

Nortel

Optical Metro 5100/5200

Provisioning and Operating Procedures, Part 2 of 2

Standard Release 8.0 Issue 1 April 2005

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See Part 1 for the following:

Using the System Manager
Managing security and user accounts



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Printed in Canada and the United Kingdom

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About this document

ATTENTION

This document is presented in two parts: Part 1 and Part 2. Each part has its own table of contents. The table of contents in Part 1 contains topics found in Part 1 only. The table of contents in Part 2 contains topics found in Part 2 only.

You are reading Part 2 of the *Provisioning and Operating Procedures*, 323-1701-310.

This document provides information about using the System Manager interface to provision and operate the Nortel Optical Metro 5100/5200 (identified prior to Release 7 as Nortel Networks OPTera Metro 5000-series Multiservice Platform).

Part 1 of the *Provisioning and Operating Procedures* covers the following:

- using the System Manager
- managing security and user accounts

Part 2 of the *Provisioning and Operating Procedures* covers the following:

- provisioning circuit packs and managing traffic
- shelf management procedures
- upgrading the software
- operating the Optical Trunk Switch
- procedures for performance monitoring
- operating the Enhanced Trunk Switch

Audience for this document

This document is intended for the following audience:

- strategic and current planners
- provisioners
- installers
- transmission standards engineers

- field maintenance engineers
- system line-up and testing (SLAT) personnel
- maintenance technicians
- network administrators

Optical Metro 5100/5200 library

The Optical Metro 5100/5200 library consists of the *Nortel Optical Metro 5100/5200 Technical Publications*, NT0H65AM.

Technical Publications

The *Optical Metro 5100/5200 Nortel Technical Publications* (NTP) consist of descriptive information and procedures.

Descriptive information

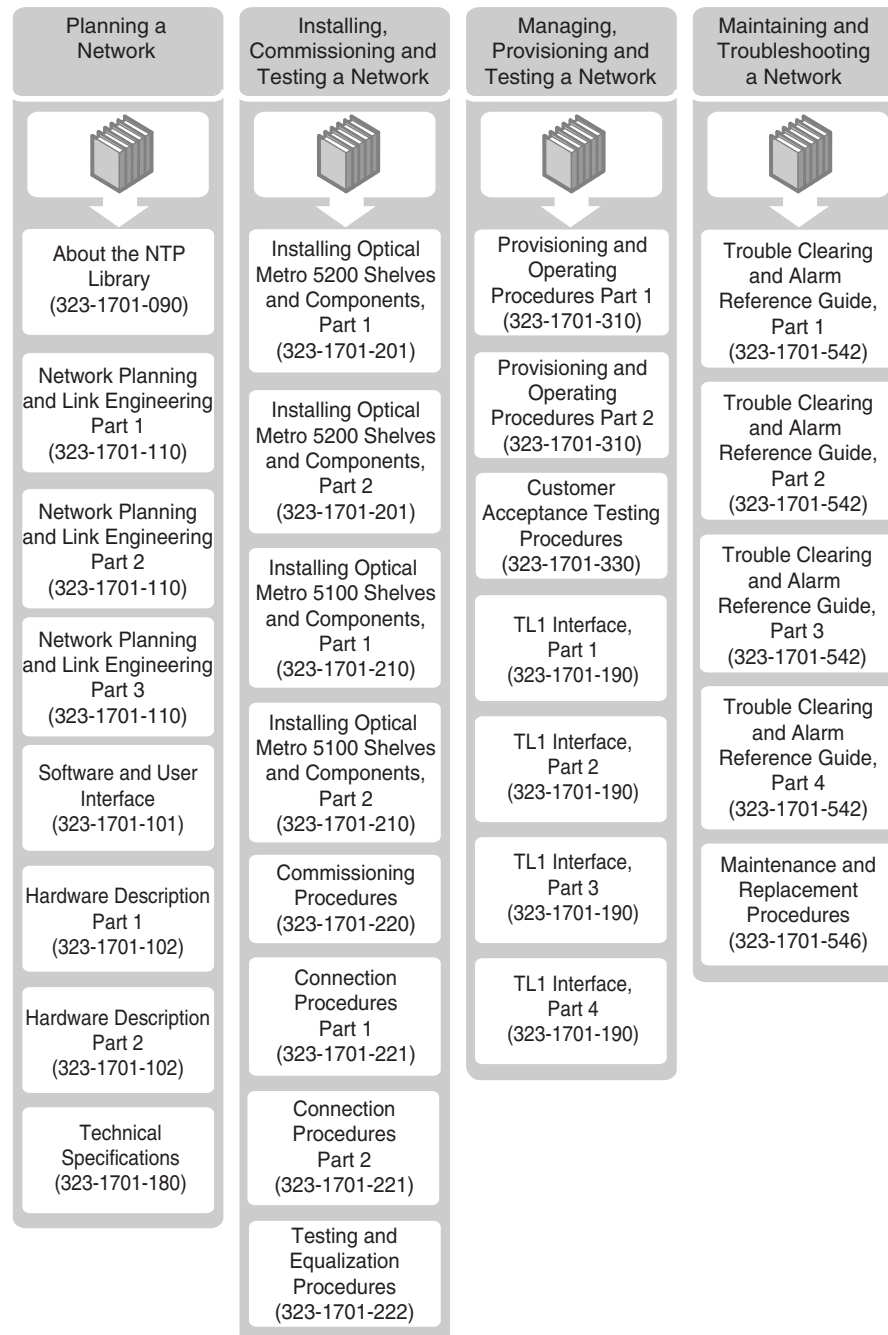
These NTPs provide detailed descriptive information about the Optical Metro 5100/5200, including system software and hardware descriptions, technical specifications, ordering information, and TL1 user information.

