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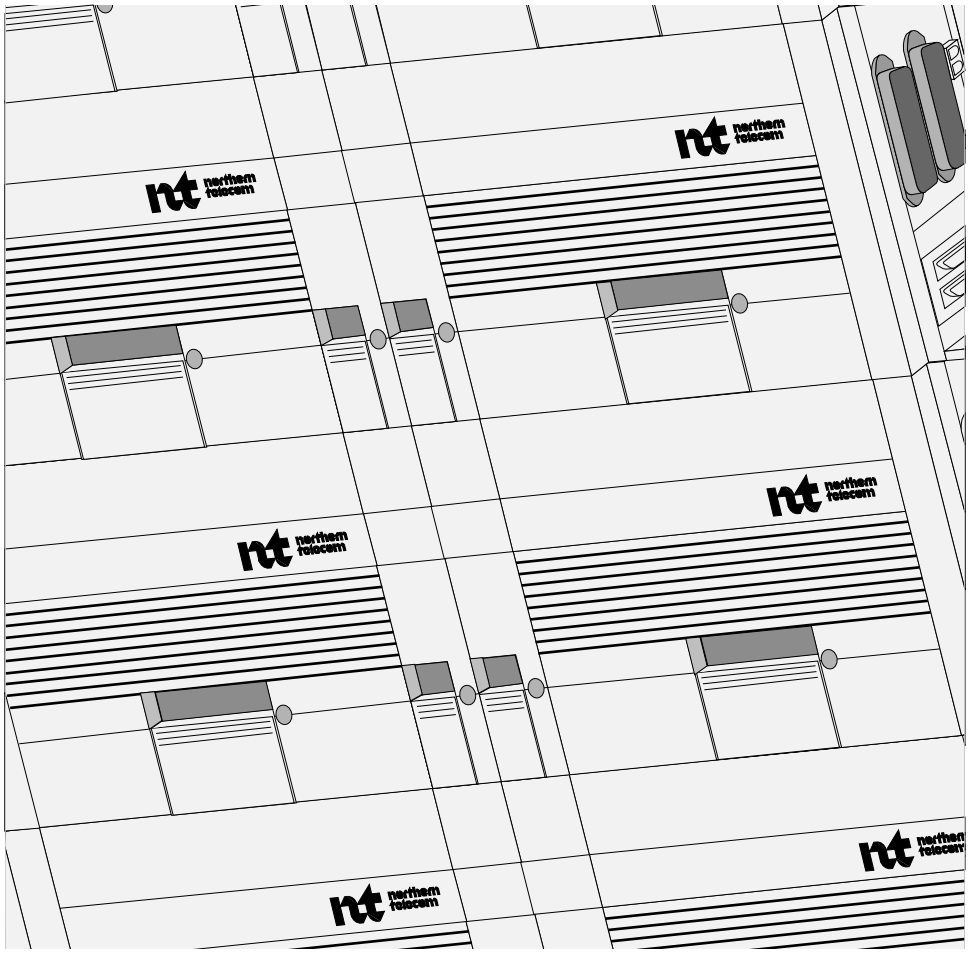
SONET Products

AccessNode

Setting Up Your System: DFA

Powering Up, Commissioning, and Provisioning

Issue 3.0 October 1999



NORTEL NETWORKS™

SONET Products

AccessNode

Setting Up Your System: DFA

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AN17.20 standard release of the document, Issue 3.0. Made the following changes:

- added input/output card information to "Optional Circuit Packs Form (DS1 mapper)," in Chapter 1
- added reference to the *Mix & Match Quick Reference Guide* to Chapter 1
- added notes to Procedures 5-2 and 5-3 pointing to *System Administration Procedures,* 323-3001-302, in *Operations, Administration, and Provisioning,* Volume 4A
- added Procedure 5-5 to unassign CRVs using MVIPROV CI
- moved TBFC step from Procedure 2-3 to the end of Procedure 2-4

August 1999

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June 1999

AN17 Standard release of the document, Issue 1.0.

Contents

Planning to set up a DFA system

Major processes in setting up a DFA system

There are three major processes in setting up a new DS1-fed AccessNode (DFA) system:

1 Powering up the equipment

2 Commissioning and provisioning the equipment

3 Miscellaneous procedures

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

For more information on reconfiguring an existing DFA system into a Mix & Match DFA system, refer to the *Mix & Match DFA Reconfiguration Quick Reference Guide*.

Terms

The following terms are used in this document:

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

Prerequisites

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

- Make sure you have all the equipment you need. Equipment for commissioning is listed in “Equipment requirements” on page 1-3.
- Obtain the network element IDs (NEID) you are assigning to the network elements in the system. All NEIDs must be unique within the network. See “Planning network elements” on page 1-2.
- Obtain the OPC user identification (user ID) and password for the system line-up and test (SLAT) security level. The default user ID is “root” with password “root.”

- Have the admin security level network element (NE) login user ID and password for each NE to be commissioned. The default user ID is “admin” with password “admin.”
- Obtain a tape or tapes with the correct OPC software load and NE software loads.
- The network administrator must fill out the System Setup Forms at the end of this chapter. Once completed, these forms list all the information needed for a technician to bring up a new system.

Control Network requirements

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

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

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

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

```
total bus length = total cable length + (4 feet x the
number of shelves connected by a CNet LAN)
```

Planning network elements

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

- All NEs in an OPC’s span of control must have unique numbers. The numbers can run from 1 to 9999.
- All NEs connecting to the same DMS-100 SuperNode must have unique NE numbers.
- All NEs across the Network Manager’s span of control must have unique NE numbers.
- The fiber central office terminal (FCOT) and remote fiber terminal (RFT) in a system must have unique NE numbers.

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

Equipment requirements

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

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

Required circuit packs

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

DFA RFT

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

- two processor cards (Proc), NT4K52.

  Note: You can use either NT4K52FB or NT4K52GB for any application, but you must use NT4K52GB if you are using DMS Access. NT4K52FB does not support DMS Access.

- one maintenance interface card (MIC), NT4K53
- working and protection DS1/VT mapper circuit packs, NT7E04. The quantity depends on your system configuration.

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

CServer

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

- one OPC, NT7E24
- one processor, NT4K52
- one MIC, NT4K53
- two DS1 mappers, NT7E04
- two DS1 protection bridge cards, NT4K31
- two DS1 input and output cards, NT4K32 and NT4K33
- two timing cross-connect (TXC) cards (NT4K75). Only one is required by the DFA OPC shelf.
- if the network element carries TR-08 services, you must have the DS1/VT mapper type NT7E04CA or NT7E04EA and the NT4D56AC TIC card.

  Note: The protection mapper must be the same type as the DS1/VT mapper, NT7E04CA or NT7E04EA, or a circuit pack mismatch alarm is generated.

- blank faceplates, which are used to improve airflow. All unused slots must have blank faceplates.

CDS modules

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

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

Circuit packs on the ABM BIP

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

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

Circuits

The following information applies to circuits:

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

Using a laptop computer to emulate a VT100 terminal

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

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

Table 1-1
Laptop computer pin connections

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

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

Table 1-1 (continued)
Laptop computer pin connections

OPC-to-VT100 cable		OPC-to-laptop cable	
3	3	3	2
4	5,6	4	1,6
5	7	5	5
7	8	7	8
6, 8	20	8	7
—end—		—end—	

RS-232 signals

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

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

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

DFA shelf configurations

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

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

Processor requirements for ABM shelves

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

Table 1-2
Processor requirements

If you are commissioning this shelf	Then you must use this processor
ABM (for line size expansion)	NT4K52FB (64Mb)
ABM DMS-X	NT4K52GB (64 Mb for DMS Access or DMS-X interface to APC-100)
Note: Use NT4K52FB for all applications except DMS Access. Use NT4K52GB for all applications including DMS Access and DMS-X interface to APC-100.	

Equipment cautions and warnings

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

Radio-frequency emissions notice

The following regulatory notice applies to the equipment:

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

Static electricity

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

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

Handling circuit packs

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

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

ATTENTION
OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES

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

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

Storing and transporting circuit packs

When storing and transporting circuit packs, follow these rules:

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

Equipment warning label

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

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

DS1 parameters

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

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

Facility identifier

The identifier for the facility.

Line coding

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

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

ami (alternate mark inversion)

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

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

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

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

amizcs (ami zero code suppression)

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

b8zs (bipolar 8-bit zero code)

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

Line build-out

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

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

Frame format

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

- superframe
- extended superframe
- digital loop carrier
- null

superframe

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

extended superframe

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

digital loop carrier

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

null

The null setting ensures that no framing bits are added.

Alarm encoding

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

Synchronization mode

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

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

Performance monitoring

This parameter enables or disables performance monitoring on DS1 facilities.

System setup forms

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

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

Forms provided

The following forms have been provided. They are:

Form	Purpose	Page
OPC Setup Form	To provide information for commissioning an OPC.	1-20
CNet Tracking Form	To record CNet connections in a system.	1-21
Host Provisioning Setup Form	To provide information for provisioning hosts in a system.	1-22
Circuit Packs Setup Forms	To indicate the circuit packs that must be inserted into a copper distribution shelf, the slots where the packs should be placed, and the related I/O cards for each pack.	1-23
CDS Shelf Setup Form	To indicate the PEC codes for the line cards that must be inserted into a CDS shelf and the slots for those cards.	1-26
Network Elements Setup Form	To provide information needed to commission the network elements in a system.	1-27
DS1 Setup Form	To provide information needed to set up all DS1 assignments in a system. This form contains two parts, one for setting up services and one for setting up parameters.	1-28

Data definitions

Table 1-3 lists the data fields on the setup forms in alphabetical order and gives a brief description of each field.

Table 1-3
Data definitions

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

—continued—

Table 1-3 (continued)
Data definitions

Data field	Description
IG number	Interface group for integrated GR-303 links (1 to 5 values). Numeric; 1 character.
IP address	Internet protocol address, which is the network address associated with the OPC.
LBO	Line build out. Distance from the DS1 cross-connect. You have three options: - short (0-150 feet), - medium (150-450 feet), or - long (450-655 feet). Alphanumeric; 6 characters maximum. The menu command is lbo.
Line coding	You have three options: B8ZS, AMI, or AMIZCS. The menu command is lcoding.
NE location	The geographic location of the network element.
NE name	A unique network element name. The first character must be alpha, not numeric. 32 characters alphanumeric.
NE number	The identifier for the network element, which can be a number from 1 to 9999. This number must be unique to your network.
OPC present	Indicates whether an OPC will reside in this network element. Your options are: - No OPC, - Primary OPC, or - Backup OPC.
OPC span of control	A group of up to 16 network elements that are controlled by a primary OPC.
OPC span of control system name	The name of the group of up to 16 network elements that are controlled by a primary OPC.
Perf. mon.	Performance monitoring, which enables or disables performance monitoring statistics on the network element facilities. The default is enable; disable is the other option. Alphanumeric; 7 characters. The menu command is prmprov.
Primary OPC alias	Use the OPC name followed by the letter P. 8 alphanumeric characters.
Primary OPC location	The network element in which the OPC resides.

—continued—

Table 1-3 (continued)
Data definitions

Data field	Description
Primary OPC name	The name of the primary OPC. The format is “OPCxxxx,” where xxxx is the OPC number.The name must be unique to your network. Alphanumeric; 7 characters.
Primary OPC serial number	The serial number for the primary OPC.
Primary OPC time zone	The time zone code for the primary OPC.
Port	The DS1 port on mapper 1 through 14.
RDTLink No.	Link number within the interface group.
Service assignment	The service that is assigned to a DS1 facility. Your options are: tandem, GR-303-DMS, GR-303 MVI, TR-08, VLCM, data direct, or unassigned.
Shelf serial number	The serial number for the shelf. The number is located in the upper right corner of the common equipment shelf.
Software version	The version of the software (for example, AN17).
Subport	Transport interface card (TIC) ports 1 through 28 on the terminated TIC.
System name (optional)	The name of the OPC span of control system. 32 characters, alphanumeric.
TID	Terminal identifier, which is the name of the network element that is the target of a TL1 message. 20 characters, starting with alphanumeric.
Transmission rate	Transmission rate. Use DS1.
—end—	

Time zone codes

The following table lists time zones, their associated time zone codes, and their offsets from Greenwich Mean Time (GMT).

Table 1-4
Time zone codes and GMT offsets

Time zone	Country: region	Time zone code	GMT offset in minutes
Hawaiian Standard Time Hawaiian Daylight Time	United States: Hawaii	HST10	-600 -540*
Aleutian Standard Time Aleutian Daylight Time	United States: Alaska (parts)	AST10ADT	-600 -540*
Yukon Standard Time Yukon Daylight Time	United States: Alaska (parts)	YST9YDT	-540 -480*
Pacific Standard Time Pacific Daylight Time	Canada: British Columbia	PST8PDT#Canada	-480 -420*
Pacific Standard Time Pacific Daylight Time	United States: California, Idaho (parts), Nevada, Oregon (parts), Washington	PST8PDT	-480 -420*
Mountain Standard Time Mountain Daylight Time	Canada: Alberta, Saskatchewan (parts)	MST7MDT#Canada	-480 -360*
Mountain Standard Time Mountain Daylight Time	United States: Colorado, Idaho (parts), Kansas (parts), Montana, Nebraska (parts), New Mexico, North Dakota (parts), Oregon (parts), South Dakota (parts), Texas (parts), Utah, Wyoming	MST7MDT	-480 -360*
Mountain Standard Time Mountain Daylight Time	United States: Arizona	MST7	-420 -360*
Central Standard Time Central Daylight Time	Canada: Manitoba, Ontario (parts), Saskatchewan (parts)	CST6CDT#Canada	-360 -300*
Note: Offsets marked with an asterisk denote the network element offset that should be used when the Daylight Saving Time is observed in the corresponding region. Daylight Saving Time change is automatically updated by the software.			
—continued—			

Table 1-4 (continued)
Time zone codes and GMT offsets

Time zone	Country: region	Time zone code	GMT offset in minutes
Central Standard Time Central Daylight Time	United States: Alabama, Arkansas, Florida (parts), Illinois, Iowa, Kansas, Kentucky (parts), Louisiana, Michigan (parts), Minnesota, Mississippi, Missouri, Nebraska, North Dakota, Oklahoma, South Dakota, Tennessee (parts), Texas, Wisconsin	CST6CDT	-360 -300*
Central Standard Time Central Daylight Time	United States: Indiana (most)	EST5CDT	-300 -240*
Eastern Standard Time Eastern Daylight Time	Canada: Ontario (parts), Quebec (parts)	EST5EDT#Canada	-300 -240*
Eastern Standard Time Eastern Daylight Time	United States: Connecticut, Delaware, District of Columbia, Florida, Georgia, Kentucky, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, Tennessee (parts), Vermont, Virginia, West Virginia	EST5EDT	-300 -240*
Atlantic Standard Time Atlantic Daylight Time	Canada: Newfoundland (parts), Nova Scotia, Prince Edward Island, Quebec (parts)	AST4ADT	-240 -180*
Newfoundland Standard Time Newfoundland Daylight Time	Canada: Newfoundland (parts)	NST3:30NDT	-210 -150*
Western European Time Western European Daylight Time	Great Britain, Ireland	WETOWETDST	0 60*
Note: Offsets marked with an asterisk denote the network element offset that should be used when the Daylight Saving Time is observed in the corresponding region. Daylight Saving Time change is automatically updated by the software.			
—continued—			

Table 1-4 (continued)
Time zone codes and GMT offsets

Time zone	Country: region	Time zone code	GMT offset in minutes
Portuguese Winter Time Portuguese Summer Time	Portugal	PWTOPST	0 60*
Middle European Time Middle European Daylight Time	Austria, Belgium, Bosnia-Herzegovina, Denmark, Croatia, Czech Republic, France, Germany, Hungary, Italy, Luxembourg, Poland, Slovakia, Slovenia, Spain, Sweden, Switzerland, Yugoslavia	MET-1METDST	60 120*
South Africa Standard Time South Africa Daylight Time	South Africa	SAST-2SADT	120 180*
Japan Standard Time	Japan	JST-9	540
Australian Western Standard Time	Australia: Western Australia	WST-8:00	480
Australian Central Standard Time	Australia: Northern Territory	CST-9:30	570
Australian Eastern Standard Time	Australia: Queensland	EST-10	600
Australian Central Standard Time Australian Central Daylight Time	Australia: South Australia	CST-9:30CDT	570 630*
Australian Eastern Standard Time Australian Eastern Daylight Time	Australia: New South Wales, Victoria	EDT-10EDT	600 660*
Note: Offsets marked with an asterisk denote the network element offset that should be used when the Daylight Saving Time is observed in the corresponding region. Daylight Saving Time change is automatically updated by the software.			
—end—			

