

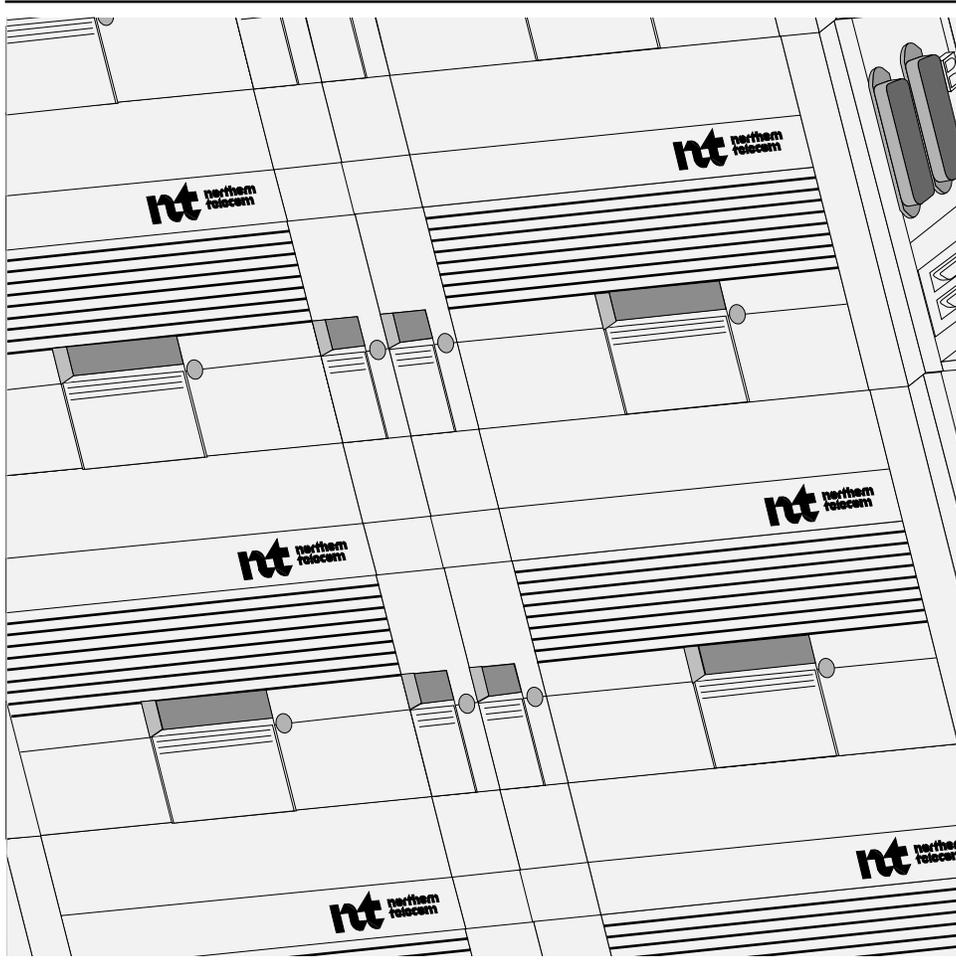
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SONET Products

# AccessNode

## Addition of AN Nodes in a VTBM Ring

Issue 1.0 February 1999



**NORTEL**  
NETWORKS™



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SONET Products

# **AccessNode**

## Addition of AN Nodes in a VTBM Ring

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# Publication history

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## February 1999

Standard release of the document, Issue 1.0. This is the initial release of this document.

*Note:* This document is release-independent. This document will be released only when technical changes occur.



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# About this document

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This document contains procedures for the adding AccessNode nodes to a virtual tributary bandwidth management (VTBM) ring.

## Audience

This document is intended for the following groups:

- planners
- provisioners
- network administrators
- transmission standards engineers

## References in this document

This document refers to the following documents in the AccessNode documentation suite:

### **Engineering and Ordering Guide, Volume 1**

- *Engineering and Ordering Information*, 323-3001-032

### **Description, Volume 2A**

- *Alarms and Surveillance Description*, 323-3001-104

### **Commissioning and Testing, Volume 3**

### **Operations, Administration, and Provisioning, Volume 4A**

- *System Administration Procedures*, 323-3001-302



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# Upgrade planning

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This chapter details the information necessary for planning an upgrade of AccessNode (AN) nodes in a Virtual Tributary Bandwidth Management (VTBM) ring.

## Terms and symbols

- The term AccessNode Express Voice Module designates the network element that will be upgraded.
- The term Host Digital Terminal refers to the network element that links all the AccessNode Express (ANX) to the DMS through DS-1 links.
- The terms TL1 commands refers to the type of command required to execute the software upgrade.
- The symbol ↵ or <return> means that you need to press the carriage return key. The symbol **Ctrl\_L T** means that you need to press the control key at the same time as letter **L** and release the keys then press **T**.

## Requirements

Before upgrading a ANX Voice Module, you must adhere to the following requirements:

- Ensure the primary OPC is equipped with a tape drive.
- Ensure a SLAT or portable OPC is available and running the latest version of the AN software.
- Ensure the existing VTBM-based ring is running the latest version of the AN software, has no active high-speed or low-speed switches and is alarm-free.
- Ensure the new equipment conforms to the minimum baseline.
- Ensure that the new VTBM ring node to be added has been installed and powered.
- Ensure that the cabling from the BITS clock to the new node (if required) has been performed.
- Ensure that the total number of network elements in the ring is less than 16. This user guide does not apply if the number of network elements in the existing ring is 16.

- Ensure that you have the shelf serial number of the new VTBM ring node. This number appears on a barcode sticker placed on the top of the shelf.
- Ensure that all required circuit packs are installed in the new VTBM ring node.

**Note:** The OC-12 optical units must be OC-12 VTBM optical interface units (NT7E05).

- Verify that personnel are located at all affected sites.
- Inform all operations controller (OPC) users and surveillance personnel about the reconfiguration before it is initiated. Except for reconfiguration personnel, all other users should log out of the system to be reconfigured.
- Ensure that all personnel using this user guide are experienced users of both the OPC and the network element user interfaces. For detailed information on OPC and network element user interfaces, refer to the AccessNode documentation suite.
- Complete this process once you begin. If you are inadvertently logged out of the system during the reconfiguration, refer to “Appendix A: Recovery instructions.” You are directed back to the main procedure at the point at which the log out occurred.

### Restrictions

The following restrictions apply to this process:

- Do not stop the reconfiguration process once you start it. If for some reason you are logged out of the primary OPC, refer to “Appendix A: Recovery instructions.”
- Do not use Lanpar VT-100 compatible terminals to perform this upgraded. They are not fully VT-100 compatible.

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# Planning your reconfiguration

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This chapter guides you through the planning stages of your reconfiguration. The stages are documented in order, as procedures.

## Chapter contents

The following table lists the procedures required for planning your reconfiguration:

Topic	See
Procedure 2-1 Collecting span of control information	page 2-6
Procedure 2-2 Determining the OPC to commission the new node	page 2-10
Procedure 2-3 Determining the new node location configuration	page 2-11
Procedure 2-4 Determining the exerciser schedule	page 2-12
Procedure 2-5 Provisioning the ESI timing references of the new node	page 2-15
Procedure 2-6 Provisioning the clock source references	page 2-17
Procedure 2-7 Determining the new VTBM ring node clocksource setting	page 2-18
Procedure 2-8 Recording the connections to the new VTBM ring node	page 2-19
Procedure 2-9 Determining the APS ID number	page 2-22
Procedure 2-10 Determining if optical circuit packs at adjacent nodes need to be changed	page 2-24

Before you start the process of adding a new node, certain information is required to properly plan and prepare for the procedure. This data is used throughout the user guide. The tables contained in this section list the required data. You must complete these tables before proceeding.

## Requirements

Before proceeding with this chapter, you must meet the following requirements by determining the network element number of the new node:

- Enter the network element number for the new VTBM ring node in Table 2-1. This number (1-9999) must be unique within the network. Assign this number according to the network element numbering plan for the existing VTBM-based ring.

**Table 2-1**  
Network element number of the new node

Node #

- Enter the appropriate time zone code for the new VTBM ring node in Table 2-2. For a list of time zone codes, refer to Table 2-3.

**Table 2-2**  
Time zone code of the new node

NE Time zone

**Table 2-3**  
Time zone codes and GMT offsets

Time zone name	TZ code	Daylight savings time		Standard time	
		Switchover date (Note 1)	GMT offset	Switchover date (Note 1)	GMT offset
Hawaiian Standard Time	HST10		-600		-600
Aleutian Standard Time, Aleutian Daylight Time	AST10ADT	Apr 24-30	-540	Oct 25-31	-600
Yukon Standard time	YST9		-540		-540
Yukon Standard Time, Yukon Daylight Time	YST9YDT	Apr 24-30	-480	Oct 25-31	-540
—continued—					

**Table 2-3**  
**Time zone codes and GMT offsets (continued)**

Time zone name	TZ code	Daylight savings time		Standard time	
		Switchover date (Note 1)	GMT offset	Switchover date (Note 1)	GMT offset
Pacific Standard Time	PST8		-480		-480
Pacific Standard Time, Pacific Daylight Time	PST8PDT	Apr 1-7	-420	Oct 25-31	-480
Mountain Standard Time	MST7		-420		-420
Mountain Standard Time, Mountain Daylight Time	MST7MDT	Apr 1-7	-360	Oct 25-31	-420
Central Standard Time	CST6		-360		-360
Central Standard Time, Central Daylight Time	CST6CDT	Apr 1-7	-300	Oct 25-31	-360
Eastern Standard Time	EST5		-300		-300
Eastern Standard Time, Central Daylight Time	EST5CDT		-300		-300
Eastern Standard Time, Eastern Daylight Time	EST5EDT	Apr 1-7	-240	Oct 25-31	-300
Atlantic Standard Time	AST4		-240		-240
Atlantic Standard Time, Atlantic Daylight Time	AST4ADT	Apr 1-7	-180	Oct 25-31	-240
—continued—					

## 2-4 Planning your reconfiguration

**Table 2-3**  
**Time zone codes and GMT offsets (continued)**

Time zone name	TZ code	Daylight savings time		Standard time	
		Switchover date (Note 1)	GMT offset	Switchover date (Note 1)	GMT offset
Newfoundland Standard Time, Newfoundland Daylight Time	NST330NDT	Apr 1-7	-150	Oct 25-31	-210
Greenwich Mean Time	GMT		0		0
Greenwich Mean Time, British Summer Time	GMT0BST	Mar 25-31	60	Oct 23-29	0
Western European Time, Western European Time Daylight Savings Time	WET0WETDST	Mar 23-29	60	Oct 23-29	0
Portuguese Winter Time, Portuguese Summer Time	PWT0PST	Mar 25-31	60	Sept 24-30	0
Middle European Time	MET1		60		60
Middle European Time, Middle European Time Daylight Savings Time	MET1METDST	Mar 25-31	120	Sept 24-30	60
Middle European Time	MET2		120		120
South Africa Standard Time, South Africa Daylight Time	SAST2SADT	Mar 1-7	120	Oct 25-31	180
Eastern European Time	EET3		180		180
—continued—					

**Table 2-3**  
**Time zone codes and GMT offsets (continued)**

Time zone name	TZ code	Daylight savings time		Standard time	
		Switchover date (Note 1)	GMT offset	Switchover date (Note 1)	GMT offset
Western Asian Time	WAT4		240		240
Western Asian Time	WAT5		300		300
—end—					

## Procedure 2-1

# Collecting span of control information

Use this procedure to collect information about the span of control where you are adding the new VTBM ring node.

### Action

Step	Action
1	<p>Log in to the primary OPC as the 'root' user. You can log in to the primary OPC through the serial ports available at the network elements or remotely using a telnet session.</p> <p><b>Note:</b> If necessary, refer to Appendix B: Common procedures, "Logging in to an OPC as a root user."</p> <p><i>The following prompt appears:</i></p> <pre>opc&gt;</pre>
2	<p>At the OPC prompt (opc&gt;), enter:</p> <pre>opcui ↵</pre> <p><i>The User Session Manager appears.</i></p>
3	<p>Move to the <b>Commissioning Manager</b> tool, then press <b>Ctrl_A</b> (or Keypad <b>0</b>).</p> <p><i>The main OPC Commissioning Manager window appears.</i></p>
4	<p>Use this screen to record the primary OPC location (the network element number of the node where this OPC is located) and the backup OPC location (the network element number of the node where this OPC is located) in Table 2-4 on page 2-9.</p> <p><b>Note 1:</b> The OPC may be located in a stand-alone OPC shelf. If so, enter 'OPC shelf' for the OPC location in Table 2-4 on page 2-9.</p> <p><b>Note 2:</b> If the span of control is not equipped with a backup OPC, enter "Not Equipped" in the "backup OPC name" field.</p>
5	<p>Tab to the <b>Edit system data</b> button, then press <b>Ctrl_A</b> (or Keypad <b>0</b>).</p> <p><i>A System Commissioning Data screen appears.</i></p>
6	<p>Use the value in the "OPC name" field to obtain the names for the primary and the backup OPCs:</p> <ol style="list-style-type: none"> <li>Obtain the primary OPC name by adding "P" to the value of "OPC name" (in the example of the screen above, the primary OPC name would be OPCM005P). Record this value in Table 2-4 on page 2-9.</li> <li>Obtain the backup OPC name by adding "B" to the value of "OPC name". Record this value in Table 2-4 on page 2-9.</li> </ol>

—continued—



## 2-8 Planning your reconfiguration

---

Procedure 2-1 (continued)

### Collecting span of control information

---

Step	Action
17	Log in to the backup OPC. Enter: <b>root</b> ↵ <i>The password prompt appears.</i>
18	Enter the root password and press the <b>Return</b> key. <b>Note:</b> The password does not appear in the field when you enter it. Passwords are case sensitive. <i>The following prompt appears</i> TERM = (vt100)
19	Press the <b>Return</b> key. <i>The following prompt appears.</i> opc>
20	At the OPC prompt (opc>), enter: <b>opcu</b> i ↵ <i>The User Session Manager appears.</i>
21	Move to the Port Configuration tool, then press <b>Ctrl_A</b> (or Keypad <b>0</b> ). <i>The OPC Port Config Mgr opens.</i>
22	Select the Query Configuration option by entering: <b>1</b> ↵
23	Record Port 1 configuration in the “Current backup OPC port 1 configuration” row in Table 2-4 on page 2-9, then press <b>Enter</b> to return to the Main Menu.
24	Exit the Port Configuration tool by choosing the Exit option by entering: <b>9</b> ↵ <i>The User Session Manager window appears.</i>
25	To log out of the backup OPC, tab to the <b>Logout</b> button, then press <b>Ctrl_A</b> (or Keypad <b>0</b> ). <i>A confirmation dialog appears.</i>
26	In the confirmation dialog, tab to the <b>Logout</b> button, then press <b>Ctrl_A</b> (or Keypad <b>0</b> ). <i>The following prompt appears:</i> opc>
27	Log out of the backup OPC by entering: <b>logout</b> ↵ <i>The following message appears:</i> Connection closed by peer entity.[]

—continued—

Procedure 2-1 (continued)

**Collecting span of control information**

- | Step | Action   |
|------|--|
| 28   | Press the <b>Return</b> key.<br><i>The following prompt appears:</i><br>opc>                   |
| 29   | At the OPC prompt (opc>), enter:<br><b>opcui</b> ↵<br><i>The User Session Manager appears.</i> |

**Table 2-4**  
**OPC and port information**

Information required	Customer input
Primary OPC name (OPCMxxxP)	
Primary OPC location (network element number)	
Backup OPC name (OPCxxxxB)	
Backup OPC location (network element number)	
Current primary OPC port 1 configuration (X.25, terminal, or printer)	
Current backup OPC port 1 configuration (X.25, terminal, or printer)	

—end—

## Procedure 2-2 Determining the OPC to commission the new node

---

Use this procedure to define which OPC is to be used to commission the new VTBM ring node. The following options are available:

- using the backup OPC of the existing VTBM-based ring. Therefore, the backup OPC needs to be shut down and relocated in the new VTBM ring node. Enter “backup” in Table 2-5
- using a spare OPC running the latest AccessNode software. Therefore, enter the “spare” in Table 2-5
- using a SLAT OPC running the latest AccessNode software. Therefore, enter the “SLAT” in Table 2-5

*Note 1:* The primary OPC cannot be used to commission the new node.

*Note 2:* It is preferable to use a SLAT OPC since the spare or backup OPC will occupy shelf slot positions that would otherwise be used for tributary (for example, DS3, DS1) circuit packs.

**Table 2-5**  
**OPC to use in order to commission the new node**

OPC

—end—

## Procedure 2-3 Determining the new node location configuration

Use this procedure to record the configuration where you are adding the new node.

### Action

Step	Action		
1	<p>In the User Session Manager of the primary OPC for the VTBM ring, move to the Configuration Manager tool, then press <b>Ctrl_A</b> (or Keypad <b>0</b>).</p> <p><i>The main Configuration Manager screen appears with a display of all system configurations.</i></p>		
2	<p>Record in Table 2-6 the name of the configuration where you are adding the new node.</p> <p><b>Table 2-6</b> <b>Configuration where you are adding the new node</b></p> <table border="1" data-bbox="522 940 1002 1050"> <thead> <tr> <th>Configuration name</th> </tr> </thead> <tbody> <tr> <td> </td> </tr> </tbody> </table>	Configuration name	
Configuration name			
3	<p>Close the Configuration Manager tool:</p> <ol style="list-style-type: none"> <li>Display the window menu by pressing <b>Ctrl_L W</b> (or Keypad <b>6</b>). <i>The window menu appears.</i></li> <li>Select the <b>Exit</b> command by pressing <b>Space</b> (or Keypad <b>0</b>). <i>The User Session Manager window appears.</i></li> </ol> <p style="text-align: center;">—end—</p>		

## Procedure 2-4 Determining the exerciser schedule

---

Use this procedure to determine the exerciser schedule. Stagger the exerciser run time by at least 3 minutes between each of the nodes in the ring system. Non-staggered exerciser runs raise the OC-12 protection path fail alarms.

Use this procedure to record the exerciser start time for each network element in the existing VTBM-based ring system where you are adding the node.

### Action

---

Step	Action
1	In the User Session Manager, tab to the Network Surv. list, and move to the Network Summary tool. Press <b>Ctrl_A</b> (or Keypad <b>0</b> ). <i>The Network Summary main window appears.</i>
2	Display the Protection menu by pressing <b>Ctrl_L T</b> (or Keypad <b>,</b> ). <i>The Protection menu appears.</i>
3	Move to the configuration where you are adding the new node (recorded in Table 2-6 on page 2-11), then press <b>Space</b> (or Keypad <b>0</b> ). <i>The message In progress . . . appears during processing, followed by the Protection details dialog, showing all ADMs in the ring.</i>
4	Tab to the Network element list and display the chooser menu by pressing <b>Ctrl_L /</b> (or Keypad <b>3</b> ).
5	Select the <b>Schedule exercisers</b> command by pressing <b>Space</b> (or Keypad <b>0</b> ). <i>The Exerciser Schedule List window appears.</i>

—continued—



Procedure 2-4 (continued)

**Determining the exerciser schedule**

---

**Step    Action**

---

- 7**    Use Table 2-7 to determine the exerciser start time of the new VTBM ring node. Ensure that the exerciser start times between any node and the new VTBM ring node are not the same. That is, the exerciser start times must be staggered by at least 3 minutes between nodes. Enter the time in Table 2-8 (in hours and minutes) for the new node.

**Table 2-8  
Exerciser start time of the new VTBM ring node**

<b>Exerciser start time (hour)</b>	<b>Exerciser start time (minutes)</b>

- 8**    In the Exerciser Schedule List screen, tab to the **Done** button, then press **Ctrl\_A** (or Keypad **0**).

*The Exerciser Schedule List screen is removed and the Protection details dialog appears.*

- 9**    Tab to the **Done** button, then press **Ctrl\_A** (or Keypad **0**).

*The Protection details dialog is removed and the Network Summary main window appears.*

- 10**    Close the Network Summary tool by doing the following:

- a.**    Display the window menu by pressing **Ctrl\_L W** (or Keypad **6**).

*The window menu appears.*

- b.**    Select the **Exit** command by pressing **Space** (or Keypad **0**).

*The User Session Manager main window appears.*

—end—

## Procedure 2-5 Provisioning the ESI timing references of the new node

Use this procedure to complete the tables with information concerning the ESI external timing references.

### Action

Step	Action
1	<p>If the new node will be externally timed from a BITS clock (using BITSA and BITSB inputs), enter the coding format, the framing format, and the signal format for these references in Table 2-9.</p> <p>Otherwise, if BITSA or BITSB is not connected, complete the corresponding fields in Table 2-9 with dashes (“-”) to indicate that this reference is not used.</p>

**Table 2-9  
Provisioning BITSA and BITSB**

Source	Coding format	Framing format	Signal format
BITSA			
BITSB			

where

Coding format is the facility coding format. The possible values are B8ZS or AMI (only applicable for DS1 Signal Format).

Framing format is the facility framing format. The possible values are SF or ESF (only applicable for DS1 signal Format).

Signal format is the facility signal format. The possible values are BITSCC or BITSDS1.

—continued—

Procedure 2-5 (continued)

**Provisioning the ESI timing references of the new node**

**Step Action**

- 2** If the new node will provide timing to other equipment (using G1OUT and G2OUT outputs), enter the framing format, the line build out, the timing reference, and the threshold AIS for these references in Table 2-10. Otherwise, if G1OUT or G2OUT is not supplying timing for other equipment, fill out the corresponding fields in Table 2-10 with dashes "-" to indicate that this reference is not used.

**Table 2-10  
Provisioning G1OUT and G2OUT**

Source	Framing format	Line build out	Timing reference	Threshold AIS
G1OUT				
G2OUT				

where

**Framing format** is the facility framing format. The possible values are SF or ESF.

**Line build out** is the facility signal line build out for the DS1 generator. The possible values are: Long, Short or Medium.

**Timing reference** is the timing reference for the output. The possible values are OC12 G1 or OC12 G2.

**Threshold AIS** is the threshold AIS value. The possible values are as follows: ST1 (Stratum1), ST2 (Stratum 2), ST3 (Stratum 3), SMC (SONET clock) or Null. If you specify Null, the threshold AIS generation feature is disabled. The default quality level value for threshold AIS is SONET clock.

**Note:** AIS is inserted into the derived DS1 timing reference output when the synchronization status message indicates that the quality of the active timing source is at, or below the selected threshold.

—end—

## Procedure 2-6 Provisioning the clock source references

Use the following If - Then scenarios to provision the clock source references and fill out Table 2-11:

If	Then
the Source indicates the synchronization source as BITSA, BITSB, G1 or G2.	Enter "Null" for references that will not be used.
The Quality level is the Stratum level of the reference. It can be ST1 (Stratum 1), STU (Traceability unknown), ST2 (Stratum 2), ST3 (Stratum 3), SMC (+/- 20 ppm clock) or DUS.	Do not use for synchronization.

**Note 1:** If S1 Byte synchronization status messaging is not to be used, set the Quality level to STU (Traceability unknown).

**Note 2:** For all network elements in a VTBM Ring that do not use external timing sources, set the quality level to AUTO for each timing reference source. Therefore, the quality level of the timing source is set to the quality level indicated in the synchronization status message.

The S1 Byte synchronization status messaging can be applied only to the transport interface units (that is, OC-12 G1 or OC-12 G2). When enabled, the value of the quality level is automatically read using the S1 byte in the SONET line overhead. To do so, enter "auto" in the Quality level column of the corresponding source in Table 2-11. Reference number is a numeric identifier for the timing reference.

**Table 2-11**  
Provisioning the clock source references

Reference number	Source	Quality level
1		
2		
3		
4		

—end—

---

## Procedure 2-7

# Determining the new VTBM ring node clocksource setting

---

Use this procedure to finalize the timing mode to set the Clock source on that node before adding the new VTBM ring node. Use the following If - Then scenarios to fill out Table 2-12:

If	Then
the new node has ESI units, then it can be timed either externally using the BITS or it can be line timed off the transport interface units (that is, OC-12 G1 or OC-12 G2) with the aid of the ESI cards	Enter the value "esi" in the Clock source field in Table 2-12.
<b>Note:</b> Whether the network element will be line timed or BITS timed depends on which references are provisioned and which reference offers the best quality level.	
the new node does not have ESI cards, it can only be set to line timed (that is, it can only be timed off of the transport interface units (OC-12 G1 or G2) with no aid from the ESI cards since they are not equipped)	Enter "linetimed" in Table 2-12.

**Table 2-12**  
**New VTBM ring node clock source**

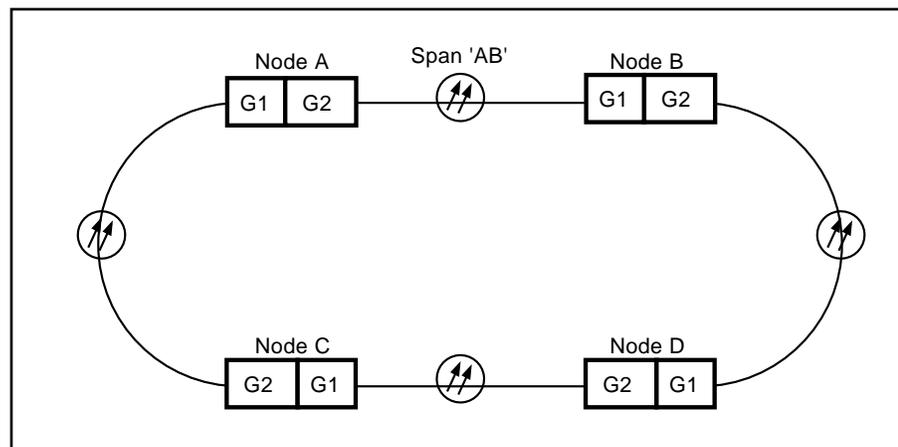
Clock source

—end—

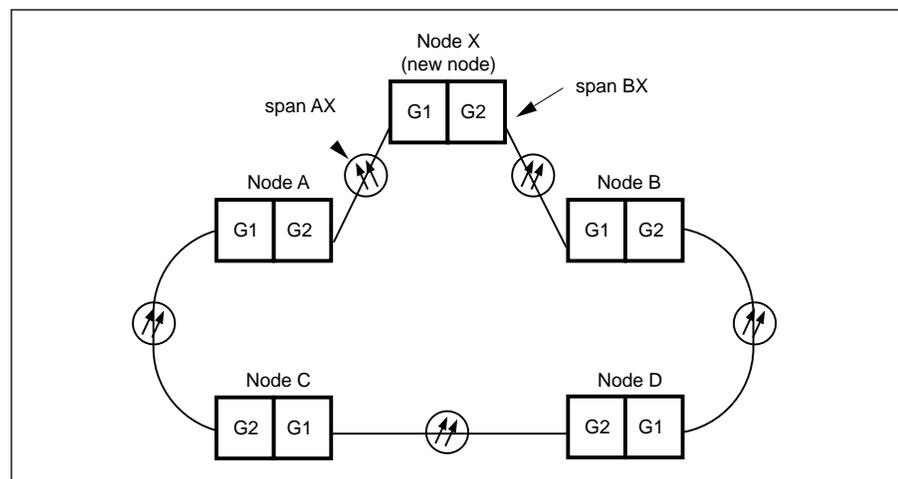
## Procedure 2-8 Recording the connections to the new VTBM ring node

Use this procedure to identify how to insert the new VTBM ring node in the existing ring system.

An example of a ring of 4 nodes is shown below to help you fill out the appropriate tables throughout this procedure.