Procedures

These NTPs contain all procedures required to install, provision, and maintain the Optical Metro 5100/5200.

The following roadmap lists the documents in the Optical Metro 5100/5200 library.

OM2805p



Technical assistance service telephone numbers

For technical support and information from Nortel Networks, refer to the following table.

Technical Assistance Service	
For service-affecting problems: For 24-hour emergency recovery or software upgrade support, that is, for: • restoration of service for equipment that has been carrying traffic and is out of service • issues that prevent traffic protection switching • issues that prevent completion of software upgrades	North America: 1-800-4NORTEL (1-800-466-7835) International: 001-919-992-8300
For non-service-affecting problems: For 24-hour support on issues requiring immediate support or for 14-hour support (8 a.m. to 10 p.m. EST) on upgrade notification and non-urgent issues.	North America: 1-800-4NORTEL (1-800-466-7835) Note: You require an express routing code (ERC). To determine the ERC, see our corporate Web site at www.nortel.com . Click on the Express Routing Codes link. International: Varies according to country. For a list of telephone numbers, see our corporate Web site at www.nortel.com . Click on the Contact Us link.
Global software upgrade support:	North America: 1-800-4NORTEL (1-800-466-7835) International: Varies according to country. For a list of telephone numbers, see our corporate Web site at www.nortel.com . Click on the Contact Us link.

Provisioning circuit packs and managing traffic

Use the procedures in this chapter to assign channels, connect traffic, define path protection, and manage traffic.

Circuit pack and facility states

A provisioned circuit pack has four state types:

- actual (circuit pack state only)
- administrative
- operational
- secondary

All these states are managed in the Equipment tab of System Manager. See [Table 3-1 on page 3-3](#) for a description of the states.

Equipment states

The equipment states are identified in the Inventory tab of System Manager.

The Actual state reflects the circuit pack provisioning information. Existing Actual states are:

- Circuit pack type (OCI, OCLD, OCM, SP, SRM, GFSRM, OTR, MOTR, MOTRSFP, OSC, OFA)
- UNDEFINED

The Administrative state of a provisioned circuit pack is in-service (IS) if both the circuit pack and its related facilities (if any) are IS. The administrative states are:

- IS
- OOS

The Operational states of a provisioned circuit pack are:

- IS-NR
- IS-ANR
- OOS-AU
- OOS-MA
- OOS-AU-MA
- OOS-MAANR

The Secondary states of a circuit pack are:

- NIL
- FAILED
- UNEQUIPPED
- MISMATCHED
- UNDEFINED

Facility states

The facility states are identified in the Facilities tab of System Manager.