OPC Setup Form

Date: _____

Network name: _____ **System name:** _____

System type: _____ **IP address:** _____

Software version: _____ **IP netmask:** _____

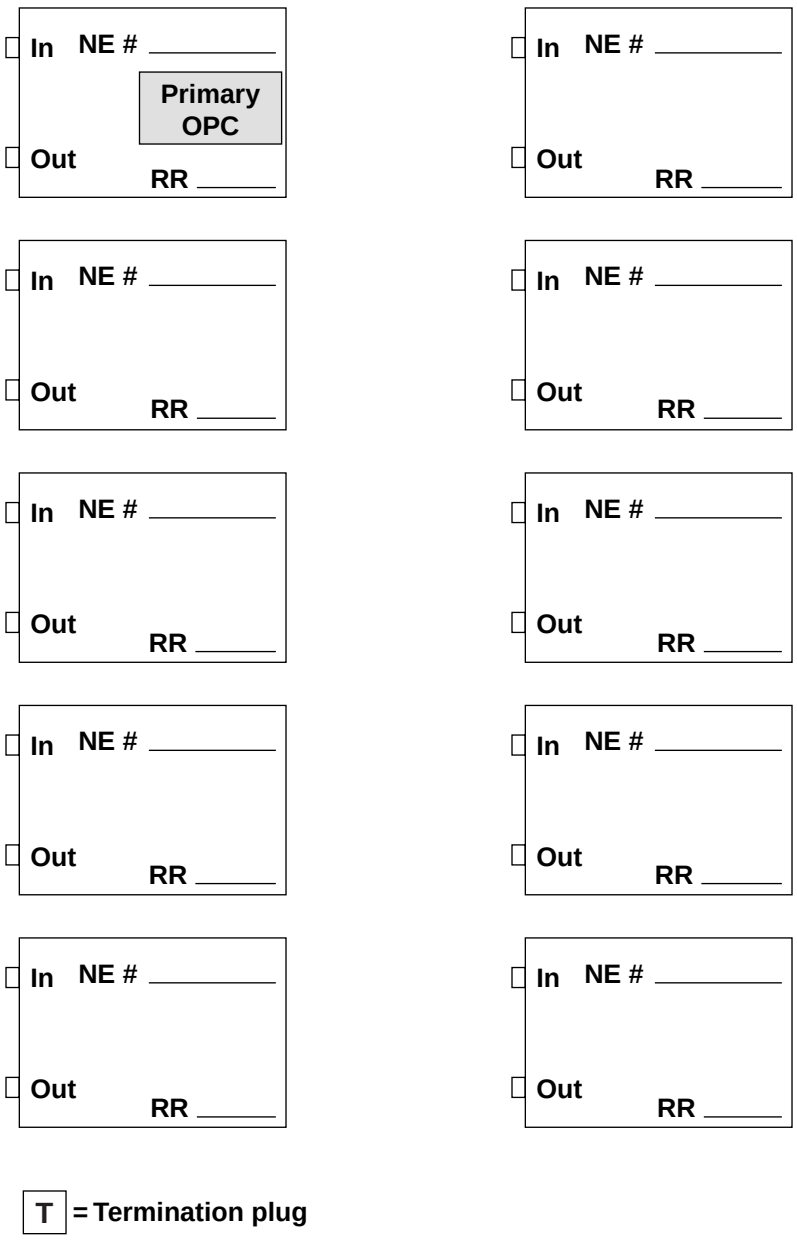
OPC span of control name: **Terminal identifier (TID):** _____
_____

Default gateway: _____

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

CNet Tracking Form

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



Host Provisioning Setup Form

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

Circuit packs setup forms

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

Required circuit packs form

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

Optional circuit packs form

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

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

Required Circuit Packs Form

Slot	Required circuit pack	PEC code	Associated input/output cards	PEC code	Input/output slot
1	DS1 mapper	NT7E04	DS1 In	NT4K32	30
			DS1 Out	NT4K33	32
3	Protection DS1 mapper	NT7E04	Protection DS1 In	NT4K32	34
			Protection DS1 In	NT4K32	36
9	Timing and cross-connect (G1)	NT4K75	Not applicable	Not applicable	Not applicable
10	Timing and cross-connect (G2)	NT4K75	Not applicable	Not applicable	Not applicable
11	Transport interface card (A)	NT4K56	Not applicable	Not applicable	Not applicable
13	Access interface card (A)	NT4K55	Not applicable	Not applicable	Not applicable
14	Transport interface card (B)	NT4K56	Not applicable	Not applicable	Not applicable
16	Access interface card (B)	NT4K55	Not applicable	Not applicable	Not applicable
17	Processor card (A)	NT4K52	Not applicable	Not applicable	Not applicable
18	Processor card (B)	NT4K52	Not applicable	Not applicable	Not applicable
19	Maintenance interface card	NT4K53	Not applicable	Not applicable	Not applicable
20	Test access card	NT4K54	Not applicable	Not applicable	Not applicable

Optional Circuit Packs Form

Install this card	Slot	Circuit pack	PEC code	Associated input/output cards	PEC code	Input/output slot
	2	DS1 mapper	NT7E04	DS1 In	NT4K32	31
				DS1 Out	NT4K33	33
	4	DS1 mapper	NT7E04	DS1 In	NT4K32	35
				DS1 Out	NT4K33	37
	5	DS1 mapper or OPC ***Note:*** If an OPC is used, it occupies slots 5 through 8. The input/output information is then not applicable.	NT7E04 or NT7E24	DS1 In	NT4K32	38
				DS1 Out	NT4K33	40
	6	DS1 mapper or OPC ***Note:*** If an OPC is used, it occupies slots 5 through 8. The input/output information is then not applicable.	NT7E04 or NT7E24	DS1 In	NT4K32	39
				DS1 Out	NT4K33	41
	7	DS1 mapper or OPC ***Note:*** If an OPC is used, it occupies slots 5 through 8. The input/output information is then not applicable.	NT7E04 or NT7E24	DS1 In	NT4K32	42
				DS1 Out	NT4K33	43
	8	DS1 mapper or OPC ***Note:*** If an OPC is used, it occupies slots 5 through 8. The input/output information is then not applicable.	NT7E04 or NT7E24	DS1 In	NT4K32	44
				DS1 Out	NT4K33	45
	12	This slot is not used.	Not applicable	Not applicable	Not applicable	Not applicable
	15	This slot is not used.	Not applicable	Not applicable	Not applicable	Not applicable
	21	Integrated remote test unit	NT4K57	Not applicable	Not applicable	Not applicable

CDS Shelf Setup Form

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

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

Left drawer

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

Right drawer

Network Elements Setup Form

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

DS1 Setup Form

NE number: _____

NE name: _____

NE location: _____

DS1 Service Assignments

End point A		End point Z				
Group (1 or 2)	**Port**	**TIC**	**Subport**	**Service Assignment**	**IG**	**RDTLink No.**
1	1	1	1			
1	2	1	2			
1	3	1	3			
1	4	1	4			
1	5	1	5			
1	6	1	6			
1	7	1	7			
1	8	1	8			
1	9	1	9			
1	10	1	10			
1	11	1	11			
1	12	1	12			

1	13	1	13			
1	14	1	14			
2	1	1	15			
2	2	1	16			
2	3	1	17			
2	4	1	18			
2	5	1	19			
2	6	1	20			
2	7	1	21			
2	8	1	22			
2	9	1	23			
2	10	1	24			
2	11	1	25			
2	12	1	26			
2	13	1	27			
2	14	1	28			

DS1 Parameters

Group (1 or 2)	Port	Facil. ID	Line Coding	Frame Format	Alarm Encoding	Synch. mode	Line build out	Perf. mon.
1	1							
1	2							
1	3							
1	4							
1	5							
1	6							
1	7							
1	8							
1	9							
1	10							
1	11							

1	12							
1	13							
1	14							
2	1							
2	2							
2	3							
2	4							
2	5							
2	6							
2	7							
2	8							
2	9							
2	10							
2	11							
2	12							
2	13							
2	14							

Powering up the equipment

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

Procedures in powering up the equipment

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

Procedure 2-1
Inspecting the network element

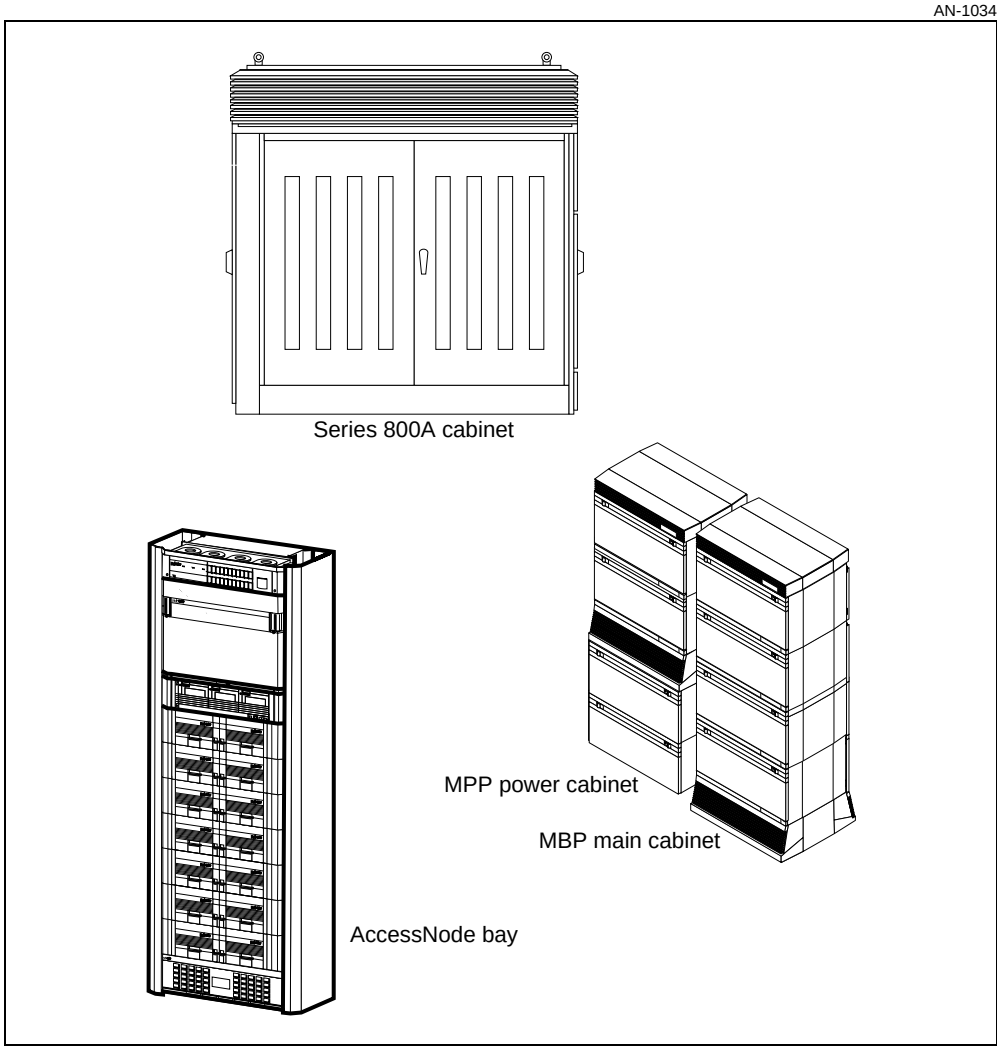
Use this procedure to visually inspect the network element.

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

View of the cabinets

Figure 2-1
View of the cabinets

AN-1034



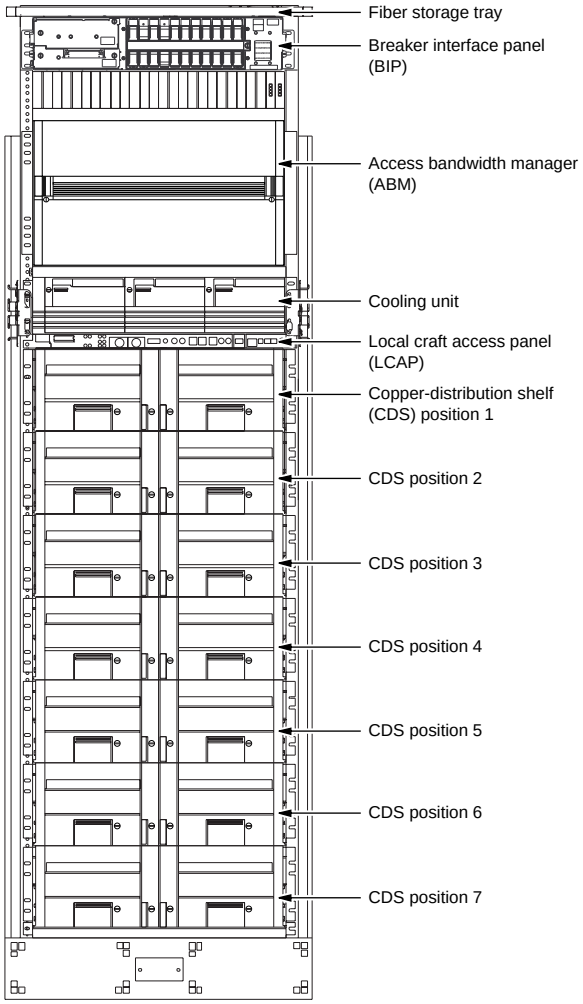
—continued—

Procedure 2-1 (continued)
Inspecting the network element

View of the network element

Figure 2-2
View of the network element

AN-1039



—continued—

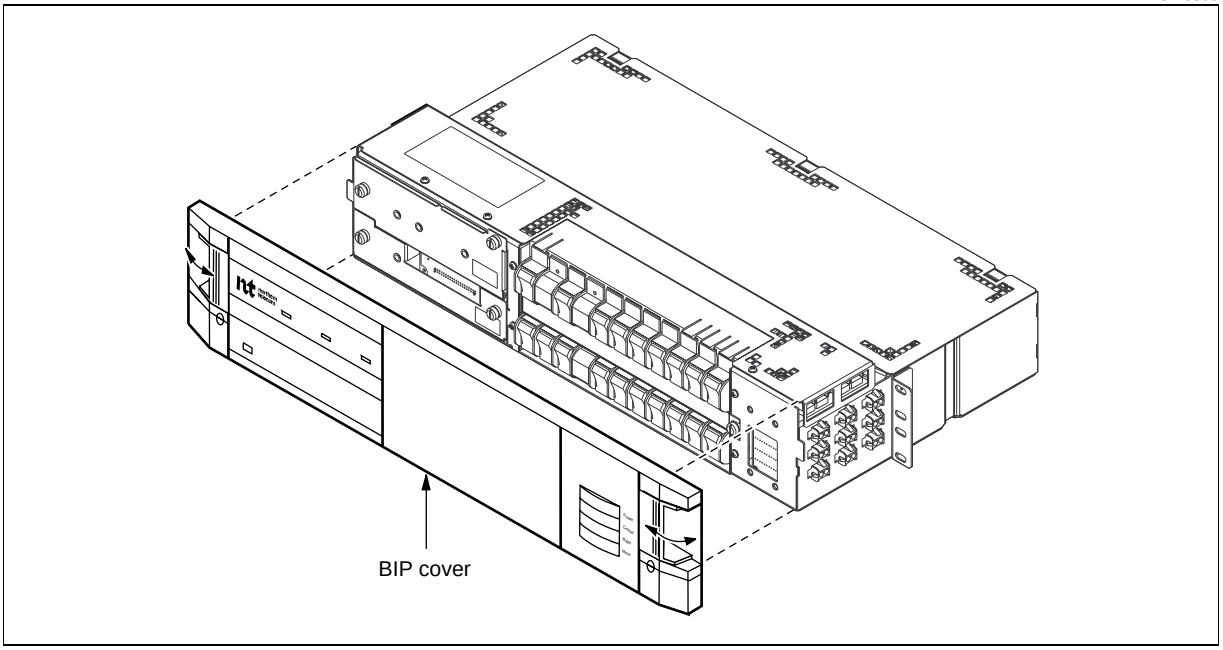
Procedure 2-1 (continued)
Inspecting the network element

Action

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

Figure 2-3
Breaker interface panel (BIP) cover

PC-16505



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

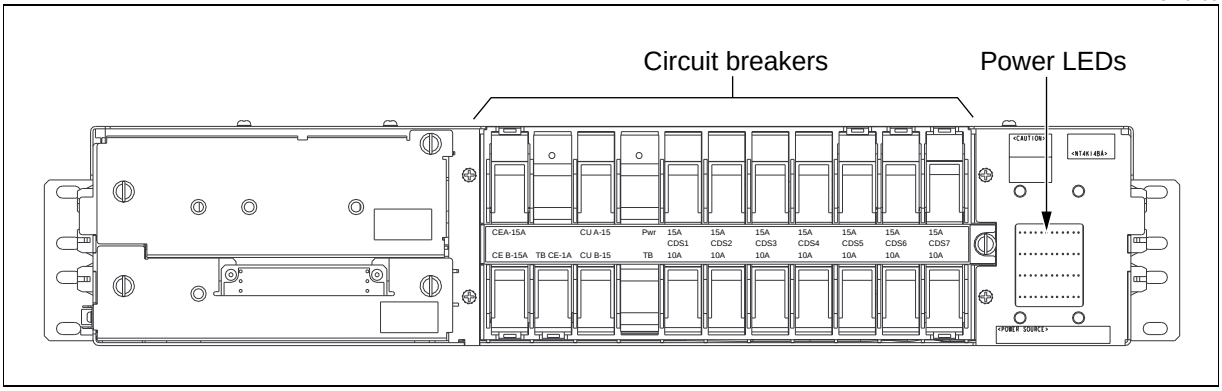
—continued—

Procedure 2-1 (continued)
Inspecting the network element

Step	Action

Figure 2-4
BIP for the ABM shelf

PC-16498



3 Remove the remaining cover (or covers).

If this is a	Then
bay configuration	remove the cover of the common-equipment shelf according to the procedure “Removing the common-equipment shelf cover” in *Routine Maintenance Procedures,* 323-3001-546, in *Maintenance,* Volume 5C.
MBP or MPP	remove the cabinet covers, pedestal grilles, and cover of the common-equipment shelf, according to the procedures “Removing the MBP cabinet covers” and “Removing the common-equipment shelf cover” in *Modular Business Package Installation Manual*, 323-3001-206.
Series 800A outside plant cabinet	open the cabinet doors and remove the cover of the common-equipment shelf, according to the procedures “Opening the doors of the Series 800A outside plant cabinet” and “Removing the common-equipment shelf cover” in *Series 800A Outside Plant Cabinet Installation Manual*, 323-3001-118.