As an example, assume that the new VTBM ring node (referred to as Node X) is to be inserted between Node A and Node B as follows:



—continued—

Procedure 2-8 (continued)

**Recording the connections to the new VTBM ring node**

---

**Action**

- | <b>Step</b> | <b>Action</b>   |
|-------------|---|
| 1           | Identify the two nodes bounding the span where you are inserting the new node. (In the example, the 2 nodes are Node A and Node B).                                     |
| 2           | Identify the connections to the circuit pack G1 of the new node (in the example, G1 of Node X will be connected to G2 of Node A). Record the information in Table 2-13. |

**Table 2-13  
Connections to G1 of the new node**

<b>Node #</b>	<b>Circuit Pack of the adjacent node</b>

where

Node # is the network element number of the adjacent node that connects to G1 of the new node (in the example, the network element number of Node A)

Circuit pack of the adjacent node is the circuit pack (G1 or G2) of the adjacent node that connects to G1 of the new node (in the example, G2 of Node A)

—continued—

Procedure 2-8 (continued)

**Recording the connections to the new VTBM ring node**

- | Step | Action  |
|------|---|
| 3    | Identify the connections to the circuit pack G2 of the new node (in the example, G2 of Node X will be connected to G1 of Node B). Record the information in Table 2-14. |

**Table 2-14**

**Connections to G2 of the new node**

Node #	Circuit pack of the adjacent node

where

Node # is the network element number of the adjacent node that connects to G2 of the new node (in the example, the network element number of Node B)

Circuit pack of the adjacent node is the circuit pack (G1 or G2) of the adjacent node that connects to G2 of the new node (in the example, G1 of Node B)

—end—

---

## Procedure 2-9 Determining the APS ID number

---

The APS ID (Automatic Protection Switch ID) is a unique number (0-15) for each VTBM ring node in a ring. Use this procedure to record an APS ID for the new node:

### Action

- 
- | Step | Action |
|------|--------|
|------|--------|
- 
- 1 In the User Session Manager, move to the Configuration Manager tool, then press **Ctrl\_A** (or Keypad **0**).  
*The main Configuration Manager screen appears with a display of all system configurations.*
  - 2 Move to the configuration where you are adding the new node, then press **Ctrl\_L** (or Keypad **Enter**) to display the List item menu. Select the **Edit Configuration** command by pressing **Space** (or Keypad **0**).  
*The Configuration Manager: Ring ADM main window appears.*
  - 3 Select the **Configure a Ring ADM** button by pressing **Ctrl\_A** (or Keypad **0**).  
*The Configure a Ring ADM dialog appears.*
  - 4 Tab to the Ring ADM APS ID field and display the chooser menu by pressing **Ctrl\_L /** (or Keypad **3**).  
*A list of all APS ID numbers appears.*
  - 5 Choose one APS ID that is not grayed out (already assigned to another node) and record that number in Table 2-15.  
**Note:** The first available APS ID appears in the Ring ADM APS ID field, but you can select any available number.

**Table 2-15**  
**APS ID of the new node**

APS ID

- 6 Exit the chooser menu by pressing **Ctrl\_^** (or Keypad **PF4**).
- 7 Tab to the **Cancel** button, then press **Ctrl\_A** (or Keypad **0**).  
*The Configure a Ring ADM dialog window closes.*

—continued—

---

Procedure 2-9 (continued)  
**Determining the APS ID number**

---

- | <b>Step</b> | <b>Action</b>  |
|-------------|--|
| <b>8</b>    | Close the Configuration Manager: Ring ADM main window: <ol style="list-style-type: none"><li>Display the window menu by pressing <b>Ctrl_L W</b> (or Keypad <b>6</b>).<br/><i>The window menu appears.</i></li><li>Select the <b>Exit</b> command by pressing <b>Space</b> (or Keypad <b>0</b>).<br/><i>The main Configuration Manager screen appears.</i></li></ol> |
| <b>9</b>    | Close the Configuration Manager tool: <ol style="list-style-type: none"><li>Display the window menu by pressing <b>Ctrl_L W</b> (or Keypad <b>6</b>).<br/><i>The window menu appears.</i></li><li>Select the <b>Exit</b> command by pressing <b>Space</b> (or Keypad <b>0</b>).<br/><i>The tool closes revealing the User Session Manager.</i></li></ol>             |

—end—

## Procedure 2-10

### **Determining if optical circuit packs at adjacent nodes need to be changed**

---

Use this procedure to determine if the OC-12 virtual tributary bandwidth management (VTBM) optical interface circuit packs need to be changed on any of the two nodes adjacent to the node you are adding.

Figure 2-1 shows three scenarios to help you determine whether the optics need to be changed.

In the first scenario, no optical circuit pack changes need to be performed since the new VTBM ring node to be added will also use 1310 IR optics. This situation is the most common since ADM nodes are usually added between existing network elements.

In the second scenario, the new VTBM ring node will be added at a location farther away from sites 1 and 2, and the node will require 1310 LR optics in both directions. Before connecting the new VTBM ring node to the existing ring, the optical circuit packs at sites 1 and 2 must be changed to 1310 LR optical circuit packs.

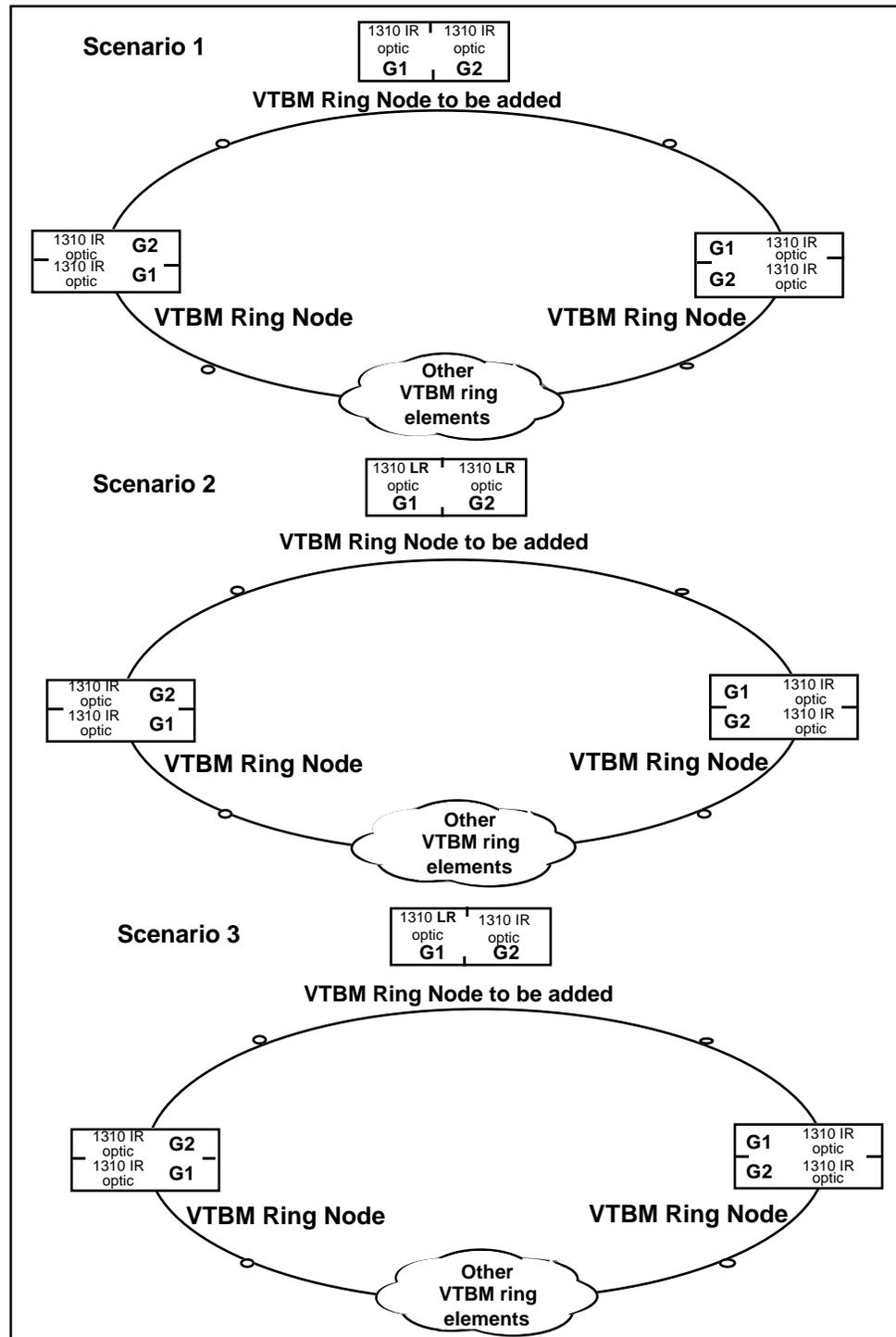
In the third scenario, different circuit packs are used in each direction at the new VTBM node to be added. Only the optical circuit pack on site 1 has to be changed to 1310 LR optical circuit packs before inserting the new node.

—continued—

Procedure 2-10 (continued)

**Determining if optical circuit packs at adjacent nodes need to be changed**

**Figure 2-1  
VTBM ring node scenarios**



Procedure 2-10 (continued)

**Determining if optical circuit packs at adjacent nodes need to be changed**

---

**Action**

---

<b>Step</b>	<b>Action</b>
1	In the User Session Manager, tab to the Available tools list, move to the NE Login Manager tool, then press <b>Ctrl_A</b> (or Keypad <b>0</b> ). <i>The NE Login Manager main window appears.</i>
2	Determine the network element number of one of the two adjacent nodes to the node to be added (recorded in Table 2-13 on page 2-20). Enter it in the network element field.
3	Tab to the <b>Login</b> button, then press <b>Ctrl_A</b> (or Keypad <b>0</b> ). <i>The following prompt appears:</i> Enter User Name >
4	At the prompt (>), enter the admin userID: <b>&lt;admin userID&gt;</b> ↵ <i>The network element prompts you to enter the password:</i> Enter Password >
5	Enter the admin password: <b>&lt;admin password&gt;</b> ↵ <i>The network element user interface appears.</i>
6	Access the OC-12 equipment screen by entering: <b>eq oc12 &lt;circuit pack group&gt;</b> ↵ where <b>&lt;circuit pack group&gt;</b> is the value ( <b>g1</b> or <b>g2</b> ) you entered in Table 2-13 <i>The OC-12 Equipment screen appears.</i>

—continued—

Procedure 2-10 (continued)

**Determining if optical circuit packs at adjacent nodes need to be changed**

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

7	Record in Table 2-16 the PEC (for example, NT7E05BC) displayed in the "Circuit packs" field of the OC-12 Equipment screen.
---	--

**Table 2-16**

**PEC of the circuit pack group you will connect to G1 of the new node**

PEC of the circuit pack you will connect to G1 of the new node

8	Determine the type of that circuit pack.
---	--

If the PEC is	Then
NT7E05Bx	enter 1310 IR in Table 2-17
NT7E05Ax	enter 1310 LR in Table 2-17
<b>Note:</b> The "x" represents F for FC connectors; G for ST connectors; and H for SC connectors.	

**Table 2-17**

**Type of the circuit pack you will connect to G1 of the new node**

Type of the circuit pack you will connect to G1 of the new node

9	Log out of the network element by entering: <b>logout</b> ↵
---	--

*The following message appears.*

Press return to exit.

10	Press the <b>Return</b> key.
----	------------------------------

*The NE Login Manager Main window appears.*

11	Determine the network element number of the other node adjacent to the node to be added (recorded in Table 2-14 on page 2-21). Enter it in the <b>network element</b> field.
----	--

12	Tab to the <b>Login</b> button, then press <b>Ctrl_A</b> (or <b>Keypad 0</b> ).
----	---

*The following prompt appears:*

Enter User Name

>

—continued—

Procedure 2-10 (continued)

**Determining if optical circuit packs at adjacent nodes need to be changed**

- | Step  | Action   |  |      |          |                             |          |                             |   |  |
|---|--|--|------|----------|-----------------------------|----------|-----------------------------|---|--|
| 13  | At the prompt (>), enter the admin userID:<br><b>&lt;admin userID&gt;</b> ↵<br><i>The network element prompts you to enter the password:</i><br>Enter Password<br>>  |  |      |          |                             |          |                             |   |  |
| 14  | Enter the admin password:<br><b>&lt;admin password&gt;</b> ↵<br><i>The network element user interface appears.</i>   |  |      |          |                             |          |                             |   |  |
| 15  | Access the OC-12 equipment screen by entering:<br><b>eq oc12 &lt;circuit pack group&gt;</b> ↵<br>where<br><br><b>&lt;circuit pack group&gt;</b> is the value ( <b>g1</b> or <b>g2</b> ) you entered in Table 2-14 on page 2-21<br><br><i>The OC-12 Equipment screen appears.</i>   |  |      |          |                             |          |                             |   |  |
| 16  | Record in Table 2-18 the PEC (for example, NT7E05BB) displayed in the "Circuit packs" field of the OC-12 Equipment screen.<br><br><b>Table 2-18</b><br><b>PEC of the circuit pack group you will connect to G2 of the new node</b><br><table border="1" style="margin-left: 40px;"> <thead> <tr> <th style="text-align: center;">PEC of the circuit pack you will connect to G2 of the new node</th> </tr> </thead> <tbody> <tr> <td style="height: 20px;"> </td> </tr> </tbody> </table>              | PEC of the circuit pack you will connect to G2 of the new node |      |          |                             |          |                             |   |  |
| PEC of the circuit pack you will connect to G2 of the new node                        |  |  |      |          |                             |          |                             |   |  |
|   |  |  |      |          |                             |          |                             |   |  |
| 17  | Determine the type of that circuit pack.<br><br><table border="1" style="margin-left: 40px;"> <thead> <tr> <th style="text-align: left;">If the PEC is</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>NT7E05Bx</td> <td>enter 1310 IR in Table 2-19</td> </tr> <tr> <td>NT7E05Ax</td> <td>enter 1310 LR in Table 2-19</td> </tr> <tr> <td colspan="2">The "x" represents F for FC connectors; G for ST connectors; and H for SC connectors.</td> </tr> </tbody> </table> | If the PEC is  | Then | NT7E05Bx | enter 1310 IR in Table 2-19 | NT7E05Ax | enter 1310 LR in Table 2-19 | The "x" represents F for FC connectors; G for ST connectors; and H for SC connectors. |  |
| If the PEC is   | Then   |  |      |          |                             |          |                             |   |  |
| NT7E05Bx  | enter 1310 IR in Table 2-19  |  |      |          |                             |          |                             |   |  |
| NT7E05Ax  | enter 1310 LR in Table 2-19  |  |      |          |                             |          |                             |   |  |
| The "x" represents F for FC connectors; G for ST connectors; and H for SC connectors. |  |  |      |          |                             |          |                             |   |  |

—continued—

Procedure 2-10 (continued)

**Determining if optical circuit packs at adjacent nodes need to be changed**

**Step Action**

**Table 2-19**  
**Type of the circuit pack you will connect to G2 of the new node**

<b>Type of the circuit pack you will connect to G2 of the new node</b>

- 18** Log out of the network element by entering:  
**logout ↵**  
*The following message appears.*  
 Press return to exit.
- 19** Press the **Return** key.  
*The NE Login Manager Main window appears.*
- 20** To close the NE Login Manager 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 **Space** (or **Keypad 0**).  
*The User Session Manager main window appears*
- 21** Tab to the **Logout** button, then press **Ctrl\_A** (or **Keypad 0**).  
*A confirmation dialog appears.*
- 22** Tab to the **Logout** button, then press **Ctrl\_A** (or **Keypad 0**).  
*The following prompt appears:*  
 opc>

—continued—

Procedure 2-10 (continued)

**Determining if optical circuit packs at adjacent nodes need to be changed**

- | Step | Action  |
|------|---|
| 23   | Log out of the OPC by entering:<br><b>logout ↵</b>  |
| 24   | Compare the type of the circuit pack in slot 9 (OC-12 G1) of the new node to be added to the one you entered in Table 2-17 on page 2-27. Decide if the optical circuit pack of the adjacent node needs to be changed. |

If you	Then
need to change the optical circuit pack	enter the type of the optical circuit pack which will be used as replacement in Table 2-20
do not need to change the optical circuit pack	enter none in Table 2-20

**Table 2-20  
New circuit pack**

<b>Type of the new circuit pack you will connect to G1 of the new node</b>

- 25 Compare the type of the circuit pack in slot 10 (OC-12 G2) of the new node to be added to the one entered in Table 2-19 on page 2-29. Decide if the optical circuit pack of the other adjacent node needs to be changed.

If you	Then
need to change the optical circuit pack	enter in Table 2-21 the type of the optical circuit pack that you will use as replacement
do not need to change the optical circuit pack	enter none in Table 2-21

**Table 2-21  
New circuit pack**

<b>Type of the new circuit pack which will connect to G2 of the new node</b>

—end—

---

## Tool and material requirements

---

This chapter contains information that you must have before you start the reconfiguration.

√	Information description
	Root passwords for the primary and backup OPCs
	Administrative passwords for all the network elements

### Tools required

Ensure that you have the following tools available before you start the reconfiguration. Be sure to note where the tools are to be located.

- one antistatic wriststrap
- three fiber cleaning kits
- three optical power meter and necessary optical patchcord to measure output power
- 1/4 in. flathead screwdriver
- high-precision variable optical attenuators (VOA) (for example, HP8158B) with single-mode optical test cords

**Note 1:** The equipment listed above is required at the site of the new VTBM ring node and the two other adjacent nodes.

**Note 2:** The high-precision VOAs are needed to perform OC-12 optical interface receiver sensitivity tests at the new VTBM ring node site.

### Materials required

Ensure that you have the materials listed in Table 3-1 before you start the reconfiguration.

3-2 Tool and material requirements

**Table 3-1**  
**Quantity and materials table**

√	Quantity	Material
	1 (see Notes 1 and 3)	SLAT or spare OPC with AccessNode software (or you can use the backup OPC). The spare OPC must have a tape drive.
	1 (see Note 3)	DDS tape containing the AccessNode software
	1 (see Notes 2 and 3)	NT7E44JC or JK CNet cable
	3	VT100-compatible terminals (1 at the primary OPC site, 1 at the new VTBM Ring node site, and 1 at the backup OPC site if you use the backup OPC to commission the new node)
	3	NT7E44RA or RB cable for terminal to OPC port 1 connection (1 at the primary OPC site, 1 at the new VTBM ring node site, and 1 at the backup OPC site if you use the backup OPC to commission the new node)
	2	NT7E44FA or FB cable for terminal to NE UI port 2 connection (1 at any site to reconfigure the primary or backup OPC port 1 if port 1 is not configured as terminal and 1 at the backup OPC site if you use the backup OPC to commission the new node)
	1	set of AN12 NTPs
	1	new DDS tape
	4 (see Note 4)	patchcords
	1 (see Note 5)	DS1 digital transmission test set (Tx,Rx) (for example, Tau-Tron S5104)
	2 (see Note 5)	DS1 electrical test cords (bantam-to-NE 310 connectors)
	14 (see Note 5)	DS1 electrical test cords (bantam-to-bantam connectors)
	1 (see Note 6)	DS3 digital transmission test set (Tx) (for example, Tau-Tron S5200)
—continued—		

**Table 3-1**  
**Quantity and materials table (continued)**

√	Quantity	Material
	1 (see Note 6)	DS3 digital transmission test set (Rx) (for example, Tau-Tron S5200)
	2 (see Note 6)	DS3 coaxial test cords with proper connectors (WECO-BNC)
	3 (see Note 6)	DS3 coaxial cords (BNC-to-BNC connectors)
<p><b>Note 1:</b> This equipment is not required if you use the backup OPC to commission the new node.</p> <p><b>Note 2:</b> This equipment is required only if you use the SLAT OPC to commission the new node.</p> <p><b>Note 3:</b> This equipment is required at the site of the new VTBM ring node.</p> <p><b>Note 4:</b> These patchcords are required for cabling the new VTBM ring node to the fiber patch panel.</p> <p><b>Note 5:</b> This equipment is required only if the new VTBM ring node has DS1 mappers.</p> <p><b>Note 6:</b> This equipment is required only if the new VTBM ring node has DS3 mappers.</p>		
—end—		

The materials listed in Table 3-1 do not include hardware requirements (for example, an ABM/TBM shelf or circuit packs required at the new node). Obtain the hardware requirements from *Engineering and Ordering Information*, 323-3001-032, in *Engineering, Configuration, and Ordering*, Volume 1, or from your Nortel Networks support group (see “Appendix C: Technical support information”).

### 3-4 Tool and material requirements

---

## Procedure overview

This chapter gives a general overview of all the procedures required to execute the reconfiguration together with the time estimate for the execution of each procedure.



### CAUTION

#### System troubleshooting

If you encounter any situation that deviates from the behavior described in this document, do not attempt to troubleshoot the system. Call your Nortel Networks support group (see “Appendix C: Technical support information”).

Use Table 4-1 to determine how long it will take you to add a VTBM ring node. You can perform Procedure 5-1 through Procedure 5-3 before the maintenance window since they do not impact existing system operation.

**Table 4-1**  
**Task time schedule**

Procedure	Title	Approximate time to complete
5-1	System verification <b>Note:</b> This procedure checks system sanity. It does not impact system operation. You can perform this procedure before the maintenance window.	5 min/network element +30 min
5-2	Pre-system reconfiguration save to tape <b>Note:</b> This procedure backs up the system data onto tape. It does not impact system operation. You can perform this procedure before the maintenance window.	40 min or less
—continued—		

**Table 4-1**  
**Task time schedule (continued)**

<b>Procedure</b>	<b>Title</b>	<b>Approximate time to complete</b>
5-3	Commissioning the new VTBM ring node <b>Note:</b> This procedure commissions and tests the new VTBM ring node and will not impact system operation. This procedure can be carried out prior to the maintenance window.	2.5 hrs + up to 4 hrs for ESI units soaking
5-4	Commissioning the new VTBM ring node on the primary OPC	30 min
5-5	Adding the new VTBM ring node to the existing VTBM-based ring	3 hrs
5-6	Post system reconfiguration verification	5 min/network element
5-7	Post system reconfiguration save to tape	40 min or less
—end—		

### **Procedures descriptions**

This document is divided into several procedures. You must go through each of the procedures. Depending on which options you select when you add the new VTBM ring node, you may be instructed not to perform all the steps in the procedure.

**Table 4-2**  
**Procedure description**

Procedure	Title	Description
5-1	Verifying the system	verifies that the existing ring system is running alarm-free and operating in a normal state
5-2	Saving pre-system reconfiguration to tape	saves the existing VTBM-based ring system data to tape before you add a new node to it. This procedure is needed if it is necessary to restore the system to its previous state.
5-3	Commissioning the new VTBM ring node	commissions an AccessNode VTBM ring node in preparation for adding it to an existing AccessNode VTBM-based ring system.  You can use the backup OPC of the existing AccessNode VTBM ring system or a spare or a SLAT OPC running the AccessNode software to commission the new node. A SLAT OPC is recommended since the spare or backup OPC occupies shelf slot positions that would otherwise be used for tributary (for example, DS3, DS1) circuit packs.
5-4	Commissioning the new VTBM ring node on the primary OPC	commissions the new VTBM ring node on the primary OPC of the existing ring system
5-5	Adding the new VTBM ring node to the existing VTBM-based ring	physically adds the new VTBM ring node to the existing ring system.
5-6	Verifying post-system reconfiguration	verifies the system after you complete the reconfiguration to ensure that the system is and continues to operate trouble-free. This procedure also performs a sanity check on each network element.
5-7	Saving post-system reconfiguration data to tape	saves OPC data to tape and synchronizes the primary and backup OPCs
7-1	ESI carrier unit installation in a TBM shelf	installs the ESI carrier unit (NT7E19) in a TBM shelf and describes how to wire external timing equipment to the TBM shelf external sync port
—continued—		

4-4 Procedure overview

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**Table 4-2**  
**Procedure description (continued)**

<b>Procedure</b>	<b>Title</b>	<b>Description</b>
7-2	Optical transmit measurement	This procedure is used to measure the optical transmit and receive power levels.
7-3	Configuring OPC port 1	This procedure is used to configure the OPC port 1 for terminal, printer, or X.25 operation.
7-4	Shutting down or restarting an OPC	This procedure outlines the steps required to shut down or restart an OPC.
7-5	Logging into the OPC	This procedure is used to log into an OPC as a 'root' user from the OPC port1 or the network element user interface port 2.
7-6	Changing a line build-out (LBO)	Use this procedure to set the LBO for DS1 and DS3 facilities.
Appendix A	Recovery procedures	Recovery instructions detail the action to take if the connection to the OPC is lost, depending at which stage of the reconfiguration this occurs.
Appendix B	Common procedures	This appendix contains basic instructional procedures that have been copied from NTPs and supplied with this CAP in order to simplify user referencing. These common procedures are referenced in one or more of the main procedures.
—end—		

---

# Adding AccessNode nodes in a VTBM ring

---

This chapter describes how to add a AccessNode VTBM ring node to an existing AccessNode VTBM ring system.

Any procedures used only in special circumstances and reference information is in the Appendices to this document. The procedures indicate when to access this information.

In performing the following procedures, you must read and complete all previous portions of this user guide to ensure a smooth reconfiguration. You must complete the appropriate tables in Chapter 2, “Planning your reconfiguration” before you perform Procedure 5-1.

## Procedure 5-1

### Verifying the system

Use this procedure to verify that the existing ring system is running alarm-free and operating in a normal state.

#### Requirements

To perform this procedure, you must first complete the following:

- read all the information in the previous chapters of this user guide and comply with all of the set-up conditions
- ensure that personnel performing this procedure have root access to the primary OPC
- ensure that personnel performing this procedure have admin access to all the network elements within the system that is being reconfigured

#### Action

Step	Action						
1	Refer to Table 2-4 on page 2-9 to determine the configuration for the primary OPC port 1.						
	<table border="1"> <thead> <tr> <th>If the value in the “Current primary OPC port 1 configuration” field is</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>terminal</td> <td>go to step 2</td> </tr> <tr> <td>printer or X.25</td> <td>perform Procedure 7-3, “Configuring OPC port 1”</td> </tr> </tbody> </table>	If the value in the “Current primary OPC port 1 configuration” field is	Then	terminal	go to step 2	printer or X.25	perform Procedure 7-3, “Configuring OPC port 1”
If the value in the “Current primary OPC port 1 configuration” field is	Then						
terminal	go to step 2						
printer or X.25	perform Procedure 7-3, “Configuring OPC port 1”						
2	<p>Log in to the primary OPC as the ‘root’ user using the primary OPC port 1 or the primary OPC ethernet port through a telnet session.</p> <p><b>Note:</b> If necessary, refer to “Appendix B: Common procedures,” Procedure 7-5, “Logging in to an OPC as a root user.”</p> <p><i>The following prompt appears:</i></p> <pre>opc&gt;</pre> <p><b>Verifying state of OPCs</b></p>						
3	<p>Access the User Session Manager by entering:</p> <pre>opcui ↵</pre> <p><i>The User Session Manager window appears.</i></p>						

—continued—

Procedure 5-1 (continued)  
**Verifying the system**

Step	Action								
4	<p>Tab to the <b>Open tools</b> list, move to the <b>OPC Status</b> tool, then press <b>Ctrl_A</b> (or <b>Keypad 0</b>).</p> <p><i>The primary and backup OPC status appear.</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If</th> <th style="text-align: left;">Then</th> </tr> </thead> <tbody> <tr> <td>the value in the "Backup OPC name" field in Table 2-4 on page 2-9 is other than "Not equipped" and the OPC Status window shows the primary OPC is active and the backup OPC is inactive</td> <td>go to step 5</td> </tr> <tr> <td>the value in the "Backup OPC name" field in Table 2-4 on page 2-9 is "Not equipped" and the OPC Status window shows the primary OPC is active</td> <td>go to step 5</td> </tr> <tr> <td>the OPCs are in any other state</td> <td>contact your next level of support or your Nortel Networks support group</td> </tr> </tbody> </table>	If	Then	the value in the "Backup OPC name" field in Table 2-4 on page 2-9 is other than "Not equipped" and the OPC Status window shows the primary OPC is active and the backup OPC is inactive	go to step 5	the value in the "Backup OPC name" field in Table 2-4 on page 2-9 is "Not equipped" and the OPC Status window shows the primary OPC is active	go to step 5	the OPCs are in any other state	contact your next level of support or your Nortel Networks support group
If	Then								
the value in the "Backup OPC name" field in Table 2-4 on page 2-9 is other than "Not equipped" and the OPC Status window shows the primary OPC is active and the backup OPC is inactive	go to step 5								
the value in the "Backup OPC name" field in Table 2-4 on page 2-9 is "Not equipped" and the OPC Status window shows the primary OPC is active	go to step 5								
the OPCs are in any other state	contact your next level of support or your Nortel Networks support group								
5	Return to the User Session Manager by pressing <b>Ctrl_T 0</b> .								

**Verifying network element association**

- 6 Check the bottom left corner of the OPC user interface screen to ensure there is no '?' (a '?' is an indication of a loss of association).  
 Re-establish any loss of communications. If necessary, contact your next level of support or your Nortel Networks support group.