The Administrative state of a circuit pack facility is IS if both the circuit pack and its related facilities (if any) are IS. The administrative states are:

- IS
- OOS

The Operational states of a circuit pack facility are:

- IS-NR
- IS-ANR
- OOS-MA
- OOS-AU
- OOS-AU-MA
- OOS-MAANR

The Secondary states of a circuit pack facility are:

- NIL
- FAILED
- SUPPORTING-ENTITY-FAILED
- SUPPORTING-ENTITY-OUTAGE

Table 3-1
Equipment and facility states

Primary state	Description
IS	In-service; no failure detected
IS-ANR	In-service abnormal; degraded condition present on the equipment/facility (where applicable). The function is being performed at a reduced capacity but the device has not failed. Note: When this state is displayed, check the active alarms and events against the system to determine the cause and the extent of the problem. Troubleshoot the alarms and events using <i>Trouble Clearing and Alarm Reference Guide</i> , 3213-1701-542 to re-establish the IS-NR (normal) state.
IS-NR	In-service normal; no failure detected
OOS	Out-of-service; no failure detected
OOS-MA	Out-of-service maintenance; no failure detected (OOS for maintenance for provisioning memory administration)
OOS-AU	Out-of-service autonomous: In-service; failure detected such as LOS or LOF.
OOS-AU-MA	Out-of-service autonomous/maintenance; failure detected
OOS-MAANR	Out-of-service maintenance and abnormal; degraded condition present on the equipment/facility (where applicable). The function is being performed at a reduced capacity but the device has not failed.
NIL	Circuit pack present
FAILED	Circuit pack present; failure detected
UNEQUIPPED	Circuit pack not present; failure detected
SUPPPORTING-ENTITY-FAILED	Circuit pack not present, failure detected
SUPPPORTING-ENTITY-OUTAGE	Circuit pack not present, failure detected
MISMATCHED	Circuit pack mismatch (the circuit pack in slot does not correspond to the circuit pack provisioned for that slot)
UNDEFINED	Circuit pack unknown (for example, a Release 6.0 OCI SRM ESCON in a Release 4.0 shelf)

Facilities

A facility is a provisioned configuration on a circuit pack that supports the data transport service. In Optical Metro 5200 shelves, only these circuit packs have facilities:

- APBE
- OCI
- OCI SRM
- OCI SRM GbE/FC
- OCI SRM GbE
- OCLD
- OFA
- OSC
- OTR
- Muxponder

In Optical Metro 5100 shelves, only these circuit packs have facilities:

- OCI
- OCI SRM
- OCI SRM GbE/FC
- OCI SRM GbE
- OCLD
- OSC
- OTR
- Muxponder

An OCI SRM or OCI SRM SONET/SDH circuit pack has four facilities, one for each of its ports. An OCI SRM SONET/SDH LTE circuit pack has five facilities; four client-side facilities (one for each of its ports) and one aggregate facility. An OCI SRM ESCON circuit pack has eight facilities, one for each of its ports. An OCI SRM GbE/FC or OCI SRM GbE circuit pack has three facilities; two client-side facilities (one for each of its ports) and one aggregate facility.

An OSC circuit pack has four facilities; two for the optical supervisory channel (OSC) and two for the wayside channel (WSC).

The OTR has two facilities, one for the client and one for the line.

The APBE has five facilities, one for each of its ports. Ports 1 through 4 each represent one electrical variable optical attenuator (eVOA), and port 5 represents the total output power of the aggregate signal.

A Muxponder 10 Gbit/s GbE/FC VCAT circuit pack has eleven facilities; ten client-side facilities (one for each of its ports) and one line facility. The Muxponder 10 Gbit/s GbE/FC (Release 7.0) supports 9 facilities (8 client-side and 1 line).

Changing the state of circuit packs and facilities

You cannot control the operational state directly. The following factors determine the operational state of a circuit pack:

- the administrative state of the circuit pack
- the operational state of the network

If the administrative state of a circuit pack is IS and its network path can carry traffic, then the operational state is IS-NR. All other combinations change the operational state to OOS-MA, OOS-AU-MA, or OOS-AU. The operational state of circuit packs must be IS if they are to perform their assigned functions. When you use the System Manager to query the state of a circuit pack, the shelf reports its operational state.

You must change the administrative state on a circuit pack to OOS before you perform any maintenance procedures on that circuit pack. The exception to this rule is the OCM circuit pack. When switching traffic from the active to protection OCM, you can leave the original OCM IS.