—continued—

Procedure 2-1 (continued)
Inspecting the network element

Step	Action

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

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

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

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

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

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

6 Finish repairs before going on to the next procedure.

—end—

Procedure 2-2
Verifying power at the ABM BIP

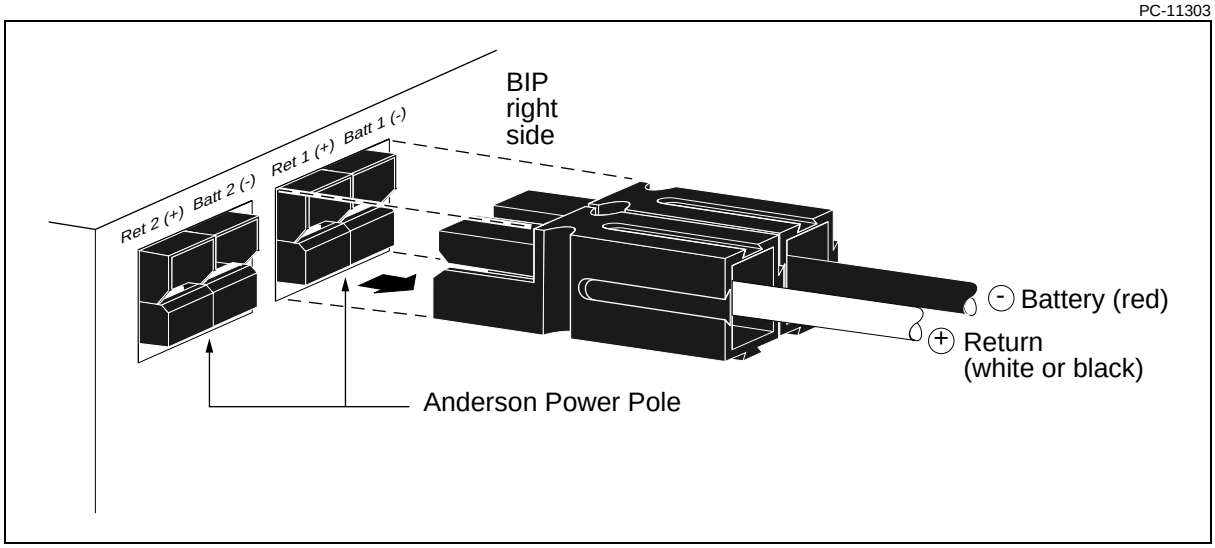
Precautions

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

Action

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

PC-11303



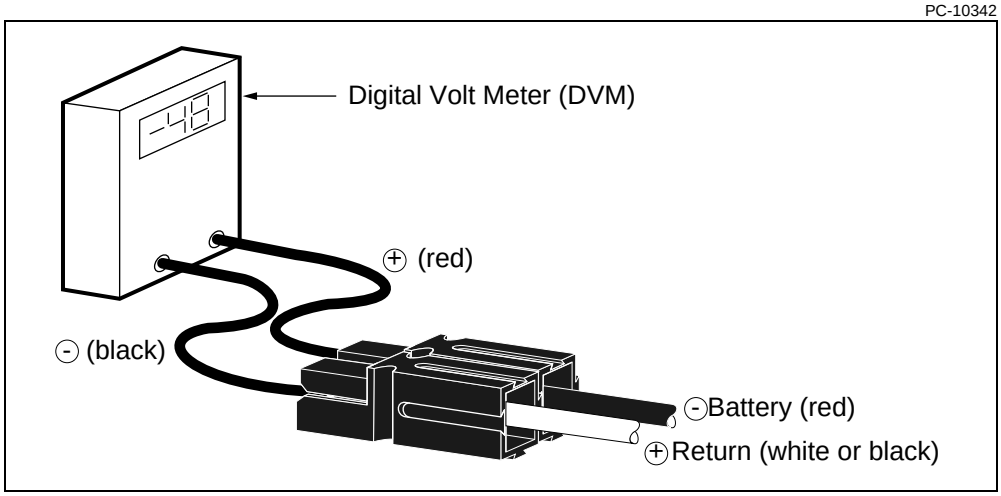
3	Connect a digital volt meter across the power cable connector as shown in the following figure.

—continued—

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

Step	Action

PC-10342



4 Apply power to the battery/return pair (Batt1/Ret1) at the dc power source (BDFB) by inserting the fuse or by switching the breaker to the on (1) position.

5 Measure the voltage. The voltage required between the battery and the return is -48 V dc and -56 V dc.

6 Remove power to the battery/return pair (Batt1/Ret1) at the dc power source (BDFB) by removing the fuse or by switching the breaker to the off (0) position.

7 Reinsert the power cable in the Batt1/Ret1 connector, matching the red wire to the Batt(-) and the white or black wire to the Ret (+) on the left side of the BIP.

8 Repeat steps 2 through 7 for Batt2/Ret2 on the left side of the BIP and for Batt3/Ret3 and Batt4/Ret4 on the right side of the BIP.

9 Repeat steps 10 through 18 for each unequipped CDS/UE9000 shelf on its associated CE and TB breakers.

10 Remove the breaker retaining bar between the two rows of breakers by loosening the captive screw on the right side of the bar. Swing the bar up from the right side until the left side disengages.

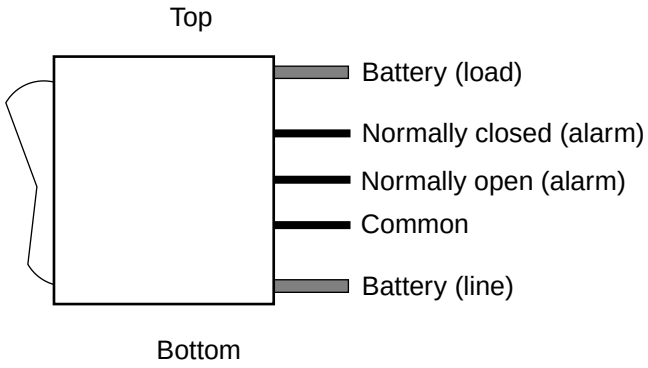
Remove the Pwr breaker associated with the unequipped shelf by lifting out of the way the retaining tabs that hold the breaker. Use a flat-head (slotted) screwdriver to lift the tab on the top of the top breakers and the tab on the bottom of the bottom breakers.

—continued—

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

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

Circuit breaker: side view



13	Insert the circuit breaker back into its slot until it snaps into place under the retaining tab.
14	Repeat steps 11 through 13 for the TB breaker for the same CDS.
15	Repeat steps 11 through 13 for the breakers associated with each additional unequipped CDS.
16	Replace the breaker retaining bar by hooking the left side of the bar into place and moving the right side down until the captive screw aligns with the screw hole.
17	Use a flathead screwdriver to fasten the captive screw on the retaining bar in place.
18	Apply power to Batt1/Ret1, Batt2/Ret2, Batt3/Ret3/, and Batt4/Ret4 at the BDFB by inserting the fuses or by switching the breakers to the on (1) position.

—end—

Procedure 2-3
Equipping the ABM common equipment and CDS shelves with circuit packs

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

Requirements

The following requirements must be met before performing this procedure.

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

Setup form

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

Circuit pack layout

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

If this is	**then refer to**
a CServer	Figure 2-7 on page 2-14
an RFT	Figure 2-8 on page 2-15

—continued—

Procedure 2-3 (continued)
Equipping the ABM common equipment and CDS shelves with circuit packs

Circuit packs

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

Circuit pack	PEC	Slots	Label
Access interface card	NT4K55	13, 16	Access IF
Common equipment power card (CEP)	NT4K58MA	54, 55	CE PWR
DS1 input card	NT4K32	30, 31, 35, 38, 39, 42, 43	DS1 IN
DS1 output card	NT4K33	32, 33, 37, 40, 41, 44, 45	DS1 OUT
DS1 protection bridge card	NT4K31	34, 36	DS1 Prot Bridge
DS1 mapper	NT7E04	1–8	DS1 Sync VT Mapper
Integrated remote test unit (IRTU)	NT4K57	21	Integ Remote Test
Maintenance interface card (MIC)	NT4K53	19	Maint IF
Operations controller Module (OPC)	NT7E24	5	OPC Module
Processor	NT4K52	17, 18	Proc
Serial I/O card	NT4K58LA	38, 40	Serial I/O
Test access card (TAC)	NT4K54	20	Test Access
Test access path card	NT4K58KA	53	TAP I/O
Transport interface card (TIC)	NT4K56	11, 14	Trans IF
Timing and cross-connect (TXC) card	NT4K75	9, 10	Timing and cross-connect

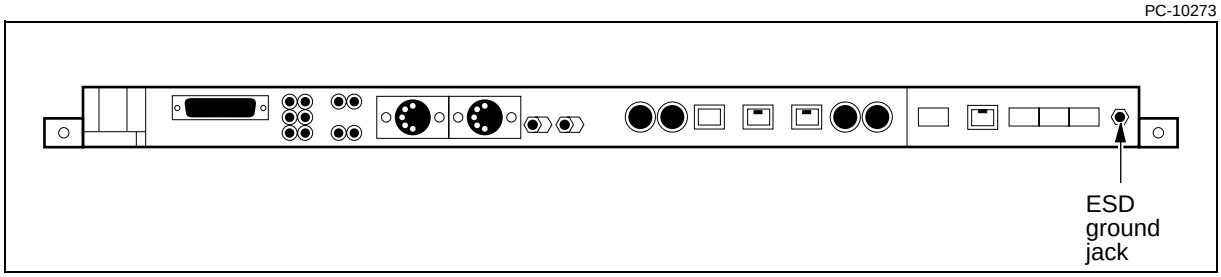
—continued—

Procedure 2-3 (continued)
Equipping the ABM common equipment and CDS shelves with circuit packs

Action

Step	Action
1	Put on the antistatic wrist strap. Make sure it is correctly grounded to the electrostatic discharge (ESD) jack on the LCAP as shown in Figure 2-5.

Figure 2-5
LCAP for the access bandwidth manager shelf



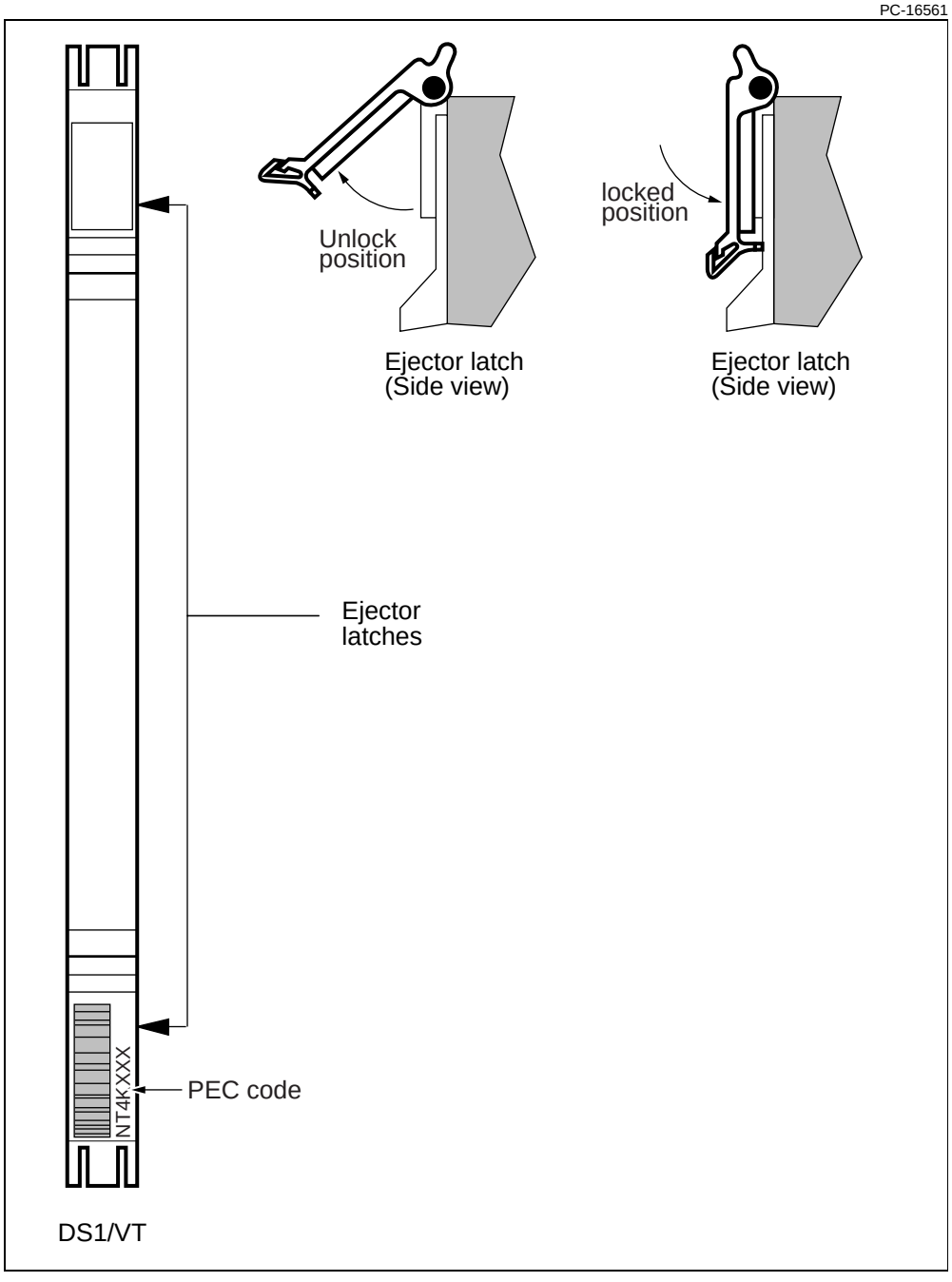
2	Carefully unwrap the circuit packs and check them for physical damage. If any circuit pack is damaged, replace it.
3	With the top and bottom ejector latches in the closed position, carefully place the circuit packs into the appropriate slots in the ABM common equipment shelf as shown in Figure 2-7 on page 2-14 or Figure 2-8 on page 2-15, as appropriate, but leave the circuit pack(s) disengaged.
4	Repeat steps 2 and 3 for all ABM circuit packs on the Circuit packs setup forms. ***Note:*** A circuit pack is in the disengaged position when the latches are closed and prevent full insertion of the circuit pack. Do not force a disengaged circuit pack when you insert it. Push it only as far as the closed latches will allow it to go. To disengage a circuit pack, push up on the top latch and down on the bottom latch. Then swing the latches out, and pull the circuit pack out slightly. Refer to Figure 2-6 on page 2-13.

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

—continued—

Procedure 2-3 (continued)
Equipping the ABM common equipment and CDS shelves with circuit packs

Figure 2-6
Circuit pack latches

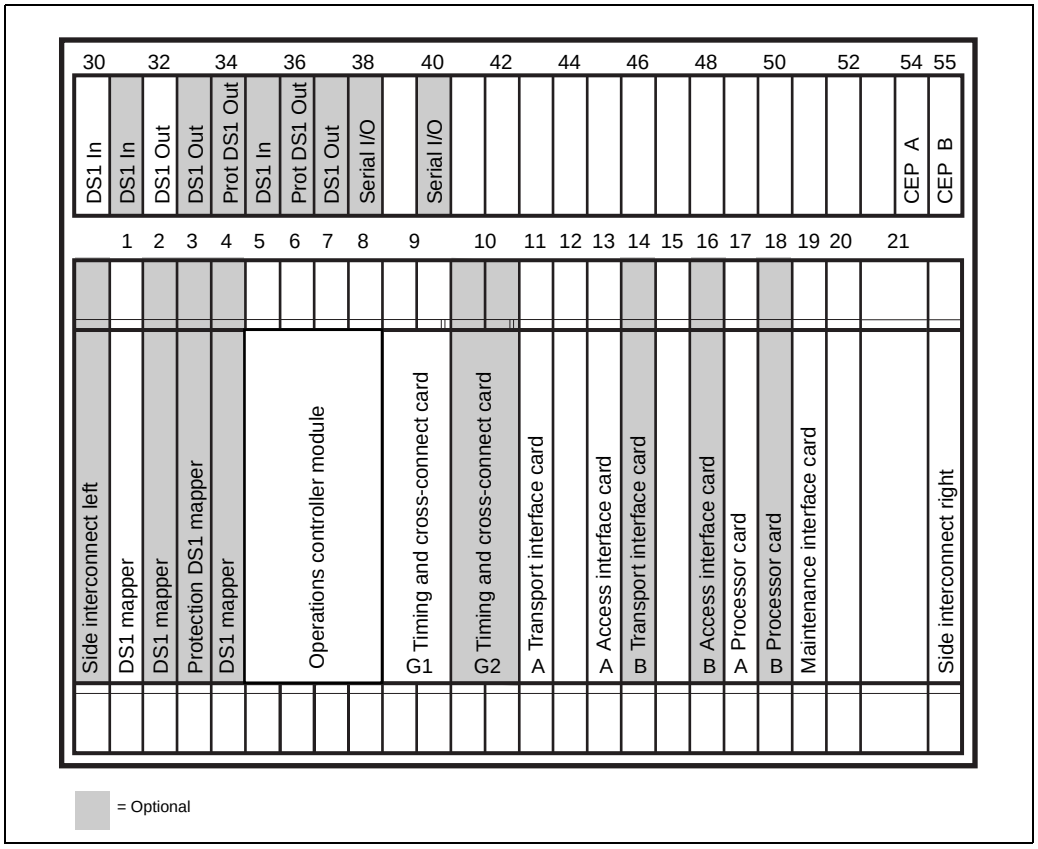


—continued—

Procedure 2-3 (continued)
Equipping the ABM common equipment and CDS shelves with circuit packs

Figure 2-7
ABM circuit pack layout of the CServer in DFA systems

AN-1036

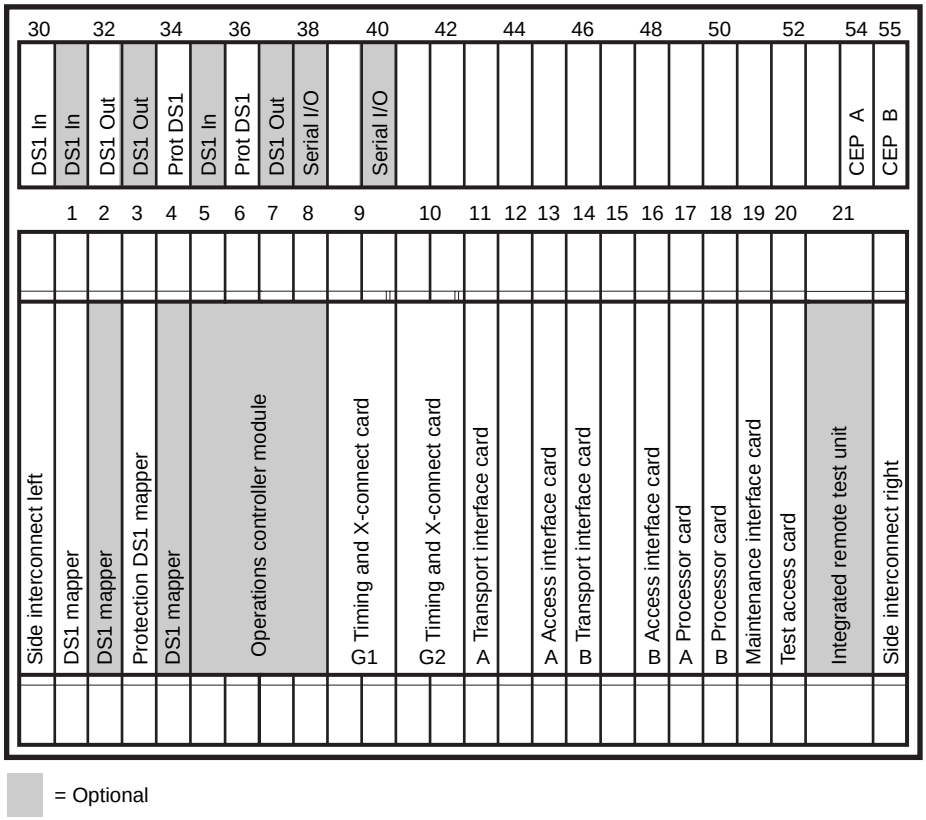


—continued—

Procedure 2-3 (continued)
Equipping the ABM common equipment and CDS shelves with circuit packs

Figure 2-8
ABM circuit pack layout of the RFT in DFA systems

AN-1035



= Optional

Note: DFA RFTs located at the central office can house the OPC; therefore, the shelf layout above would also include the OPC in slots 5 through 8.