**Logging in to a network element**

- 7 In the User Session Manager, tab to the **Available tools** list, move to the **NE Login Manager** tool, then press **Ctrl\_A** (or **Keypad 0**).  
*The NE Login Manager main window appears.*
- 8 Determine the first network element which is not checked in column **A** in Table 2-7 on page 2-13 and enter the network element number in the **Network element** field.  
**Note:** If you are repeating this step, tab to the **Network element** field.

—continued—

5-4 Adding AccessNode nodes in a VTBM ring

---

Procedure 5-1 (continued)

**Verifying the system**

---

- | Step | Action  |
|------|---|
| 9    | Tab to the <b>Login</b> button, then press <b>Ctrl_A</b> (or Keypad <b>0</b> ).<br><i>The following prompt appears:</i><br>Enter User Name<br>>                     |
| 10   | At the prompt (>), enter the admin userID:<br><b>&lt;admin userID&gt;</b> ↵<br><i>The network element prompts you to enter the password:</i><br>Enter Password<br>> |
| 11   | Enter the admin password:<br><b>&lt;admin password&gt;</b> ↵<br><i>The network element user interface appears.</i>  |

**Running the network element exerciser**

- 12 Run the exerciser by entering:  
**eq sh;exercise** ↵  
*The following message appears:*  
The shelf exerciser has been initiated. Please refer to EQP logs for results.  
*The Exerciser field indicates when the exerciser is running and when it has terminated. Wait for the Exerciser field to display 'off' before going to the next step.*

**Verifying the network element logs**

- 13 Access the logs menu by entering:  
**fw** ↵  
**logutil** ↵  
*The following message appears:*  
LOGUTIL:
- 14 View the results of the exerciser by entering:  
**open eqp** ↵  
*The EQP608 Exerciser Results log appears.*

If	Then go to
the exerciser passed in all cases	step 16
the exerciser did not run successfully (that is, the exerciser results show failed, aborted, or not run)	step 15

—continued—

Procedure 5-1 (continued)  
**Verifying the system**

**Step Action**

- 15** For all the results that show 'not run' determine if one of the following situations apply:
- The results show 'not run' for the OC-12. The OC-12 working unit(s) has no protection or the protection channel is active.
  - The results show 'not run' for an OC-3 tributary. The OC-3 working unit(s) has no protection or the protection channel is active.
  - The results show 'not run' for a DS3 or DS1 mapper. The working units have no protection, or all the facilities carried by the DS3 or DS1 working units are in the out-of-service state

<b>If all the results that show 'not run'</b>	<b>Then</b>
can be explained from the above list	go to step 16
cannot be explained from the above list	contact your next level of support or your Nortel Networks support group

**Checking for outstanding swerrs**

- 16** Open the software error log by entering:  
**open swerr** ↵

<b>If</b>	<b>Then</b>
the "Log empty" message appears	go to step 17
the "Log empty" message does not appear	contact your next level of support or your Nortel Networks support group

**Logging out of the network element**

- 17** Log out of the network element by entering:  
**logout** ↵

*The following message appears.*  
 Press return to exit.

- 18** Press the **Return** key.  
*The NE Login Manager Main window appears.*

- 19** Repeat steps 8 to 18 for each remaining network element in Table 2-7 on page 2-13.

**Note:** As you complete each network element, check off and record in column **A** in Table 2-7 the time you performed this step.

—continued—

5-6 Adding AccessNode nodes in a VTBM ring

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Procedure 5-1 (continued)  
**Verifying the system**

---

**Step Action**

---

- 20** Close the NE Login Manager tool by doing the following:
- a. Display the window menu by pressing **Ctrl\_L W** (or Keypad **6**).  
*The window menu appears.*
  - b. Select the **Exit** command by pressing **Space** (or Keypad **0**).  
*The User Session Manager main window appears.*

**Checking for outstanding logs and alarms**

- 21** Tab to the **Available tools** lists, move to the Event Browser tool, then press **Ctrl\_A** (or Keypad **0**).  
*The Event Browser main window appears.*
- 22** Open the **List item** menu by pressing **Ctrl\_L /** (or Keypad **3**).
- 23** Open the Filter option either by pressing **Esc\_F** or move to the **Filter** option, then press **Space** (or Keypad **0**).  
*The Events List **Filter** dialog appears.*
- 24** In the **Number of events** field, ensure that the field is set to retrieve the maximum number of events (500).  
**Note:** You can use the Number of events field to limit the number of events displayed. Events not displayed are not lost, and can be viewed by resetting this field. The maximum number of events retrieved is 500.
- 25** To modify the number of events displayed:
- a. Display the List item menu by pressing **Ctrl\_L** (or Keypad **Enter**).
  - b. Select the **Select All** command by pressing **Space** (or Keypad **0**).  
*The data in the field is highlighted in reverse video.*
  - c. Enter 500 so that the maximum number of events appears.
- 26** Tab to the Network Element list. Ensure that OPC and all the network elements are all marked Include.  
*The word "Include" appears in the Network Element list beside network elements whose events currently appear in the Events list on the Event Browser main window.*  
To include all the network elements:
- a. Move to the network element you want to add and display the List item menu by pressing **Ctrl\_L** (or Keypad **Enter**).  
*The List item menu appears. The first menu item Add is highlighted.*
  - b. Select **Add** by pressing **Space** (or Keypad **0**).  
*The network element is added and the word "include" appears beside it in the Network Element list.*

—continued—

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 Procedure 5-1 (continued)  
**Verifying the system**


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Step	Action
27	<p>Tab to the <b>Type</b> buttons. Ensure that all the OPC logs, alarms, and alerts are selected.</p> <p><b>Note:</b> The Type buttons determine whether the OPC logs, or the OPC or network element alarms or alerts appear in the <b>Events</b> list.</p> <p>To display all the event types, move to the event type you want to add, then press <b>Ctrl_A</b> (or Keypad <b>0</b>).</p> <p><i>The mark beside the button appears (indicating selection).</i></p>
28	<p>Tab to the <b>Severity</b> buttons. Ensure that all alarm severity boxes have been selected.</p> <p><b>Note:</b> The Severity check buttons determine what severities of events appear in the Events list.</p> <p>To display all the event severities, move to the severity you want to add, then press <b>Ctrl_A</b> (or Keypad <b>0</b>).</p> <p><i>The mark beside the button appears (indicating selection).</i></p>
29	<p>Tab to the <b>Class</b> buttons. Ensure that <b>Trbl, Usage, State, Cmpl, Prog, COM, SDA, STBY, NAD</b> and <b>GEN</b> boxes are all marked.</p> <p><b>Note:</b> The Class check buttons determine what class of events appear in the Events list.</p> <p>To display all the class types, move to the class you want to add, then press <b>Ctrl_A</b> (or Keypad <b>0</b>).</p> <p><i>The mark beside the button appears (indicating selection).</i></p>
30	<p>Tab to the next field. Ensure that <b>Eqp, Fac, Env</b> and <b>Sw</b> boxes are all marked.</p> <p><b>Note:</b> These boxes determine if Equipment, Facility and Environmental alarms or alerts appear in the Events list.</p> <p>To display all alarms and events, move to the item you want to add, then press <b>Ctrl_A</b> (or Keypad <b>0</b>).</p> <p><i>The mark beside the button appears (indicating selection).</i></p>
31	<p>Tab to the <b>Date and time, from</b> field. Set this value to <b>2 days ago</b>:</p> <p><b>Note:</b> The Date and Time fields specify a time range for events displayed in the Events list.</p> <ol style="list-style-type: none"> <li>a. Select the chooser menu by pressing <b>Ctrl_L</b> / (or Keypad <b>3</b>).</li> <li>b. Move to the <b>1 day ago</b> option, then press <b>Space</b> (or Keypad <b>0</b>). <i>The date of 1 day ago appears.</i></li> <li>c. Move the cursor and manually change the date to indicate <b>2 days ago</b>.</li> </ol> <p><b>Note:</b> To manually change the date you have to position the cursor after the date that appears on the screen and erase it using the <b>backspace</b> key.</p>

—continued—

5-8 Adding AccessNode nodes in a VTBM ring

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Procedure 5-1 (continued)

**Verifying the system**

---

<b>Step</b>	<b>Action</b>
<b>32</b>	<p>Tab to the <b>Date and time, to</b> field.</p> <p>If this field is not blank:</p> <ol style="list-style-type: none"><li>Select the chooser menu by pressing <b>Ctrl_L</b> / (or Keypad <b>3</b>).</li><li>Move to the <b>Ignore time</b> option, then press <b>Space</b> (or Keypad <b>0</b>).</li></ol> <p><i>This ensures that all events up to the present time are recorded.</i></p> <p><b>Note:</b> If any event is recorded and its date and time are ahead of the current date call your Nortel Networks support group.</p>
<b>33</b>	<p>Tab to the <b>Save</b> button, then press <b>Ctrl_A</b> (or Keypad <b>0</b>).</p> <p><i>The filter you have defined is the default filter for the Event Browser tool. It does not become active in the current session unless you select the OK button.</i></p>
<b>34</b>	<p>Tab to the <b>OK</b> button, then press <b>Ctrl_A</b> (or Keypad <b>0</b>).</p> <p><i>The Events List <b>Filter</b> dialog closes.</i></p> <p><i>The filter you have defined is in effect for the current user, and appears above the Events list on the main window.</i></p> <p><i>The selected events are added to the events currently in the display until a maximum of 500 is reached.</i></p>
<b>35</b>	<p>If you want detailed information on any event:</p> <ol style="list-style-type: none"><li>Move to an event, then press <b>Ctrl_A</b> (or Keypad <b>0</b>).</li></ol> <p><i>The selected item appears in reverse video.</i></p> <ol style="list-style-type: none"><li>Display the List item menu by pressing <b>Ctrl_L</b> (or Keypad <b>Enter</b>).</li></ol> <p><i>The menu appears.</i></p> <ol style="list-style-type: none"><li>Move to the <b>Details</b> command, then press <b>Space</b> (or Keypad <b>0</b>).</li></ol> <p><i>The details dialog for that event appears.</i></p> <ol style="list-style-type: none"><li>Move to the <b>Done</b> button, then press <b>Space</b> (or Keypad <b>0</b>).</li></ol> <p><i>The dialog closes. The Event Browser screen reappears.</i></p>
<b>36</b>	<p>If an event cannot be accounted for or if any event may pose a problem for the reconfiguration, contact your next level of support or your Nortel Networks support group.</p>

—continued—

Procedure 5-1 (continued)  
**Verifying the system**

Step	Action						
37	<p>If the system has been completely idle for the preceding 48-hour period (that is, no maintenance operations have been performed) ensure that the following logs have been generated each of the preceding nights:</p> <pre>NAD646 Audited user profile data (success) NAD624 Audited Connections. Result: Success NAD619 Ring Configuration Audit. Result: Success</pre> <p>If an audit has failed and any of the following logs are present, ensure that the failure was not caused by maintenance operations on the system. Contact your next level of support or your Nortel Networks support group.</p> <pre>NAD324 Audited Connections. Result: Failed NAD346 Audited user profile data (failed) NAD308 Ring Configuration Audit. Result: Failed</pre> <p>If the nightly data transfer has failed and the following log is present, ensure that the failure was not caused by maintenance operations on the system. Contact your next level of support or your Nortel Networks support group.</p> <pre>STBY356 DATA sync error detected</pre>						
38	<p>Determine whether the system is equipped with a backup OPC using Table 2-4.</p> <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th style="text-align: left;">If the value in the Backup OPC name field is</th> <th style="text-align: left;">Then go to</th> </tr> </thead> <tbody> <tr> <td>other than "Not equipped"</td> <td>step 39</td> </tr> <tr> <td>"Not equipped"</td> <td>step 42</td> </tr> </tbody> </table> <p>If the system has been completely idle for the preceding 48-hour period (that is, no maintenance operations have been performed) ensure that the following logs have been generated each of the preceding nights:</p> <pre>STBY702 OPC data sync is in progress STBY612 OPC data sync complete</pre>	If the value in the Backup OPC name field is	Then go to	other than "Not equipped"	step 39	"Not equipped"	step 42
If the value in the Backup OPC name field is	Then go to						
other than "Not equipped"	step 39						
"Not equipped"	step 42						
39	<p>If the following failure log is found, contact your local Nortel Networks support group immediately:</p> <pre>STBY348 During the synchronization of data from OPC to OPC, some data was corrupted in the following type file: &lt;xx&gt;</pre>						

—continued—

5-10 Adding AccessNode nodes in a VTBM ring

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Procedure 5-1 (continued)

**Verifying the system**

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<b>Step</b>	<b>Action</b>
<b>40</b>	<p>Ensure that OPC to OPC communications have been stable. If either of the following logs appears, and is not the result of maintenance operations on the system, contact your next level of support or your Nortel Networks support group:</p> <pre>STBY509 OPC to OPC link lost STBY340 Partner OPC not found STBY372 Nightly data synchronization request ignored because Backup OPC is not connected</pre>
<b>41</b>	<p>Ensure that the OPC to network element communications have been stable. If the following log appears, and is not the result of maintenance operations on the system, contact your next level of support or your Nortel Networks support group:</p> <pre>COM502 OPC to NE &lt;xx&gt; Sh 1 link lost</pre>
<b>42</b>	<p>Ensure that none of the network elements have rebooted unexpectedly. If any of the following logs appear and are not the result of maintenance operations on the system, contact your next level of support or your Nortel Networks support group:</p> <pre>SDA701 Software download in progress: load &lt;xx&gt; to NE &lt;yy&gt; sh 1. SDA601 Software download successful: load &lt;xx&gt; to NE &lt;yy&gt; Sh 1. &lt;mm&gt; records were sent in &lt;nn&gt; seconds. SDA359 During the download of software load &lt;xx&gt; to NE/processor &lt;yy&gt; the following error occurred &lt;zz&gt;. The download will continue. SDA354 NE/processor,XX. is not accepting software load,yy, because &lt;zz&gt;. The network element will request the load and it will be sent again. If the download continues to fail, get a new network element software load and transfer it on to the OPC.</pre>
<b>43</b>	<p>Ensure that no events indicate optical signal degradation. If signal degradation is present, high speed switching can occur during the reconfiguration.</p>
<b>44</b>	<p>Ensure that the following log is not displayed. If it is present contact your next level of support or your Nortel Networks support group:</p> <pre>GEN302 There is not enough memory left. Too many processes may be running at the same time. Close any windows you do not need, then try again.</pre>

—continued—

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Procedure 5-1 (continued)  
**Verifying the system**

---

<b>Step</b>	<b>Action</b>
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---

- 45** Close the Event Browser tool by doing the following:
- Display the window menu by pressing **Ctrl\_L W** (or Keypad **6**).  
*The window menu appears.*
  - Select the **Exit** command by pressing **Space** (or Keypad **0**).  
*The User Session Manager appears.*

**Final check for alarms and active protection switches**

- 46** Check the banner line at the bottom of the OPC user interface screen. The C, M, m, w and ActProt fields should not have any counts that are not expected. Use the Alarm Monitor tool to check raised alarms.

If alarms are present, refer to *Alarm and Trouble Clearing Procedures*, 323-3001-543, in *Maintenance*, Volume 5A.



**CAUTION**

**Active alarms**

If alarms are active, do not proceed with the next procedure. Call your next level of support or your Nortel Networks support group (see "Appendix C: Technical support information") for help.

—end—

## Procedure 5-2

# Saving pre-system reconfiguration to tape

Use this procedure to save the existing VTBM-based ring system data to tape before you add a new node to it. This procedure is needed if you have to restore the system to its previous state.

### Requirements

To perform this procedure, you must first complete the following:

- read all the information in the previous chapters of this user guide and comply with all of the set up conditions.
- ensure that personnel performing this procedure have root access to the primary OPC.

### Action

Step	Action										
1	Determine whether you are logged in to the primary OPC										
	<table border="1"> <thead> <tr> <th>If you are</th> <th>Then go to</th> </tr> </thead> <tbody> <tr> <td>logged into the primary OPC</td> <td>step 2</td> </tr> <tr> <td><b>not</b> logged into the primary OPC</td> <td>step 3</td> </tr> </tbody> </table>	If you are	Then go to	logged into the primary OPC	step 2	<b>not</b> logged into the primary OPC	step 3				
If you are	Then go to										
logged into the primary OPC	step 2										
<b>not</b> logged into the primary OPC	step 3										
2	Determine what to do if you are logged into the primary OPC.										
	<table border="1"> <thead> <tr> <th>If</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>an OPC tool appears</td> <td>return to the User Session Manager by pressing <b>Ctrl_T 0</b>, then go to step 5</td> </tr> <tr> <td>the User Session Manager appears</td> <td>go to step 5</td> </tr> <tr> <td>the OPC prompt (opc&gt;) appears and the OPC time appears at the bottom right of the screen</td> <td>return to the User Session Manager by pressing <b>Ctrl_T 0</b>, then go to step 5</td> </tr> <tr> <td>the OPC prompt (opc&gt;) appears and the OPC time does not appear at the bottom right of the screen</td> <td>go to step 4</td> </tr> </tbody> </table>	If	Then	an OPC tool appears	return to the User Session Manager by pressing <b>Ctrl_T 0</b> , then go to step 5	the User Session Manager appears	go to step 5	the OPC prompt (opc>) appears and the OPC time appears at the bottom right of the screen	return to the User Session Manager by pressing <b>Ctrl_T 0</b> , then go to step 5	the OPC prompt (opc>) appears and the OPC time does not appear at the bottom right of the screen	go to step 4
If	Then										
an OPC tool appears	return to the User Session Manager by pressing <b>Ctrl_T 0</b> , then go to step 5										
the User Session Manager appears	go to step 5										
the OPC prompt (opc>) appears and the OPC time appears at the bottom right of the screen	return to the User Session Manager by pressing <b>Ctrl_T 0</b> , then go to step 5										
the OPC prompt (opc>) appears and the OPC time does not appear at the bottom right of the screen	go to step 4										

—continued—

Procedure 5-2 (continued)

**Saving pre-system reconfiguration to tape**

- | Step | Action   |
|------|--|
| 3    | <p>Log in to the primary OPC as the 'root' user using the primary OPC port 1 or the primary OPC ethernet port through a telnet session.</p> <p><b>Note:</b> If necessary, refer to "Appendix B: Common procedures," Procedure 7-5, "Logging in to an OPC as a root user."</p> <p><i>The following prompt appears:</i></p> <pre>opc&gt;</pre> |
| 4    | <p>At the OPC prompt (opc&gt;), enter:</p> <pre>opcui ↵</pre> <p><i>The User Session Manager appears.</i></p>  |
| 5    | <p>Tab to the Available tools list, move to the OPC Save and Restore tool, then press <b>Ctrl_A</b> (or Keypad <b>0</b>).</p> <p><i>The OPC Save and Restore main window appears.</i></p>  |
| 6    | <p>Insert a DDS tape into the primary OPC tape drive to store the system data.</p>   |
| 7    | <p>Tab to the <b>Save OPC data to tape</b> button, then press <b>Ctrl_A</b> (or Keypad <b>0</b>).</p> <p><i>The Save confirmation dialog appears, prompting you to confirm your request.</i></p>   |
| 8    | <p>Tab to the <b>Yes</b> button, then press <b>Ctrl_A</b> (or Keypad <b>0</b>).</p> <p><i>A progress dialog appears, indicating that the save operation has been initiated.</i></p>  |

If the DDS tape	Then go to
is blank	step 9
contains data that you are overwriting	<p><i>A confirmation dialog appears.</i></p> <p>If the tape contains a data archive or a software load, a dialog prompts you to confirm your request to overwrite the existing data on the tape.</p> <p>Tab to the <b>OK</b> button, then press <b>Ctrl_A</b> (or Keypad <b>0</b>).</p> <p><i>The progress dialog reappears, indicating the progress of the save operation.</i></p>

- 9 Wait until the save operation is complete. This step can take up to 40 minutes.  
*A completion dialog appears.*

—continued—

## 5-14 Adding AccessNode nodes in a VTBM ring

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Procedure 5-2 (continued)

### Saving pre-system reconfiguration to tape

---

- | Step | Action   |
|------|--|
| 10   | Select the <b>Done</b> button by pressing <b>Ctrl_A</b> (or Keypad <b>0</b> ).<br><i>The completion dialog closes.</i>   |
| 11   | Close the Save and Restore tool: <ol style="list-style-type: none"><li>Display the window menu by pressing <b>Ctrl_L W</b> (or Keypad <b>6</b>).<br/><i>The window menu appears.</i></li><li>Select the <b>Exit</b> command by pressing <b>Space</b> (or Keypad <b>0</b>).<br/><i>The User Session Manager window appears.</i></li></ol> |
| 12   | Eject the tape from the OPC tape drive, label it (system name, current software version (OPC/network element), and store it in a secure place.   |
| 13   | Go to the next procedure.  |

—end—

## Procedure 5-3

# Commissioning the new VTBM ring node

Use this procedure to commission a VTBM ring node in preparation to adding it to an existing VTBM-based ring system.

You can use the backup OPC of the existing VTBM ring system or a spare or a SLAT OPC running the AccessNode software to commission the new node. A SLAT OPC is recommended since the spare or backup OPC will occupy shelf slot positions that would otherwise be used for tributary (for example, DS3, DS1) circuit packs.

## Action

Step	Action
1	Using Table 2-5 on page 2-10, verify which OPC is to be used to commission the new VTBM ring node.

If the value in the OPC field is	Then go to
spare or slat	step 6
backup	step 2

2	Refer to Table 2-4 on page 2-9 to determine the backup OPC port 1 configuration.
---	--

If the value in the "Current backup OPC port 1 configuration" field is	Then
terminal	go to step 3
printer or X.25	perform Procedure 7-3, "Configuring OPC port 1"

3	Go to the site of the ring system containing the backup OPC. Shut down and remove the OPC.
---	--

**Note:** If necessary, refer to "Appendix B: Common procedures," "OPC start or shut down."

4	Go to the site of the new VTBM ring node with the backup OPC and a DDS tape containing the AccessNode software. Insert the OPC in slot 5 of the NE. Log in to the OPC using the <b>root</b> class userID and password.
---	--

**Note:** If necessary, refer to "Appendix B: Common procedures," Procedure 7-5, "Logging in to an OPC as a root user."

—continued—

5-16 Adding AccessNode nodes in a VTBM ring

Procedure 5-3 (continued)

**Commissioning the new VTBM ring node**

- | Step | Action  |
|------|---|
| 5    | Go to step 8.   |
| 6    | Go to the site of the new VTBM ring node with the SLAT or spare OPC running AccessNode software and a DDS tape containing the software. |

If you are using a	Then
SLAT OPC	connect the CNET cable from the CNet port of the SLAT OPC to the CNet port of the new VTBM ring node
spare OPC	insert it in slot 5 of the new VTBM ring node

- |   |  |
|---|--|
| 7 | Log in to the OPC using the <b>root</b> class userID and password.<br><b>Note:</b> If necessary, refer to “Appendix B: Common procedures,” Procedure 7-5, “Logging in to an OPC as a root user.”   |
| 8 | To access the User Session Manager from the opc prompt (opc>), enter:<br><b>opcui</b> ↵<br><i>The User Session Manager window appears. Wait for the OPC to become active before proceeding. The OPC status appears in the Open tools area of the User Session Manager.</i> |
| 9 | Go to the Commissioning Manager tool, then press <b>Ctrl_A</b> (or <b>Keypad 0</b> ).<br><i>A Commissioning Manager window appears.</i>  |

If you are	Then go to
using a new OPC (that is, the cursor points to the Commission new system button)	step 10
not using a new OPC	step 14

- |    |   |
|----|---|
| 10 | Select the <b>Commission new system</b> button by pressing <b>Ctrl_A</b> (or <b>Keypad 0</b> ).<br><i>The System Commissioning Data dialog appears:</i>             |
| 11 | Tab to the System type field and press <b>Ctrl_L</b> / (or <b>Keypad 3</b> ). Move to the <b>AccessNode</b> command, then press <b>Space</b> (or <b>Keypad 0</b> ). |
| 12 | Tab to the <b>OPC name</b> field and enter <b>OPCM999</b> .<br><b>Note:</b> This number can have any value (it is temporary).                                       |

—continued—

Procedure 5-3 (continued)

**Commissioning the new VTBM ring node**

**Step Action**

**13** Tab to the **OK** button, then press **Ctrl\_A** (or Keypad **0**).

*If you select OK, and you entered the information correctly, the System Commissioning Data dialog is removed. The arrow (=>) indicator in the main window moves to the Commission new network element button.*

**14** Move to the correct area of the screen following the directions in the following table:

If the screen cursor is	Then
not on the <b>Commission new network element</b> button	tab to it, then press <b>Ctrl_A</b> (or Keypad <b>0</b> )
on the <b>Commission new network element</b> button	press <b>Ctrl_A</b> (or Keypad <b>0</b> )

The Network Element Commissioning Data dialog appears.

**15** At the Network element number field, enter the new VTBM ring node number recorded in Table 2-1 on page 2-2.

**16** Tab to the **Shelf type** field and display the chooser menu attached to this field by pressing **Ctrl\_L** / (or Keypad **3**).

If the screen cursor is	Then
not on the <b>Commission new network element</b> button	tab to it, then press <b>Ctrl_A</b> (or Keypad <b>0</b> )
on the <b>Commission new network element</b> button	press <b>Ctrl_A</b> (or Keypad <b>0</b> )

*The chooser menu appears.*

**17** Move to the appropriate shelf type (ABM or TBM), then press **Space** (or Keypad **0**).

*The chosen shelf type appears in the field.*

**18** Write the shelf type (ABM or TBM) in the following table:

**Table 5-1  
Shelf type of the new Network elements**

Shelf type

**19** Tab to the Shelf function field and display the chooser menu by pressing **Ctrl\_L** / (or Keypad **3**).

*The chooser menu appears.*

—continued—

5-18 Adding AccessNode nodes in a VTBM ring

Procedure 5-3 (continued)

**Commissioning the new VTBM ring node**

- | Step | Action   |
|------|--|
| 20   | Move to the appropriate shelf function (RFT_BLSR, FCOT_BLSR or TN_BLSR), then press <b>Space</b> (or Keypad <b>0</b> ).<br><i>The chosen shelf function appears in the field.</i>  |
| 21   | Tab to the Shelf serial number field and enter the shelf serial number.<br><b>Note 1:</b> This number appears in a barcode on the shelf frame. The format of the serial number is An h hhhhhh, where n is positive integer and h is a hexadecimal number (Example: A2 C 0200001).<br><b>Note 2:</b> If this serial number is not accepted, call your Nortel Networks representative. |
| 22   | Tab to the Software Release field and display the chooser menu by pressing <b>Ctrl_L</b> / (or Keypad <b>3</b> ).<br><i>The chooser menu appears.</i>  |
| 23   | Move to the appropriate release, then press <b>Space</b> (or Keypad <b>0</b> ). If a release entry does not appear, no release software loads reside on this OPC (they will be added in later steps of this procedure).  |

If no release entry appears	Then
but NONE appears	press <b>Space</b> (or Keypad <b>0</b> )

- 24 Tab to the This network element contains field.
- 25 Move to the **no OPC** button, then press **Ctrl\_A** (or Keypad **0**).  
*A mark appears between the brackets beside no OPC.*
- 26 Tab to the **OK** button, then press **Ctrl\_A** (or Keypad **0**).  
*If you select OK, and you entered the information correctly, the dialog is removed. The network element is added to the list in the main window.*  
**Note:** If any essential data is missing or entered incorrectly, an error dialog that explains the nature of the problem appears. In addition, the Network Element Commissioning Data dialog remains displayed, and each of the fields that needs data, or contains erroneous data, is marked with an "X".
- 27 Return to the User Session Manager by pressing **Ctrl\_T 0**.  
*The Commissioning Manager disappears from view, but remains open, ready for future use.*

**Verifying that the OPC has the correct network element load**

- 28 In the User Session Manager, tab to the Available Tools list, move to the Reboot/Load Manager, then press **Ctrl\_A** (or Keypad **0**).  
*The Reboot/Load Manager main window appears.*

—continued—

Procedure 5-3 (continued)

**Commissioning the new VTBM ring node**

**Step Action**

**29** Move to the newly added node (recorded in Table 2-1 on page 2-2), then press **Ctrl\_A** (or Keypad **0**).

*The network element is highlighted.*

<b>If the Default Release field shows</b>	<b>Then go to</b>
a release lower than the release in the VTBM ring	step 30
NONE	step 34
the same release as in the VTBM ring	step 53

**30** Display the List item menu by pressing **Ctrl\_L** (or Keypad **Enter**).

*The List item menu appears.*

**31** Choose the **Change startup release** command by pressing **Space** (or Keypad **0**).

*The Change Default Release dialog appears.*

**32** In the **Release** field, display the chooser menu by pressing **Ctrl\_L** / (or Keypad **3**).

**33** Move to the release you want to choose.

<b>If the release list</b>	<b>Then go to</b>
shows a release entry, press <b>Space</b> (or Keypad <b>0</b> )	step 53
does not show a release entry, then you must transfer NE loads from tape to the OPC hard disk. Tab to the <b>Cancel</b> button, then press <b>Ctrl_A</b> (or Keypad <b>0</b> )	step 34

**34** Insert the AccessNode software tape into the OPC tape drive.

**35** Return to the User Session Manager by pressing **Ctrl\_T 0**. Move to the NE Software Delivery Manager tool. Press **Ctrl\_A** (or Keypad **0**).