When you change the administrative state to OOS, you force the operational state to OOS and the circuit pack cannot perform its provisioned function.

You must change the administrative state of an APBE, OCI, OCI SRM, OCI SRM GbE/FC, OCI SRM GbE, OCLD, OTR, Muxponder, or OFA circuit pack to IS before you can put its related facility or facilities to IS. In addition, you must change the state of an APBE, OCI, OCI SRM, OCI SRM GbE/FC, OCI SRM GbE, OCLD, OTR, Muxponder, or OFA facility or facilities to OOS before you can take its related circuit pack OOS. The software takes approximately 15 seconds to complete requests to change the state of facilities and circuit packs.

The OSC circuit pack defaults to an IS state when it is provisioned. When the OSC circuit pack is provisioned, the OSC facilities (east and west) are automatically IS. You must place the WSC facilities (east and west) IS if you require the wayside channel.

Note 1: The aggregate facility on an OCI SRM GbE/FC or OCI SRM GbE circuit pack must be IS before you can put the client-side facilities IS, and the client-side facilities must be OOS before you can put the aggregate

facility OOS. All the facilities on an OCI SRM GbE/FC or OCI SRM GbE circuit pack must be OOS before you can take the OCI SRM GbE/FC or OCI SRM GbE circuit pack OOS.

Note 2: Port 5 on an APBE must be IS before you can put ports 1 through 4 IS, and ports 1 through 4 must be OOS before you can put port 5 OOS. All five port facilities must be OOS before you can take the APBE circuit pack OOS.

Note 3: The Line facility on a Muxponder circuit pack must be IS before you can put the client-side facilities IS, and the client-side facilities must be OOS before you can put the Line facility OOS. All the facilities on an Muxponder circuit pack must be OOS before you can take the Muxponder circuit pack OOS.

Sequence for provisioning a new wavelength

Follow this sequence to provision a new wavelength on the ring and minimize the number and severity of alarms generated. This sequence presumes that the shelves are commissioned and System Manager is installed. Proceed on a shelf-by-shelf basis, starting with the originating or terminating shelf, and work your way in order around the ring to the opposite end of the path.

OCLD/OCI or OCLD/OCI SRM connections

- Autoprovision the corresponding OCLDs (the inventory and facilities are put in-service).
- Autoprovision the corresponding OCIs (the inventory is put in-service and the facilities are out-of-service; the OCI Tx laser is in shutdown mode).

On the OCI, a -80 dBm Tx power monitoring reading indicates a laser shutdown by software. The OCI Tx laser can be shutdown for the following:

- incomplete provisioning path on the System Manager (equipment / facility / channel assignment)
- missing physical fiber connections for the provisioned path
- active alarms within the circuit pack in question which can cause a surrogate payload signal (SPS) to be injected
- Create the new channel assignment; follow [Procedure 3-3, “Making or modifying channel assignments”](#), in this chapter.
- Connect the OCI to the traffic source.
 - Follow the procedure appropriate to the type of OCI, in the [“Connecting components”](#) chapter in *Connection Procedures*, 323-1701-221.
- Place the OCI facilities in-service (Rx AIS alarms on the OCI should clear).
 - Follow [Procedure 3-10 “Putting a circuit pack or SFP facility in-service”](#), in this chapter.

- Move to the next shelf in the ring, seat the OCLD, then the OCI circuit packs, create the channel assignment and place the OCI facilities in-service.
- In amplified networks where APBEs are used, provision the APBEs on the optical path between the transmitting OCLD and the receiving OCLD.
 - Follow procedures in [“Equalizing amplified systems”](#) chapter, in *Testing and Equalization Procedures*, 323-1701-222.