Note: TR-08 services require the working and protection DS1 mappers to be type NT7E04CA or NT7E94EA. If the mappers are not this type, a circuit pack mismatch alarm occurs. To avoid this alarm, make sure the first NT7E04CA mapper is installed as the protection mapper.

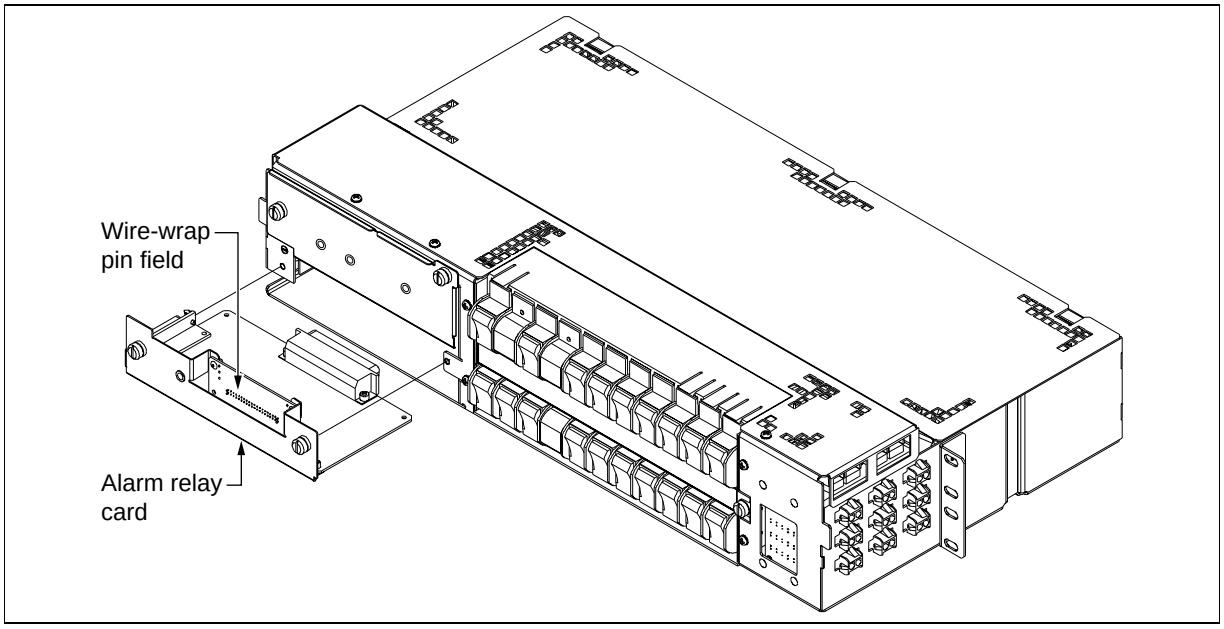
—continued—

Procedure 2-3 (continued)
Equipping the ABM common equipment and CDS shelves with circuit packs

Step	Action
5	If this network element contains an OPC, read the OPC serial number from the motherboard of the OPC, and record it on the OPC Setup Form.
6	Insert the alarm relay card. Push the card in until it clicks and is flush with the adjacent cards. See Figure 2-9 below.
7	Connect the alarm relay cable to the connector on the side of the alarm relay card.
8	Tighten the screw-in knobs on the front of the alarm relay card. ***Note:*** Make sure that the talk battery filter card is not engaged.

Figure 2-9
Alarm relay card on the ABM BIP

PC-16500



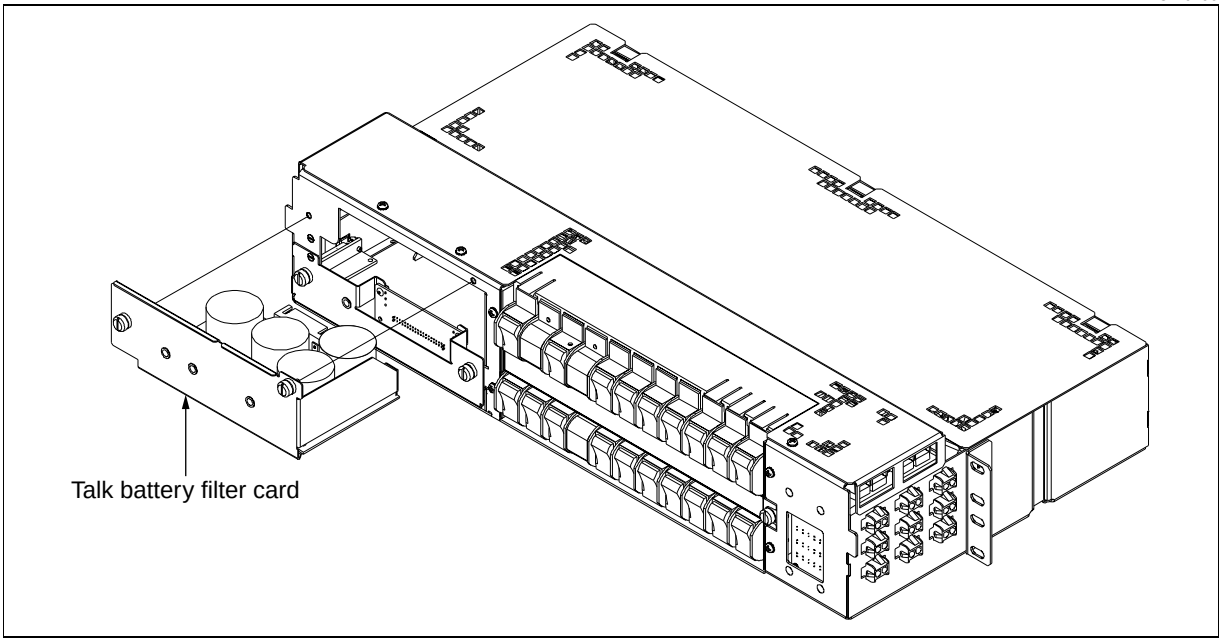
—continued—

Procedure 2-3 (continued)
Equipping the ABM common equipment and CDS shelves with circuit packs

Step	Action

Figure 2-10
Talk battery filter card on the ABM BIP

PC-16499



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

If this NE is	Then go to
equipped with CDS	step 10
equipped with UE9000	*Universal Edge 9000 Installation Quick Reference Guide*
not equipped with CDS/UE9000s	step 19

Inserting circuit packs into the CDS shelves

10 Unlock the left drawer of the first CDS (CDS 1), using a small screwdriver to turn the locking knob one-quarter turn to the left. Grasp the handle and pull open the drawer.

11 Insert the metallic test access card (MTA) in the slot labeled MTA A (see Figure 2-11 on page 2-18). Make sure the MTA is engaged.

12 Insert the two narrowband line interface cards (NLICs) in slots LIC A and LIC B. Refer to Figure 2-11 on page 2-18. Make sure the NLICs are engaged.

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

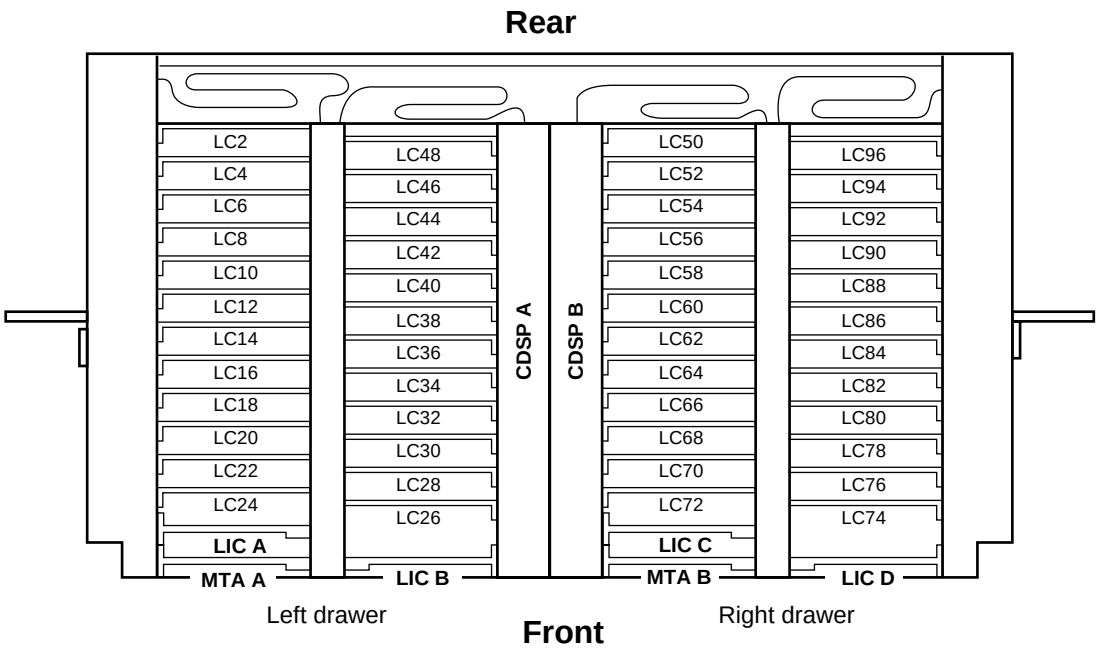
—continued—

Procedure 2-3 (continued)
Equipping the ABM common equipment and CDS shelves with circuit packs

Step	Action

Figure 2-11
Top view of the copper-distribution shelf

PC-10750



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

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

13 Close the left drawer.

14 Unlock the right drawer as you did the left drawer in step 10 and open the right drawer.

15 Insert the MTA in slot MTA B. Make sure the MTA is fully engaged.

16 Insert the two NLICs in slots LIC C and LIC D. Make sure the NLICs are fully engaged.

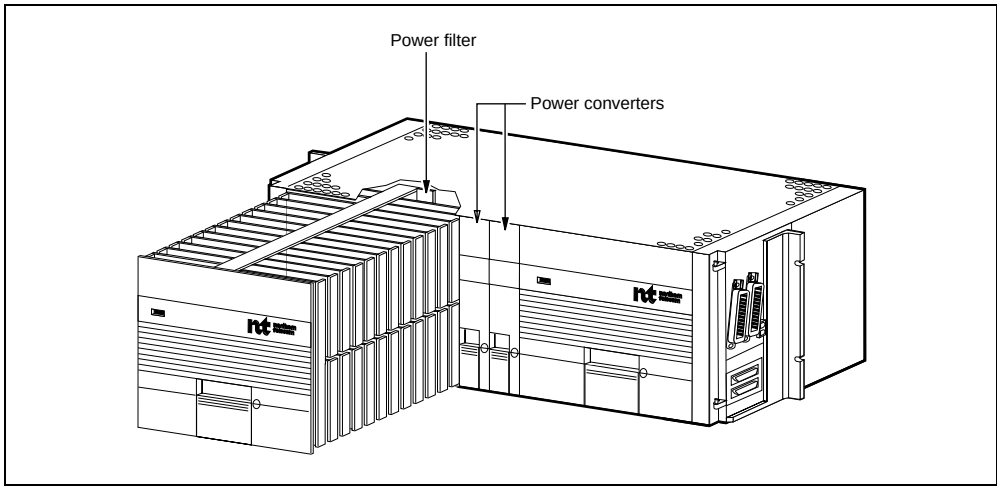
—continued—

Procedure 2-3 (continued)
Equipping the ABM common equipment and CDS shelves with circuit packs

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

Figure 2-12
Power converters on the copper-distribution shelf

AN-1040



Note: Line cards may be installed later; please see your System setup forms in Chapter 1.

19	Repeat steps 10 through 18 for CDS 2 to CDS 7, if the shelves are present. Make sure all other circuit packs are installed, but not engaged, in the appropriate shelves.
20	Remove the antistatic wrist strap you are wearing.

—end—

Procedure 2-4
Powering up the ABM common equipment shelf

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

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

Requirements

Before you start this procedure, make sure that the circuit packs for this configuration are installed in the ABM shelf but not engaged according to Procedure 2-3 on page 2-10.

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

Action

Step	Action
1	Put on the antistatic wrist strap. Make sure it is properly grounded to the ESD jack on the local craft access panel LCAP as shown in Figure 2-5 on page 2-12.
2	On the new ABM common-equipment shelf, fully engage the processor circuit packs as follows: **a.** Pull open the top and bottom latches on the circuit pack.

—continued—

Procedure 2-4 (continued)
Powering up the ABM common equipment shelf

Step	Action

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

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

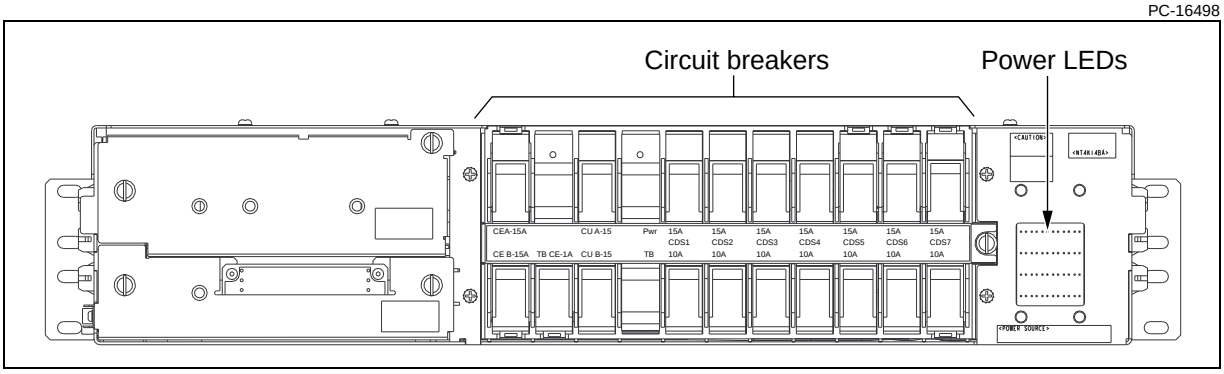
CAUTION
Risk of equipment damage
Once the processor is engaged, it undergoes an initialization process. This could take up to 25 minutes. Do not remove the processor during this time. It could affect the operation of the circuit pack.

3 Disconnect the B modular power connector on the common-equipment power (CEP) I/O card in slot 55 of the ABM shelf. Refer to Figure 2-7 on page 2-14 or Figure 2-8 on page 2-15, depending upon the system configuration.

4 Fully engage the maintenance interface card (MIC) circuit pack in slot 19 of the ABM shelf.

Figure 2-13
BIP for the ABM shelf

PC-16498



—continued—

Procedure 2-4 (continued)
Powering up the ABM common equipment shelf

Step	Action
5	Set the CE_A circuit breaker to the 1 position. Verify that power is being supplied to the shelf by observing the MIC and processor LED activity. Make sure the power LEDs on the BIP light up. ***Note:*** It is not the intent of this procedure to make sure specific LEDs light up, but to verify that power is being supplied to the shelf. In fact, the actual LED indicator(s) should be ignored since the system is not yet commissioned.
6	After verifying the MIC and processor LEDs, set the CE_A circuit breaker to the 0 position.

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

Step	Action
7	Make sure the CEP I/O card in slot 54 is connected to the CE_A breaker and that the CEP I/O card in slot 55 is connected to the CE_B breaker. Then, repeat steps 5 and 6.
8	Reconnect any disconnected CEP I/O card power connectors in slot 55.
9	Disconnect the A modular power connector on the CEP I/O card in slot 54 of the ABM shelf.
10	Set the CE_B circuit breaker associated with the shelf position to the 1 position. Verify that power is being supplied to the shelf by observing the MIC and processor LED activity. ***Note:*** It is not the intent of this procedure to make sure specific LEDs light up, but to verify that power is being supplied to the shelf. In fact, the actual LED indicator(s) should be ignored since the system is not commissioned.
11	After verifying the MIC and processor LEDs, set the CE_B circuit breaker to the 0 position.