*The NE Software Delivery Manager main window appears.*

<b>If</b>	<b>Then</b>
the disk contains network element loads	These loads automatically appear in the NE Loads To Transfer list.
no NE loads are on the OPC hard disk	<i>a message appears that indicates that either the OPC is not commissioned or no valid NE loads are on the disk. Select the <b>OK</b> button in the warning dialog by pressing <b>Ctrl_A</b> (or Keypad <b>0</b>).</i>

—continued—

5-20 Adding AccessNode nodes in a VTBM ring

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Procedure 5-3 (continued)

**Commissioning the new VTBM ring node**

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<b>Step</b>	<b>Action</b>
<b>36</b>	where you want to deliver network element loads, then press <b>Ctrl_A</b> (or Keypad <b>0</b> ). <i>The destination OPC is highlighted.</i>
<b>37</b>	Tab to the NE Loads To Transfer list.
<b>38</b>	Display the list menu by pressing <b>Ctrl_L</b> / (or Keypad <b>3</b> ). <i>The list menu appears.</i>
<b>39</b>	Move to the <b>Query/Exclude disk loads</b> command, then press <b>Space</b> (or Keypad <b>0</b> ). <i>The network element loads on the OPC hard disk no longer appear in the list.</i>
<b>40</b>	Display the list menu by pressing <b>Ctrl_L</b> / (or Keypad <b>3</b> ). <i>The list menu appears.</i>
<b>41</b>	Move to the <b>Query/Exclude tape loads</b> command, then press <b>Space</b> (or Keypad <b>0</b> ). <i>After about 1 minute, network element loads on the tape appear in the list.</i>
<b>42</b>	To select all the items in the list, press <b>Ctrl_A</b> for the first item, then <b>Ctrl_Z</b> . Press the down arrow key until you reach the end of the list. <i>All items in the list are highlighted.</i>
<b>43</b>	Tab to the <b>Transfer</b> button, then press <b>Ctrl_A</b> (or Keypad <b>0</b> ). <i>The File Transfer Progress dialog appears, indicating that the selected loads are being transferred to the selected OPC. The dialog shows the status of the transfer as well as any error or warning messages.</i> <i>The file transfer takes about 3 minutes for the APU load, about 1 minute for the HMU load, and about 1 minute each for the firmware loads.</i>
<b>44</b>	When the transfer is complete, the Current Stage of Transfer field of the File Transfer Progress dialog indicates that the transfer has completed successfully. Ensure that no messages are in the Error and Warning Messages field. If any messages appear, contact your next level of support or your Nortel Networks support group.
<b>45</b>	Select the <b>Done</b> button by pressing <b>Ctrl_A</b> (or Keypad <b>0</b> ). <i>The File Transfer Progress dialog closes.</i>
<b>46</b>	To close the NE Software Delivery Manager tool: <b>a.</b> Display the window menu by pressing <b>Ctrl_L W</b> (or Keypad <b>6</b> ). <i>The window menu appears.</i> <b>b.</b> Select the <b>Exit</b> command by pressing <b>Space</b> (or Keypad <b>0</b> ). <i>The tool closes revealing the User Session Manager.</i>

—continued—

Procedure 5-3 (continued)

**Commissioning the new VTBM ring node**

- | Step | Action   |
|------|--|
| 47   | Move to the Reboot/Load Manager, then press <b>Ctrl_A</b> (or Keypad <b>0</b> ).<br><i>The Reboot/Load Manager screen appears.</i>   |
| 48   | Display the List item menu by pressing <b>Ctrl_L</b> (or Keypad <b>Enter</b> ).<br><i>The List item menu appears.</i>  |
| 49   | Choose the <b>Change startup release</b> command by pressing <b>Space</b> (or Keypad <b>0</b> ).<br><i>The Change Default Release dialog appears.</i>                                      |
| 50   | In the Release field, display the chooser menu by pressing <b>Ctrl_L</b> / (or Keypad <b>3</b> ).  |
| 51   | Move to the release you want to choose, then press <b>Space</b> (or Keypad <b>0</b> ).   |
| 52   | Tab to the <b>OK</b> button, then press <b>Ctrl_A</b> (or Keypad <b>0</b> ).<br><i>The Change Default Release dialog closes. The release field is updated in the network element list.</i> |

**Download software to the new VTBM ring node**

- 53 Ensure all circuit packs are properly seated in the backplane connectors of the new VTBM ring node. The new VTBM ring node must have at least the following circuit packs:
- PROC (in slot 17 for an ABM shelf or in slot 21 for a TBM shelf)
  - MIC (in slot 20)
  - OC-12 G1 (in slot 9)
  - OC-12 G2 (in slot 10)
- 54 Using Table 2-12 on page 2-18, you can determine if ESI units are required at the new VTBM ring node.

If the entry in Table 2-12 is	Then go to
ESI	step 55
Linetimed	step 60

- 55 Determine if ESI units are equipped in slot 19 (for a FCOT\_BLSR) or slot 23 (for a TN\_BLSR) of the new VTBM ring node.

If ESI units are	Then go to
equipped	step 58
not equipped	step 56

—continued—

5-22 Adding AccessNode nodes in a VTBM ring

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Procedure 5-3 (continued)

**Commissioning the new VTBM ring node**

---

- | Step             | Action   |                  |            |          |         |              |         |
|------------------|--|------------------|------------|----------|---------|--------------|---------|
| 56               | Insert the ESI carrier (NT7E19) into slot 19 (for a FCOT_BLSR) or slot 23 (for a TN_BLSR) of the AccessNode TBM shelf. Secure it into place using the two locking latches.   |                  |            |          |         |              |         |
| 57               | Insert an ESI subunit (NT7E27) into the top (or G1) position of the ESI carrier. Insert the second ESI unit (NT7E27) into the bottom (or G2) position of the ESI carrier. Lock each ESI unit into position by turning the fastener 45 degrees clockwise. |                  |            |          |         |              |         |
| 58               | Record the current date and time:<br><br>Date: _____ Time: _____<br><br>This data is used in a subsequent step.  |                  |            |          |         |              |         |
| 59               | Go to step 62.   |                  |            |          |         |              |         |
| 60               | Determine if ESI units are equipped in slot 19 (for a FCOT_BLSR) or slot 23 (for a TN_BLSR) of the new VTBM ring node.   |                  |            |          |         |              |         |
|                  | <table border="1"><thead><tr><th>If ESI units are</th><th>Then go to</th></tr></thead><tbody><tr><td>equipped</td><td>step 61</td></tr><tr><td>not equipped</td><td>step 62</td></tr></tbody></table>  | If ESI units are | Then go to | equipped | step 61 | not equipped | step 62 |
| If ESI units are | Then go to   |                  |            |          |         |              |         |
| equipped         | step 61  |                  |            |          |         |              |         |
| not equipped     | step 62  |                  |            |          |         |              |         |
| 61               | Remove the ESI subunits (NT7E27) in the top (or G1) and bottom (or G2) positions of the ESI carrier.   |                  |            |          |         |              |         |

—continued—

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 Procedure 5-3 (continued)

**Commissioning the new VTBM ring node**


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Step	Action
62	<p>To start the download, remove the processor (s) (Proc) circuit pack(s) at the new VTBM ring node (slot 21 on the OC-12 shelf), wait at least 5 seconds, and then reinsert them securely into their backplane connectors.</p> <p><i>The download starts. After several seconds, In Progress . . . appears in the Reboot/Load Manager Download Status field. After 5 to 10 minutes, a "-" appears in the Download Status field. At this point, the HMU download has been completed. The Proc circuit pack, however, needs several more minutes to initialize. When the green Active LED on the MIC goes on, initialization is complete.</i></p> <p><b>Note 1:</b> Wait until the association is established between the OPC and the NE before proceeding. The association state change is indicated by the disappearance of the question mark (?) to the left of the network element list item.</p> <p><b>Note 2:</b> Wait for the second processor to be downloaded (if present) before proceeding. Use the Reboot/Load manager to verify the status of the download.</p>
63	Return to the User Session Manager by pressing <b>Ctrl_T 0</b> .
64	Go to the NE Login Manager tool, then press <b>Ctrl_A</b> (or Keypad <b>0</b> ).
65	<p>Tab to the Network Element field and enter the NE number of the new node.</p> <p><b>Note:</b> You can retrieve this number from Table 2-1 on page 2-2.</p>
66	<p>Tab to the <b>Login</b> button, then press <b>Ctrl_A</b> (or Keypad <b>0</b>).</p> <p><i>The network element prompts you to enter a user name as follows.</i></p> <pre>Enter User Name &gt;</pre>
67	<p>At the prompt (&gt;), enter the admin userID:</p> <pre>&lt;admin userID&gt; ↵</pre> <p><i>The network element prompts you to enter the password:</i></p> <pre>Enter Password &gt;</pre>
68	<p>Enter the admin password:</p> <pre>&lt;admin password&gt; ↵</pre> <p><i>The network element user interface appears.</i></p>
69	From Table 5-1 on page 5-17, determine which type shelf is used in the network element.

—continued—

Procedure 5-3 (continued)

**Commissioning the new VTBM ring node**

Step	Action						
70	<p>Determine your next step:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If the shelf is</th> <th style="text-align: left;">Then go to</th> </tr> </thead> <tbody> <tr> <td>a TBM</td> <td>step 71</td> </tr> <tr> <td>an ABM</td> <td>step 82</td> </tr> </tbody> </table>	If the shelf is	Then go to	a TBM	step 71	an ABM	step 82
If the shelf is	Then go to						
a TBM	step 71						
an ABM	step 82						
71	<p>At the main network element user interface, enter:  <b>approve</b> ↵  <b>yes</b> ↵ (it is OK to ignore the warning message)  <b>yes</b> ↵ (it is OK to ignore the warning message)  <i>The network element autoprovisions.</i>  <i>The "Press return to exit" message appears.</i></p>						
72	<p>Press the <b>Return</b> key.  <i>The NE Login Manager window appears.</i></p>						
73	<p>Return to the User Session Manager by pressing <b>Ctrl_T 0</b>.</p>						
74	<p>Move to the Reboot/Load Manager tool, then press <b>Ctrl_A</b> (or Keypad <b>0</b>).  <i>The Reboot/Load Manager screen appears.</i></p>						
75	<p>In the Reboot/Load Manager tool main window, wait for an association to establish with the network element. The '?' does not appear next to the new node number right away. Wait for it to appear and then wait for it to clear.</p>						
76	<p>Return to the User Session Manager by pressing <b>Ctrl_T 0</b>.</p>						
77	<p>In the Open Tools, move to the NE Login Manager tool, then press <b>Ctrl_A</b> (or Keypad <b>0</b>).</p>						
78	<p>Tab to the Network Element field and enter the NE number of the new node.  <b>Note:</b> You can retrieve this number from Table 3-1 on page 3-2.</p>						
79	<p>Tab to the <b>Login</b> button, then press <b>Ctrl_A</b> (or Keypad <b>0</b>).  <i>The network element prompts you to enter a user name as follows.</i>            Enter User Name            &gt;</p>						
80	<p>At the prompt (&gt;), enter the admin userID:  <b>&lt;admin userID&gt;</b> ↵  <i>The network element prompts you to enter the password:</i>            Enter Password            &gt;</p>						

—continued—

Procedure 5-3 (continued)

**Commissioning the new VTBM ring node**

**Step Action**

**81** Enter the admin password:  
**<admin password>** ↵  
*The network element user interface appears.*  
*You are logged into the network element. A message appears that indicates your password has expired. This message is normal since the new VTBM ring node has not been audited by the OPC Centralized User Administration tool.*

**Verifying the hardware baseline**

**82** At the node to be added, access the equipment shelf inventory screen by entering:

**eq sh;inventory** ↵

*The Shelf Inventory screen appears.*

**83** Verify that all units in the shelf inventory meet the minimum baseline requirements as described in “Appendix C: Technical support information.” Verify all pages of the inventory screen.

Use the **f** ↵ and the **b** ↵ commands to move to the next or previous page of the inventory list.

**Note:** You do not have to verify units with no release (that is, the ESI carrier in slot 19 (for an FCOT\_BLSR)).

<b>If</b>	<b>Then</b>
any circuit pack does not meet the minimum baseline requirement	call your next level of support or contact the nearest Regional Service Center listed “Appendix C: Technical support information”
all circuit packs meet the minimum baseline requirement	go to step 84

**Setting the Time zone**

**84** Edit the Time Zone (TZ), by entering:

**eq sh;edit** ↵

**timezone <NE Timezone>** ↵

where

<NE Timezone> is the time zone you recorded in Table 3-1 on page 3-2

*The following warning message appears:*

Warning: Changing the time zone may affect the performance monitoring statistics and the scheduler. Please confirm (“Yes” or “No”):

—continued—

Procedure 5-3 (continued)

**Commissioning the new VTBM ring node**

Step	Action
85	<p>Confirm the request by entering:</p> <p><b>y</b> ↵</p> <p><i>The correct network element time appears in the bottom left corner of the screen.</i></p>

**Setting the exerciser start time**

86	<p>Access the Network Element Schedule user interface screen by entering:</p> <p><b>admin nep</b> ↵</p> <p><b>schedule</b> ↵</p> <p><i>The Network Element Schedule screen appears.</i></p>
----	---

87	<p>Change the exerciser schedule start time to that recorded in Table 2-8 on page 2-14 by entering:</p> <p><b>edit</b> ↵</p> <p><b>strtime 1 &lt;hour&gt; &lt;minute&gt;</b> ↵</p> <p>where</p> <p>&lt;hour&gt;                    is the hour you recorded in Table 2-8</p> <p>&lt;minute&gt;                is the minute you recorded in Table 2-8</p>
----	---

*The Exerciser Start Time field is updated with the new time.*

**Verify the firmware on the OC-12 circuit packs**

88	<p>At the network element user interface for the new VTBM ring node, enter:</p> <p><b>quit all</b> ↵</p> <p><b>tcsfwdl</b> ↵</p> <p><b>query oc12vtm both</b> ↵</p> <p><i>The system returns the current load name for the firmware on the OC12 circuit packs equipped in the shelf. Record the Running load name.</i></p> <p>Running load name for OC-12 G1 unit (slot 9) _____</p> <p>Running load name for OC-12 G2 unit (slot 10) _____</p>
89	<p>Verify that the AccessNode firmware running load name for each OC12 circuit pack.</p>

If the AccessNode firmware for each OC-12 circuit pack is	Then go to
correct	step 91
not correct	step 90

—continued—

Procedure 5-3 (continued)

**Commissioning the new VTBM ring node**

- | Step | Action   |
|------|--|
| 90   | <p>Transfer the correct AccessNode firmware from the OPC to the OC-12 circuit pack by entering:</p> <p><b>download oc12vtm &lt;circuit pack group&gt;</b> ↵</p> <p><b>yes</b> ↵</p> <p>where</p> <p>&lt;circuit pack group&gt;      <b>g1</b> for the OC-12 unit equipped in slot 9<br/>                                  <b>g2</b> for the OC-12 unit equipped in slot 10<br/>                                  <b>both</b> for both OC-12 units if both cards are to be downloaded</p> |

*The AccessNode firmware is transferred from the OPC to the OC-12 circuit pack. This operation takes about 10 minutes per card. Wait for the message: "Download to OC12xx Completed" to appear before proceeding.*

**Note:** Repeat step 90 for the other OC-12 circuit pack in the shelf if it needs the new firmware.

- |    |  |
|----|--|
| 91 | <p>Exit the TCSFWDL CI tool and return to the network element main user interface screen by entering:</p> <p><b>quit</b> ↵</p> <p><b>fwp</b> ↵</p> |
|----|--|

*The Network Element Status Screen appears.*

**Carry out site testing procedures**

- |    |  |
|----|--|
| 92 | Determine if the DS3 and/or DS1 facilities of the new VTBM ring node are connected to a DSX-n patch panel. |
|----|--|

If the DS3 and/or DS1 facilities of the new VTBM ring node are	Then
connected to a DSX-n patch panel	perform Procedure 7-6, "Setting the LBO for DS1 and DS3 facilities" for each DS3 and/or DS1 facility
not connected to a DSX-n patch panel	go to step 93

—continued—

Procedure 5-3 (continued)

**Commissioning the new VTBM ring node**

**Step Action**

93 To carry out site testing procedures.

**Note:** See *Commissioning and Testing*, Volume 3.



**CAUTION**

**Risk of traffic outages**

This step is not optional. It must be performed since it prepares the AccessNode ring optical units so they can be connected to the existing ring system without causing traffic outages. Traffic hits can occur if you do not perform this step.

**Note:** If the new node does not have any electrical tributary circuit packs (for example DS3 or DS1 circuit packs) equipped in it, you must add at least 1 DS3 circuit pack and 1 DS3 I/O or 1 DS1 circuit pack and 1 DS1 I/O to the shelf before performing this step.

**Provisioning BITSA and BITSB parameters**

94 Use Table 2-12 on page 2-18 to determine the timing mode used to set the clocksource on the new VTBM ring node.

If the entry in Table 2-12 is	Then go to
ESI	step 97
Line timed	step 95

95 Set the OC-12 target clock mode to normal by entering:

**eq oc12 g1** ↵  
**edittarg normal** ↵

*The Target Clock Mode field indicates Normal.*

**Note:** This command changes the target clock mode for both OC-12 units (G1 and G2).

96 Go to step 136.

97 Verify that the ESI subunits G1 and G2 are in the IS state and that one is active while the other is standby by entering:

**eq esi g1** ↵

Then, verify that the G2 unit is in the IS state and that it is in the active or standby mode by entering:

**select g2** ↵

—continued—

Procedure 5-3 (continued)

**Commissioning the new VTBM ring node**

- | Step | Action   |
|------|--|
| 98   | Access the BITSA facility screen by entering:<br><b>fa esi bitsa</b> ↵<br><i>A Critical Major minor warning screen appears.</i>                  |
| 99   | Change the facility state to out-of-service (OOS) by entering:<br><b>chgstate oos</b> ↵<br><b>yes</b> ↵<br><i>The State field indicates OOS.</i> |
| 100  | Access the BITSB facility screen by entering:<br><b>fa esi bitsb</b> ↵   |
| 101  | Change the facility state to OOS by entering:<br><b>chgstate oos</b> ↵<br><b>yes</b> ↵<br><i>The State field indicates OOS.</i>                  |
| 102  | Review Table 2-9 on page 2-15.   |

If all fields corresponding to BITSA in Table 2-9	Then go to
are filled with “-”	step 109
are not filled with “-”	step 103

- 103 Access the BITSA facility screen by entering:  
**fa esi bitsa** ↵  
*The ESI BITSA Facility screen appears.*
- 104 Access the edit screen by entering:  
**edit** ↵
- 105 Set the coding format for BITSA by entering:  
**lcoding <coding Format>** ↵  
where  
**<coding format>** is the coding format for BITSA that you entered in Table 2-9  
  
*The Coding Format field indicates the coding format for BITSA recorded in Table 2-9.*

—continued—

## 5-30 Adding AccessNode nodes in a VTBM ring

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Procedure 5-3 (continued)

### Commissioning the new VTBM ring node

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

---

- 106** Set the framing format for BITSA by entering:  
**framefmt <framing format> ↵**

where

<framing format> is the framing format for BITSA that you entered in Table 2-9

*The framing format field indicates the framing format for BITSA recorded in Table 2-9.*

- 107** Set the signal format for BITSA by entering:  
**sigfmt <signal format> ↵**

where

<signal format > is the signal format for BITSA that you entered in Table 2-9

*The Signal format field indicates the signal format for BITSA recorded in Table 2-9*

- 108** Put the BITSA facility back in service (IS) by entering:  
**quit ↵**  
**chgstate is ↵**

*The State field indicates IS.*

- 109** Study Table 2-9.

If all fields corresponding to BITSB in Table 2-9	Then go to
are filled with “-”	step 112
are <b>not</b> filled with “-”	step 110

- 110** Access the BITSB facility screen by entering:  
**fa esi bitsb ↵**

*The ESI BITSB Facility screen appears.*

- 111** Put the BITSB facility back in service by entering:  
**quit ↵**  
**chgstate is ↵**

*The State field indicates IS.*

—continued—

Procedure 5-3 (continued)  
**Commissioning the new VTBM ring node**

**Step Action**

**Provisioning G1OUT parameters**

**112** Access the G1OUT facility screen by entering:

**fa esi g1out** ↵

*The ESI G1OUT facility screen appears:*

**113** Change the facility state to out-of-service by entering:

**chgstate oos** ↵

**yes** ↵

*The State field indicates OOS.*

**114** Review Table 2-10 on page 2-16.

If all fields corresponding to G1OUT in Table 2-10	Then go to
are filled with “-”	step 124
are <b>not</b> filled with “-”	step 115

**115** Access the edit screen by entering:

**edit** ↵

**116** Set the framing format for G1OUT by entering:

**framefmt <framing format>** ↵

where

<framing format> is the framing format for G1OUT that you entered in Table 2-10

*The framing format field indicates the framing format for G1OUT recorded in Table 2-10.*

**117** Set the line build out for G1OUT by entering:

**lbo <line build out>** ↵

where

<line build out > is the line build out value for G1OUT that you entered in Table 2-10

*The line build out field indicates the line build out for G1OUT that you recorded in Table 2-10.*

—continued—

Procedure 5-3 (continued)

**Commissioning the new VTBM ring node**

**Step Action**

**118** Verify the timing reference for G1OUT entered in Table 2-10.

If the timing reference for G1OUT is	Then go to
OC-12 G1	step 119
OC-12 G2	step 121

**119** Change the source to OCA by entering:

**source oca** ↵

*The Source field indicates OCA and the timing reference field indicates OC12 G1.*

**120** Go to step 122.

**121** Change the source to OCB by entering:

**source ocb** ↵

*The Source field indicates OCB and the timing reference field indicates OC12 G2.*

**122** Set the Threshold AIS for G1OUT by entering:

**thresais <Threshold AIS>** ↵

where

<Threshold AIS> is the Threshold AIS value for G1OUT that you entered in Table 2-10

*The Threshold AIS field indicates the Threshold AIS for G1OUT that you recorded in Table 2-10.*

**123** Put the G1OUT facility back in service by entering:

**quit** ↵

**chgstate is** ↵

*The State field indicates IS.*

**Provisioning G2OUT parameters**

**124** Access the G2OUT facility screen by entering:

**fa esi g2out** ↵

*The ESI G2OUT facility screen appears.*

**125** Change the facility state to OOS by entering:

**chgstate oos** ↵

**yes** ↵

*The State field indicates OOS.*

—continued—

Procedure 5-3 (continued)  
**Commissioning the new VTBM ring node**

**Step Action**

**126** Review Table 2-10 on page 2-16.

<b>If all fields corresponding to G2OUT in Table 2-10</b>	<b>Then go to</b>
are filled with “-”	step 136
are not filled with “-”	step 127

**127** Access the edit screen by entering:  
**edit** ↵

**128** Set the framing format for G2OUT by entering:  
**framefmt <framing format>** ↵

where

<framing format> is the framing format for G2OUT that you entered in Table 2-10

*The framing format field indicates the framing format for G2OUT that you recorded in Table 2-10.*

**129** Set the line build out for G2OUT by entering:  
**lbo <line build out>** ↵

where

<line build out> is the line build out value for G2OUT that you entered in Table 2-10

*The line build out field indicates the line build out for G2OUT that you recorded in Table 2-10.*

**130** Verify the timing reference for G2OUT that you entered in Table 2-10.

<b>If the timing reference for G2OUT is</b>	<b>Then go to</b>
OC12 G1	step 131
OC12 G2	step 133

**131** Change the source to OCA by entering:  
**source oca** ↵

*The Source field indicates OCA and the timing reference field indicates OC12 G1.*

—continued—

## 5-34 Adding AccessNode nodes in a VTBM ring

---

Procedure 5-3 (continued)

### Commissioning the new VTBM ring node

---

- | Step | Action  |
|------|---|
| 132  | Go to step 134.   |
| 133  | Change the source to OCB by entering:<br><b>source ocb</b> ↵<br><i>The Source field indicates OCB and the timing reference field indicates OC12 G2.</i> |
| 134  | Set the Threshold AIS for G2OUT by entering:<br><b>thresais &lt;Threshold AIS&gt;</b> ↵   |

where

<Threshold AIS > is the Threshold AIS value for G2OUT that you entered in Table 2-10

*The Threshold AIS field indicates the Threshold AIS for G2OUT that you recorded in Table 2-10.*

- |     |  |
|-----|--|
| 135 | Put the G2OUT facility back in service by entering:<br><b>quit</b> ↵<br><b>chgstate is</b> ↵<br><i>The State field indicates IS.</i> |
|-----|--|

#### Setting the clock source references

- |     |   |
|-----|---|
| 136 | Access the reference protection edit screen by entering:<br><b>pr tp;edit</b> ↵<br><i>The Reference Protection Edit screen appears.</i> |
| 137 | Determine if the first timing reference is used.  |

If the value in the Source field for reference #1 in Table 2-11 is	Then go to
Null	step 140
not Null	step 138

—continued—

Procedure 5-3 (continued)

**Commissioning the new VTBM ring node**

**Step Action**

**138** Provision the first timing reference by entering:

**source 1 <source> ↵**  
**yes ↵**

where

<source> is the source (BITSA, BITSB, G1, G2 or NULL) that you entered for reference #1 in Table 2-11 on page 2-17

*The Source field for reference #1 indicates the source for reference #1 that you recorded in Table 2-11.*

**139** Set the quality level for the first timing reference by entering:

**qlevel 1 <quality level> ↵**  
**yes ↵**

where

<quality level> is the value of the Quality Level that you entered for reference #1 in Table 2-11

*The QLevel field for reference #1 indicates the quality level for reference #1 that you recorded in Table 2-11.*

**Note:** If the quality level recorded in Table 2-11 is set to Auto, then the QLevel field displays DUS.

**140** Determine if the second timing reference is used.

If the value in the Source field for reference #2 in Table 2-11 is	Then go to
Null	step 143
not Null	step 141

**141** Provision the second timing reference by entering:

**source 2 <source> ↵**  
**yes ↵**

where

<source> is the source (BITSA, BITSB, G1, G2 or NULL) that you entered for reference #2 in Table 2-11

*The Source field for reference #2 indicates the source for reference #2 that you recorded in Table 2-11.*

—continued—

Procedure 5-3 (continued)

**Commissioning the new VTBM ring node**

---

**Step Action**

---

**142** Set the quality level for the second timing reference by entering:  
**qllevel 2 <quality level> ↵**  
**yes ↵**

where

<quality level> is the value of the quality level that you entered for reference #2 in Table 2-11

*The QLevel field for reference #2 indicates the quality level for reference #2 that you recorded in Table 2-11.*

**Note:** If the quality level that you recorded in Table 2-11 is set to Auto, then the QLevel field displays DUS.

**143** Determine if the third timing reference is used.

<b>If the value in the Source field for reference #3 in Table 2-11 is</b>	<b>Then go to</b>
Null	step 146
not Null	step 144

**144** Provision the third timing reference by entering:

**source 3 <source> ↵**  
**yes ↵**

where

<source> is the source (BITSA, BITSB, G1 G2 or NULL) that you entered for reference #3 in Table 2-11

*The Source field for reference #3 indicates the source for reference #3 that you recorded in Table 2-11.*

—continued—

Procedure 5-3 (continued)

**Commissioning the new VTBM ring node**

**Step Action**

**145** Set the quality level for the third timing reference by entering:  
**qllevel 3 <quality level>** ↵  
**yes** ↵

where

<quality level> is the value of the Quality Level that you entered for reference #3 in Table 2-11

*The QLevel field for reference #3 indicates the quality level for reference #3 recorded in Table 2-11.*

**Note:** If the quality level recorded in Table 2-11 is set to Auto, then the QLevel field display DUS.

**146** Determine if the fourth timing reference is used.

If the value in the Source field for reference #4 in Table 2-11 is	Then go to
Null	step 149
not Null	step 147

**147** Provision the fourth timing reference by entering:  
**source 4 <source>** ↵  
**yes** ↵

where

<source> is the source (BITSA, BITSB, G1, G2 or NULL) that you entered for reference #4 in Table 2-11

*The Source field for reference #4 indicates the source for reference #4 that you recorded in Table 2-11.*

—continued—

5-38 Adding AccessNode nodes in a VTBM ring

Procedure 5-3 (continued)

**Commissioning the new VTBM ring node**

**Step Action**

**148** Set the quality level for the fourth timing reference by entering:

**qllevel 4 <quality level> ↵**  
**yes ↵**

where

<quality level> is the value of the Quality Level that you entered for reference #4 in Table 2-11

*The QLevel field for reference #4 indicates the quality level for reference #4 that you recorded in Table 2-11*

**Note:** If the quality level recorded in Table 2-11 is set to Auto, then the QLevel field displays DUS.

**Setting the shelf timing source**

**149** Access the Shelf Equipment edit screen by entering:

**eq sh;edit ↵**

*The Shelf Equipment screen appears.*

**150** Set the shelf timing source by entering:

**clocksrc <Clocksource> ↵**  
**yes ↵**

where

<Clocksource> is the value of the clock source that you entered in Table 2-12 on page 2-18

*The Clock Source field indicates the clock source that you recorded in Table 2-12.*

**151** Use Table 2-8 on page 2-14 to determine if the NT4K86 cable needs to be connected to the new VTBM ring node External Sync port.