OCLD/OCI SRM GbE/FC or OCLD/OCI SRM GbE connections

- Autoprovision the corresponding OCLDs (the inventory and facilities are put in-service).
- Autoprovision the corresponding OCI SRM GbE/FC or OCI SRM GbE circuit packs (the inventory is put in-service, the aggregate facility is out-of-service, and the client-side facilities are out-of-service).
- Verify the provisioning of the OCI SRM GbE/FC or OCI SRM GbE aggregate facility and make any necessary changes; follow [Procedure 3-11, “Provisioning concatenation type and transport mode”](#), in this chapter.
- Create the new channel assignment; follow [Procedure 3-3, “Making or modifying channel assignments”](#), in this chapter.
- If the protocol specified for the client-side facility in the channel assignment is Gigabit Ethernet, make sure that the Auto-negotiation and Pause details are provisioned correctly on the subtending equipment
- Connect the OCI SRM GbE/FC or OCI SRM GbE to the traffic source.
 - Follow the procedure in the [“Connecting components”](#) chapter in *Connection Procedures*, 323-1701-221.
- If the protocol specified for the client-side facility in the channel assignment is Gigabit Ethernet, provision the Auto-negotiation and Pause details on the OCI SRM GbE/FC or OCI SRM GbE circuit pack; see [Procedure 3-19, “Provisioning Auto-negotiation and Pause details”](#).
- Place the OCI SRM GbE/FC or OCI SRM GbE aggregate facility and client-side facilities in-service (Rx AIS alarms on the OCI should clear).
 - Follow [Procedure 3-10 “Putting a circuit pack or SFP facility in-service”](#), in this chapter.
- Move to the next shelf in the ring, seat the OCLD, then the OCI SRM GbE/FC or OCI SRM GbE circuit packs, create the channel assignment and place the OCI SRM GbE/FC or OCI SRM GbE facilities in-service.
- In amplified networks where APBEs are used, provision the APBEs on the optical path between the transmitting OCLD and the receiving OCLD.
 - Follow procedures in [“Equalizing amplified systems”](#) chapter, in *Testing and Equalization Procedures*, 323-1701-222.

OTR connections

- Autoprovision the OTR (the inventory is put in-service, the Line facility is in-service and the Client facility is out-of-service).
- Create the new channel assignment.
 - Follow [Procedure 3-3 “Making or modifying channel assignments”](#), in this chapter.
- Connect the OTR to the traffic source.
 - For an unprotected connection, follow [Procedure 3-24 “Connecting OTR circuit packs to subtending equipment”](#), in *Connection Procedures*, 323-1701-221.
 - For a protected connection, follow [Procedure 3-25 “Connecting OTR circuit packs to subtending equipment through a Transponder Protection Tray”](#), in *Connection Procedures*, 323-1701-221.
- Place the OTR client facility in-service.
 - Follow [Procedure 3-10 “Putting a circuit pack or SFP facility in-service”](#), in this chapter.

Note: When the client signal is coming from a transponder protection tray, for one of the two OTR circuit packs involved, the client port Tx laser stays in shut down mode (protection path).

- Move to the next shelf in the ring, seat the OTR circuit pack, create the channel assignment and place the client facility in-service.
 - For a passthrough connection with a 10 Gbit/s OTR or 10 Gbit/s Enhanced OTR, make sure that you comply with [Procedure 3-26 “Connecting OTR 10 Gbit/s circuit packs for pass-through connections through a patch panel”](#) or [Procedure 3-27 “Connecting OTR 10 Gbit/s Enhanced circuit packs for pass-through connections through a patch panel”](#), in *Connection Procedures*, 323-1701-221.

Note: When the client signal is coming from a transponder protection tray, for one of the two OTR circuit packs involved, the client port Tx laser stays in shut down mode (protection path).

- In amplified networks where APBEs are used, provision the APBEs on the optical path between the transmitting OTR and the receiving OTR.
 - Follow procedures in [“Equalizing amplified systems”](#), in *Testing and Equalization Procedures*, 323-1701-222.

Muxponder connections

- Autoprovision the Muxponder (the inventory is put in-service and the line-side facility is in-service). All SFP modules equipped on the circuit pack also autoprovise (the equipment is put in-service, but the client-side facilities are out-of-service)
- Create the new channel assignment.