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

—continued—

Procedure 2-4 (continued)
Powering up the ABM common equipment shelf

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

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

—continued—

Procedure 2-4 (continued)
Powering up the ABM common equipment shelf

Step	Action
16	Proceed according to the following tasks:

If the NE is	Then
an RFT mounted in a Series 800A outside plant cabinet	**a.** close both circuit breakers CU A and CU B on the BIP. **b.** remove the cover of the thermostat and write down the thermostat setting. The thermostat is located on the inside right wall of the cabinet when accessed from the front. **c.** turn down the thermostat until all fans start operating. If the fans fail to operate, check the wiring. If you cannot identify the problem, call your Nortel Networks representative. **d.** turn the thermostat to its original setting and reinstall the thermostat cover.
in an ABM bay	**a.** on the ABM BIP, close only the CU A circuit breaker by moving it to the 1 position. *The fans in the cooling unit should start to operate. If the fans do not operate, check that there is power coming from the power source and check the power supply cable for correct polarity.* **b.** open the CU A circuit breaker by moving it to the 0 position. *The fans in the cooling unit shut off.* **c.** on the ABM BIP close only the CU B circuit breaker by moving it to the 1 position. *The fans in the cooling unit should start to operate. If the fans do not operate, check that there is power coming from the power source and check the power supply cable for correct polarity.* **d.** open the CU B circuit breaker by moving it to the 0 position. *The fans in the cooling unit shut off.* **e.** close the CU A circuit breaker by moving it to the 1 position. *The fans in the cooling unit turn on.* **f.** close the CU B circuit breaker by moving it to the 1 position.

—continued—

—continued—

Procedure 2-4 (continued)
Powering up the ABM common equipment shelf

Step Action

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

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

—continued—

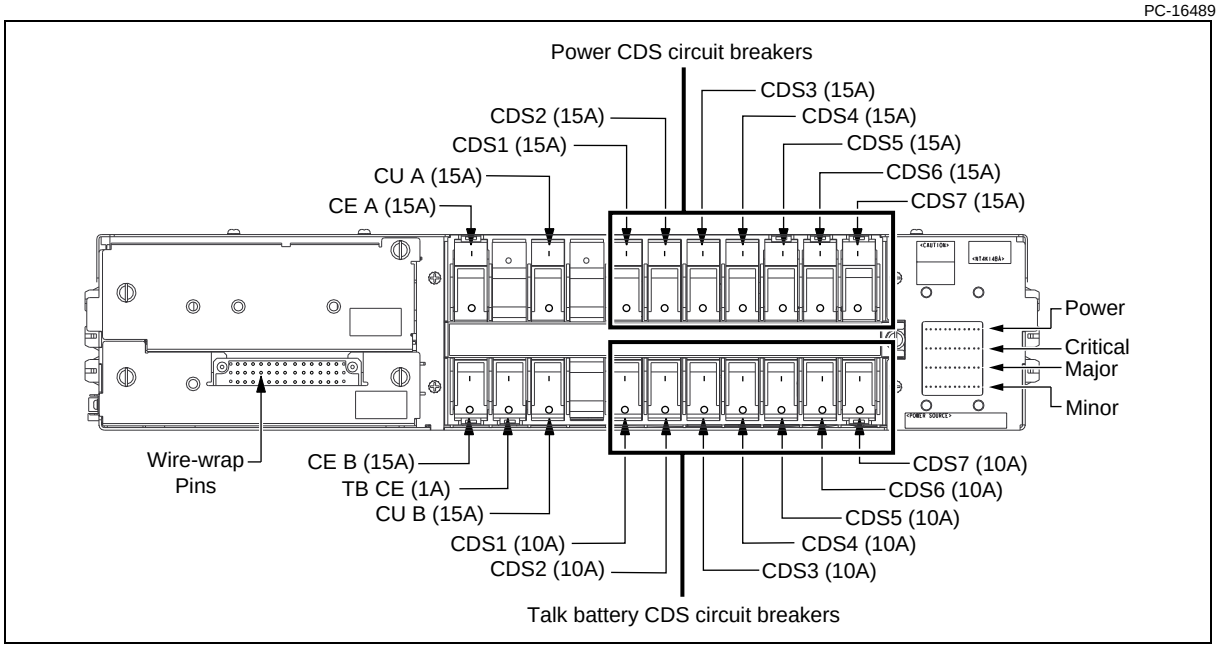
Procedure 2-4 (continued)
Powering up the ABM common equipment shelf

Step	Action

18 On the breaker interface panel (BIP), set the circuit breaker labeled TBCE-1A to the 1 position (the talk battery power to the test access card). The breaker interface panel (BIP) is shown in Figure 2-14.

Figure 2-14
Breaker interface panel (BIP)

PC-16489



19 Set the circuit breaker labeled Power CDS 1 to the 1 position. This circuit breaker provides shelf power to the copper-distribution shelf 1 (CDS 1).

20 Close the circuit breaker labeled TB CDS1, which provides talk battery to copper-distribution shelf 1 (CDS 1).

21 If the bay is equipped with CDSs, engage the talk battery filter card into the shelf. Refer to Figure 2-10 on page 2-17 for an example of the talk battery filter card.

22 Repeat steps 19 and 20 for each equipped CDS shelf, CDS 2 through CDS 7.

23 Do one of the following:

If the NE is	Then
an RFT mounted in a Series 800A outside plant cabinet	go to step 24.
in an MBP cabinet	go to step 27.
in an ABM bay	This procedure is complete. Go to the next procedure.

—continued—

Procedure 2-4 (continued)
Powering up the ABM common equipment shelf

Step	Action

24 Check all rectifiers for the ON/RFA LED conditions.

If any rectifier ON/RFA LED is red, slowly adjust its FLT potentiometer slightly clockwise until the ON/RFA LED turns green.

Note: When the adjusted output voltage of a rectifier is lower than that of the other rectifiers, its ON/RFA LED is red because its output current drops below 0.1 A.

25 Check the ammeters of all rectifiers and balance the amperage supplied by all rectifiers.

Note: Balanced load sharing among all rectifiers is difficult to achieve if one or more rectifiers have open sensing leads.

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

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

26 Repeat steps 24 and 25 until all rectifier ammeters display approximately the same current level and until all rectifier ON/RFA LEDs are green.

The digital meter on the faceplate of the dc distribution shelf displays the value of float voltage from all rectifiers.

27 If this is an MBP site equipped with an external battery string, verify that the battery string does the following:

- supplies uninterrupted power to the MBP cabinets when the commercial ac power source fails, according to the manufacturer's recommended procedures.
- recharges from the rectifiers, according to the manufacturer's recommended procedures.

—end—

Commissioning and provisioning the equipment

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

Procedures in commissioning and provisioning the equipment

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

If you are adding a network element to an existing OPC span of control, then skip Procedures 3-1 through 3-4, and go directly to Procedure 3-5.

—continued—

Procedure 3-1
Verifying the OPC software version

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

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

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

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

Setup form

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

Action

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

—continued—

Procedure 3-1 (continued)
Verifying the OPC software version

Step	Action

3 Enter the password by entering:

root

The TERM = vt100 prompt is displayed.

Press the Return key (↵) to select the VT100 terminal mode.

The opc> prompt is displayed.

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

opcui ↵

If the	Then the
screen displays the following message: *"command not found"*	OPC software is NOT loaded. You are finished with this procedure. Log out of the OPC. For steps to log out of the OPC, see Procedure 4-4, in "Appendix A: Common commissioning procedures". • Go to Procedure 3-3 on page 3-9.
User Session Manager is displayed	OPC software is loaded. Go to step 6.

5 Do one of the following:

If you are	Then
adding an NE to an existing OPC	this procedure is completed. Go to Procedure 3-6 on page 3-17.
not adding an NE to an existing OPC	go to step 4.

6 Check the OPC software version. Press **Ctrl_T**, and then press the number **2**.

The OPC status screen appears.

—continued—

Procedure 3-1 (continued)
Verifying the OPC software version

Step	Action

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

If the OPC	Then
does not have the correct software	• press **Ctrl_T 0** to return to the User Session Manager. • tab to the Logout button and press **Ctrl_A**. • tab to the Logout button on the displayed screen and press **Ctrl_A**. The opc prompt is displayed. • go to Procedure 3-2 on page 3-6
does have the correct software	• Return to the User Session Manager main window by pressing **Ctrl_T 0**. • go to Procedure 3-4 on page 3-11

—end—

Procedure 3-2
Removing the software from the OPC

Action

Step	Action
1	Carefully insert the tape with the correct OPC software load into the OPC tape drive, as shown in Figure 3-1 on page 3-8. This tape contains the RMOPCLD script, which is required to remove existing OPC software from an OPC.

CAUTION
Risk of equipment damage
Forcing the tape into the tape drive can damage the drive and you may not be able to remove the tape. If you cannot insert the tape easily, it could be oriented the wrong way. Refer to Figure 3-1 on page 3-8 for the correct orientation of the tape.

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

cd /tmp ↵

The "opc>" prompt appears.

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

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

```
439+4 blocks in
439+4 blocks out
```

The "opc>" prompt appears.

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

cd /install ↵

The "opc>" prompt appears.

4 Enter

cd rmopclddir

5 Enter

cd hpux_8.0

6 Uncompress by entering

uncompress rmopcld_basesys.tar.Z↵

7 Uncompress by entering

uncompress rmopcld_popc.tar.Z↵

—continued—

Procedure 3-2 (continued)
Removing the software from the OPC

Step	Action
8	Execute the RMOPCLD script by typing the following two commands: **cd /tmp/install** ↵ *The "opc>" prompt appears.* **rmopcld** ↵ *A warning message appears with a prompt to confirm the removal of the OPC load:* `You are about to wipe out the OPC load. Please confirm (Y/N).`
9	Type **y** ↵ to continue. *OPC processes are stopped. A message appears which gives you the option of aborting the removal of the OPC load.*
10	Type **c** and press **Enter** to continue. *The script removes the existing software version. The OPC reboots automatically.*
11	Wait until the login prompt appears on the screen. When the OPC has rebooted, log in again, using the **root** user ID. *"TERM=(VT100)" appears.* Press the Return key. *The "opc>" prompt appears.*

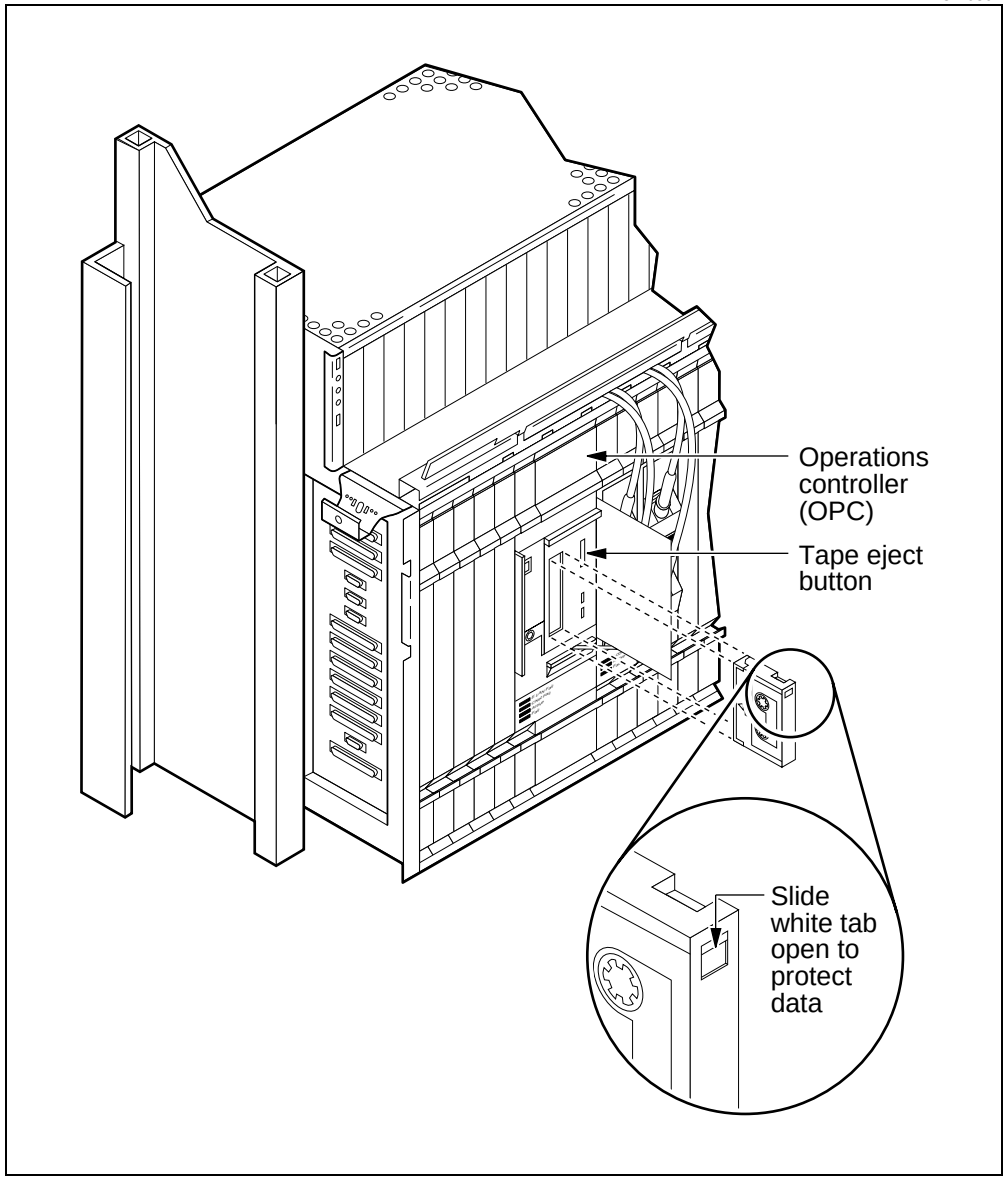
—continued—

Procedure 3-2 (continued)
Removing the software from the OPC

Step	Action

Figure 3-1
Inserting and ejecting the tape in an OPC (NT7E24BA)

PC-10864



—end—

Procedure 3-3
Installing software on a local OPC and NE from tape

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

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

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

Action

Step	Action

1 Make sure the correct software tape is inserted into the OPC tape drive, as shown in Figure 3-1 on page 3-8.

CAUTION
Risk of equipment damage
If you force the tape into the tape drive, you can damage the drive and you may not be able to remove the tape. If you cannot easily insert the tape, it may be oriented the wrong way.
Refer to Figure 3-1 on page 3-8 for the correct orientation of the tape.

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

Installing the OPC software

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

cd /tmp ↵

The “opc>” prompt appears.

—continued—

Procedure 3-3 (continued)
Installing software on a local OPC and NE from tape

Step	Action

3	Enter:
	dd if=/dev/rdt/tape2 bs=20b | tar xvf - ↵
	Either the message Broken pipe appears or a message similar to the following appears (the numbers may vary).
	`439+4 blocks in`
	`439+4 blocks out`
	The "opc>" prompt appears.

4	Enter: **cd /tmp/install** ↵ *The "opc>" prompt appears.*
5	Enter: **install_release -f** ↵ *The system displays a message saying that it is installing the software, and as the installation proceeds, it displays the percentage of software installation completed. The installation takes approximately one hour.* **a.** When the application software has been loaded, the OPC automatically reboots.
6	When the login prompt appears, log back in to the OPC, using the **root** user ID and password.
7	Enter **opcui** *The system displays the User Session Manager main window.*
8	Press the tape eject button to release the tape.

—end—

Procedure 3-4
Commissioning the OPC

Setup form

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

Action

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

—continued—

Procedure 3-4 (continued)
Commissioning the OPC

Step	Action
10	Tab to the Primary OPC serial number field. *The serial number of the OPC you are logged into appears in this field by default. The serial number of the OPC you are logged into also is displayed in the upper right corner of the Commissioning Manager main window.*
11	Optional step. To specify an alias for the primary OPC, tab to the Primary OPC alias field and enter a name up to 8 alphanumeric characters long. The default alias is the OPC name followed by P (for primary).
12	Record the data from the System Commissioning Data dialog on the OPC Setup Form.
13	Tab to the OK button and select it by pressing **Ctrl_A**. *When you select the OK button and the information is entered correctly, the System Commissioning Data dialog is removed and the name of the system being commissioned is displayed on the first line of the Commissioning Manager main window. The arrow (=>) indicator in the Commissioning Manager main window moves to Commission new network element.*

If	Then
any essential data is missing or entered incorrectly	• an error dialog explaining the nature of the problem is displayed. • the System Commissioning Data dialog remains displayed and fields with missing or erroneous data are marked with an “X.”

14	Close the Commissioning Manager main window by pressing **Ctrl_L W**. *The Exit command appears.*
15	Select Exit by pressing the **space bar**. *The User Session Manager main window appears.*

—end—

Procedure 3-5
Commissioning a network element

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

Setup form

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

Action

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

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

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

A chooser menu appears.

—continued—

Procedure 3-5 (continued)
Commissioning a network element

Step	Action
	b. Press the arrow keys to move to the appropriate selection and select it by pressing the **space bar**.
6	Tab to the Shelf Serial Number field. Read the serial number on the upper right corner of the equipment shelf, and enter it into the Shelf Serial Number field. See Figure 3-2 on page 3-16.
7	Tab to the area of the screen named “This network element contains.” *The cursor moves to the “No OPC” selection.*
8	To choose a selection other than “No OPC,” use the arrow key to move the cursor.
9	Press **Ctrl_A**.
10	Tab to the OK_Return button, and press **Ctrl_A** to select it. *The Commissioning Manager main window is displayed, showing the network element that was commissioned.*
11	Do one of the following:

If	**Then**
you want to commission another network element	repeat this procedure beginning at step 2.
you do not want to commission another network element	go to step 12.

12	Do one of the following:

If you are commissioning an NE	**Then**
in a new OPC span of control	go to step 13.
in an existing OPC span of control	go to step 20.