<b>If all the fields in Table 2-8</b>	<b>Then</b>
are filled with “-”	go to step 152
are not filled with “-”	connect the NT4K86 cable to the external sync port as shown in Appendix B: Common procedures, “ESI carrier unit installation in a TBM shelf”

—continued—

Procedure 5-3 (continued)

**Commissioning the new VTBM ring node**

- | Step       | Action  |
|------------|---|
| <b>152</b> | <p>Access the active alarms network element user interface screen by entering: <b>alarms</b> ↵</p> <p><i>The active alarms list appears.</i></p> <p>The following alarms are expected at the new node. However, not all of them might be reported:</p> <ul style="list-style-type: none"> <li>• ESI G1 Tx AIS (only if the new node is equipped with ESI units and G1OUT and G2OUT have not been put in the OOS state)</li> <li>• ESI G2 Tx AIS (only if the new node is equipped with ESI units and G1OUT and G2OUT have not been put in the OOS state)</li> <li>• ESI G1 Timing generation entry to (fast) acquire</li> <li>• SONET DCC link fail</li> <li>• OC12 G1 Rx LOS</li> <li>• OC12 G2 Rx LOS</li> <li>• DS1 STS Rx Unequipped</li> <li>• DS3 STS Rx Unequipped</li> <li>• OC12 G1 Maps Invalid</li> <li>• OC12 G2 Maps Invalid</li> <li>• timing reference fail (if the new node is Linetimed)</li> <li>• OC12 G1 Entry to SONET clock acquire (for Linetimed nodes)</li> <li>• OC12 G2 Entry to SONET clock acquire (for Linetimed nodes)</li> <li>• CE Sonet Overhead data/clock loss</li> <li>• MAPS Invalid (when new node is physically connected, on both NEs adjacent to new node)</li> </ul> <p>If other alarms are active, call your next level of support or your Nortel Networks support group.</p> |
| <b>153</b> | <p>Return to the User Session Manager by pressing <b>Ctrl_T 0</b>.</p> <p><b>Spare, backup, or SLAT OPC removal</b></p>   |
| <b>154</b> | <p>Determine what type of OPC you have been using.</p>  |

If you used	Then
a SLAT OPC to commission the new VTBM ring node	disconnect the CNET cable, eject the tape from the tape drive, and go to step 155
the backup or spare OPC to commission the new VTBM ring node	eject the tape from the tape drive and go to step 157

—continued—

5-40 Adding AccessNode nodes in a VTBM ring

Procedure 5-3 (continued)

**Commissioning the new VTBM ring node**

- | Step | Action  |
|------|---|
| 155  | Shut down and power down the SLAT OPC. Refer to "Appendix B: Common procedures," "OPC start or shut down," starting at step 14. |
| 156  | Go to step 1 in Procedure 5-5, "Adding the new VTBM ring node to the existing VTBM-based ring."                                 |
| 157  | Shut down and remove the backup or spare OPC. Refer to Appendix B: Common procedures, "OPC start or shut down."                 |
| 158  | Determine whether the backup OPC or a spare OPC is being used.  |

If you used	Then go to
the backup OPC to commission the new VTBM ring node	step 159
a spare OPC to commission the new VTBM ring node	Procedure 5-5, "Adding the new VTBM ring node to the existing VTBM-based ring."

- 159 Return and insert the backup OPC in its original network element shelf position in the existing ring system.

If the backup OPC port 1 was	Then
reconfigured in step 2	reconfigure port 1 back to its original setting (either printer or X.25). If necessary, refer to "Appendix B: Common procedures," "Configuring OPC port 1."
not reconfigured in step 2	go to step 160

**Verifying the CNET link fail status at backup OPC network element**

- 160 Connect a VT-100 terminal to the craft user interface port 2 on the network element that houses the backup OPC (use an NT7E44FA or NT7E44FB cable).
- 161 Press the **break** key.  
*The Login prompt appears.*

—continued—

Procedure 5-3 (continued)

**Commissioning the new VTBM ring node**

- | Step | Action   |
|------|--|
| 162  | <p>At the login prompt, enter:<br/> <b>login</b> ↵<br/> <i>The following message appears:</i><br/>           Enter user name<br/>           &gt;<br/>           Enter the admin userID:<br/> <b>&lt;admin userID&gt;</b> ↵<br/> <i>The following prompt appears:</i><br/>           Enter Password<br/>           &gt;</p> |
| 163  | <p>Enter the admin password:<br/> <b>&lt;admin password&gt;</b> ↵<br/> <i>The network element user interface appears.</i></p>  |
| 164  | <p>Access the equipment shelf alarm provisioning screen by entering:<br/> <b>eq sh</b> ↵<br/> <b>almprov</b> ↵<br/> <i>The Shelf Alarm Provisioning screen appears.</i></p>  |
| 165  | <p>Using the equipment shelf alarm provisioning screen, determine the CNET link fail status.</p>   |

If the CNET link fail status is	Then go to
off	Change the CNET link fail status to on by entering: <b>editstat 2</b> ↵ <i>The CNET link fail status indicates On.</i>
on	Disconnect the cable between the VT-100 terminal and the craft User Interface port 2.

- 166 Go to the next procedure

—end—

# Procedure 5-4 Commissioning the new VTBM ring node on the primary OPC

Use this procedure to commission the new VTBM ring node on the primary OPC of the existing ring system.

## Action

Step	Action						
1	Determine if ESI units are equipped in slot 23 of the new VTBM ring node. <table border="1" data-bbox="522 741 1408 861"> <thead> <tr> <th>If ESI units are</th> <th>Then go to</th> </tr> </thead> <tbody> <tr> <td>equipped</td> <td>step 2</td> </tr> <tr> <td>not equipped</td> <td>step 3</td> </tr> </tbody> </table>	If ESI units are	Then go to	equipped	step 2	not equipped	step 3
If ESI units are	Then go to						
equipped	step 2						
not equipped	step 3						
2	The ESI units must have soaked for at least 4 hours before proceeding. Ensure that 4 hours have elapsed since the time recorded in step 58 in Procedure 5-3. <table border="1" data-bbox="522 999 1408 1150"> <thead> <tr> <th>If 4 hours have</th> <th>Then</th> </tr> </thead> <tbody> <tr> <td>elapsed</td> <td>go to step 3</td> </tr> <tr> <td>not elapsed</td> <td>wait until 4 hours have elapsed and then go to step 3</td> </tr> </tbody> </table>	If 4 hours have	Then	elapsed	go to step 3	not elapsed	wait until 4 hours have elapsed and then go to step 3
If 4 hours have	Then						
elapsed	go to step 3						
not elapsed	wait until 4 hours have elapsed and then go to step 3						
3	<p>To initialize the Proc circuit pack at the new VTBM ring node, a local OPC is required to download software using the CNet bus (or backplane). This initial downloading cannot be performed over the fiber.</p> <p>To allow the primary and the backup OPC to communicate with this new node, the VTBM ring node commissioning data must be entered on the primary OPC.</p> <p>Log in to the primary OPC of the existing ring system using the <b>root</b> class userID and password.</p> <p><b>Note:</b> If necessary, refer to “Appendix B: Common procedures,” “Logging in to an OPC as a root user.”</p>						
4	<p>To access the User Session Manager from the opc prompt (opc&gt;), entering:</p> <p><b>opcui ↵</b></p> <p><i>The User Session Manager window appears. Wait for the OPC to become active before proceeding. The OPC status appears in the Open tools area of the User Session Manager.</i></p>						

—continued—

Procedure 5-4 (continued)

**Commissioning the new VTBM ring node on the primary OPC**

Step	Action
5	Go to the Commissioning Manager tool, then press <b>Ctrl_A</b> (or Keypad <b>0</b> ). <i>A Commissioning Manager window appears.</i>
6	Tab to the <b>Commission new network element</b> button, then press <b>Ctrl_A</b> (or Keypad <b>0</b> ). <i>The Network Element Commissioning Data dialog appears.</i>
7	At the Network element number field, enter the new VTBM ring node number that you recorded in Table 2-1 on page 2-2.
8	Tab to the Shelf type field and display the chooser menu by pressing <b>Ctrl_L</b> / (or Keypad <b>3</b> ). <i>The chooser menu appears.</i>
9	Move to the appropriate shelf type (ABM/TBM), then press <b>Space</b> (or Keypad <b>0</b> ). <i>The chosen shelf type appears in the field.</i>
10	Tab to the Shelf function field and display the chooser menu by pressing <b>Ctrl_L</b> / (or Keypad <b>3</b> ). <i>The chooser menu appears.</i>
11	Move to the appropriate shelf function (RFT_BLSR or FCOT_BLSR), then press <b>Space</b> (or Keypad <b>0</b> ). <i>The chosen shelf function appears in the field.</i>
12	Tab to the Shelf serial number field and enter the shelf serial number. <b>Note 1:</b> This number appears in a barcode on the shelf frame. The format of the serial number is An h hhhhhh, where n is positive integer and h is a hexadecimal number (for example, A2 C 0200001) <b>Note 2:</b> If this serial number is not accepted, call your Nortel Networks representative.
13	Tab to the Software Release field and display the chooser menu by pressing <b>Ctrl_L</b> / (or Keypad <b>3</b> ). <i>The chooser menu appears.</i>
14	Move to the appropriate release, then press <b>Space</b> (or Keypad <b>0</b> ).
15	Tab to the This network element contains field.
16	Move to the <b>no OPC</b> button, then press <b>Ctrl_A</b> (or Keypad <b>0</b> ). <i>A mark appears between the brackets beside no OPC.</i>

—continued—

## 5-44 Adding AccessNode nodes in a VTBM ring

---

Procedure 5-4 (continued)

### Commissioning the new VTBM ring node on the primary OPC

---

- | Step | Action |
|------|--------|
|------|--------|
- 17** Tab to the **OK** button, then press **Ctrl\_A** (or Keypad **0**).
- If you select OK, and you entered the information correctly, the dialog is removed. The network element is added to the list in the main window.*
- Note:** If any essential data is missing or entered incorrectly, an error dialog that explains the nature of the problem appears. In addition, the Network Element Commissioning Data dialog remains displayed, and each of the fields that needs data, or contains incorrect data, is marked with an X.
- 18** Use Table 2-4 on page 2-9 to determine whether the system has a backup OPC.
- | If the value in the Backup OPC name field is | Then go to |
|--|------------|
| other than Not Equipped                      | step 19    |
| Not Equipped                                 | step 22    |
- 19** Tab to the **Transfer data to Backup OPC** button, then press **Ctrl\_A** (or Keypad **0**).
- A confirmation dialog appears.*
- 20** Tab to the **Yes** button, then press **Ctrl\_A** (or Keypad **0**).
- The confirmation dialog disappears and the commissioning data is transferred from the primary OPC to the backup OPC. When the process is complete, a notification dialog appears.*
- Note:** The transfer may take from 4 to 30 minutes.
- 21** Select the **Done** button by pressing **Ctrl\_A** (or Keypad **0**).
- The notification dialog disappears.*
- 22** Close the Commissioning Manager tool:
- Display the window menu by pressing **Ctrl\_L W** (or Keypad **6**).
- The window menu appears.*
- Select the **Exit** command by pressing **Space** (or Keypad **0**).
- The tool closes revealing the User Session Manager.*
- 23** Got to the next procedure.

—end—

## Procedure 5-5

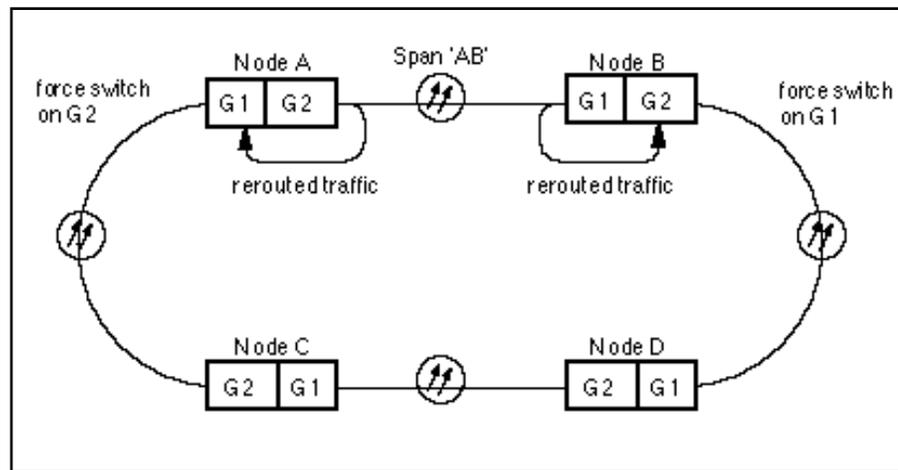
# Adding the new VTBM ring node to the existing VTBM-based ring

Use this procedure to physically add the new VTBM ring node to the existing ring system.

To insert the new VTBM ring node on a given span, a manual switch command is issued at one of the two nodes bounding this span and will take effect at both ends (an automatic protection switch will automatically occur at the other end bounding this span). The alarms are verified at the other end before you apply a forced switch at both ends. At this point, the fibers can be disconnected and the new VTBM ring node cabled in.

As shown in Figure 5-1, to insert the new VTBM ring node, issue a forced switch command at the two nodes that bound the span where the new VTBM ring node will be inserted (in this example, span AB). Never perform a Lockout request on the optics. Otherwise, traffic is retained on the working card instead of switching to protection path.

**Figure 5-1**  
Operating a forced switch on Span AB†



—continued—

Procedure 5-5 (continued)

**Adding the new VTBM ring node to the existing VTBM-based ring**

**Action**

---

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

---

**Operating a forced switch on Span AB of the node to be added**

1 Tab to the Available Tools list in the User Session Manager of the VTBM ring primary OPC. Move to the NE Login Manager tool. Press **Ctrl\_A** (or Keypad **0**).

*The NE Login Manager window appears.*

2 Tab to the Network Element field and enter the network element number that you recorded in Table 2-13 on page 2-20 in the “Node #” field.

3 Tab to the **Login** button, then press **Ctrl\_A** (or Keypad **0**).

*The network element prompts you to enter a user name as follows.*

```
Enter User Name
>
```

4 At the prompt (>), enter the admin userID:

**<admin userID>** ↵

*The network element prompts you to enter the password:*

```
Enter Password
>
```

5 Enter the admin password:

**<admin password>** ↵

*The network element user interface appears.*

6 Access the OC-12 protection screen and issue a manual switch on the circuit pack group that you entered in Table 2-13 on page 2-20 in the “Circuit Pack of the adjacent node” field. A short traffic hit (< 50 ms) occurs when you issue this command.

```
pr dp oc12 ↵
manual op <circuit pack group> ↵
yes ↵
```

where

<circuit pack group> is the value (g1 or g2) that you entered in Table 2-13 in the “Circuit pack of the adjacent node” field

*An asterisk (\*) appears in the Manual switch column for the selected network element.*

—continued—

Procedure 5-5 (continued)

**Adding the new VTBM ring node to the existing VTBM-based ring**

Step	Action
7	<p>Access the active alarms network element user interface screen by entering:  <b>alarms</b> ↵</p> <p><i>The active alarms list appears.</i></p> <p>The following alarms are expected:</p> <ul style="list-style-type: none"> <li>• OC-12 Manual switch request</li> <li>• OC-12 Protection switch complete</li> <li>• OC-12 Entry to SONET clock acquire (if node is linetimed).</li> </ul>
8	<p>Return to the User Session Manager by pressing <b>Ctrl_T 0</b>.</p>
9	<p>In the Open Tools, move to the NE Login Manager tool, then press <b>Ctrl_A</b> (or Keypad <b>0</b>).</p> <p><i>The NE Login Manager window appears.</i></p>
10	<p>Tab to the Network Element field and enter the network element number that you recorded in Table 2-14 on page 2-21 in the "Node #" field.</p>
11	<p>Tab to the <b>Login</b> button, then press <b>Ctrl_A</b> (or Keypad <b>0</b>).</p> <p><i>The network element prompts you to enter a user name as follows.</i></p> <pre>Enter User Name &gt;</pre>
12	<p>At the prompt (&gt;), enter the admin userID:  <b>&lt;admin userID&gt;</b> ↵</p> <p><i>The network element prompts you to enter the password:</i></p> <pre>Enter Password &gt;</pre>
13	<p>Enter the admin password:  <b>&lt;admin password&gt;</b> ↵</p> <p><i>The network element user interface appears.</i></p>
14	<p>Access the active alarms network element user interface screen by entering:  <b>alarms</b> ↵</p> <p><i>The active alarms list appears.</i></p> <p>The following alarm is expected:</p> <ul style="list-style-type: none"> <li>• OC-12 Protection switch complete</li> </ul> <p>If other alarms are active, call your next level of support or your Nortel Networks support group.</p>

—continued—

Procedure 5-5 (continued)

**Adding the new VTBM ring node to the existing VTBM-based ring**

---

<b>Step</b>	<b>Action</b>
15	Return to the User Session Manager by pressing <b>Ctrl_T 0</b> .
16	In the User Session Manager, move to the opened NE Login session for the node recorded in Table 2-13. Press <b>Ctrl_A</b> (or Keypad <b>0</b> ). <i>The Network Element User interface screen appears.</i>
17	Access the OC-12 protection screen and issue a forced switch on the circuit pack group that you entered in Table 2-13 on page 2-20 in the “Circuit pack of the adjacent node” field. <b>pr dp oc12 ↵</b> <b>forced op &lt;circuit pack group&gt; ↵</b> <b>yes ↵</b>

where

<circuit pack group> is the value (g1 or g2) that you entered in Table 2-13 in the “Circuit pack of the adjacent node” field

*An asterisk (\*) appears in the Forced switch column for the selected network element. The manual switch is released.*



**Warning**

**Risk of traffic loss**

Do not perform a Lockout request on any of the optical cards instead of a forced switch, as a loss of traffic occurs when the fiber is disconnected.

**Operating a forced switch on span AB on the node that will connect to OC-12 circuit pack G2 of the node to be added.**

18 In the User Session Manager, move to the opened NE Login session for the node that you recorded in Table 2-14 on page 2-21. Press **Ctrl\_A** (or Keypad **0**).

*The Network Element User interface screen appears.*

—continued—

Procedure 5-5 (continued)

**Adding the new VTBM ring node to the existing VTBM-based ring**

Step	Action
19	<p>Access the OC-12 protection screen and issue a forced switch on the circuit pack group entered in Table 2-14 on page 2-21 in the “Circuit pack of the adjacent node” field.</p> <pre>pr dp oc12 ↵ forced op &lt;circuit pack group&gt; ↵ yes ↵</pre>

where

<circuit pack group> is the value (g1 or g2) that you entered in Table 2-14 in the “Circuit pack of the adjacent node” field

*An asterisk (\*) appears in the Forced switch column for the selected network element. It replaces the Forced switch ‘remote’ indicator (\*R).58.*

**Putting OC-12 facilities out-of-service in span AB**

20	<p>Put the OC-12 facility of the circuit pack group recorded in Table 2-14 in the OOS state by entering:</p> <pre>fa oc12 &lt;circuit pack group&gt; ↵ chgstate oos ↵ yes ↵</pre>
----	---

where

<circuit pack group> is the value (g1 or g2) that you entered in Table 2-14 in the “Circuit pack of the adjacent node” field

*The State field indicates OOS.*

The following alarm is expected at the adjacent nodes if they are linetimed:

- timing reference fail

The following alarm is expected at Adjacent node A:

- OC-12 Gx Receive AIS

—continued—

5-50 Adding AccessNode nodes in a VTBM ring

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Procedure 5-5 (continued)

**Adding the new VTBM ring node to the existing VTBM-based ring**

---

Step	Action
21	Return to the User Session Manager by pressing <b>Ctrl_T 0</b> .
22	Go to the opened NE Login session for the node that you recorded in Table 2-13 on page 2-20. Press <b>Ctrl_A</b> (or Keypad <b>0</b> ). <i>The Network Element User interface screen appears.</i>
23	Put the OC-12 facility of the circuit pack group recorded in Table 2-13 in the OOS state by entering: <b>fa oc12 &lt;circuit pack group&gt; ↵</b> <b>chgstate oos ↵</b> <b>yes ↵</b>

where

<circuit pack group> is the value (g1 or g2) that you entered in Table 2-13 in the "Circuit pack of the adjacent node" field

*The State field indicates OOS.*

The following alarm clears at **Adjacent Node A**:

- OC-12 Gx Receive AIS

24 Return to the User Session Manager by pressing **Ctrl\_T 0**.

**Connecting the new VTBM ring node to the existing VTBM ring**

Alarms are raised when connecting the new node to the existing VTBM ring:

- SONET DCC link fail minor alarms are raised. They clear after the new node has been cabled in the existing ring.
- If the adjacent node is linetimed, the timing reference interface fail alarm is raised if the timing is derived from the OC-12 facilities that were put OOS.
- After the new node is added, OC12 G1 and OC12 G2 Rx AIS critical alarms and invalid neighbor detected major alarms might be raised. These alarms clear when the new node maps are sent to the network elements.

25 At the site of the network element that you recorded in Table 2-13 on page 2-20, disconnect the fibers that terminate on the OC-12 circuit pack that has its green activity LED turned off (the circuit pack recorded in Table 2-13).

**Note:** Circuit pack G1 is in slot 9 and circuit pack G2 is in slot 10.

—continued—

Procedure 5-5 (continued)

**Adding the new VTBM ring node to the existing VTBM-based ring**

- | Step   | Action   |  |            |      |         |                 |         |
|--|--|--|------------|------|---------|-----------------|---------|
| 26   | Verify if you need to change the optical circuit pack that will connect to G1 of the new node.   |  |            |      |         |                 |         |
|  | <table border="1"> <thead> <tr> <th>If the value entered in Table 2-20 on page 2-30 is</th> <th>Then go to</th> </tr> </thead> <tbody> <tr> <td>none</td> <td>step 40</td> </tr> <tr> <td>other than none</td> <td>step 27</td> </tr> </tbody> </table>  | If the value entered in Table 2-20 on page 2-30 is | Then go to | none | step 40 | other than none | step 27 |
| If the value entered in Table 2-20 on page 2-30 is | Then go to   |  |            |      |         |                 |         |
| none   | step 40  |  |            |      |         |                 |         |
| other than none                                    | step 27  |  |            |      |         |                 |         |
| 27   | Attach one end of the antistatic wrist strap to the electrostatic discharge (ESD) jack on the shelf and the other end to your wrist.   |  |            |      |         |                 |         |
| 28   | Gently pull out the circuit pack to the extent necessary to disconnect it from the backplane connector.<br><b>Note 1:</b> Be careful when pulling out the circuit pack to prevent stress to the optical patchcord or pigtail.<br><b>Note 2:</b> A "Circuit pack missing" minor alarm is raised at the network element. This alarm clears after you insert the new OC-12 VTBM circuit pack.                                 |  |            |      |         |                 |         |
| 29   | Remove the circuit pack from the shelf.  |  |            |      |         |                 |         |
| 30   | Install the new circuit pack (recorded in Table 2-20) in the shelf without inserting it into the backplane connector (that is, the circuit pack must not be powered). Wait at least 20 seconds before reinserting a removed circuit pack.  |  |            |      |         |                 |         |
| 31   | Firmly push the new circuit pack (recorded in Table 2-20) all the way into its position and into the backplane connector.<br><b>Note:</b> After insertion, the red fail LED and the yellow LOS LED turn on for several seconds until the circuit pack achieves full operation. If the red fail LED stays lit, do not replace the OC-12 unit. The LED may be lit because the OC-12 unit does not have the correct firmware. |  |            |      |         |                 |         |
| 32   | Wait 2 minutes before proceeding with the next step to allow the OC-12 VTBM circuit pack to properly initialize.   |  |            |      |         |                 |         |
| 33   | In the User Session Manager, move to the opened NE Login session of the network element recorded in Table 2-13 on page 2-20, then press <b>Ctrl_A</b> (or Keypad <b>0</b> ).<br><i>The network element user interface appears.</i>   |  |            |      |         |                 |         |

—continued—

Procedure 5-5 (continued)

**Adding the new VTBM ring node to the existing VTBM-based ring**

**Step Action**

**34** At the network element user interface enter:  
**quit all** ↵  
**tcsfwdl** ↵  
**query oc12VTM <circuit pack group>** ↵

where

<circuit pack group> is the value (g1 or g2) recorded in Table 2-13 on page 2-20

*The system returns the current load name for the firmware on the OC-12 circuit pack where the firmware is verified (Circuit pack G1 is in slot 9 and circuit pack G2 is in slot 10). Record the Running load name.*

Running load name \_\_\_\_\_

**35** Verify that the OC-12 firmware running load name for that circuit pack matches the OC-12 firmware.

If the OC-12 firmware is	Then go to
correct	step 37
not correct	step 36

**36** Transfer the correct OC-12 firmware from the OPC to the OC-12 circuit pack by entering:

**download oc12VTM <circuit pack group>** ↵  
**yes** ↵

where

<circuit pack group> is the value (g1 or g2) that you entered in Table 2-13

*The OC-12 firmware is transferred from the OPC to the OC-12 circuit pack. This operation takes about 15 minutes. Wait for the message: "Download to OC12xx Completed" to appear before proceeding.*

**37** Exit the TCSFWDL CI tool and return to the network element main user interface screen by entering:

**quit** ↵  
**fwp** ↵

*The Network Element Status Screen appears.*

**38** Return to the User Session Manager by pressing **Ctrl\_T 0**.

—continued—

Procedure 5-5 (continued)

**Adding the new VTBM ring node to the existing VTBM-based ring**

**Step Action**

**39** View the OC-12 circuit pack red unit fail LED.

If the OC-12 circuit pack red unit fail LED is	Then
lit	the OC-12 circuit pack is faulty and needs to be replaced. Disconnect the fibers that terminate on that circuit pack and repeat steps 27 to 39 with another OC-12 circuit pack of the same type as the one you recorded in Table 2-20 on page 2-30
not lit	go to step 40

**Note:** If you are at this step for the second time, call your next level of support or your Nortel Networks support group.

**40** Connect the fibers that come from the G1 circuit pack of the new node to the OC-12 circuit pack which has its green activity LED turned off.

**41** At the site of the network element that you recorded in Table 2-14, disconnect the fibers that terminate on the OC-12 circuit pack, which has its green activity LED turned off (the circuit pack that you recorded in Table 2-14).

