]	<b>for POTS-24 and UVG-24.</b>
	These parameters do not apply to CDS or ANX.
	<b>Note 1:</b> The “start” number must be less than or equal to the corresponding “end” number.
	<b>Note 2:</b> The 22nd DMS shelf has only 32 slots.
—continued—	

—continued—

Procedure 6-3 (continued)  
**Assigning DMS line equipment numbers**

**Step    Action**

or:	<p><b>slot [DMS LEN shelf] [DMS LEN slot] [shelf type]          [NE shelf] [NE slot] [NE circuit]</b></p> <p>where:</p> <p>[DMS LEN shelf]    <b>1 to 22</b></p> <p>[DMS LEN slot]     <b>1 to 96</b></p> <p>[shelf type]        <b>CDS, ANX, or UE</b></p> <p>[NE shelf]          <b>1 to 7 for CDS, 1 to 28 for ANX,          1 to 7 for UE</b></p> <p>[NE slot]            <b>1 to 96 for CDS, 1 to 56 for ANX,          1 to 16 for UE</b></p> <p>[NE circuit]        <b>1 to 4 for ADSL 4+4 or 1 to 24 for          POTS-24 and UVG-24. These          parameters do not apply to CDS          or ANX.</b></p> <p><b>Note:</b> The 22nd DMS shelf has only 32 slots.</p>
—end—	

Example:

**assign\_len slot 4 1 ANX 1 29**↵

*DSM LEN shelf 4 slot 1 is assigned to service ANX VM on NE shelf 1 slot 29. The screen displays "command successful."*

**4**    Record the LENs because you will need them when you provision the GR-303 DMS services at the switch.

**5**    When finished, close the tool by entering the following command:

**quit** ↵

*The tool closes and the S/DMS Nodes screen appears.*

—end—



---

## Appendix A: OPC and NE user interfaces

---

This appendix contains login procedures for the OPC and Network Element (NE) user interfaces (UIs).

### Chapter contents

This chapter contains the following procedures:

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## Procedure 7-1 Logging in to the OPC UI

---

Use this procedure to log in to the OPC user interface (UI).

### Action

---

Step	Action
1	Connect the VT-100 terminal to the OPC port 1 or port b on the left side of the common equipment shelf. Use one NTE7E44RA or RB cable. <i>A login prompt appears.</i>
2	Enter a root level User ID, such as: <b>root ↵</b>
3	Enter the corresponding root level password, such as: <b>root ↵</b> <i>The TERM = vt100 prompt is displayed.</i> Press the Return key (↵) to select the VT100 terminal mode. <i>The opc&gt; prompt is displayed.</i>
4	To access the User Session Manager at the OPC prompt, enter the following command: <b>opcui ↵</b> <i>The User Session Manager main window is displayed.</i>

—end—

---

## Procedure 7-2 Logging in to the NEUI

---

Use this procedure to log in to the network element (NE) UI.

### Action

---

Step	Action
1	From the OPC User Session Manager main window, tab to the Available tool menu.
2	Press the right bracket key to go to the end of the tools list.
3	Use the arrow keys to move to the NE Login Manager.
4	Open the NE Login Manager by pressing <b>Ctrl_A</b> . <i>The NE Login Manager screen is displayed.</i>
5	Enter the ID number of the network element that you wish to log on to, in the Network Element field.
6	Tab to the Login field and press <b>Ctrl_A</b> .
7	Enter the admin level user name, such as: <b>admin</b> ↵
8	Enter the corresponding admin level password, such as: <b>admin</b> ↵ <i>A warning message appears.</i>
9	Press <b>Enter</b> to cancel the displayed warning message. <i>The S/DMS Nodes screen appears.</i> <b>Note:</b> You can enter commands on the S/DMS Nodes screen by entering the associated command number instead of the command name. The command numbers are displayed on the left-side of the screen.
10	Return to the current procedure for further steps.

—end—

## Procedure 7-3 Logging out of the NEUI

---

Use this procedure to log out of the NEUI.

### Action

---

Step	Action
1	From the NEUI S/DMS Nodes screen, enter the following command: <b>logout</b> <i>A message appears listing the username, date, and time of the logout.</i>
2	Press the return key. <i>The NE Login Manager appears.</i>
3	Press <b>Ctrl_T 0</b> to close the NE Login Manager. <i>The OPC User Session Manager main window appears.</i>

—end—

---

## Procedure 7-4 Logging out of the OPC UI

---

Use this procedure to log out of the OPC UI.

### Action

---

Step	Action
1	From the OPC User Session Manager main window, tab to the Logout field and press <b>Ctrl_A</b> . <i>A confirmation message appears.</i>
2	Tab to the Logout field and press <b>Ctrl_A</b> . <i>The opc&gt; prompt appears.</i>
3	Enter the following command: <b>logout</b> ↵

—end—



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SONET Products

## **AccessNode/AccessNode Express**

### **Mix & Match DFA Reconfiguration Quick Reference Guide**

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Publication number: P0911073

Release: Issue 1.0

Date: October 1999

Printed in Canada