13	Close the Commissioning Manager by entering **Ctrl_L W.**
14	Select Exit from the displayed menu by pressing the **space bar**. *The User Session Manager appears.*
15	Enter **Ctrl_T 3** ↵ *The OPC prompt appears.*
16	Enter **cd /tmp** ↵

—continued—

Procedure 3-5 (continued)
Commissioning a network element

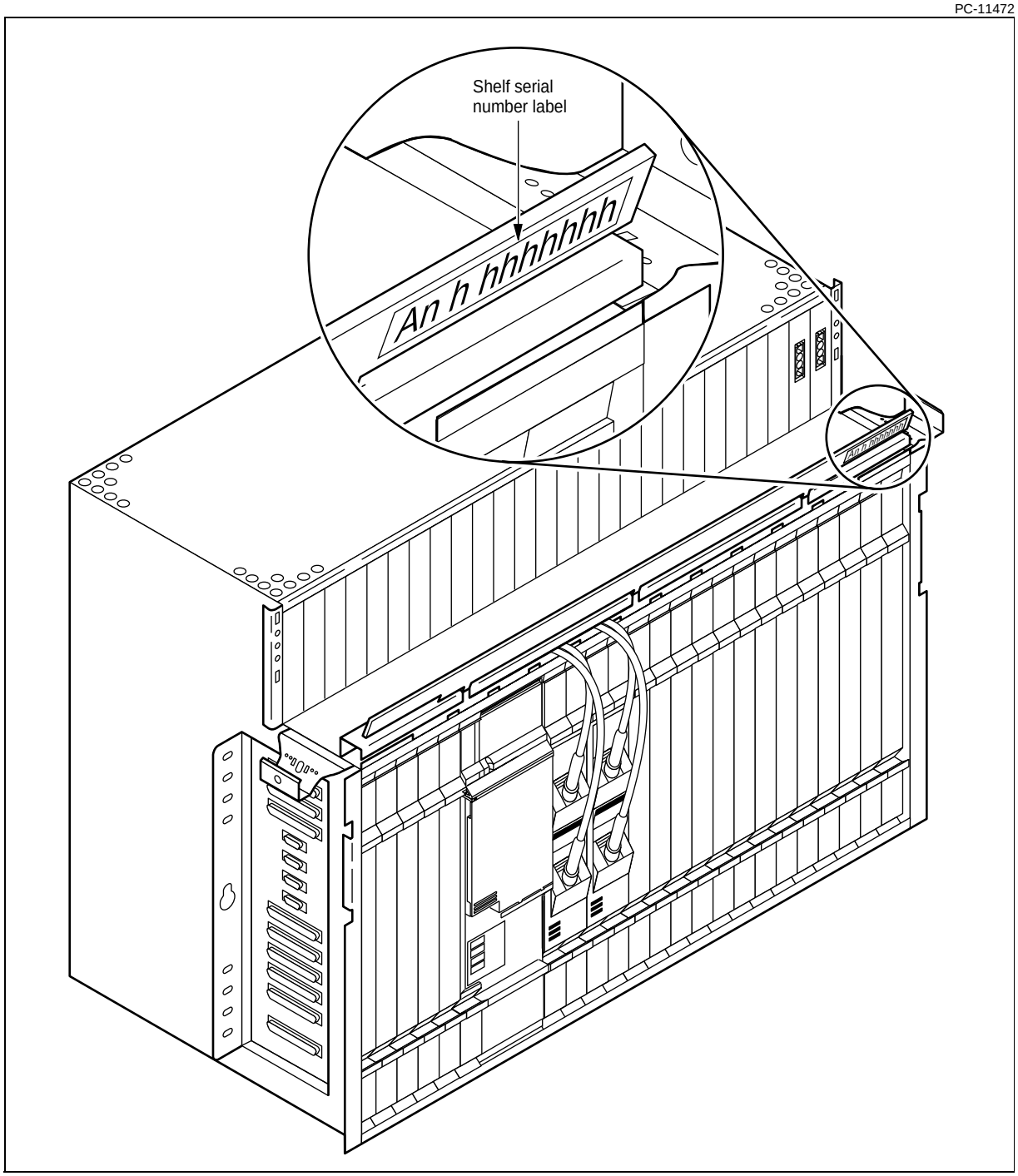
Step	Action
17	Enter **setmbr** ↵ *The system displays messages saying that it is setting the software release, followed by a message that the set OPC release was successful. The system then displays the OPC prompt.*
18	Enter **Ctrl_T 0**↵ *The User Session Manager main window is displayed.*
19	This procedure is complete. Go to the next procedure.
20	Enter **Ctrl_T 3** ↵. *The OPC prompt is displayed.*
21	Enter **cd /tmp** ↵. *The OPC prompt is displayed.*
22	Enter the following command **lomui setNE_release -p <product> -r REL_<xxxx> -n <NE_ID>** ↵ **where** <product> is the type of NE (access, OC3, OC12) <xxxx> is the number of the current NE release <NE_ID> is the identification number of the NE *The OPC prompt is displayed.*
23	Enter **Ctrl_T 0** ↵. *The User Session Manager is displayed.*

—continued—

Procedure 3-5 (continued)
Commissioning a network element

Figure 3-2
Shelf serial number label on the Common Equipment (ABM) shelf

PC-11472



—end—

Procedure 3-6
Monitoring the loading of software to a network element

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

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

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

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

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

Action

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

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

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

—continued—

Procedure 3-6 (continued)
Monitoring the loading of software to a network element

Step	Action

3 Review the download progress using the OPC Reboot/Load Manager tool.

The download starts. The yellow initialization (Init) LED lights up on the maintenance interface card (MIC) while the processor card is loading software.

As the download progresses, the system displays a message that it is loading each processor. The download process takes 15 to 20 minutes per network element. While the download process continues, a question mark is displayed in front of the NE number on the screen.

4 Wait for the question mark to disappear, then go to step 5. If you are commissioning more than one NE, wait for the question marks to disappear before all the NEs you are commissioning.

5 Close the Reboot/Load Manager tool.

a. Display the Window menu by pressing **Ctrl_L W**.

The Window menu is displayed.

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

The User Session Manager screen appears.

6 Do one of the following:

If	Then
the OPC is in an RFT	Wait 30 minutes, and then go to Procedure 3-7, “Adding a new host to an RFT.”
the OPC is in a CServer	go to step 7.

Downloading software to the network element at a remote DFA

7 At the User Session Manager, open the OPC shutdown tool in the Available Tools menu. To open the OPC shutdown tool, position the cursor on the tool name, and press **Ctrl_A**.

The following message is displayed:

```
Press the shutdown button to proceed, or close this tool
by selecting exit.
```

8 Position the cursor on the shutdown button and press **Ctrl_A**.

A warning message is displayed.

9 Tab to Proceed, and press **Ctrl_A**.

An information screen is displayed.

10 Position the cursor on OK, and press **Ctrl_A**.

The system displays a message that the OPC is shutting down.

—continued—

Procedure 3-6 (continued)
Monitoring the loading of software to a network element

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

—end—

Procedure 3-7
Adding a new host to an RFT

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

If there are no GR-303 DMS or GR-303 MVI links to assign, skip this procedure, and go to Procedure 3-9 on page 3-24.

Setup form

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

Action

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

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

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

—continued—

Procedure 3-7 (continued)
Adding a new host to an RFT

Step **Action**

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

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

The selected interface type is marked by a solid diamond.

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

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

9 Do one of the following:

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

—end—

Procedure 3-8
Provisioning default connections

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

Action

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

—continued—

Procedure 3-8 (continued)
Provisioning default connections

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

—end—

Procedure 3-9
Provisioning DS1 facility assignments

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

Each DS1 facility assignment contains the following information:

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

Setup form

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

—continued—

Procedure 3-9 (continued)
Provisioning DS1 facility assignments

Requirements

Before starting this procedure, you must do the following:

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

Action

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

—continued—

Procedure 3-9 (continued)
Provisioning DS1 facility assignments

Step	Action

8 Change the assignment for the facility.

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

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

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

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

a. Move the cursor to Assign as GR-303 DMS, and press the **space bar**.

The GR-303 facilities dialog appears.

b. Tab to the IG Number field, then press **Ctrl_L** ***l***.

The chooser menu appears.

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

c. Move to the IG number you want, then press the **space bar**.

The host name appears in the Host Name field, the IDT number appears in the IDT number field, and a link number appears in the RDTLink Number field.

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

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

d. Tab to the **OK** button, then press **Ctrl_A.**

A warning screen appears.

—continued—

Procedure 3-9 (continued)
Provisioning DS1 facility assignments

Step	Action

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

The OPC requests that the network element create the links.

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

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

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

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

The TR-08 facilities dialog appears.

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

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

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

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

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

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

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

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

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

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

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

—continued—

Procedure 3-9 (continued)
Provisioning DS1 facility assignments

Step	Action

12 To change the DS1 assignment to VLCM service:

a. Use the arrow keys to move to the **Assign as VLCM** command, then press the **space bar**.

The Assign as VLCM dialog appears.

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

c. Use the arrow keys to move to system number 1, then press the **space bar**.

Note: You must select system number 1 to 2.

d. Tab to the Switch Port Number field, then press **Ctrl_L** to display the chooser menu.

The chooser menu appears.

e. Use the arrow keys to move to the switch port you want, then press the **space bar**.

The switch port number appears in the Switch Port Number field.

Note 1: Ports 0 and 3 are reserved as signalling links. One of these ports must be provisioned if you want to perform line/loop testing. When you provision port 0 or 3, a dialog appears. The dialog allows you to assign a remote maintenance module (RMM) channel to the signalling link so you can perform line/loop testing.

Note 2: Ports 2 and 5 are not used.

f. Tab to the **OK** button, then press **Ctrl_A**.

The DS1 in the facilities list on the main window changes to VLCM.

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

13 To change the DS1 assignment to Data Direct, move to the **Assign as Data Direct** command, then press the **space bar**.

14 Tab to the **OK** button, then press **Ctrl_A**.

The DS1 in the facilities list on the main window changes to Data Direct

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

—continued—

Procedure 3-9 (continued)
Provisioning DS1 facility assignments

Step	Action

15 To remove the facility assignment:

a. Move to the **Unassign** command, then press the **space bar**.

A confirmation dialog appears informing you that the selected DS1 will have its current assignment removed.

b. Tab to the **OK** button, then press **Ctrl_A**.

The assignment in the Facilities list in the main window is removed (changed) to Unassigned.

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

16 Do one of the following:

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

17 Do one of the following:

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

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

The Connection Manager main window appears.

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

The window menu appears.

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

The User Session Manager appears.

—end—

Procedure 3-10
Setting the time zone, date, and time at the OPC

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

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

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

If you are adding a network element to an existing OPC span of control, skip this procedure and go to Procedure 3-11.

Setup form

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

Action

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

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

—continued—

Procedure 3-10 (continued)
Setting the time zone, date, and time at the OPC

Step	Action

Adjust Time

4 Select the Adjust Time button by pressing **Ctrl**_**A**.

The time and date change dialog is displayed.

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

where

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

The new date is displayed in the Date entry field.

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

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

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

where

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

The new time is displayed in the Time field.

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

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

—continued—

Procedure 3-10 (continued)
Setting the time zone, date, and time at the OPC

Step	Action
7	Tab to the Update button and select it by pressing **Ctrl_A**. *The data you entered is validated. If the data is incorrect, an error dialog is displayed telling you what to do. If the data is correct, the OPC Date main window is redisplayed.* If you select the Cancel button, the changes you make are not saved.
8	Press **Ctrl_L W**. *The system displays a selection menu.*
9	Select Exit by pressing the **space bar**. *The system displays the User Session Manager main window.* You are finished with this procedure.
Reset Time	
10	Select the Reset Time button from the OPC Date window by pressing **Ctrl_A**. *A confirmation dialog is displayed, indicating the amount of time required for shutting down the OPC and giving you a final chance to abort the shutdown.*
11	Tab to the Proceed button and select it by pressing **Ctrl_A**. *The OPC shutdown process starts. A console message is displayed to all users who are currently logged in to the OPC.* ***Note 1:*** The selection of the Proceed button commits the shutdown of the OPC, even if you decide later to abort the changes to the time and date. To stop the OPC shutdown procedure, select the Cancel button. ***Note 2:*** The OPC clock is reset to the time you specified when the last dialog is confirmed in step 17.
12	Select the OK button by pressing **Ctrl_A**. *A shutdown progress message is displayed. As the shutdown progresses, the dots on the dialog are replaced with Xs.* The progress message indicates that the OPC is shutting down normally. Since the shutdown continues while the previous console message is displayed, the shutdown can complete before you select the OK button in this step. In this case, you do not see the progress message following. *This dialog is replaced by the following dialog when the shutdown is complete. The new dialog is displayed to all users who are currently logged in to the OPC.*

—continued—

Procedure 3-10 (continued)
Setting the time zone, date, and time at the OPC

Step	Action
13	Select the Done button by pressing **Ctrl_A**. *The dialog is replaced by the Time and Date Change dialog.*
14	To change the date, tab to the Date field and enter a new value in the form dd/mm/yyyy. **where** dd — is the day of the month (range 01 to 28, 29, 30, or 31 depending on the month). mm — is the month (range 01 to 12). yyyy — is the year (range 1976 to 2036). *The new date is displayed in the Date entry field.* ***Note:*** Make sure old data is removed by using the right arrow key to position the cursor ahead of old text and pressing the backspace key.
15	To change the time, tab to the Time field and enter a new value in the form hh:mm. **where** hh — is the hour (range 00 to 23). mm — is the minute (range 00 to 59). *The new time is displayed in the Time entry field.* ***Note:*** It is recommended that the current time on the primary OPC clock be used when setting the backup OPC clock. The OPC clock is actually reset to the specified time when the last dialog is confirmed. To change the time zone, tab to the Time Zone list, use the arrow keys to move the cursor to the time zone code desired and select it by pressing **Ctrl_A**. Refer to the OPC Setup Form for the time zone code you need to enter. *The selected entry will be placed in the Time Zone field.*

—continued—

Procedure 3-10 (continued)
Setting the time zone, date, and time at the OPC

Step	Action
16	Tab to the Update button and select it by pressing **Ctrl_A**. *A confirmation message is displayed, indicating that an error in selecting the new time and date would require a second OPC shutdown to correct.* ***Note:*** If you select the Cancel button, the changes you have made are not saved and you are returned to the time and date change dialog.
17	Select the OK button by pressing **Ctrl_A**. *The OPC clock is now set to the time you specified.* *The data you entered is validated. If incorrect, an error dialog is displayed that tells you what to do. If correct, the time and date information is saved and the OPC begins its reboot sequence. You can briefly see the User Session Manager screen.* *The reboot process takes about 5 to 10 minutes. When it is completed, the OPC login prompt (login:) is displayed.* *The shutdown of the OPC terminates all user login sessions and you have to log in again, after the OPC returns to service.*
18	Log in to the OPC using the **root** user ID and password.
19	At the opc prompt, type **opcui**. The User Session Manager is displayed.

—end—

Procedure 3-11
Setting the time zone at the network element

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

Setup Form

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

Action

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

—continued—

Procedure 3-11 (continued)
Setting the time zone at the network element

Step	Action

11	Enter the time zone using the following format:
	Timezone <NE time zone> ↵
	where
	<NE time zone> is the time zone code on the Network Elements Setup Form
	
	The following warning is displayed:
	`Warning: changing the time zone may affect the performance monitoring statistics and the scheduler.`
	`Please confirm ("Yes" or "No"):`
	yes ↵
	—end—

Procedure 3-12
Setting the network synchronization

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

Action

Step	Action
1	From the Edit Shelf screen, type: **clocksrc TribLineTimed** ↵ *The system displays a message that synchronization traffic may be affected.*

2	Type **y** and press **Enter** (↵) to continue.
	The system displays the following message:
	`ClockSRC command successful.`
	The NE Clock Source field displays the following:
	`TribLineTimed`

3	At the command line, enter the following command: **quit** ↵ *The system displays the Shelf Equipment screen.*
4	At the command line, enter the following command: **quit** ↵ *The S/DMS Nodes screen is displayed.*

—end—

Procedure 3-13
Setting the network element name

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

Setup form

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

Action

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

—end—

Procedure 3-14
Disabling TIC alarms and TIC Ports

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

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

Action

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

—continued—

Procedure 3-14 (continued)
Disabling TIC alarms and TIC Ports

Step	Action
6	Disable all ports that were not provisioned in Procedure 3-9. **chgstate oos <Beginning port> <Ending port>** The following example disables ports 7 through 14: **chgstate oos 7 14** *The screen displays the following warning message:* `CHGSTATE command successful.` *The ports you disabled are displayed as out of service (oos) in the ports list, and the provisioned ports, which were not disabled, show TRBL.*
7	Type **Yes**.
8	Return to the S/DMS Nodes screen: **quit** ↵ *The S/DMS Nodes screen is displayed.*

—end—

Procedure 3-15
Provisioning DS1 facility parameters

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

Table 3-1 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.

Table 3-1
Provisioning DS1 parameters for GR-303 DMS/MVI, VLCM, TR-08, tandem and transport DS1s

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

Setup form

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

—continued—

Procedure 3-15 (continued)
Provisioning DS1 facility parameters

Action

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

—continued—

Procedure 3-15 (continued)
Provisioning DS1 facility parameters

Step	Action

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

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

—continued—

Procedure 3-15 (continued)
Provisioning DS1 facility parameters

Step **Action**

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

7 Type **quit** ↵.

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

chgstate is↵

The state changes to in service (IS) or in service with trouble (IS TRBL). If the state is IS TRBL, you will need to clear alarms after you finish the commissioning and provisioning procedures. The process for clearing alarms is covered in Procedure 3-20.