- Follow [Procedure 3-3 “Making or modifying channel assignments”](#), in this chapter.
- If the protocol specified for the client-side facility in the channel assignment is Gigabit Ethernet, make sure that the Auto-negotiation and Pause details are provisioned correctly on the subtending equipment. The Auto-negotiation and Pause are available when the signal is Gigabit Ethernet and the GFP encapsulation mode is set to GFP-T.
- Connect the Muxponder SFPs to the traffic source.
 - Follow the procedure in the [“Connecting components”](#) chapter in *Connection Procedures*, 323-1701-221.
- If the protocol specified for the client-side facility in the channel assignment is Gigabit Ethernet, provision the Auto-negotiation and Pause details on the Muxponder SFP; see [Procedure 3-19, “Provisioning Auto-negotiation and Pause details”](#).
- Place the SFP client-side facilities in-service.
 - Follow [Procedure 3-10 “Putting a circuit pack or SFP facility in-service”](#), in this chapter.
- Move to the next shelf in the ring, seat the Muxponder circuit pack, create the channel assignment and place the client-side facilities in-service.
- In amplified networks where APBEs are used, provision the APBEs on the optical path between the transmitting Muxponder and the receiving Muxponder.
 - Follow procedures in [“Equalizing amplified systems”](#), in *Testing and Equalization Procedures*, 323-1701-222.

Sequence for deprovisioning a wavelength

Follow this sequence to deprovision a wavelength on the ring and minimize the number and severity of alarms generated. This sequence presumes that the System Manager is installed on the computer that will access the Optical Metro 5100/5200 shelf. Proceed on a shelf-by-shelf basis, starting with the originating or terminating shelf, and work your way in order around the ring to the opposite end of the path.

OCLD/OCI, OCLD/OCI SRM, OTR, or Muxponder connections

- Put all corresponding OCLD and OCI/OCI SRM, OTR, or Muxponder client/line port facilities out-of-service. Start with the originating or terminating shelf, and work your way in order around the ring to the opposite end of the path. Follow [Procedure 3-13, “Taking a circuit pack facility or SFP facility out-of-service”](#), in this chapter.
- Delete the corresponding channel assignment. Follow [Procedure 3-4, “Deleting channel assignments”](#), in this chapter.
- Disconnect the traffic source from the corresponding OCIs or OTR client ports.

- The path is now available to be provisioned with a new channel assignment. To create a new channel assignment, follow [Procedure 3-3](#), “[Making or modifying channel assignments](#)”, in this chapter.

Requirements

[Table 3-2](#) lists the tools and materials required to complete the procedures in this chapter.

Table 3-2
Tools and materials required to complete circuit pack provisioning procedures

Item	Quantity	Supplied
Antistatic wrist strap	1	no
Optical fiber cleaning kit	1	no
Fiber inspection scope	1	no
Optical test set	1	no
Adapters (if necessary)	1	no
System Manager interface	1	no

Before you begin

Before you begin the procedures in this chapter, make sure that you have commissioned the network according to the “[Commissioning a shelf](#)” chapter, in *Commissioning Procedures*, 323-1701-220.

Log in to the System Manager as an Admin or Operator level user.

Precautions



CAUTION

Risk of shelf malfunction

Nortel Networks recommends that you do not use cellular phones at any Optical Metro 5100/5200 site. The use of cellular phones in proximity to Optical Metro 5100/5200 equipment can cause shelf malfunction.



CAUTION

Risk of affecting network reliability

Make sure that all connectors are cleaned before you make the connections (or re-connections) described in this procedure. For cleaning information, see the chapter “[Cleaning connectors](#)”, in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

**CAUTION****Risk of incorrect backup file**

Back up the shelf after provisioning changes. Otherwise, the shelf could be restored from an out-of-date backup file in the event of shelf failure. See [Procedure 1-36 “Backing up shelf configuration data”](#) for details.

Procedure list

[Table 3-3](#) lists the procedures in this chapter.

Table 3-3
Procedures for provisioning the circuit packs

Procedure	Page	Comments
3-1 Autoprovisioning a circuit pack or SFP	3-16	Required.
3-2 Manually provisioning a circuit pack or SFP	3-20	Required.
3-3 Making or modifying channel assignments	3-29	Required.
3-4 Deleting channel assignments	3-47	Required.
3-5 Adding path assignments	3-51	Optional.
3-6 Deleting path assignments	3-54	Optional.
3-7 Putting a circuit pack or SFP in-service	3-55	Required.
3-8 Taking a circuit pack or SFP out-of-service	3-57	Required.
3-9 Deleting a circuit pack or SFP from the inventory	3-59	Required.
3-10 Putting a circuit pack or SFP facility in-service	3-61	Required.
3-11 Provisioning concatenation type and transport mode	3-64	Required to provision the concatenation type and transport mode on the aggregate facility of an OCI SRM GbE/FC or OCI SRM GbE circuit pack or the line-side facility of a Muxponder circuit pack.
3-12 Putting a WSC facility in-service on an OSC circuit pack	3-66	Optional.
3-13 Taking a circuit pack facility or SFP facility out-of-service	3-68	Required.
3-14 Deleting a circuit pack or SFP facility	3-72	Required.
3-15 Adding a circuit pack facility or SFP facility	3-75	Required.