**Note:** Circuit pack G1 is in slot 9 and circuit pack G2 is in slot 10.

**42** Verify if you need to change the optical circuit pack which will connect to G2 of the new node.

If the value entered in Table 2-21 on page 2-30 is	Then go to
none	step 56
other than none	step 43

**43** Attach one end of the antistatic wrist strap to the electrostatic discharge (ESD) jack on the shelf and the other end to your wrist.

**44** Gently pull out the circuit pack to the extent necessary to disconnect it from the backplane connector.

**Note 1:** Be careful when pulling out the circuit pack to prevent stress to the optical patchcord or pigtail.

**Note 2:** A "Circuit pack missing" minor alarm is raised at the network element. This alarm will clear once the new OC-12 VTBM circuit pack is inserted.

**45** Remove the circuit pack from the shelf.

**46** Install the new circuit pack (recorded in Table 2-21) in the shelf without inserting it into the backplane connector (that is, the circuit pack must not be powered). Wait at least 20 seconds before reinserting a removed circuit pack.

—continued—

## 5-54 Adding AccessNode nodes in a VTBM ring

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Procedure 5-5 (continued)

### Adding the new VTBM ring node to the existing VTBM-based ring

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- | Step | Action  |
|------|---|
| 47   | Firmly push the new circuit pack (recorded in Table 2-21) all the way into its position and into the backplane connector.<br><b>Note:</b> After insertion, the red fail LED and the yellow LOS LED turn on for several seconds until the circuit pack achieves full operation. If the red fail LED stays lit, do not replace the OC-12 unit. The LED may be lit because the OC-12 unit does not have the correct firmware.  |
| 48   | Wait 2 minutes before proceeding with the next step to allow the OC-12 VTBM circuit pack to properly initialize.  |
| 49   | In the User Session Manager, move to the opened NE Login session of the network element recorded in Table 2-14, then press <b>Ctrl_A</b> (or <b>Keypad 0</b> ).<br><i>The network element user interface appears.</i>   |
| 50   | At the network element user interface enter:<br><b>quit all</b> ↵<br><b>tcsfwdl</b> ↵<br><b>query oc12VTM &lt;circuit pack group&gt;</b> ↵<br><br>where<br><br><circuit pack group> is the value (g1 or g2) that you recorded in Table 2-14<br><br><i>The system returns the current load name for the firmware on the OC-12 circuit pack where the firmware is verified (Circuit pack G1 is in slot 9 and circuit pack G2 is in slot 10). Record the Running load name.</i><br>Running load name _____ |
| 51   | Verify that the OC-12 firmware running load name for that circuit pack matches.   |

If the OC-12 firmware is	Then go to
correct	step 53
not correct	step 52

—continued—

Procedure 5-5 (continued)

**Adding the new VTBM ring node to the existing VTBM-based ring**

- | Step | Action   |
|------|--|
| 52   | <p>Transfer the correct OC-12 firmware from the OPC to the OC-12 circuit pack by entering:</p> <pre>download oc12VTM &lt;circuit pack group&gt; ↵ yes ↵</pre> <p>where</p> <p>&lt;circuit pack group&gt; is the value (g1 or g2) that you recorded in Table 2-15 on page 2-22</p> <p><i>The OC-12 firmware is transferred from the OPC to the OC-12 circuit pack. This operation takes about 20 minutes. Wait for the message: "Download to OC12xx Completed" to appear before proceeding.</i></p> |
| 53   | <p>Quit out the TCSFWDL CI tool and return to the network element main user interface screen by entering:</p> <pre>quit ↵ fwp ↵</pre> <p><i>The Network Element Status Screen appears.</i></p>   |
| 54   | Return to the User Session Manager by pressing <b>Ctrl_T 0</b> .   |
| 55   | View the OC-12 circuit pack's red unit fail LED.   |

If the OC-12 circuit pack's red unit fail LED is	Then
lit	the OC-12 circuit pack is faulty and needs to be replaced. Disconnect the fibers which terminate on that circuit pack and repeat steps 43 to 55 with another OC-12 circuit pack of the same type that you recorded in Table 2-21 on page 2-30
not lit	go to step 56

**Note:** If you are at this step for the second time, call your next level of support or your Nortel Networks support group.

- |    |   |
|----|---|
| 56 | Connect the fibers that come from the G2 circuit pack of the new node to the OC-12 circuit pack that has its green activity LED turned off.   |
| 57 | At the site of the new VTBM ring network element, connect the fibers that come from the network element and circuit pack that you recorded in Table 2-13, to the OC-12 G1 circuit pack. |
- Note:** Circuit pack G1 is in slot 9.

—continued—

Procedure 5-5 (continued)

**Adding the new VTBM ring node to the existing VTBM-based ring**

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<b>Step</b>	<b>Action</b>
<b>58</b>	Connect the fibers, which come from the network element and circuit pack recorded in Table 2-14 on page 2-21, to the OC-12 G2 circuit pack. <b>Note:</b> Circuit pack G2 is in slot 10.
<b>Performing basic optical tests</b>	
<b>59</b>	At the site of the network element that you recorded in Table 2-13 on page 2-20, perform “Appendix B: Common procedures,” “Optical transmit measurement,” on the OC-12 circuit pack, which has its green activity LED turned off (the circuit pack recorded in Table 2-13). <b>Note:</b> Circuit pack G1 is in slot 9 and circuit pack G2 is in slot 10.
<b>60</b>	At the site of the network element recorded in Table 2-14 on page 2-21, perform “Appendix B: Common procedures,” “Optical transmit measurement,” on the OC-12 circuit pack, which has its green activity LED turned off (the circuit pack recorded in Table 2-13). <b>Note:</b> Circuit pack G1 is in slot 9 and circuit pack G2 is in slot 10.
<b>61</b>	At the site of the new VTBM ring network element, perform “Appendix B: Common procedures,” “Optical transmit measurement,” on the OC-12 G1 circuit pack. <b>Note:</b> Circuit pack G1 is in slot 9.
<b>62</b>	Perform “Appendix B: Common procedures,” “Optical transmit measurement,” on the OC-12 G2 circuit pack. <b>Note:</b> Circuit pack G2 is in slot 10.
<b>Verifying network element association</b>	
<b>63</b>	Check in the bottom left corner of the OPC user interface screen to ensure a ‘?’ (a ‘?’ is an indication of a loss of association) does not appear.  If a ‘?’ does appear, wait 10 minutes to allow association to restore. If associations do not restore (that is, the ‘?’ is still present) after 10 minutes, contact your next level of support or your Nortel Networks support group.
<b>Adding the new VTBM ring node to the Configuration Manager</b>	
<b>64</b>	In the User Session Manager, tab to the Available Tools list, move to the Configuration Manager tool then press <b>Ctrl_A</b> (or Keypad <b>0</b> ). <i>The main Configuration Manager screen appears with a display of all system configurations.</i>
<b>65</b>	Move to the configuration that you recorded in Table 2-6 on page 2-11, and press <b>Ctrl_L</b> (or Keypad <b>Enter</b> ) to display the List item menu. Select the <b>Edit Configuration</b> command by pressing <b>Space</b> (or Keypad <b>0</b> ). <i>A confirmation dialog appears.</i>
<b>66</b>	Select the <b>Configure a Ring ADM</b> button by pressing <b>Ctrl_A</b> (or Keypad <b>0</b> ). <i>The Configure a Ring ADM dialog appears.</i>

—continued—

Procedure 5-5 (continued)

**Adding the new VTBM ring node to the existing VTBM-based ring**

- | Step | Action  |
|------|---|
| 67   | In the Network Element field, display the chooser menu by pressing <b>Ctrl_L</b> / (or Keypad <b>3</b> ) and move to the VTBM ring node that has been added (the network element number recorded in Table 2-1 on page 2-2). Press <b>Space</b> (or Keypad <b>0</b> ). |
| 68   | Tab to the Ring ADM APS ID field and display the chooser menu by pressing <b>Ctrl_L</b> / (or Keypad <b>3</b> ). Move to the ring APS ID recorded in Table 2-1, then press <b>Space</b> (or Keypad <b>0</b> ).  |
| 69   | Tab to the ADM field (for the G1 neighbor) and display the chooser menu by pressing <b>Ctrl_L</b> / (or Keypad <b>3</b> ). Move to the node recorded in Table 2-13 on page 2-20 in the "Node #" field, then press <b>Space</b> (or Keypad <b>0</b> ).                 |
| 70   | To enter the CPG that connects to the circuit pack G1 of the new node, tab to the OC-12 CPG field and enter the circuit pack that you recorded in Table 2-13, in the "Circuit Pack of the adjacent node" field.   |
| 71   | Tab to the ADM field (for the G2 neighbor) and display the chooser menu by pressing <b>Ctrl_L</b> / (or Keypad <b>3</b> ). Move to the node recorded in Table 2-14 page 2-21 in the "Node #" field, then press <b>Space</b> (or Keypad <b>0</b> ).                    |
| 72   | To enter the CPG that connects to the circuit pack G2 of the new node, tab to the OC-12 CPG field and enter the circuit pack recorded in Table 2-14, in the "Circuit pack of the adjacent node" field.  |
| 73   | Tab to the <b>OK</b> button, then press <b>Ctrl_A</b> (or Keypad <b>0</b> ).<br>If the CPG connections form a closed loop, the Configured ADMs field in the Ring Configuration Manager displays <i>Valid ring</i> .   |

If	Then go to
Valid Ring appears	step 75
Valid Ring does not appear	step 74

- 74 Verify and correct the circuit pack groups for the new node:
- a. Tab to the new network element.
  - b. Type **Ctrl-L** (or Keypad **2**).
  - c. Select **Edit configuration**, then press **Spacebar** (or Keypad **0**).
  - d. Go back to step 35 and make sure the information you are using is valid.
- 75 Select the **Provision pass-through connections (added adm(s) only)** button by pressing **Ctrl\_A** (or Keypad **0**).  
*The following confirmation dialog appears.*
- 76 Tab to the **Yes** button, then press **Ctrl\_A** (or Keypad **0**).

—continued—

5-58 Adding AccessNode nodes in a VTBM ring

Procedure 5-5 (continued)

**Adding the new VTBM ring node to the existing VTBM-based ring**

**Step Action**

77 Verify the message.

If	Then
the following message appears: <i>The pass-through connections for the new ADM(s) were provisioned successfully.</i>	Tab to the <b>Done</b> button and press <b>Ctrl_A</b> (or Keypad <b>0</b> ). Then go to step 87.
the following message appears: <i>“Pass-through connection provisioning could not be performed for the following ring ADM(s):”</i> 8450 Node_name_1 8451 Node_name_2 <i>Would you like to try again?”</i>	go to the next step.
any other message appears	call your Nortel Networks support and <b>do not go any further</b> .

78 Tab to the **Yes** button and press **Ctrl\_A** (or Keypad **0**) to resend the pass-through connections to the NEs. Verify the message.

If	Then
the following message appears: <i>“The pass-through connections for the new ADM(s) were provisioned successfully.”</i>	Tab to the <b>Done</b> button and press <b>Ctrl_A</b> (or Keypad <b>0</b> ). Then go to step 87.
the following message appears: <i>Unable to provision the passthru connections for the following ring ADM(s):</i> 8450 Node_name_1 8451 Node_name_2 <i>Please use the “Audit connections” option in the Connection Manager to audit the connections for these ADM(s) upon leaving this tool before releasing any protection switches.”</i>	go to the next step.
any other message appears	call your Nortel Networks Support and <b>do not go any further</b> .

—continued—

Procedure 5-5 (continued)

**Adding the new VTBM ring node to the existing VTBM-based ring**

- | Step                            | Action  |
|---------------------------------|---|
| 79                              | Tab to the <b>Done</b> button and press <b>Ctrl_A</b> (or Keypad <b>0</b> ).  |
| <b>Connection Manager audit</b> |   |
| 80                              | In the User Session Manager, tab to the Available Tools list, move to the Connection Manager tool, then press <b>Ctrl_A</b> (or Keypad <b>0</b> ).<br><i>The main Connection Manager window appears.</i>  |
| 81                              | Display the Utilities menu by pressing <b>Ctrl_L T</b> then <b>+</b> (or Keypad <b>,</b> then Keypad <b>9</b> ).<br><i>The Utilities menu appears.</i>  |
| 82                              | Move to the <b>Audit connections</b> command, then press <b>Space</b> (or Keypad <b>0</b> ).<br><i>A Connection Audit screen appears.</i>   |
| 83                              | Exclude all nodes which are not part of the ring configuration where the new node is being added. Repeat the following steps for these NEs. <ol style="list-style-type: none"> <li>Move to the NE that should be excluded from the audit, then press <b>Ctrl_A</b> (or Keypad <b>0</b>).</li> <li>Press <b>Ctrl_L</b> (or Keypad <b>2</b>) and tab to Remove from audit.</li> <li>Press spacebar (or Keypad <b>0</b>).</li> </ol> |
| 84                              | Tab to the <b>OK</b> button, then press <b>Ctrl_A</b> (or Keypad <b>0</b> ).<br><i>The Connection Audit dialog closes. The connection data for the specified OC-12 network elements is audited. A dialog appears indicating the results of the audit.</i>   |

	<p><b>CAUTION</b>  <b>Possible loss of traffic</b>                      When you perform the audit, if mismatches occur for any number of network elements and you select the Yes option to correct the mismatches, a traffic interruption may occur.</p>
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If the audit finds	Then
no discrepancies between the OPC and OC-12 TBM network element connection data, the message "successful" appears	go to step 85
discrepancies, the message failed: mismatch found appears	select the <b>NO</b> option and call your next level of support or your Nortel Networks support group

—continued—

5-60 Adding AccessNode nodes in a VTBM ring

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Procedure 5-5 (continued)

**Adding the new VTBM ring node to the existing VTBM-based ring**

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- | Step   | Action   |
|--|--|
| 85   | In the Results dialog, select the <b>OK</b> button by pressing <b>Ctrl_A</b> (or Keypad <b>0</b> ).<br><i>The Results dialog closes.</i>   |
| 86   | To close the Connection Manager tool: <ol style="list-style-type: none"><li>Display the window menu by pressing <b>Ctrl_L W</b> (or Keypad <b>6</b>).<br/><i>The window menu appears.</i></li><li>Select the <b>Exit</b> command by pressing <b>Space</b> (or Keypad <b>0</b>).<br/><i>The tool closes.</i></li></ol>  |
| 87   | Return to the User Session Manager by pressing <b>Ctrl_T 0</b> .   |
| <b>Returning the OC-12 facilities to in-service in span AB</b>   |  |
| After you return the OC-12 facilities to in-service (IS), the following alarms are raised:   |  |
| <ul style="list-style-type: none"><li>Entry to acquire and entry to fast alarms are raised at nodes that are linitimed with or without ESI units. They clear after about 2 minutes.</li><li>An OC-12 Line RFI alarm at the node that has its OC-12 facility returned to IS first is raised. It clears in about 30 seconds.</li></ul> |  |
| 88   | Move to the opened NE Login session for the node that you recorded in Table 2-14 on page 2-21. Press <b>Ctrl_A</b> (or Keypad <b>0</b> ). At the Network Element User Interface screen, enter:<br><b>fa oc12 &lt;circuit pack group&gt; ↵</b><br><b>chgstate is ↵</b><br><br>where<br><br><circuit pack group> is the value (g1 or g2) that you entered in Table 2-14 in the "Circuit pack of the adjacent node" field<br><br><i>The State field indicates IS.</i> |
| 89   | Return to the User Session Manager by pressing <b>Ctrl_T 0</b> .   |

—continued—

Procedure 5-5 (continued)

**Adding the new VTBM ring node to the existing VTBM-based ring**

- | Step | Action   |
|------|--|
| 90   | <p>In the User Session Manager, move to the opened NE Login session for the node that you recorded in Table 2-13 on page 2-20. Press <b>Ctrl_A</b> (or Keypad <b>0</b>). At the Network Element User interface screen, enter:</p> <pre>fa oc12 &lt;circuit pack group&gt; ↵ chgstate is ↵</pre> <p>where</p> <p>&lt;circuit pack group&gt; is the value (g1 or g2) that you entered in Table 2-13 in the “Circuit pack of the adjacent node” field</p> <p><i>The State field indicates IS.</i></p> |
| 91   | <p>Return to the User Session Manager by pressing <b>Ctrl_T 0</b>.</p> <p><b>Logging in to the new VTBM ring node</b></p>  |
| 92   | <p>In the Open Tools list, move to the NE Login Manager tool then press <b>Ctrl_A</b> (or Keypad <b>0</b>).</p> <p><i>The NE Login Manager window appears.</i></p>   |
| 93   | <p>Tab to the Network Element field and enter the network element number of the new VTBM ring node that you recorded in Table 2-1 on page 2-2.</p>   |
| 94   | <p>Tab to the <b>Login</b> button, then press <b>Ctrl_A</b> (or Keypad <b>0</b>).</p> <p><i>The network element prompts you to enter a user name as follows.</i></p> <pre>Enter User Name &gt;</pre>   |
| 95   | <p>At the prompt (&gt;), enter the admin userID:</p> <pre>&lt;admin userID&gt; ↵</pre> <p><i>The network element prompts you to enter the password:</i></p> <pre>Enter Password &gt;</pre>   |
| 96   | <p>Enter the admin password:</p> <pre>&lt;admin password&gt; ↵</pre> <p><i>The network element user interface appears.</i></p> <p><b>Checking span performance before releasing the force switch</b></p>   |
| 97   | <p>Access the OC-12 G1 performance statistics screen by entering:</p> <pre>pm fp oc12 g1 ↵</pre> <p><i>The OC-12 G1 Performance Statistics screen appears.</i></p>   |

—continued—

Procedure 5-5 (continued)

**Adding the new VTBM ring node to the existing VTBM-based ring**

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<b>Step</b>	<b>Action</b>
<b>98</b>	Start a new untimed interval by entering: <b>startunt</b> ↵ <i>The Untimed Start field is updated to the current date and time.</i>
<b>99</b>	Access the OC-12 G2 performance statistics screen by entering: <b>pm fp oc12 g2</b> ↵ <i>The OC-12 G2 Performance Statistics screen appears.</i>
<b>100</b>	Start a new untimed interval by entering: <b>startunt</b> ↵ <i>The Untimed Start field gets updated to the current date and time.</i>
<b>101</b>	Return to the User Session Manager by pressing <b>Ctrl_T 0</b> .
<b>102</b>	Move to the opened NE Login session for the node that you recorded in Table 2-14 on page 2-21. Press <b>Ctrl_A</b> (or Keypad <b>0</b> ). At the Network Element User Interface screen, enter: <b>pm fp oc12 &lt;circuit pack group&gt;</b> ↵  where  <circuit pack group> is the value (g1 or g2) that you entered in Table 2-14 in the "Circuit pack of the adjacent node" field  <i>The OC-12 Performance Statistics screen appears.</i>
<b>103</b>	Start a new untimed interval by entering: <b>startunt</b> ↵ <i>The Untimed Start field gets updated to the current date and time.</i>
<b>104</b>	Return to the User Session Manager by pressing <b>Ctrl_T 0</b> .
<b>105</b>	In the User Session Manager, move to the opened NE Login session for the node that you recorded in Table 2-13 on page 2-20. Press <b>Ctrl_A</b> (or Keypad <b>0</b> ). At the Network Element User interface screen, enter: <b>pm fp oc12 &lt;circuit pack group&gt;</b> ↵  where  <circuit pack group> is the value (g1 or g2) that you entered in Table 2-13 in the "Circuit pack of the adjacent node" field  <i>The OC-12 Performance Statistics screen appears.</i>

—continued—

Procedure 5-5 (continued)

**Adding the new VTBM ring node to the existing VTBM-based ring**

Step	Action
106	Start a new untimed interval by entering: <b>startunt</b> ↵ <i>The Untimed Start field is updated to the current date and time.</i>
107	Return to the User Session Manager by pressing <b>Ctrl_T 0</b> .
108	Wait 15 minutes before proceeding with the next step.
109	Move to the opened NE Login session of the new VTBM ring node. Press <b>Ctrl_A</b> (or Keypad <b>0</b> ). At the Network Element User Interface screen, enter: <b>pm fp oc12 g1</b> ↵ <i>The OC-12 G1 Performance Statistics screen appears.</i>
110	Verify that the Untimed Curr column displays 0 for all performance monitoring parameters. If 0 is not displayed for all parameters, call your next level of support or your Nortel Networks support group.
111	At the Network Element User Interface screen, enter: <b>pm fp oc12 g2</b> ↵ <i>The OC-12 G2 Performance Statistics screen appears.</i>
112	Verify that the Untimed Curr column displays 0 for all performance monitoring parameters. If 0 is not displayed for all parameters, call your next level of support or your Nortel Networks support group.
113	Return to the User Session Manager by pressing <b>Ctrl_T 0</b> .
114	Move to the opened NE Login session for the node that you recorded in Table 2-14 on page 2-21. Press <b>Ctrl_A</b> (or Keypad <b>0</b> ). At the Network Element User Interface screen, enter: <b>pm fp oc12 &lt;circuit pack group&gt;</b> ↵  where  <circuit pack group> is the value (g1 or g2) that you entered in Table 2-14 in the "Circuit pack of the adjacent node" field  <i>The OC-12 Performance Statistics screen appears.</i>
115	Verify that the Untimed Curr column displays 0 for all performance monitoring parameters. If 0 is not displayed for all parameters, call your next level of support or your Nortel Networks support group.
116	Return to the User Session Manager by pressing <b>Ctrl_T 0</b> .

—continued—

5-64 Adding AccessNode nodes in a VTBM ring

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Procedure 5-5 (continued)

**Adding the new VTBM ring node to the existing VTBM-based ring**

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**Step Action**

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**117** Move to the opened NE Login session for the node that you recorded in Table 2-13 on page 2-20. Press **Ctrl\_A** (or Keypad **0**). At the Network Element User interface screen, enter:

**pm fp oc12 <circuit pack group> ↵**

where

<circuit pack group> is the value (g1 or g2) that you entered in Table 2-13 in the “Circuit pack of the adjacent node” field

*The OC-12 Performance Statistics screen appears.*

**118** Verify that the Untimed Curr column displays 0 for all performance monitoring parameters. If 0 is not displayed for all parameters, call your next level of support or your Nortel Networks support group.

**119** Return to the User Session Manager by pressing **Ctrl\_T 0**.

**Saving and sending node map**

**120** Move to the **Configuration Manager: Ring** tool then press **Ctrl\_A** (or Keypad **0**).

*The Configuration Manager: Ring screen appears.*

**121** In the main window of the tool the cursor is on the **Save and send configuration data** command. Press **Ctrl\_A** (or Keypad **0**).

*A confirmation dialog appears:*

**122** Tab to the **Yes** button, then press **Ctrl\_A** (or Keypad **0**).

*When the operation is completed, an information dialog appears.*

**Note:** Momentary OC-12 Line RFI alarms are raised at the new node when the new node maps are sent to the network elements.

**123** Select the **Done** button by pressing **Ctrl\_A** (or Keypad **0**).

**Note:** The Network Manager needs to be updated in order to reflect the changes made to the configuration. Save from GNE if the Network Manager is used.

**Releasing the forced switches**

**124** In the Open Tools, move to the opened NE Login session for the node that you recorded in Table 2-14 on page 2-21. Press **Ctrl\_A** (or Keypad **0**). At the Network Element User Interface screen, enter:

**pr dp oc12 ↵**  
**forced re <circuit pack group> ↵**  
**yes ↵**

—continued—

Procedure 5-5 (continued)

**Adding the new VTBM ring node to the existing VTBM-based ring**

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

where

<circuit pack group> is the value (g1 or g2) that you entered in Table 2-14 in the "Circuit pack of the adjacent node" field

*A short traffic hit (< 50 ms) occurs when you release the forced switch. The Forced column in the OC12 protection screen changes from "\*" to ".".*

**125** Log out of the network element by entering:

**logout** ↵

*The "Press return to exit" message appears.*

**126** Press the **Return** (↵) key.

*The NE Login Manager window appears.*

**127** Return to the User Session Manager by pressing **Ctrl\_T 0**.

**128** Move to the opened NE Login session for the node that you recorded in Table 2-13 on page 2-20. Press **Ctrl\_A** (or Keypad **0**). At the Network Element User interface screen, enter:

**pr dp oc12** ↵

**forced re <circuit pack group>** ↵

**yes** ↵

where

<circuit pack group> is the value (g1 or g2) that you entered in Table 2-13 in the "Circuit pack of the adjacent node" field

*A short traffic hit (< 50 ms) occurs when you release the forced switch. The Forced column in the OC12 protection screen changes from "\*" to ".".*

**129** Log out of the network element by entering:

**logout** ↵

*The "Press return to exit" message appears.*

**130** Press the **Return** (↵) key.

*The NE Login Manager window appears.*

**131** Return to the User Session Manager by pressing **Ctrl\_T 0**.

**132** Move to the opened NE Login session of the new VTBM ring node. Press **Ctrl\_A** (or Keypad **0**).

*The Network Element User Interface screen appears.*

—continued—

Procedure 5-5 (continued)

**Adding the new VTBM ring node to the existing VTBM-based ring**

**Step Action**

**133** Log out of the network element by entering:  
**logout** ↵  
*The “Press return to exit” message appears.*

**134** Press the **Return** (↵) key.  
*The NE Login Manager window appears.*

**135** Return to the User Session Manager by pressing **Ctrl\_T 0**.

**Configuration Manager audit**

**136** Press **Ctrl\_L T** (or Keypad ,) to display the Utilities menu. Select the Audit configuration command by pressing **Space** (or Keypad **0**).  
*A confirmation dialog appears.*

**137** Tab to the **Yes** button, then press **Ctrl\_A** (or Keypad **0**).

<b>If the Audit Configuration command</b>	<b>Then</b>
completes successfully (an Audit successful dialog box appears)	select the <b>Done</b> button by pressing <b>Ctrl_A</b> (or Keypad <b>0</b> ) and continue with step 139
does not complete successfully	go to step 138

*An information dialog appears.*

**138** Correct the problem indicated in the dialog box.  
 For example, if discrepancies are found by the audit, you can use the Send command to correct them on the individual VT Ring nodes that reported the inconsistency.

In the Configured ADMs list (Ring Configuration Manager tool main window), select the network element that caused the discrepancy. Open the List item menu (Keypad **Enter** or **Ctrl\_L**), and select the **Send** command. Then retry step 136.

**Note:** If problems persist, verify the Network Element/OPC associations in the OPC span of control. Ensure that all processor circuit packs in the span of control are operating properly and communicating with the OPC. Contact your Nortel Networks representative if you cannot correct the problems.

**139** To close the Configuration Manager: Ring 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 **Space** (or Keypad **0**).

—continued—

Procedure 5-5 (continued)

**Adding the new VTBM ring node to the existing VTBM-based ring**

**Step Action**

<b>If</b>	<b>Then</b>
a dialog appears prompting for a primary to backup OPC data transfer	tab to the <b>No</b> button, then press <b>Ctrl_A</b> (or Keypad <b>0</b> )
the Configuration Manager screen appears	go to step 140

- 140** To close the Configuration Manager screen:
- a.** Display the window menu by pressing **Ctrl\_L W** (or Keypad **6**).  
*The window menu appears.*
  - b.** Select the **Exit** command by pressing **Space** (or Keypad **0**).  
*The Configuration Manager main window closes.*

**141** Return to the User Session Manager by pressing **Ctrl\_T 0**.

**Connection Manager audit**

**142** Tab to the Available Tools list, move to the Connection Manager tool, then press **Ctrl\_A** (or Keypad **0**).

*The main Connection Manager window appears.*

**143** Display the Utilities menu by pressing **Ctrl\_L T** then **+** (or Keypad **9**).

*The Utilities menu appears.*

**144** Move to the **Audit connections** command, then press **Space** (or Keypad **0**).

**145** Exclude all nodes that are not part of the ring configuration where you are adding the new node. Repeat the following steps for these NEs.

- a.** Move to the NE that should be excluded from the audit, then press **Ctrl\_A** (or Keypad **0**).
- b.** Press **Ctrl\_L** (or Keypad **2**) and tab to Remove from audit.
- c.** Press the **Spacebar** (or Keypad **0**).