—continued—

Procedure 3-15 (continued)
Provisioning DS1 facility parameters

Step	Action
9	Repeat steps 4 through 8 for each DS1 facility (port) to be provisioned and for each DS1 group to be provisioned.
10	At the command line, type **quit**. *The S/DMS Nodes screen is displayed.*

—end—

Procedure 3-16
Diagnosing failed circuit packs

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

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

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

Action

Step	Action
1	On the S/DMS Nodes screen, enter **alarms** on the command line. *The system displays the Active Alarms screen showing all alarms on the network element.*
2	Look at the list of alarms for Eqp alarms with a reason of “circuit pack fail.” Then look at the shelf type for each failed circuit pack to determine whether the circuit pack is in a CDS shelf or a common equipment shelf. (If there is more than one screen of alarms, enter the letter F to move forward through the list of alarms.) If there are no failed alarms, continue with the next procedure.
3	For each failed circuit pack, do the following:

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

—continued—

Procedure 3-16 (continued)
Diagnosing failed circuit packs

Step	Action

Diagnosing failed common equipment circuit packs

4 Display the appropriate equipment screen by entering:

equipmnt <equipment ID>↵

where

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

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

Equipment type	Equipment ID
processor (Proc)	proc a, proc b
maintenance interface card (MIC)	mic
operations controller (OPC)	opc
narrowband line interface cards (NLIC)	nlic
metallic test access card (MTAC)	mtac
CDS power cards (CDSP)	cdsp
optical interface	oc3 g1, oc3 g2, oc12 g1, oc12 g2
DS1/VT mapper	(see note)
DS3 mapper	(see note)
access interface card (AIC)	aic a, aic b
transport interface card (TIC)	tic a, tic b
test access card (TAC)	tac
integrated remote test unit (IRTU)	irtu

—continued—

Procedure 3-16 (continued)
Diagnosing failed circuit packs

Step	Action
5	If the module to be diagnosed is not already out of service, enter: **chgstate oos** ↵ *Confirmation is requested. If you confirm the action, the State field value changes to OOS.* ***Note:*** The TIC, AIC, MIC, and processor cards can be put through self-diagnostics without taking the system out of service. Although you can do out-of-service (OOS) diagnostics on all cards as explained above, you can do in-service diagnostics starting at step 6.
6	Initiate diagnostics by entering: **chgstate is** ↵ *The system performs an out-of-service diagnostics (OOS) on the circuit pack as part of the transition from an OOS state to an in-service (IS) state.* *Diagnostics can take a while; it proceeds as a background task. The diagnosis is reported as an update to the circuit pack state, as follows:* OOS-Diagnose — diagnostics in progress Test fail — diagnostics failed IS — diagnostics passed
7	If a failure is indicated, remove the defective module and insert a spare module. ***Note:*** If the test access card (TAC) is indicating a failure, verify that all ground cables are properly connected according to one of the acceptable office grounding schemes described in the chapter "Power and ground distribution", in *Site Installation Planning and Engineering*, 323-3001-200, in *Engineering, Configuration, and Ordering Guide*, Volume 1.
8	Diagnose any other failed circuit packs.
9	Type **quit** to return to the S/DMS Nodes screen.
Diagnosing failed CDS circuit packs	
10	If the indicator of a line interface card (LIC), or copper-distribution shelf power converter (CDSP) circuit pack in a copper-distribution shelf (CDS) indicates trouble or failure, you should perform out-of-service (OOS) diagnostics on the failed circuit pack. Display the detailed equipment screen for the appropriate circuit pack as follows: If the circuit pack is a LIC, enter: **eq lic** ↵ **dtllic <CDS #> <ID>**↵

—continued—

Procedure 3-16 (continued)
Diagnosing failed circuit packs

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

—continued—

Procedure 3-16 (continued)
Diagnosing failed circuit packs

Step	Action
17	Start diagnostics, by entering: **diagnose** ↵ *The system performs out-of-service diagnostics on the MTA.* ***Note:*** When diagnostics are requested on an MTA and the resources are busy, the diagnostic request is rejected. If diagnostics are requested on an MTA that is not out-of-service, the diagnostic request is rejected. *Diagnosis runs as a background task. The diagnosis is reported as an update to the state of the circuit pack, as follows:* OOS-Diagnose — diagnostics in progress Test fail — diagnostics failed IS — diagnostics passed
18	If failure is indicated, remove the defective MTA and insert a spare one. *The new MTA undergoes self-testing.* ***Note:*** The MTA remains out-of-service after being inserted and passing its self-tests. If the new MTA fails or if more than one MTA fails diagnostics, there can be a higher order problem, such as loose cables, bent pins, TAC fault, or other condition. Refer to the document, *Alarm and Trouble Clearing Procedures*, 323-3001-543 in *Maintenance*, Volume 5A.
19	If the MTA passes diagnostics, place it back in service by entering: **chgstate is** ↵ *The MTA goes in service.*
20	Type **quit** to return to the S/DMS Nodes screen. ***Note:*** If alarms still exist on the system, refer to the document, *Alarm and Trouble Clearing Procedures*, 323-3001-543 in *Maintenance*, Volume 5A.

—end—

Procedure 3-17
Verifying redundant common-equipment cards

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

The following cards are checked for redundancy operation:

- processor card (Proc), NT4K52
- transport interface card (TIC), NT4K56
- narrowband line interface card (NLIC), NT4K70 in copper-distribution shelves (CDSs). The access interface cards are automatically verified when the NLICs are verified.
- DS1/DS3 circuit packs
- AIC
- OC-3/OC-12 circuit packs
- transport cross-connect cards (TXCs), NT4K75

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

Requirements

The following requirements must be met before starting this procedure:

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

—continued—

Procedure 3-17 (continued)
Verifying redundant common-equipment cards

Action

Step	Action

Verifying redundancy of the processor (Proc) cards

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

eq proc <equipment ID>↵

where

<equipment ID> **a** or **b**

The Processor Equipment screen is displayed.

2 Do one of the following:

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

3 Do one of the following:

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

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

switch ↵

y ↵

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

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

—continued—

Procedure 3-17 (continued)
Verifying redundant common-equipment cards

Step	Action

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

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

6 From the S/DMS Nodes screen, enter the following command:

eq proc <equipmentID> ↵

where

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

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

7 Do one of the following:

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

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

eq proc <equipmentID> ↵

where

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

*The system displays the Processor Equipment screen***.**

9 Enter the following command:

chgstate oos ↵

y ↵

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

—continued—

Procedure 3-17 (continued)
Verifying redundant common-equipment cards

Step	Action

10 Enter the following command

chgstate is ↵

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

11 Do one of the following:

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

Verifying redundancy of the transport interface cards (TICs)

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

eq tic <equipment ID>↵

where

<equipment ID> **a** or **b**

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

switch ↵

y ↵

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

—continued—

Procedure 3-17 (continued)
Verifying redundant common-equipment cards

Step	Action

14 Do one of the following:

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

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

eq tic <equipmentID>

where

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

*The system displays the TIC Equipment screen***.**

16 Enter the following command:

chgstate oos force ↵

y ↵

The circuit pack goes out of service (OOS).

17 Enter the following command

chgstate is ↵

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

18 Do one of the following:

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

—continued—

Procedure 3-17 (continued)
Verifying redundant common-equipment cards

Step	Action

Verifying redundancy of the timing and cross-connect circuit packs (TXCs)

19 On the command line, enter the following command:

eq txc <group ID>↵

where

<group ID> **g1** or **g2**

The TXC Equipment screen is displayed.

20 On the command line of the TXC Equipment screen, enter the following command:

dtlprot ↵

The TXC Protection screen is displayed.

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

22 Enter the following command:

manual op <group ID>↵

where

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

y ↵

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

23 Do one of the following:

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

—continued—

Procedure 3-17 (continued)
Verifying redundant common-equipment cards

Step	Action

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

eq txc <group ID> ↵

where

<group ID> **g1**or **g2**, whichever is on standby.

25 Enter the following command:

chgstate oos ↵

y ↵

The circuit pack goes out of service (OOS).

26 Enter the following command

chgstate is ↵

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

27 Do one of the following:

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

Verifying redundancy of the DS1 circuit packs

28 On the command line, type the following command:

eq ds1 <group ID> ↵

where

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

The DS1 Equipment screen is displayed.

—continued—

Procedure 3-17 (continued)
Verifying redundant common-equipment cards

Step	Action
29	Enter the following command: **dtlprot** *The DS1 Protection screen is displayed.*
30	Enter the following command: **manual op <group ID>** **where** <group ID> **g1**, **g2, g3, g4, g5,** or **g6** **y** ↵
31	Verify that protection switching occurred by doing one of the following: • Look for an asterisk in the Manual column beside the DS1 circuit pack you switched. If an asterisk is present, switching occurred. • Do the following steps: **i.** Enter **eq ds1 <g1, g2, g3, g4, g5,** or **g6>**. The DS1 Equipment screen is displayed. **ii.** Look for the word “Protection” in the Status field beside the circuit pack you switched. If “Protection” is present, switching occurred. **iii.** Enter **dtlprot** to return to the DS1 Protection screen.
32	Enter the following command: **manual re <group ID>** **where** <group ID> **g1**, **g2, g3, g4, g5,** or **g6** *The protection switch is released.*
33	Do one of the following:

If protection switching	**Then**
occurred	repeat steps 28 to 32 to verify protection switching on all DS1 circuit packs.
did not occur	go to step 34.

—continued—

Procedure 3-17 (continued)
Verifying redundant common-equipment cards

Step	Action
34	Enter the following command: **listalms** ↵ *A list of alarms is displayed.*
35	Clear the alarms by following the procedures in *Alarm and Trouble Clearing Procedures*, 323-3001-543, in *Maintenance,* Volume 5A. Then go to step 36.
36	Repeat steps 28 to 35 for the failed circuit pack.
37	Repeat steps 28 to 36 to verify protection switching on each of the other DS1 circuit packs.
	Verifying redundancy of the line interface cards (LICs)
38	Display the detailed LIC Equipment screen for a LIC by entering the following command: **eq lic** *The LIC Equipment screen is displayed.*
39	Enter the following command to test switching for the a and b LICs in the appropriate shelf: **dtllic <CDS #><equipment ID>**↵ **where** <CDS #> is **1** to **7** <equipment ID> is **a** *The LIC Equipment screen is displayed.*
40	Verify that the LICs can switch activity by entering: **switch** ↵ **y** ↵ *If card A was IS-Secondary it switches to IS-Primary, and card B switches to IS-Secondary. The Status field on the screen shows the change.*
41	Do one of the following:

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

—continued—

Procedure 3-17 (continued)
Verifying redundant common-equipment cards

Step	Action

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

switch ↵

y ↵

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

43 Do one of the following:

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

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

dtllic <CDS #><equipment ID>↵

where

<CDS #> is **1** to **7**

<equipment ID> is **c**

The LIC Equipment screen is displayed.

45 Verify that the LICs can switch activity by entering:

switch ↵

y ↵

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

46 Do one of the following:

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

—continued—

Procedure 3-17 (continued)
Verifying redundant common-equipment cards

Step	Action
47	Verify that the c and d LICs can switch activity in the opposite direction by entering: **switch** ↵ **y** ↵ *If card C was IS-Secondary it switches to IS-Primary, and card D switches to IS-Secondary. The Status field on the screen shows the change.*
48	Do one of the following: <table><tr><th>If failure</th><th>Then go to</th></tr><tr><td>occurred</td><td>step 50 to perform diagnostics on the LICs. Then go step 49.</td></tr><tr><td>did not occur</td><td>step 49.</td></tr></table>
49	Repeat steps 39 to 48 to verify switching on any additional shelves.
50	Enter **fwp**↵ *The S/DMS Nodes screen is displayed.*
51	This procedure is complete. Go to the next procedure.
52	Perform full diagnostics on the LIC in the secondary state, by entering: **eq lic; dtllic <CDS #><equipment ID>**↵ **where** <CDS #> is **1** to **7** <equipment ID> is **a**, **b**, **c**, or **d** *The LIC Equipment screen is displayed.* **chgstate oos** ↵ **y** ↵ *The LIC card is placed out of service.* **chgstate is** ↵ *The LIC Equipment screen indicates that diagnostics are in progress. When diagnostics are complete, the screen shows that the LIC card is back in-service.* If a fault is detected, replace the card.

—continued—

Procedure 3-17 (continued)
Verifying redundant common-equipment cards

Step	Action
53	Enter the following command to determine whether switching is working with the replaced circuit pack: **switch** ↵ **y** ↵

—end—

Procedure 3-18
Performing a manual NE database backup

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

Action

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

—end—

Procedure 3-19
Saving OPC data to tape

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

CAUTION
Risk of damage to electrostatic-sensitive devices
Electrostatic-sensitive devices can be damaged by electrostatic discharge. Always ground yourself before handling the tape.

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

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

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

The tool contains two action buttons:

- Display tape details
- Save OPC data to tape

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

Requirements

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

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

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

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

—continued—

Procedure 3-19 (continued)
Saving OPC data to tape

Action

Step	Action
1	On the Available Tools menu, move the cursor to the Open the OPC Save and Restore tool by pressing the arrow keys, and press **Ctrl_A**. *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.*
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 **Ctrl_A** (or Keypad **0**). *The Tape Details dialog appears. It shows information about the tape.*
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 **Ctrl_A** (or Keypad **0**). *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.*
6	Select the **Save OPC data to tape** button by pressing **Ctrl_A** (or Keypad **0**). *The Save confirmation dialog appears, prompting you to confirm your request.*
7	Tab to the **Yes** button, then press **Ctrl_A** (or Keypad **0**).

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

—continued—

Procedure 3-19 (continued)
Saving OPC data to tape

Step	Action

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** (or Keypad **0**).

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

If you want to	Then go to
cancel save operation	step 10
continue with save operation	step 11 when the completion dialog appears

10 To cancel the save operation, select the **Cancel** button by pressing **Ctrl_A** (or Keypad **0**).

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** (or Keypad **0**).

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** (or Keypad **0**).

The completion dialog closes and the main window appears.

Go to step 13.

—continued—

Procedure 3-19 (continued)
Saving OPC data to tape

Step	Action
13	Close the tool by doing the following steps: **a.** Display the window menu by pressing **Ctrl_L W** (or Keypad **6**). *The window menu appears.* **b.** Select the **Exit** command by pressing the **space bar** (or Keypad **0**). *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 3-20
Clearing alarms

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

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

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

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

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

—end—

Appendix A: Common commissioning procedures

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

Common procedures

The following table lists the procedures in this chapter.

Procedure 4-1
Logging in to the OPC

Use this procedure to log in to the OPC.

Requirements

- a VT-100 terminal
- The OPC port is configured as **Terminal**. See *OPC User Interface Description*, in 323-3001-301, and *System Administration Procedures*, 323-3001-302, in *Operations, Administration, and Provisioning*, Volume 4A.

Action

Step	Action
1	Connect the terminal to the OPC port 1 or port b on the left side of the common equipment shelf using a 9-pin connector. Use one NTE7E44RA or RB cable. *A login prompt appears.*
2	Enter a root level User ID such as: **root**
3	Enter the corresponding root level password such as: **root** *The TERM = vt100 prompt is displayed.* Press the Return key (↵) to select the VT100 terminal mode. *The opc> prompt is displayed.*
4	To access the User Session Manager at the OPC prompt, type in **opcui** and press Enter.

—end—

Procedure 4-2
Logging in to the network element

Use this procedure to log in to the network element.

Action

Step	Action
1	From the User Session Manager, tab to the Available tool menu.
2	Press the right bracket key to go to the end of the tools list.
3	Use the arrow keys to move to the NE Login Manager.
4	Open the NE Login Manager by pressing **Ctrl_A**. *The NE Login Manager screen is displayed.*
5	Enter the ID number of the network element that you wish to log on to, in the Network Element field.
6	Tab to the Login field and press **Ctrl_A**.
7	Enter the admin level user name, such as: **admin**
8	Enter the corresponding admin level password, such as: **admin** *A warning message appears.*
9	Press **Enter** to cancel the displayed warning message. *The S/DMS Nodes screen appears.* ***Note:*** You can enter commands on the S/DMS Nodes screen by typing 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 4-3
Logging out of the network element

Use this procedure to log out of the network element after you have completed all procedures.

Action

Step	Action
1	From the S/DMS Nodes screen, enter: **logout** *A message appears listing the username, date, and time of the logout.*
2	Press return. *The NE Login Manager appears.*
3	Press **Ctrl_T_0** to close the NE Login Manager. *The User Session Manager appears.*

—end—

Procedure 4-4
Logging out of the OPC

Use this procedure to log out of the OPC.

Action

Step	Action
1	From the User Session Manager, tab to the Logout field and press **Ctrl_A**. *A confirmation message appears.*
2	Tab to the Logout field and press **Ctrl_A**. *The opc> prompt appears.*
3	Enter the following: **logout**

—end—

Appendix B: Miscellaneous Procedures

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

Procedures in this chapter

This chapter contains the following procedures:

Procedure 5-1
Adding a backup OPC

Use this procedure to add a backup OPC.

Action

Step	Action

1 Log in to the primary OPC. For steps to log in to the OPC, see Procedure 4-1 on page 4-2.

2 Log in to the NE Login Manager. For steps to log in to the NE Login Manager, see Procedure 4-1 on page 4-2.

If the previous backup	Then
is not recent	go to step 3
is recent	go to step 5

3 Perform a database backup for each network element within the Primary OPC span of control, using Procedure 3-18 on page 3-63.

4 Save the OPC data to tape using Procedure 3-19 on page 3-64.

5 Insert the backup OPC into slot 5 of the backup OPC shelf and engage to the backplane.

6 If it is not already connected, connect a CNET cable (NT7E44JC/JK) from the CNET OUT port on the left side of the primary OPC shelf to the CNET IN port of the backup OPC shelf. Ensure that the CNET termination connectors (NT7E5072) are inserted into the unused CNET ports on the left side of the primary and backup OPC shelves.

7 Wait for the backup OPC to become active.

8 Log out of the primary OPC. For steps to log out of the OPC, see Procedure 4-4, in “Appendix A: Common commissioning procedures”.

9 Move the VT100 cable from the primary OPC shelf to the backup OPC shelf.

10 Log in to the backup OPC using Procedure 4-1 on page 4-2.

11 Verify that the backup OPC is equipped with the same software load as the primary OPC, using Procedure 3-1 on page 3-3.