3-12 Provisioning circuit packs and managing traffic

Table 3-3 (continued)

Procedures for provisioning the circuit packs

Procedure	Page	Comments
3-16 Setting GFP conditioning on a client-side port	3-76	Required.
3-17 Provisioning GFP Frame Check Sequence (FCS)	3-77	Optional.
3-18 Measuring round trip delay on a client-side port	3-79	Required
3-19 Provisioning Auto-negotiation and Pause details	3-81	Required if you create a channel assignment on a port of an OCI SRM GbE/FC or OCI SRM GbE circuit pack with Gigabit Ethernet as the protocol.
3-20 Provisioning subrate and extended reach details	3-85	Required if you create a channel assignment on a port of an OCI SRM GbE/FC Enhanced circuit pack and FC-100 is the protocol.
3-21 Changing the timing mode	3-88	Optional.
3-22 Changing the signal degrade threshold	3-90	Optional.
3-23 Provisioning the per-wavelength optical service channel (PWOSC)	3-91	Optional.
3-24 Setting path monitoring on an OCI SRM SONET/SDH LTE	3-93	Optional.
3-25 Manually provisioning a DSCM	3-94	Optional.
3-26 Manually provisioning an ECT or PBE	3-96	Optional.
3-27 Manually provisioning an OMX	3-98	Optional.
3-28 Manually provisioning a 1310 nm splitter/coupler	3-100	Optional.
3-29 Manually provisioning an OSC splitter/coupler	3-102	Optional.
3-30 Manually provisioning a VOA tray	3-104	Optional.
3-31 Manually provisioning a transponder protection tray	3-106	Optional.
3-32 Manually provisioning an equipment inventory unit (EIU)	3-108	Optional.
3-33 Provisioning the slot number of a passive device	3-112	Optional.
3-34 Provisioning OFA direction and location	3-113	Optional.

Table 3-3 (continued)
Procedures for provisioning the circuit packs

Procedure	Page	Comments
3-35 Provisioning APBE direction, location, and associated equipment	3-115	Optional.
3-36 Provisioning the optical system identifier (OSID)	3-117	Required for interconnected rings, hub-and-spoke configurations, and intrasite fault sectionalization.
3-37 Provisioning the fibering topology and fibering configuration	3-122	Required for compound systems and intrasite fault sectionalization.
3-38 Enabling intrasite fault sectionalization (IFS)	3-124	Optional. You must enable intra-site fault sectionalization for each OSC circuit pack in the ring.
3-39 Disabling intrasite fault sectionalization (IFS)	3-127	If IFS is enabled, it must be disabled before making fibering changes at a site, removing a band from a site, removing a shelf, or performing a software upgrade.
3-40 Removing traffic from an OCI circuit pack	3-129	Optional.
3-41 Adding traffic to an end-to-end channel involving OCI and OCLD circuit packs	3-131	Required.
3-42 Removing traffic from an OCLD circuit pack	3-133	Optional.
3-43 Adding traffic to an end-to-end channel involving OTR circuit packs	3-136	Required.
3-44 Removing traffic from an OTR circuit pack	3-139	Required.
3-45 Adding traffic to an end-to-end channel involving Muxponder circuit packs	3-142	Required.
3-46 Removing traffic from a Muxponder circuit pack	3-144	Required.
3-47 Adding path protection to an unprotected path	3-147	Optional.
3-48 Forcing traffic to one path on a protected channel	3-151	Optional.
3-49 Removing a manual, force, or lockout switch from a protection path	3-155	Required if a manual, force, or lockout switch is set on a protection path, but is no longer needed.
3-50 Creating two unprotected paths from one protected OCLD path	3-158	Optional.