—continued—

Procedure 5-5 (continued)

**Adding the new VTBM ring node to the existing VTBM-based ring**

**Step Action**

- 146** Tab to the **OK** button, then press **Ctrl\_A** (or Keypad **0**).  
*The Connection Audit dialog closes. The connection data for the specified OC-12 network elements is audited. A dialog appears indicating the results of the audit.*

	<p><b>CAUTION</b>  <b>Possible loss of traffic</b>                  When you perform the audit, if mismatches occur for any number of network elements and you select the Yes option to correct the mismatches, a traffic interruption may occur.</p>
---	---

If the audit finds	Then
no discrepancies between the OPC and OC-12 TBM network element connection data, the message "successful" appears	go to step 147
discrepancies, the message failed: mismatch found appears	select the <b>NO</b> option and call your next level of support or your Nortel Networks support group

- 147** In the Results dialog, select the **OK** button by pressing **Ctrl\_A** (or Keypad **0**).  
*The Results dialog closes.*
- 148** To close the Connection Manager 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 **Space** (or Keypad **0**).  
*The tool closes.*

**Check for alarms and active protection switches**

- 149** Check the banner line at the bottom of the OPC user interface screen. Verify that no counts appears next to the C, M, m, w and ActProt fields that are not expected. Use the Alarm Monitor tool to check for raised alarms.
- Note 1:** If alarms are present, refer to *Alarm and Trouble Clearing Procedures*, 323-3001-543, in *Maintenance*, Volume 5A.
- Note 2:** If alarms are active, do not proceed with the next procedure. Call your next level of support or your Nortel Networks support group (see "Appendix C: Technical support information") for help.

—continued—

Procedure 5-5 (continued)

**Adding the new VTBM ring node to the existing VTBM-based ring**

**Step Action**

**Run User Profile audit**

**150** In the User Session Manager, move to the Central User Admin tool. Press **Ctrl\_A** (or Keypad **0**).

*The main Centralized User Administration tool appears.*

**151** Display the Utilities menu by pressing **Ctrl\_L T** then **+** (or Keypad **,** then Keypad **9**).

*The Utilities menu appears.*

**152** Select the **Audit user profile data** command by pressing **Space** (or Keypad **0**).

*A confirmation dialog appears.*

**153** Tab to the **Yes** button, then press **Ctrl\_A** (or Keypad **0**).

*An In progress dialog appears.*

<b>If</b>	<b>Then</b>
the main Centralized User Administration window appears	the audit is successful. Go to step 154.
a result dialog appears indicating that some NEs could not be audited	verify the NE/OPC associations in the OPC span of control. Ensure that all processor circuit packs in the span of control are operating properly and communicating with the OPC. Once corrected, repeat step 151 through step 153. Contact your Nortel Networks representative if you cannot correct the problems.

**154** To close the Centralized User Administration 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 **Space** (or Keypad **0**).

*The User Session Manager window appears.*

**155** Go to the next procedure.

—end—

## Procedure 5-6 Verifying post-system reconfiguration

Use this procedure to perform system verification after you complete the reconfiguration. Verification ensures that the system is and continues to operate trouble free. This procedure also performs a sanity check on each network element.

### Action

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

#### Verifying state of OPCs

- 1 In the User Session Manager, tab to the Open tools list and open the OPC Status tool by pressing **Ctrl\_A** (or Keypad **0**).

*The primary and backup OPC status appear.*

If	Then
the value in the Backup OPC name field in Table 2-4 on page 2-9 is other than "Not equipped" and the OPC status window shows the primary OPC is active and the backup OPC is inactive	go to step 2
the value in the Backup OPC name field in Table 2-4 is "Not equipped" and the OPC status window shows the primary OPC is active	go to step 2
the OPCs are in any other state	contact your next level of support or your Nortel Networks support group

- 2 Return to the User Session Manager by pressing **Ctrl\_T 0**.
- 3 Record the OPC time that appears in the bottom right corner of the User Session Manager screen. It is used in a subsequent step of this procedure.

OPC time: \_\_\_\_\_.

#### Verifying network element association

- 4 Check in the bottom left corner of the OPC user interface screen to ensure that no '?' (a '?' is an indication of a loss of association) appears.  
Re-establish any loss of communications. If this cannot be done, contact your next level of support or your Nortel Networks support group.

—continued—

Procedure 5-6 (continued)

**Verifying post-system reconfiguration****Step Action****Logging in to a network element**

- 5** In the User Session Manager, tab to the Open tools list, move to the NE Login Manager tool, then press **Ctrl\_A** (or Keypad **0**).

*The NE Login Manager main window appears.*

- 6** Enter the Network Element number of the new VTBM ring node in the Network element field (recorded in Table 2-1 on page 2-2).

**Note:** If you are repeating this step, tab to the Network element field.

- 7** Tab to the **Login** button, then press **Ctrl\_A** (or Keypad **0**).

*The following prompt appears:*

```
Enter User Name
>
```

- 8** At the prompt (>), enter the admin userID:

**<admin userID>** ↵

*The network element prompts you to enter the password:*

```
Enter Password
>
```

- 9** Enter the admin password:

**<admin password>** ↵

*The network element user interface appears.*

**Creating network element database backups**

- 10** Perform a database backup by entering:

```
eq sh;backupdb ↵
yes ↵
```

*One of the following messages appears:*

Message 1:

```
The system is busy so the backupDB command cannot be
processed at the moment. Please re-enter the command
later.
```

Message 2:

```
The BackupDB has been initiated. Please refer to FWDB logs
for results.
```

If	Then go to
message 1 appears	step 11
message 2 appears	step 12

—continued—

Procedure 5-6 (continued)

**Verifying post-system reconfiguration**

---

- | Step | Action   |
|------|--|
| 11   | Wait 2 minutes and then repeat step 10. If the problem persists, contact your next level of support or your Nortel Networks support group. |

**Running the network element exerciser**

- 12 Run the exerciser by entering:  
**eq sh;exercise** ↵  
*The following message appears:*  
The shelf exerciser has been initiated. Please refer to EQP logs for results.  
*The Exerciser field indicates when the exerciser is running and when it has terminated. Wait for the Exerciser field to display 'off' before proceeding with the next step.*

**Verifying the network element logs**

- 13 Access the logs menu by entering:  
**fw** ↵  
**logutil** ↵  
*The following message appears:*  
LOGUTIL:  
14 View the results of the exerciser by entering:  
**open eqp** ↵  
*The EQP608 Exerciser Results log appears.*

If	Then go to
the exerciser passed in all cases	step 16
the exerciser did not run successfully (that is, the exerciser results show failed, aborted, or not run)	step 15

—continued—

Procedure 5-6 (continued)

**Verifying post-system reconfiguration**

**Step Action**

**15** For all the results that show “not run,” determine if one of the following situations applies:

<b>If the results show “not run” for</b>	<b>Then</b>
the OC-12	the OC-12 working units have no protection or the protection channel is active
an OC-3 tributary	the OC-3 working units have no protection or the protection channel is active
a DS3 or DS1 mapper	the working units have no protection, or all the facilities carried by the DS3 or DS1 working units are in the out-of-service state

<b>If you</b>	<b>Then</b>
can explain all the results that show “not run” in the previous table	go to step 16
cannot explain all the results that show “not run” in the previous table	contact your next level of support or your Nortel Networks support group

**Checking for outstanding swerrs**

**16** Open the software error log by entering:

**open swerr** ↵

<b>If</b>	<b>Then</b>
the “Log empty” message appears	go to step 17
the “Log Empty” message does not appear	contact your next level of support or your Nortel Networks support group

**Logging out from the network element**

**17** Log out of the network element by entering:

**logout** ↵

*The following message appears.*

Press return to exit.

**18** Press the **Return** key.

*The NE Login Manager Main window appears.*

—continued—

Procedure 5-6 (continued)

**Verifying post-system reconfiguration**

---

- | Step   | Action  |
|--|---|
| 19   | Repeat steps 6 through 18 for each network element that is not checked off in column B in Table 2-7 on page 2-13.<br><br>As you complete each network element, check off and record the time this step was executed in column B in Table 2-7.   |
| 20   | Return to the User Session Manager by pressing <b>Ctrl_T 0</b> .  |
| <b>Verifying the network element database backups</b>  |   |
| 21   | Tab to the Available tools list, move to the Backup/Restore Manager tool, then press <b>Ctrl_A</b> (or Keypad <b>0</b> ).<br><br><i>The Backup/Restore Manager main window appears.</i>   |
| 22   | Display the Options menu by pressing <b>Ctrl_L T</b> (or Keypad <b>,</b> )<br><br><i>The Options menu appears.</i>  |
| 23   | Select <b>Query All Backups</b> command by pressing <b>Space</b> (or Keypad <b>0</b> ).<br><br><i>The Query All Backups dialog appears.</i>   |
| 24   | For each network element in Table 2-7, as well as for the new VTBM ring node, ensure that there is a <b>REL 1400.current</b> backup name and that its time is more recent than the one you recorded in step 3 (use the arrow key to move down the list, if necessary).<br><br><b>Note:</b> If a <b>REL 1400.current</b> backup name is missing for any one network element, contact your next level of support or your Nortel Networks support group. |
| 25   | Close the Query all backups dialog by tabbing to the <b>Done</b> button, then press <b>Ctrl_A</b> (or Keypad <b>0</b> ).  |
| 26   | Close the Backup/Restore Manager tool by doing the following:<br><ol style="list-style-type: none"><li>Display the window menu by pressing <b>Ctrl_L W</b> (or Keypad <b>6</b>).<br/><br/><i>The window menu appears.</i></li><li>Select the <b>Exit</b> command by pressing <b>Space</b> (or Keypad <b>0</b>).<br/><br/><i>The User Session Manager appears.</i></li></ol>   |
| <b>Check for alarms and active protection switches</b> |   |
| 27   | Check the banner line at the bottom of the OPC user interface screen. There should not be any counts next to the C, M, m, w and ActProt fields which are not expected. Use the Alarm Monitor tool to check for raised alarms.<br><br><b>Note:</b> If alarms are present, refer to <i>Alarm and Trouble Clearing Procedures</i> , 323-3001-543, in <i>Maintenance</i> , Volume 5A.   |

—continued—

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Procedure 5-6 (continued)

**Verifying post-system reconfiguration**

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<b>Step</b>	<b>Action</b>
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---

**Logging out of the primary OPC**

**28** In the User Session Manager, tab to the **Logout** button, then press **Ctrl\_A** (or Keypad **0**).

*A confirmation dialog appears.*

**29** Confirm the request by tabbing to the **Logout** button, then press **Ctrl\_A** (or Keypad **0**).

*The following prompt appears:*

`opc>`

**30** Log out of the primary OPC by entering:

**logout** ↵

**Configuring port 1 on the primary OPC**

**31** If you altered the primary OPC port 1 configuration during this procedure (at step 1), return its state to its original setting (that is, X.25 or printer) by performing "Appendix B: Common procedures," "Configuring OPC port 1."

**32** Go to the next procedure.

—end—

## Procedure 5-7

# Saving post-system reconfiguration data to tape

---

Use this procedure to save OPC data to tape and also synchronize the primary and backup OPCs.

### Action

---

Step	Action
1	<p>Log in to the primary OPC as the 'root' user using the primary OPC port 1 or the primary OPC ethernet port through a telnet session.</p> <p><b>Note:</b> If necessary, refer to "Appendix B: Common procedures," "Logging in to an OPC as a root user."</p> <p><i>The following prompt appears:</i></p> <pre>opc&gt;</pre> <p><b>Note:</b> If the primary OPC's port 1 is not configured for terminal operation, you must log into the primary OPC using a network element user interface port 2.</p>
2	<p>Access the User Session Manager by entering:</p> <pre>opcui ↵</pre> <p><i>The User Session Manager window appears.</i></p>
3	<p>Tab to the Available tools list, move to the OPC Save and Restore tool, then press <b>Ctrl_A</b> (or Keypad <b>0</b>).</p> <p><i>The OPC Save and Restore main window appears in save mode. The Save to tape button is selected and the buttons for saving OPC data to tape appear in the bottom half of the window.</i></p>
4	<p>Insert a DDS tape into the primary OPC tape drive to store the system data.</p> <p><b>Note:</b> You can use the DDS tape that you used in Procedure 2, since the system data on the tape is now invalid.</p>
5	<p>Tab to the <b>Save OPC data to tape</b> button, then press <b>Ctrl_A</b> (or Keypad <b>0</b>).</p> <p><i>The Save confirmation dialog appears, prompting you to confirm your request.</i></p>

—continued—

Procedure 5-7 (continued)

**Saving post-system reconfiguration data to tape**

**Step Action**

**6** Tab to the **Yes** button, then press **Ctrl\_A** (or Keypad **0**).  
*A progress dialog appears, indicating that the save operation has been initiated.*

**7** The DDS tape contains data that you are overwriting:

<b>If the DDS tape</b>	<b>Then go to</b>
is blank	step 9
contains data that you are overwriting	<i>A confirmation dialog appears.</i> If the tape contains a data archive or a software load, a dialog prompts you to confirm your request to overwrite the existing data on the tape. Tab to the <b>OK</b> button, then press <b>Ctrl_A</b> (or Keypad <b>0</b> ). <i>The progress dialog reappears, indicating the progress of the save operation.</i>

**8** Wait until the save operation is complete. A dialog showing the progress of the save operation appears. This step can take up to 40 minutes.  
*A completion dialog appears.*

**9** Select the **Done** button by pressing **Ctrl\_A** (or Keypad **0**).  
*The main Save and Restore manager screen appears.*

**Transfer primary OPC data to backup OPC**

**10** Use Table 2-4 on page 2-9 to determine whether the system has a backup OPC.

<b>If the value in the Backup OPC name field in Table 2-4 is</b>	<b>Then go to</b>
other than Not equipped	step 11
Not equipped	step 15

**11** Tab to Operation to perform field, move to the **Restore from tape** button, then press **Ctrl\_A** (or Keypad **0**).

**12** Tab to the **Transfer Data to Backup OPC** option then press **Ctrl\_A** (or Keypad **0**).  
*A confirmation dialog appears.*

**Note:** The Transfer of data to the backup OPC is done from the primary OPC and not from the tape. The command is available and accessed from Save and Restore tool.

—continued—

Procedure 5-7 (continued)

**Saving post-system reconfiguration data to tape**

- | Step | Action   |
|------|--|
| 13   | <p>Tab to the <b>Yes</b> button, then press <b>Ctrl_A</b> (or Keypad <b>0</b>).</p> <p><i>The dialog disappears and a progress dialog appears, indicating that the data on the OPC is being copied to the backup OPC and the percentage completion of the save operation. The save operation takes between 4 and 30 minutes.</i></p> <p>When the transfer is done, a dialog appears.</p> |
| 14   | <p>To remove the dialog, select the <b>Done</b> button by pressing <b>Ctrl_A</b> (or Keypad <b>0</b>).</p>   |
| 15   | <p>Eject the tape from the OPC tape drive, label it (system name, current software version (OPC/network element)) and store it in a secure place.</p>  |

**Logging out from the primary OPC**

- |    |  |
|----|--|
| 16 | Return to the User Session Manager by pressing <b>Ctrl_T 0</b>   |
| 17 | <p>Tab to the <b>Logout</b> button, then press <b>Ctrl_A</b> (or Keypad <b>0</b>).</p> <p><i>A confirmation dialog appears.</i></p>  |
| 18 | <p>Confirm the request by tabbing to the <b>Logout</b> button, then press <b>Ctrl_A</b> (or Keypad <b>0</b>).</p> <p><i>The following prompt appears:</i></p> <p>opc&gt;</p> |
| 19 | <p>Log out of the primary OPC by entering:</p> <p><b>logout ↵</b></p>  |

If you	Then
logged in to the primary OPC using a network element user interface port 2	<p>Log out of the network element interface by entering:</p> <p><b>logout ↵</b></p> <p><i>This procedure is completed.</i></p>
did not log in to the primary OPC using a network element user interface port 2	<i>This procedure is completed.</i>

—end—

## Appendix A: Recovery instructions

If a step fails or you do not get an expected result, call your local Nortel Networks support group or customer help line (refer to “Appendix C: Technical support information”).

### Recovering from a log out

Once you start the procedures in this user guide, you cannot cancel or interrupt the reconfiguration. However, if you inadvertently log out or are logged out from the OPC or the OPC reboots unexpectedly, resolve the problem that caused the log out, and then log back into the OPC using the recovery as detailed in the table following.

**Table 6-1**  
**Recovery instruction**

If you are logged out at	Restart at	Dependent action
Procedure 5-1: Steps 1 through 6	Step 1	None
Steps 7 through 19	Step 7 - Continue with the network element you were logged into prior to log out	Log into OPC (Procedure 7-5) Enter <b>opcui</b>
Steps 20 through 45	Step 21	Log into OPC (Procedure 7-5) Enter <b>opcui</b>
Step 47	Step 47	None
Procedure 5-2:	Step 1	None
Procedure 5-3: Steps 1 through 6	Last executed step	None
Steps 7 through 26	step7	Log into OPC (Procedure 7-5)
Steps 27 through 52	Step 27	Log in Enter <b>opcui</b>
—continued—		

6-2 Appendix A: Recovery instructions

**Table 6-1  
Recovery instruction (continued)**

<b>If you are logged out at</b>	<b>Restart at</b>	<b>Dependent action</b>
Steps 53 through 61	Last executed step	None
Steps 62 through 68	Step 62	Log in Enter <b>opcui</b>
Step 70	Step 70	Log into OPC and new NE
Steps 73 through 167	Last executed step	Log into OPC and new NE
Procedure 5-4: Steps 1 through 18	Step 1	Log into OPC (Procedure 7-5)
Steps 19 through 22	Step 19	Log into OPC (Procedure 7-5) Open the Commissioning Manager tool
Procedure 5-5: Steps 1 through 65	Last executed step	Log into OPC and NEs adjacent to the new node.
Steps 66 through 78	Step 66	Log into OPC and NEs adjacent to the new node.
Steps 81 through 121	Repeat steps 66 through 81 and then go to the last executed step	Log into OPC and NEs adjacent to the new node.
Steps 122 through 125	Step 122	Log into OPC and NEs adjacent to the new node.
Steps 139 through 142	Last executed step	Log into OPC and NEs adjacent to the new node.
Steps 126 through 130	Step 126	Log into OPC (Procedure 7-5) Open the Configuration Manager tool and select the “Edit Configuration” option
Step 47	Step 47	Log into OPC (Procedure 7-5)
Step 132 through 138	Step 132	Log into OPC (Procedure 7-5)
Step 152 through 156	Step 152	Log into OPC (Procedure 7-5)
Procedure 5-6: Steps 1 through 4	Step 1 - Continue with the network element you were logged into prior to log out	Log into OPC (Procedure 7-5) Enter <b>opcui</b> ↵
—continued—		

**Table 6-1**  
**Recovery instruction (continued)**

If you are logged out at	Restart at	Dependent action
Steps 7 through 19	Step 7 - Continue with the network element you were logged into prior to log out	Log into OPC (Procedure 7-5). Enter <b>opcui</b> ↵
Steps 21 through 26	Step 21	Log into OPC (Procedure 7-5) Enter <b>opcui</b> ↵
Steps 27	Step 27	None
Steps 28 through 31	Step 31	None
Procedure 5-7: Steps 1 through 9	Step 1	None
Steps 10 through 21	Step 10	<ol style="list-style-type: none"> <li>1. Log into OPC (Procedure 7-5)</li> <li>2. Enter <b>opcui</b> ↵</li> <li>3. In the User Session Manager, tab to the Available tools list, move to the OPC Save and Restore tool, then press <b>Ctrl_A</b> (or Keypad <b>0</b>).</li> </ol>
—end—		



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## Appendix B: Common procedures

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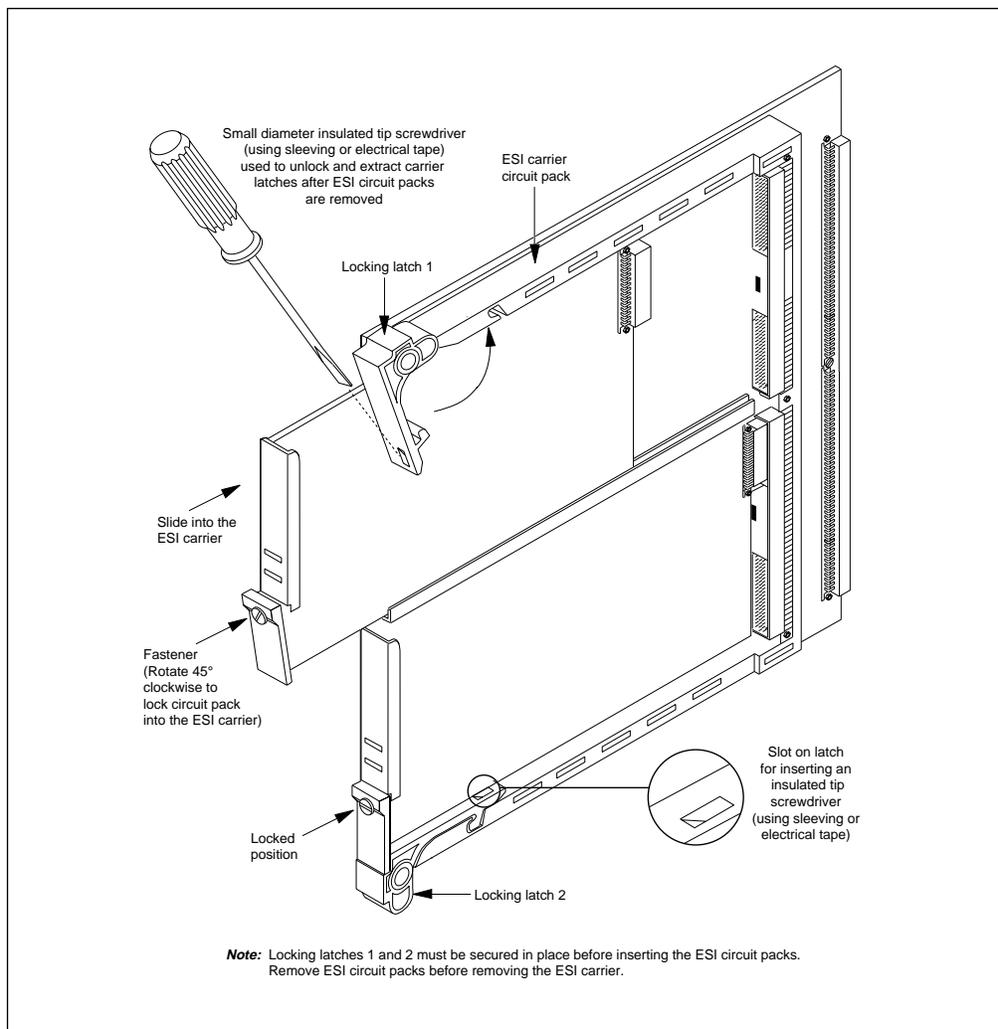
This Appendix contains procedures that are not used in every system that this user guide is applied to. It also contains procedures that are commonly used throughout this user guide, and which, if placed in the context of the user guide would distract from its use.

## Procedure 7-1 ESI carrier unit installation in a TBM shelf

Use this procedure to install the ESI carrier unit (NT7E19) in a TBM shelf and it also details how to wire external timing equipment to the external sync port of the TBM shelf.

Refer to Figure 7-1 for ESI carrier installation. Refer to Figure 7-2 and Table 2-1 on page 2-2 for details on how to wire external timing equipment to the external sync port of the TBM shelf.

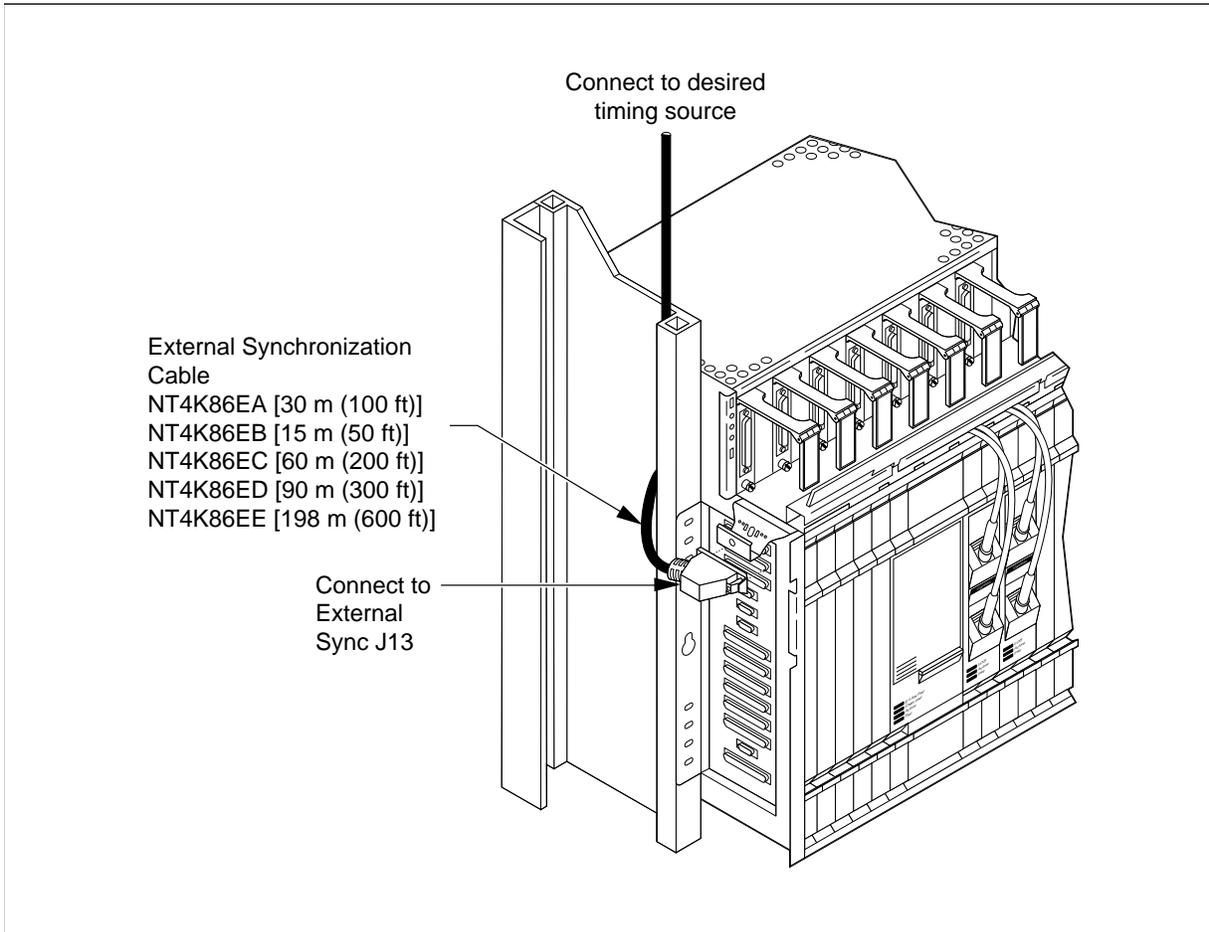
**Figure 7-1**  
**ESI carrier installation**



—continued—

Procedure 7-1 (continued)  
ESI carrier unit installation in a TBM shelf

Figure 7-2  
Connecting the external synchronization cable



—continued—

7-4 Appendix B: Common procedures

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Procedure 7-1 (continued)

**ESI carrier unit installation in a TBM shelf**

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**Table 7-1**  
**External synchronization wiring table (NT4K86 cable)**

<b>Pin</b>	<b>Function</b>	<b>Color</b>	<b>Pin</b>	<b>Function</b>	<b>Color</b>
1	BITSA (Tip)	W/BL	14	BITSA (Ring)	BL/W
2	frame ground	—	15	frame ground	—
3	BITSB (Tip)	W/O	16	BITSB (Ring)	O/W
4	frame ground	—	17	frame ground	—
5	G1OUT (Tip)	W/G	18	G1OUT (Ring)	G/W
6	frame ground	—	19	frame ground	—
7	G2OUT (Tip)	W/BR	20	G2OUT (Ring)	BR/W
8	frame ground	—	21	frame ground	—
9	future	not connected	22	future	not connected
10	frame ground	—	23	frame ground	—
11	future	not connected	24	future	not connected
12	frame ground	—	25	frame ground	—
13	spare	not connected			

—end—

## Procedure 7-2

# Optical transmit measurement

Use this procedure to measure the optical transmit and receive power levels.



**DANGER**  
**Risk of laser radiation**  
 When you remove the connector dust cap, laser radiation within the limits of Class IIIb might be present. This level of radiation is sufficient to cause injury to personnel and caution must be exercised to avoid exposure.