If the software is	Then
not installed	perform Procedure 3-3, 3-4, and 3-5.
incorrect	perform Procedures 3-2, 3-3, 3-4, and 3-5
correct	go to step 12.

—continued—

Procedure 5-1 (continued)
Adding a backup OPC

Step	Action
12	Set the time zone of the backup OPC to match the primary OPC. (See Procedure 3-10 on page 3-30.)
13	Move the VT100 cable from the backup OPC shelf to the primary OPC shelf.
14	Log in to the primary OPC using Procedure 4-1 on page 4-2.
15	At the OPC prompt, enter **opcui** *The User Session Manager window appears.*
16	On the primary OPC, open the Commissioning Manager tool. *The Commissioning Manager main window appears.*
17	Tab to the **Edit System Data** button, then press **Ctrl_A** (or Keypad **0**). *The System Data Commissioning dialog appears, similar to the following figure.*
18	Tab to the **Backup OPC serial number** field, then type the serial number of the backup OPC. As you are looking at the faceplate, the serial number is at the bottom center of the motherboard, on the right side. OPC serial numbers have the following format: **Anhhhhhhh** where **n** is a positive integer, and **h** is a hexadecimal number. (Example: **A1b3e01be**) ***Note:*** If this serial number is not accepted, contact your Nortel Networks technical support person.
19	To specify an alias for the backup OPC, tab to the **Backup OPC alias** field, then type a name up to 8 alphanumeric characters long. This step is optional, since the default alias is the OPC name followed by B for backup.
20	To complete the entry of system data, tab to the **OK** button, then press **Ctrl_A** (or Keypad **0**). *If the information is correct, the name of the system being commissioned appears on the first line of the main window.* ***Note:*** If essential data is incorrect, an error dialog explaining the problem appears. The System Data Commissioning dialog remains displayed, and X marks the fields containing erroneous data.
21	Tab to the list of network elements commissioned in this system in the Commissioning Manager main window, select the network element representing the backup OPC shelf, then press **Ctrl_L** (or Keypad **Enter**) to display the List item menu.

—continued—

Procedure 5-1 (continued)
Adding a backup OPC

Step	Action
22	To select the **Edit** option in the List item menu, press **the space bar** (or Keypad **0**). *The Network Element Commissioning Data dialog for shelf B appears, similar to the following figure.*
23	Tab to the field containing the three OPC radio buttons.
24	Using the arrow keys, move the cursor to the **Backup OPC** button, then press **Ctrl_A** (or Keypad **0**). *A mark appears between the brackets beside Backup OPC.*
25	Tab to the **OK** button, then press **Ctrl_A** (or Keypad **0**) to confirm the changes and close the Network Element Commissioning Data dialog.
26	Enter **Crtl_L W**
27	Use the **space bar** to exit.
28	Tab to the Available tools section of the User Session Manager window.
29	Arrow down to the OPC Save and Restore tool.
30	Open the tool by pressing **Ctrl_A**.
31	Tab to the Save to tape button at the top of the main window. Do not select it.
32	Using the down arrow key, move to the Restore from tape button and select it by pressing **Ctrl_A** (or Keypad **0**).
33	Tab to the Transfer data to Backup OPC button and select it by pressing **Ctrl_A** (or Keypad **0**). *A confirmation dialog appears, prompting you to confirm your request.*
34	Tab to the Yes button and select it by pressing **Ctrl_A** (or Keypad **0**). *The confirmation dialog closes. Progress dialogs appear, indicating that the data on the OPC disk is being copied to the backup OPC. This operation can take up to 30 minutes to complete. When the transfer is complete, the following completion dialog appears.*
35	To remove the dialog, select the Done button by pressing **Ctrl_A** (or Keypad **0**). *The dialog closes.*
36	To close the tool: **a.** Display the window menu by pressing **Ctrl_L W** (or Keypad **6**). *The window menu appears.* **b.** Select the Exit command by pressing the **space bar** (or Keypad **0**). *The tool closes.*

—continued—

Procedure 5-1 (continued)
Adding a backup OPC

Step	Action
37	Repeat steps 3 and 4.
38	If you are using a LAN port, do Procedure 5-4 on page 5-15 for the backup OPC LAN port.

—end—

Procedure 5-2
Setting the target identifiers for a network element

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

Note 1: This procedure should only be used if the element is to be monitored by an X.25 link.

Note 2: For more information about setting the OSS interface, refer to Chapter 13, in the *System Administration Procedures,* 323-3001-302, in *Operations, Administration, and Provisioning,* Volume 4A.

Note 3: For more information about enabling or disabling the TR-08 service, refer to Procedure 13-2, Enabling and disabling TR-08 translation, in the *System Administration Procedures,* 323-3001-302, in *Operations, Administration, and Provisioning*, Volume 4A.

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

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

No spaces or other characters are allowed.

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

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

tidmap↵

—continued—

Procedure 5-2 (continued)
Setting the target identifiers for a network element

Upgrading from previous releases

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

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

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

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

Setup form

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

Action

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

```
opc> tidmap                    NE Name      NE ID
===============                ==========   =======
88                                          88
5HDT                           HDT5         5
HDT06                          NE06         6
opc>
```

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

—continued—

Procedure 5-2 (continued)
Setting the target identifiers for a network element

Step	Action
3	To add or change a TID, enter: **tidmap -a <network element ID> <TID>↵** where <network element ID> — current value of the network element ID <TID> — new value for the TID
4	To verify the changes, enter: **tidmap↵**
5	Exit the UNIX shell by entering: **exit↵**

—end—

Procedure 5-3
Defining and enabling an X.25 configuration

Requirements

The following requirements must be met before performing this procedure:

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

  Note: Additional action is required using the OS Connection Manager tool. For more information about the tool, refer to Chapter 13, in *System Administration Procedures*, 323-3001-302, in *Operations, Administration, and Provisioning*, Volume 4 A.

Action

Step	Action

1 Log in to the OPC.

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

The Port Configuration main menu appears.

2 To display OPC port configuration, enter:

1 ↵

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

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

—continued—

Procedure 5-3 (continued)
Defining and enabling an X.25 configuration

Step	Action

Configuring a service and X.25

4 Configure a service by entering:

2 ↵

The Configure a service menu appears.

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

5 Configure X.25 by entering:

3 ↵

The Configure X.25 menu appears.

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

6 View X.25 parameters by entering:

1 ↵

X.25 configuration parameters appear.

—continued—

Procedure 5-3 (continued)
Defining and enabling an X.25 configuration

Step	Action

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

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

8 Enter X.25 parameters by entering:

2 ↵

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

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

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

Defining parameter values

9 To begin defining parameter values, enter:

y ↵

The following menu appears:

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

10 To select global parameters, enter:

1 ↵

The global parameters appear. Default values are in square brackets following the parameter name. A menu containing two entries appears.

—continued—

Procedure 5-3 (continued)
Defining and enabling an X.25 configuration

Step	Action
11	To modify global parameters, enter: **1** ↵ *Each of the global parameters appears in turn. You can enter a value, or accept the default value by pressing **Return**.*
12	Respond to the prompts as required. To change the default value, enter a new value, then press **Return**. To accept the default value, press **Return**. For parameters that do not have a default, you must specify a value. *After you respond to all displayed parameters, the current values of all global parameters appear, and a menu containing two entries appears.*
13	To return to the menu shown in step 9, enter: **2** ↵
14	To select level 2 parameters, enter: **2**↵ *The level 2 parameters appear. Default values are in square brackets following the parameter name. A menu containing two entries appears.*
15	To modify level 2 parameters, enter: **1** ↵ *Each of the level 2 parameters appears in turn. You can enter a value, or press **Return** to accept the default value.*
16	Respond to the prompts as required. To change the default value, enter a new value, then press **Return**. To accept the default value, press **Return**. For parameters that do not have a default, you must specify a value. *After you respond to all displayed parameters, the current values of all level 2 parameters are displayed, and a menu containing two entries appears.*
17	To return to the menu shown in step 9, enter: **2** ↵
18	To select level 3 parameters, enter: **3** ↵ *The level 3 parameters appear. Default values are in square brackets following the parameter name. A menu containing two entries appears.*
19	To modify level 3 parameters, enter: **1** ↵ *Each of the level 3 parameters appears in turn. You can enter a value, or press **Return** to accept the default value.*

—continued—

Procedure 5-3 (continued)
Defining and enabling an X.25 configuration

Step	Action
20	Respond to the prompts as required. To change the default value, enter a new value, then press **Return**. To accept the default value, press **Return**. For parameters that do not have a default, you must specify a value. *After you respond to all displayed parameters, the current values of all level 3 parameters are displayed, and a menu containing two entries appears.*
21	To return to the menu shown in step 9, enter: **2** ↵
Creating the configuration file	
22	To create the configuration file, enter: **6** ↵ *The configuration file is created, the program terminates, and the Configure X.25 menu appears.*
23	Enable X.25 by entering: **3** ↵ *If your hardware configuration supports multiple OPC ports, a message prompting you to select a port appears.* `Port Number (B, 1, 2, 3):`

24	Select a port that is not already configured to enable X.25 on by entering:
	<port #>
	where
	<port #> **B, 1, 2,** or **3**
	A confirmation message appears.
	`X.25 operation is being configured on port x.`
	`Do you wish to continue? (Yes/No):`

25	Confirm by entering:
	y ↵
	The following message appears:
	`X.25 configuration successful on port x.`
	`Insert the appropriate X.25 cable on port x.`
	The Configure X.25 menu appears after a short period.

—continued—

Procedure 5-3 (continued)
Defining and enabling an X.25 configuration

Step	Action

Configuring other services or exiting

26 You have defined X.25 parameters and enabled X.25. You can exit or continue defining other services.

If you want to	Then
configure another service (X.3 PAD, PPL (electronic software delivery), terminal, or printer)	Enter: **8** ↵ *The Configure a service menu appears.* Repeat this procedure for that device.
exit	Enter: **9** ↵ *The program ends and the UNIX prompt, opc>, appears.*

—end—

Procedure 5-4
Configuring a LAN port

For the OPC to recognize and support communications with a Nortel Network Manager or an X terminal using the Ethernet port on the OPC faceplate, the OPC Ethernet port must be initialized. Use this procedure to initialize the OPC Ethernet port so that it can communicate with a Network Manager or an X terminal.

Requirements

To complete this procedure, the following requirements must be met:

- make sure the OPC module is installed and started. Consult the workstation hardware documentation to determine the applicable cabling option.
- obtain the root password to access the OPC. This should be the OPC you want to initialize.
- obtain the following identifiers for initializing the OPC to be initialized:
  - — the OPC name (for example: OPCM001P)
  - — the OPC Internet Protocol (IP) address (for example: 47.32.130.222)
  - — the OPC IP netmask (for example: 255.255.255.0)
- read the command conventions in *OPC User Interface Description,* 323-3001-301, in *Operations, Administration, and Provisioning,* Volume 4A.

  Note: Up to eight characters are allowed for the SYSTEM_NAME variable in the /etc/rc file. X terminal installation fails if this limit is exceeded.

Setup form

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

—continued—

Procedure 5-4 (continued)
Configuring a LAN port

Action

Step	Action
1	Log in to the OPC by entering the root user ID and password at the login prompt. *The UNIX shell opc> prompt is displayed.*
2	If you have not already done so, plug in the Ethernet cable.
	Starting the Ethernet administration script
3	Type **opcui** ↵. *The User Session Manager main window is displayed.*
4	Tab to the Available Tools menu.

5	Tab to Select Ethernet admin and select it by pressing **Ctrl_A**.
	The Ethernet port command list is displayed:
	`1. Initialize and enable the Ethernet port`
	`2. Ethernet port control (enable/disable)`
	`3. X terminals configuration`
	`4. Help`
	`5. Quit`
	`Select one of the above commands [1-5]:`

6	The Ethernet port must be initialized before it can be enabled or disabled. Select the Ethernet port initialization command by entering: **2**↵ *A message describing the port initialization requirements is displayed, followed by a node name prompt:* `Enter the nodename:` Enter the node name assigned to the OPC. *The node name can be up to a maximum of eight alphanumeric characters. An example of node name is "OPCM001P".* ***Note:*** Refer to the OPC Setup form in Chapter 1 for the node name.

—continued—

Procedure 5-4 (continued)
Configuring a LAN port

Step	Action
7	Press the Return key (↵). *The nodename is checked. If the node name is not in the correct format an error message is displayed, followed by another node name prompt. If the node name prompt reappears, go to step 6.* *Once you enter an acceptable node name, an IP address prompt is displayed:* `Enter the IP address:`
8	Enter the IP address assigned to the OPC. *The IP address consists of four numbers, each separated by a period. Each number must be greater than or equal to 0, and less than or equal to 255. The IP address in the example is in step 3 and has the following:"* `47.32.130.222`
9	Press the Return key (↵). *The IP address is checked. If the IP address is not in the correct format, if it is reserved, or if it is already assigned to another OPC, an error message is displayed, followed by another IP address prompt. If the IP address prompt re-appears, go to step 8.* *Once you enter an acceptable IP address, the netmask prompt is displayed:* `Enter the netmask [default 255.255.255.0]:`
10	Enter the netmask number assigned to the OPC. *The default netmask value is 255.255.255.0. You can accept this value by pressing the Return key. If desired, you can enter a new netmask number using the same criteria as the IP address.*
11	Enter the IP address for the default gateway.

12	Press the Return key (↵).
	The netmask is checked. If the netmask is not in the correct format, an error message is displayed followed by another netmask prompt. If the netmask prompt reappears, go to step 10.
	Once you enter an acceptable netmask number, a summary of the Ethernet port initialization values appears, followed by a request to continue with the initialization process:
	`Initializing Ethernet to:`
	`  name: 'OPCM001P'`
	`  address: '47.32.130.222'`
	`  netmask: '255.255.255.0'`
	`Do you wish to continue? [yes;no]:`

—continued—

Procedure 5-4 (continued)
Configuring a LAN port

Step	Action

13 Check the initialization values in the summary and verify that they are correct.

If you want to	Then go to
continue the Ethernet port initialization	step 14
discontinue the Ethernet port initialization	step 16

14 Continue the Ethernet port initialization process by entering:

yes ↵

The Ethernet port command list is displayed.

```
1. Initialize and enable the Ethernet port
2. Ethernet port control (enable/disable)
3. X terminals configuration
4. Help
5. Quit
Select one of the above commands [1-5]:
```

15 Reboot the OPC. If you do not know how to do this, refer to *OPC User Interface Description*, 323-3001-301, in *Operations, Administration, and Provisioning,* Volume 4A.

The OPC is now ready to communicate with the Network Manager or X terminal.

16 Discontinue the Ethernet port initialization process by entering:

no ↵

The Ethernet port command list appears.

If you want to reexecute the Ethernet port initialization process, go to step 3.

17 Quit the Ethernet administration script by entering:

5 ↵

The UNIX shell opc> prompt is displayed.

—end—

Procedure 5-5
Unassigning call reference values

Use this procedure to unassign call reference values (CRVs) for MVI switches. This procedure is necessary if you plan to use OPS/INE to assign CRVs rather than using the default settings.

For more information on the MVIPROV CI tool, see *Line Card Provisioning Procedures*, 323-3001-315, in *Operations, Administration, and Provisioning*, Volume 4B.

Requirements

A GR-303 MVI host switch has been added to the remote fiber terminal (RFT) data using the OPC Host Provisioning Manager tool.

Action

Step	Action
1	Log in to the network element user interface. *The Network Element Status screen appears.*
2	Type the following: **quit all** ↵
3	Start the MVIPROV CI tool by entering: **mviprov** ↵ *The MVIPROV prompt appears.*
Unassigning call reference and IG values	
4	Unassign the call reference values by entering: **nilcrv <edit method>** ↵

where <edit method>		
is:	**slot <shelftype> <shelf #> <slot #> <circuit #>**	
	where:	
	<shelftype>	**CDS**, **ANX**, or **UE**
	<shelf #>	**1** to **7** for CDS, **1** to **28** for ANX, **1** to **7** for UE
	<slot #>	**1** to **96** for CDS, **1** to **48** for ANX, **1** to **16** for UE
	<circuit #>	**1** to **24** for UE, not applicable to CDS or ANX

—continued—

—continued—

Procedure 5-5 (continued)
Unassigning call reference values

Step **Action**

where <edit method>	
or:	**range <shelftype> <start shelf #> <start slot #> <start circuit #> <end shelf #> <end slot #> <end circuit #>** where: <shelftype> **CDS**, **ANX**, or **UE** <start shelf #> <end shelf #> **1** to **7** for CDS, **1** to **28** for ANX, **1** to **7** for UE <start slot #> <end slot #> **1** to **96** for CDS, **1** to **48** for ANX, **1** to **16** for UE <start circuit #> <end circuit #> **1** to **24** for UE, not applicable to CDS or ANX
	Note: The "start" number must be less than or equal to the corresponding "end" number.
or:	**CRV <CRV #> <IG #>** where: <CRV #> **1** to **2048** <IG #> **1** to **5**
or:	**CRV_range <start CRV #> <end CRV #> <IG #>** where: <start CRV #> <end CRV #> **1** to **2048** <IG #> **1** to **5**
	Note: The "start" number must be less than or equal to the corresponding "end" number.

The edit method and IG appear. Confirmation is requested.

5 Confirm or cancel the command by entering:

y ↵ or **n** ↵

If confirmed, the command is executed.

—continued—

Procedure 5-5 (continued)
Unassigning call reference values

Step	Action
	Listing unassigned call reference and IG values
6	List the call reference values by entering: **querynil** ↵ *The list of unassigned CRVs appears. You can advance to the next screen of information by pressing Return.*
	Listing the MVIPROV CI commands
7	View the list of MVIPROV CI commands by entering: **help** ↵ *The list of MVIPROV CI commands appears.*
8	Return to the network element user interface by entering: **fwp** ↵

—end—

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SONET Products

AccessNode

Setting Up Your System: DFA

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