A label similar to the following is located on the optical interface circuit packs near the optical connector.

**Caution**  
 Avoid direct exposure to beam. Invisible light can blind. Keep all optical connectors capped.

Always observe the following precautions when you handle the equipment:

- Clean optical connections: To ensure accurate results, clean the optical connectors and verify the optical meter calibration. Ensure positive mating of fibers in optical connectors.
- Optical fibers: Do not mix transmit and receive fiber cables.
- Equipment handling: Wear an antistatic wriststrap.

## Action

Step	Action						
1	<p>Locate the end of the transmit patchcord (it might be connected to the FPP (Fiber Patch Panel) and connect it to the optical power meter. Measure the optical power.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If the OC-12 unit is</th> <th style="text-align: left;">Then the measurement should be</th> </tr> </thead> <tbody> <tr> <td>1310 nm Intermediate Reach (NT7E05BF/BG/BH)</td> <td>≥ - 15.0 dBm (e.g. -5.0 dBm)</td> </tr> <tr> <td>1310 nm Long Reach (NT7E05AF/AG/AH)</td> <td>≥ - 1.5 dBm</td> </tr> </tbody> </table>	If the OC-12 unit is	Then the measurement should be	1310 nm Intermediate Reach (NT7E05BF/BG/BH)	≥ - 15.0 dBm (e.g. -5.0 dBm)	1310 nm Long Reach (NT7E05AF/AG/AH)	≥ - 1.5 dBm
If the OC-12 unit is	Then the measurement should be						
1310 nm Intermediate Reach (NT7E05BF/BG/BH)	≥ - 15.0 dBm (e.g. -5.0 dBm)						
1310 nm Long Reach (NT7E05AF/AG/AH)	≥ - 1.5 dBm						

—continued—

Procedure 7-2 (continued)

**Optical transmit measurement**

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- | <b>Step</b> | <b>Action</b>  |
|-------------|--|
| 2           | If the power measurement fails, replace the OC-12 unit with a new one.   |
| 3           | Reconnect the optical patchcord if necessary.  |
| 4           | Measure the optical receive power level to the OC-12 optical interface receiver using the optical power meter. |

<b>If the OC-12 unit is</b>	<b>Then the measurement should be between</b>
1310 nm Intermediate Reach (NT7E05BF/BG/BH)	0 dBm and -28.0 dBm
1310 nm Long Reach (NT7E05AF/AG/AH)	0 dBm and -29.5 dBm

If required, set the optical receive power level to the desired level for system operation using the miniature variable optical attenuator (the recommended optical receive power level is -20 dBm).

—end—

## Procedure 7-3

# Configuring OPC port 1

Use this procedure to configure the OPC port 1 for terminal, printer, or X.25 operation.

### Action

Step	Action						
1	Log in to the OPC through a network element (which houses the OPC, or any other network element).						
2	At the OPC prompt (opc>) enter: <b>opcui</b> ↵ <i>The User Session Manager appears.</i>						
3	Tab to the OPC Admin list. Move to the Port Configuration tool, then press <b>Ctrl_A</b> (or Keypad <b>0</b> ). <i>The OPC Port Configuration Manager opens displaying a dialog.</i>						
4	Select the <b>Query Configuration</b> option by entering: <b>1</b> ↵ <i>The port configuration appears. Record the port configuration for port 1. It is required in a subsequent step.</i>						
5	Return to the Main Menu by entering: ↵ <i>The Port Configuration Main Menu appears.</i>						
6	Using the port configuration that you recorded in step 4 .						
	<table border="1"> <thead> <tr> <th>If the port configuration is</th> <th>Then go to</th> </tr> </thead> <tbody> <tr> <td>X.25, terminal or printer</td> <td>step 11</td> </tr> <tr> <td>X.25, TCP/IP over X.25 is enabled</td> <td>step 7</td> </tr> </tbody> </table>	If the port configuration is	Then go to	X.25, terminal or printer	step 11	X.25, TCP/IP over X.25 is enabled	step 7
If the port configuration is	Then go to						
X.25, terminal or printer	step 11						
X.25, TCP/IP over X.25 is enabled	step 7						
7	Select the <b>Unconfigure a Service</b> option by entering: <b>3</b> ↵ <i>A dialog appears.</i>						
8	Unconfigure the TCP/IP over X.25 service by entering: <b>4</b> ↵ <i>The following message appears:</i> Warning: TCP/IP over X.25 is being disabled Do you wish to continue (yes/no):  —continued—						

Procedure 7-3 (continued)

**Configuring OPC port 1**

**Step Action**

**9** To confirm the request, enter:

**y** ↵

*A dialog appears:*

**10** Return to the Main Menu by entering:

**8** ↵

*The Port Configuration Main Menu appears.*

**11** Select the **Configure a Service** option by entering:

**2** ↵

*A dialog appears.*

**12** Determine how the OPC port 1 needs to be configured.

<b>If you want to configure OPC port 1 as</b>	<b>Then go to</b>
X.25 or X.25 TCP/IP over X.25 is enabled	step 24
printer	step 43
terminal	step 13

**13** Select port 1 to be a terminal by entering:

**1** ↵

*Depending on the OPC hardware module equipped in your system, a message such as the following appears prompting you to select a port:*

Port Number (B, 1, 3):

<b>If this message</b>	<b>Then go to</b>
appears	step 14
does not appear	step 15

**14** For port 1, enter:

**1** ↵

*A confirmation message appears:*

Configuration on port 1 is changing from Printer (or X.25)  
to Terminal

Do you wish to continue (yes/no):

—continued—

---

 Procedure 7-3 (continued)  
 Configuring OPC port 1
 

---

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

---

15 Using the port configuration determined in step 4,

If the initial port configuration was	Then go to
printer	step 16
X.25 or X.25 TCP/IP over X.25	step 20

16 To confirm the request, enter:

**y** ↵

*The following message appears:*

```
Warning Printer operation is being removed from port 1
Do you wish to continue (yes/no):
```

17 To confirm the request, enter:

**y** ↵

*The following message appears:*

```
Printer operation has been successfully removed from
port 1
Terminal operation is being configured on port 1
Do you wish to continue (yes/no):
```

18 To confirm the request, enter:

**y** ↵

*A dialog screen appears.*

19 Go to step 50.

20 To confirm the request, enter:

**y** ↵

*After about 1 minute, the following messages appears:*

```
X.25 operation has been removed from port 1
Remove the X.25 cable and insert the appropriate terminal
cable.
Press RETURN when you are done.
```

21 After inserting the appropriate terminal cable, enter:

↵

*The following message appears:*

```
Terminal operation is being configured on port 1
Do you wish to continue (yes/no):
```

—continued—

Procedure 7-3 (continued)

**Configuring OPC port 1**

**Step Action**

**22** To confirm the request, enter:

**y** ↵

*A dialog screen appears:*

**23** Go to step 50.

**24** Select the X.25 option by entering:

**3** ↵

*A dialog screen appears.*

**25** To enable the X.25 port, enter:

**3** ↵

*Depending on the OPC hardware module equipped in your system, a message such as the following appears prompting you to select a port:*

Port Number (B, 1, 2, 3):

<b>If this message</b>	<b>Then go to</b>
appears	step 26
does not appear	step 27

**26** For port 1, enter:

**1** ↵

*A confirmation message similar to the following appears:*

Warning Terminal operation is being removed from port 1  
Do you wish to continue (yes/no):

**27** Confirm the configuration port change by entering:

**y** ↵

*After about 1 minute, the following message appears:*

Terminal operation has been removed from port 1  
Remove the terminal cable and insert the appropriate X.25  
cable.  
Press RETURN when you are done

**28** After you insert the X.25 cable, enter:

↵

*The following message appears:*

X.25 operation is being configured on port 1  
Do you wish to continue (yes/no):

—continued—

---

 Procedure 7-3 (continued)  
**Configuring OPC port 1**


---

Step	Action						
29	Enter: <b>y</b> ↵ <i>A dialog screen appears.</i>						
30	Determine if TCP/IP needs to be enabled over the X.25 link. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If TCP/IP</th> <th style="text-align: left;">Then go to</th> </tr> </thead> <tbody> <tr> <td>needs to be enabled over X.25</td> <td>step 31</td> </tr> <tr> <td>does not need to be enabled over X.25</td> <td>step 35</td> </tr> </tbody> </table>	If TCP/IP	Then go to	needs to be enabled over X.25	step 31	does not need to be enabled over X.25	step 35
If TCP/IP	Then go to						
needs to be enabled over X.25	step 31						
does not need to be enabled over X.25	step 35						
31	Return to the Configure menu by entering: <b>8</b> ↵ <i>The Configure menu appears.</i>						
32	Select the <b>TCP/IP over X.25</b> option by entering: <b>6</b> ↵ <i>A dialog screen appears.</i>						
33	Enable TCP/IP over X.25 by entering: <b>6</b> ↵ <i>A dialog screen appears.</i>						
34	Go to step 50.						
35	Exit the <b>Port Configuration</b> tool by entering: <b>9</b> ↵ <i>The User Session Manager appears.</i>						
36	Move to a Unix Shell tool, then press <b>Ctrl_A</b> (or Keypad <b>0</b> ). <i>The "opc&gt;" prompt appears.</i>						
37	At the opc prompt (opc>), enter: <b>config_TL1</b> ↵ <i>The TL1 Configuration Main Menu appears.</i>						
38	To restart the TL1 Session Manager, enter: <b>3</b> ↵ <i>A confirmation dialog appears.</i>						
39	Confirm the request by entering: <b>yes</b> ↵ <i>The 'Restarting TL1 Session Manager' message appears followed by the TL1 Configuration Main Menu.</i>						

—continued—

Procedure 7-3 (continued)

**Configuring OPC port 1**

Step	Action						
40	Exit the TL1 Configuration tool by entering: <b>9</b> ↵ <i>The “opc&gt;” prompt appears.</i>						
41	Return to the User Session Manager by pressing <b>Ctrl_T 0</b> .						
42	Go to step 51.						
43	To configure the port as printer, enter: <b>2</b> ↵ <i>A dialog screen appears.</i>						
44	To configure the port, enter: <b>1</b> ↵ <i>Depending on the OPC hardware module equipped in your system, a message similar to the following appears prompting you to select a port:</i> Port Number (B, 1, 3):						
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">If this message is</th> <th style="text-align: left;">Then go to</th> </tr> </thead> <tbody> <tr> <td>displayed</td> <td>step 45</td> </tr> <tr> <td><b>not</b> displayed</td> <td>step 46</td> </tr> </tbody> </table>		If this message is	Then go to	displayed	step 45	<b>not</b> displayed	step 46
If this message is	Then go to						
displayed	step 45						
<b>not</b> displayed	step 46						
45	For port 1, enter: <b>1</b> ↵ <i>The Baud Rate menu appears.</i>						
46	Select a baud rate from the menu and enter its corresponding number, then press the <b>Return</b> key. <i>The printer mode menu appears.</i>						
47	Select a printer mode from the menu and enter its corresponding number, then press the <b>Return</b> key. <i>The following message appears.</i> Configuration on port 1 is changing from Terminal to Printer Warning Terminal operation is being removed from port 1 Do you wish to continue (yes/no):						

—continued—

---

Procedure 7-3 (continued)  
**Configuring OPC port 1**

---

<b>Step</b>	<b>Action</b>
<b>48</b>	Insert the appropriate printer cable on port 1 and then enter: ↵ <i>The following message appears:</i> PRINTER operation (<baud rate> baud, <printer mode> mode) is being configured on port 1 Do you wish to continue (yes/no):
<b>49</b>	To confirm, the request, enter: <b>y</b> ↵ <i>A dialog screen appears.</i>
<b>50</b>	Close the Port Configuration tool by entering: <b>9</b> ↵ <i>The User Session Manager appears.</i>
<b>51</b>	To log out from the OPC: <b>a.</b> Tab to the <b>Logout</b> button, then press <b>Ctrl_A</b> (or Keypad <b>0</b> ). <i>A confirmation dialog appears.</i> <b>b.</b> Tab to the <b>Logout</b> button, then press <b>Ctrl_A</b> (or Keypad <b>0</b> ). <b>c.</b> To terminate the remote login session, at the opc prompt (opc>), enter: <b>logout</b> ↵ <i>The session is terminated. You are logged out from the OPC.</i>
<b>52</b>	Log out of the network element user interface by entering: <b>logout</b> ↵

—end—

## Procedure 7-4 OPC start or shut down

---

Use this procedure to shut down or restart an OPC.

### Requirements

To do this procedure, you must do the following:

- obtain the password for the root user ID on the OPC.
- obtain the password for the admin user ID on the network elements.

### Action

---

Step	Action
1	Connect a VT-100 terminal to the craft User Interface port B (port 1) on the network element that houses the OPC (use an NT7E44FA or NT7E44FB cable).
2	Press the <b>break</b> key. <i>The Login prompt (?) appears.</i>
3	At the login prompt, enter: <b>login</b> ↵ <i>The following message appears:</i> Enter user name >
4	Enter the admin userID: <b>&lt;admin userID&gt;</b> ↵ <i>The following prompt appears:</i> Enter Password >
5	Enter the admin password: <b>&lt;admin password&gt;</b> ↵ <i>The network element user interface appears.</i>
6	Deprovision the OPC by entering: <b>eq opc</b> ↵ <b>chgstate oos</b> ↵ <b>yes</b> ↵ <b>delete</b> ↵ <b>yes</b> ↵ <i>The State field indicates Null.</i>

—continued—

Procedure 7-4 (continued)  
**OPC start or shut down**

- | Step                                       | Action   |                                 |            |  |         |   |         |
|--|--|---------------------------------|------------|--|---------|---|---------|
| 7  | <p>Access the equipment shelf alarm provisioning screen by entering:</p> <p><b>eq sh</b> ↵<br/> <b>almprov</b> ↵</p> <p><i>The Shelf Alarm Provisioning screen appears.</i></p>  |                                 |            |  |         |   |         |
| 8  | <p>Using the equipment shelf alarm provisioning screen, determine the CNET link fail status.</p> <table border="1"> <thead> <tr> <th>If the CNET link fail status is</th> <th>Then go to</th> </tr> </thead> <tbody> <tr> <td>off</td> <td>step 11</td> </tr> <tr> <td>on</td> <td>step 9</td> </tr> </tbody> </table>   | If the CNET link fail status is | Then go to | off  | step 11 | on  | step 9  |
| If the CNET link fail status is            | Then go to   |                                 |            |  |         |   |         |
| off  | step 11  |                                 |            |  |         |   |         |
| on   | step 9   |                                 |            |  |         |   |         |
| 9  | <p>Determine if the shelf has a CNET cable attached to its CNET ports.</p> <table border="1"> <thead> <tr> <th>If the shelf has</th> <th>Then go to</th> </tr> </thead> <tbody> <tr> <td>no CNET cable attached to its CNET port(s)</td> <td>step 10</td> </tr> <tr> <td>a CNET cable attached to its CNET port(s)</td> <td>step 11</td> </tr> </tbody> </table>   | If the shelf has                | Then go to | no CNET cable attached to its CNET port(s) | step 10 | a CNET cable attached to its CNET port(s) | step 11 |
| If the shelf has                           | Then go to   |                                 |            |  |         |   |         |
| no CNET cable attached to its CNET port(s) | step 10  |                                 |            |  |         |   |         |
| a CNET cable attached to its CNET port(s)  | step 11  |                                 |            |  |         |   |         |
| 10   | <p>Change the CNET link fail status to off by entering:</p> <p><b>editstat 2</b> ↵<br/> <b>yes</b> ↵</p> <p><i>The CNET link fail status field indicates Off.</i></p>  |                                 |            |  |         |   |         |
| 11   | <p>Disconnect the cable between the VT-100 terminal and the craft User Interface port B (port 1).</p>  |                                 |            |  |         |   |         |
| 12   | <p>Log in to the OPC using the root class user ID and password.</p>  |                                 |            |  |         |   |         |
| 13   | <p>To access the User Session Manager from the opc prompt (opc&gt;), enter:</p> <p><b>opcui</b> ↵</p> <p><i>The User Session Manager window appears.</i></p>   |                                 |            |  |         |   |         |
| 14   | <p>Tab to the Available tools list and move to the OPC Shutdown tool. Open the tool by pressing <b>Ctrl_A</b> (or Keypad <b>0</b>).</p> <p><i>The OPC Shutdown tool main window appears.</i></p>   |                                 |            |  |         |   |         |
| 15   | <p>Select the <b>Shutdown</b> button by pressing <b>Ctrl_A</b> (or Keypad <b>0</b>).</p> <p><i>A confirmation dialog appears, indicating the amount of time required for the shutdown and giving you a final chance to abort the shutdown.</i></p> <p><b>Note:</b> Selecting the <b>Proceed</b> button commits the shutdown of the OPC. You can select the <b>Cancel</b> button at this point to abort the OPC shutdown procedure.</p> |                                 |            |  |         |   |         |

—continued—

Procedure 7-4 (continued)  
**OPC start or shut down**

**Step Action**

**16** Confirm the shutdown with the current Port B configuration:

<b>If</b>	<b>Then go to</b>
the Confirm shutdown button is selected (that is '**' appears beside this button)	step 17
the Confirm shutdown button is not selected	tab to the <b>Confirm shutdown</b> button, then press <b>Ctrl_A</b> (or Keypad <b>0</b> )

**17** Tab to the **Proceed** button, then press **Ctrl\_A** (or Keypad **0**).

*The confirmation dialog closes and a dialog, similar to the following, appears.*

**18** Depending on the task you are performing, you may be required to remove the OPC module from the shelf. If so, you must take the required action before the OPC attempts to restart. Determine now if you are removing the OPC from the shelf.

<b>If you are</b>	<b>Then go to</b>
restarting the OPC	step 19
removing the OPC from the shelf (that is, shutting down)	step 20

**19** Tab to the **Halt** button, then move to the **Restart** button. Press **Ctrl\_A** (or Keypad **0**).

**20** Tab to the **OK** button, then press **Ctrl\_A** (or Keypad **0**).

*The OPC shutdown process starts and a dialog appears.*

**21** Select the **OK** button by pressing **Ctrl\_A** (or Keypad **0**).

*A shutdown progress message appears.*

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

*A dialog appears when the shutdown is complete. The new dialog appears to all users who are currently logged in to the OPC.*

**22** Select the **Done** button by pressing **Ctrl\_A** (or Keypad **0**).

—continued—

Procedure 7-4 (continued)

**OPC start or shut down**

**Step Action**

- 23** Depending on the task you are performing, you may be required to remove the OPC module from the shelf.

<b>If you are</b>	<b>Then go to</b>
restarting the OPC	step 25
removing the OPC from the shelf (that is, shutting down)	step 24

**Note:** You must not remove the OPC from the shelf during the restart process.

- 24** Immediately after the green Activity Indicator LED turns off, remove the OPC from the shelf.

*The OPC initiates a restart after a 3-minute delay, if the OPC is left in place. If you have not removed or powered down the OPC by this time, the red Unit Fail LED turns on and an alarm is raised.*

**Do not remove or power down the OPC after the red LED has turned on.** If you do, the data on its hard drive is corrupted. The restart process takes 5-10 minutes.

- 25** The OPC shutdown/restart procedure is complete.

—end—

## Procedure 7-5

# Logging in to an OPC as a root user

Use this procedure to log in to an OPC as a root user from the OPC port 1 or the network element user interface port B (port 1).

### Requirements

To do this procedure, you must do the following:

- obtain the password for the root userid on the OPC.
- obtain the password for the admin userid on the network elements.

### Action

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

- |   |  |
|---|--|
| 1 | Unless otherwise noted, assume that you are logging into a terminal connected to OPC port 1. |
|---|--|

If logging in through	Then go to
OPC port 1	step 2
user interface port 2	step 4

- |   |  |
|---|--|
| 2 | Connect the VT-100 compatible terminal—set to 9600 baud, no parity, 8 bits, no new line and VT-100 mode— to the OPC port 1 located on the left side of the network element shelf. (Use an NT7E44RA or NT7E44RB cable.) |
|---|--|

*The following prompt appears:*

```
login:
```

- |   |  |
|---|--|
| 3 | Go to step 11.   |
| 4 | Connect the VT-100 compatible terminal—set to the baud rate of the craft user interface port 2, no parity, 8 bits, no new line and VT-100 mode— to the craft user interface port 2 on the network element (use an NT7E44FA or NT7E44FB cable). |

- |   |   |
|---|---|
| 5 | Press the <b>break</b> key.<br><i>The Login prompt (?) appears.</i> |
|---|---|

- |   |                             |
|---|-----------------------------|
| 6 | At the login prompt, enter: |
|---|-----------------------------|

```
login ↵
```

*The following message appears.*

```
Enter User Name
>
```

—continued—

Procedure 7-5 (continued)  
**Logging in to an OPC as a root user**

- | Step | Action   |
|------|--|
| 7    | Enter the admin userID:<br><b>&lt;admin userID&gt;</b> ↵<br><i>The following prompt appears:</i><br>Enter Password<br>>      |
| 8    | Enter the admin password:<br><b>&lt;admin password&gt;</b> ↵<br><i>The network element user interface appears.</i>           |
| 9    | From the network element screen, enter:<br><b>quit all</b> ↵<br><i>The screen clears. The following prompt appears:</i><br>> |
| 10   | Using rlogin to access the primary or backup OPC.  |
- | If logging in to the | Then enter               |
|----------------------|--------------------------|
| primary OPC          | <b>rlogin OPCxxxxP</b> ↵ |
| backup OPC           | <b>rlogin OPCxxxxB</b> ↵ |
- | where           |   |
|-----------------|---|
| <b>OPCxxxxP</b> | is the primary OPC name, refer to the Table 2-4 on page 2-9 |
| <b>OPCxxxxB</b> | is the backup OPC name, refer to the Table 2-4              |
- The following prompt appears:*  
 login:
- |    |   |
|----|---|
| 11 | Enter:<br><b>root</b> ↵<br><i>The password prompt appears.</i>  |
| 12 | Enter the root password and press the <b>Return</b> key.<br><i>The password does not appear in the field when you enter it. Passwords are case sensitive. The following prompt appears:</i><br>TERM = (vt100) |
| 13 | Press the <b>Return</b> key.<br><i>The following prompt appears:</i><br>opc>  |

—end—

## Procedure 7-6

# Setting the LBO for DS1 and DS3 facilities

Use this procedure to set the LBO for DS1 and DS3 facilities.

**Table 7-2**  
**DS1 line build-out ranges**

Range	Distance using RG59/BU	Distance using 734A/728A
Short	0 m to 46 m (0 ft to 150 ft)	0 m to 30.5 m (0 ft to 100 ft)
Medium	46 m to 137 m (150 ft to 450 ft)	30.5 m to 76 m (100 ft to 250 ft)
Long	137 m to 200 m (450 ft to 655 ft)	76 m to 137 m (250 ft to 450 ft)

**Table 7-3**  
**DS3 line build-out ranges**

Range	Distance using RG59/BU	Distance using 734A/728A
Short	0 m to 50 m (0 ft to 164 ft)	0 m to 68 m (0 ft to 225 ft)
Long	50 m to 76 m (164 ft to 250 ft)	68 m to 137 m (225 ft to 450 ft)

## Action

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

- |   |   |
|---|---|
| 1 | Access the facility screen and select the facility by entering:<br><b>facility &lt;facility type&gt; &lt;unit&gt; &lt;port#&gt; ↵</b> |
|---|---|

where

<facility type> is **ds1** or **ds3**

<unit> is either **all** or **g1** to **g12** for DS1  
or **g1** to **g4** for DS3

<port#> is **1** to **3**, or **all** for DS3 or  
**1** to **14**, or **all** for DS1

*The facility screen with the selected facility appears.*

- |   |  |
|---|--|
| 2 | Change the operating state of the facility to out-of-service by entering:<br><b>chgstate oos ↵</b><br><b>yes ↵</b> |
|---|--|

—continued—

Procedure 7-6 (continued)

**Setting the LBO for DS1 and DS3 facilities**

---

<b>Step</b>	<b>Action</b>
3	Access the edit screen by entering: <b>edit</b> ↵ <i>The edit screen appears.</i>
4	Select the LBO length by entering: <b>lbo &lt;lbo length&gt;</b> ↵ where <lbo length> is <b>short, medium</b> (for DS1 only), <b>long</b> or blank to toggle  <i>A screen appears depending on the facilities that you changed.</i>
5	Return to the DS1 or DS3 facility screen by entering: <b>quit</b> ↵
6	Return the facility to in-service by entering: <b>chgstate is</b> ↵ <i>The state changes to in-service (IS).</i>

—end—



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## Appendix C: Technical support information

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This section lists the technical support available for AccessNode.

### 24-hour emergency technical assistance

This section explains how to contact 24-hour emergency technical assistance.

If you are here	Then call this number	
United States	(800) ASK-ETAS (800) 275-3827	
Canada	(613) 226-5456	

### Non-emergency support and software upgrade support

This section explains how to contact non-emergency support and software upgrade support.

If you are here	Then call this number
United States Normal business hours 8:00 am - 5:00 pm local time Monday to Friday	(800) ASK-TRAN (800) 275-8726
All other times (for urgent software upgrade support only)	(800) ASK-ETAS (800) 275-3827
Canada Normal business hours 8:00 am - 4:00 pm local time Monday to Friday	Call your regional field service engineering support group.
All other times (for urgent software upgrade support only)	(800) ASK-ETAS (800) 275-3827

### Standard repair service: USA

This section explains how to contact US standard repair service.

US standard repair service consists of like-for-like replacement: a replacement circuit pack is shipped from Nortel Networks within five (5) working days after receiving the order.

Call customer service	and	ship defective unit prepaid to
(800) 251-1758 and request a Repair Order Number. 7:00 am - 6:00 pm CST Monday to Friday	Mark the defective item with the following: <ul style="list-style-type: none"> <li>• assigned repair order number</li> <li>• explanation of the problem.</li> </ul>	Nortel Networks 917 Air Park Center Drive Nashville, TN 37217 Attn: Repair and Return

### Standard repair service: Canada

This section explains how to contact Canadian standard repair service.

Canadian standard repair service consists of the following options:

- **Like-for-like replacement:** A replacement circuit pack is shipped from Nortel Networks within five (5) working days after receiving the order.
- **Repair of the circuit pack:** The repaired circuit pack is shipped from Nortel Networks within fourteen (14) days after receipt of the defective circuit pack.

Call customer service	and	ship defective unit prepaid to
(800) 668-1717 (English) (800) 668-1748 (French) and request a Repair Order Number. Monday to Friday 8:00 am - 5:00 pm local time	Mark the defective item with the following: <ul style="list-style-type: none"> <li>• assigned repair order number</li> <li>• explanation of the problem.</li> </ul>	Northern Telecom Canada Ltd. Repair Customer Service Group 9300 Trans Canada Highway St. Laurent, Québec H4S 1K5 CANADA

## Emergency repair service: USA

This section explains how to contact US emergency repair service. A replacement circuit pack is shipped from Nortel Networks within 24 hours of receiving the order.

Call customer service	and	ship prepaid to
(800) 251-1758 and request an emergency replacement.	<b>1)</b> Give the following: <ul style="list-style-type: none"> <li>• name</li> <li>• company name</li> <li>• telephone number</li> <li>• exact unit code and name for emergency replacement</li> <li>• ship-to address</li> </ul> <b>2)</b> Mark the defective item with the assigned emergency repair order number	Nortel Networks 917 Air Park Center Dr. Nashville, TN 37217 Attn: Repair and Return

## Emergency repair service: Canada

This section explains how to contact Canadian emergency repair service. A replacement circuit pack is shipped from Nortel Networks within 24 hours of receiving the order.

Call customer service	and	ship prepaid to
Normal business hours Monday to Friday 8:00 am - 5:00 pm local time (800) 668-1717 (English) (800) 668-1748 (French) and request an emergency replacement.  All other times: (800) 361-2575 and request an emergency replacement.	<b>1)</b> Give the following: <ul style="list-style-type: none"> <li>• name</li> <li>• company name</li> <li>• telephone number</li> <li>• exact unit code and name for emergency replacement</li> <li>• ship-to address</li> </ul> <b>2)</b> Mark the defective item with the assigned emergency repair order number	Northern Telecom Canada Ltd. Repair Customer Service Group 9300 Trans Canada Highway St. Laurent, Québec H4S 1K5 CANADA



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SONET Products

## **AccessNode**

### Addition of AN Nodes in a VTBM Ring

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