Table 3-3 (continued)**Procedures for provisioning the circuit packs**

Procedure	Page	Comments
3-51 Creating two unprotected paths from one protected OTR path	3-163	Optional.
3-52 Creating two unprotected paths from one protected Muxponder path	3-170	Optional.
3-53 Locking out an active path	3-175	Optional.
3-54 Performing a lockout on a Muxponder circuit pack	3-180	Optional.
3-55 Force switching on OCM circuit packs	3-183	Optional.
3-56 Manual switching on protected channel assignments	3-185	Optional.
3-57 Manual switching on OCM circuit packs	3-188	Optional.
3-58 Removing a force switch from an OCM	3-190	Required if a force switch is set on an OCM, but is no longer needed.
3-59 Creating and modifying a loopback using the System Manager	3-192	Optional.
3-60 Removing a loopback using the System Manager	3-200	Optional.
3-61 Provisioning primary and secondary clock references for an OCI SRM SONET/SDH or OCI SRM SONET/SDH LTE	3-202	Required.
3-62 Manual switching of clock references for an OCI SRM SONET/SDH or OCI SRM SONET/SDH LTE	3-205	Optional.
3-63 Upgrading a shelf from OCM 1.25 Gbit/s to OCM 2.5 Gbit/s circuit packs	3-207	You must use OCM 2.5 Gbit/s circuit packs in a shelf if you are provisioning OCI SRM SONET/SDH, OCI SRM ESCON, OCI OC-48/STM-16 circuit packs, or if you are provisioning OCI SONET/SDH circuit packs for an OC-48/STM-16 signal.
3-64 Enabling or disabling revertive protection switching	3-211	Optional.
3-65 Converting a protected channel assignment to an unprotected channel assignment on an OCLD path	3-214	Optional.

Table 3-3 (continued)
Procedures for provisioning the circuit packs

Procedure	Page	Comments
3-66 Converting a protected channel assignment to an unprotected channel assignment on an OTR path	3-220	Optional.
3-67 Converting a protected channel assignment to an unprotected channel assignment on a Muxponder path	3-228	Optional.
3-68 Reseating a circuit pack	3-232	Optional.

Procedure 3-1

Autoprovisioning a circuit pack or SFP

Use this procedure to seat and autoprovision a circuit pack or SFP in the commissioned Optical Metro 5100 or Optical Metro 5200 shelf.

Action

Step	Action
1	If you want to autoprovision a circuit pack in an Optical Metro 5100 shelf Then go to step 2 Optical Metro 5200 shelf Then go to step 10
2	Go to Procedure 3-6 “Engaging the remaining circuit packs into the backplane (for Optical Metro 5100 shelf)” in <i>Commissioning Procedures</i> , 323-1701-220. Make sure to read the introduction, the requirements, and the precautions sections.
3	Remove the shelf cover by opening the latches on each side of the cover.
	 DANGER Risk of personal injury or equipment damage Do not let go of the shelf cover when you open it. The shelf cover is not permanently attached to the shelf and you must remove the door completely. If you let go of the door when you open it, you can cause personal injury, damage to the equipment, or both.
4	Seat a circuit pack. Lift the lock latches away from the circuit pack faceplate and slide the desired circuit pack in the desired slot to the back of the shelf and push the ends of the lock latches against the faceplate of the circuit pack to lock the circuit pack in position. <i>The top and bottom latches lock to the circuit pack cage.</i> Note: Wait for the circuit pack to autoprovision. Autoprovisioning takes approximately two minutes to complete. Do not go to the next step until the circuit pack is online. The Status LED should be green when complete.
5	Follow Procedure 1-39 “Performing a health check” to run a health check on the shelf and verify that all circuit packs meet the hardware baseline. Note: Optical system identifiers are unassigned (blank) when you seat line-facing circuit packs. If your network consists of multiple independent or bridged systems, you must manually provision the optical system identifier for all line-facing equipment in each ring. Follow Procedure 2-21 “Provisioning the optical system identifier” in this chapter.

—continued—

Procedure 3-1 (continued)

Autoprovisioning a circuit pack or SFP

Step	Action						
6	After a successful circuit pack autoprovisioning in the Optical Metro 5100 shelf, the seated circuit pack or SFP (if present on the circuit pack) appears in an in-service state in the Inventory window of System Manager. Circuit pack facilities are listed in the Facilities window in the following states: • OCLD facilities are IS • OTR line facility is IS, and client facility is OOS • Muxponder line facility is IS, and SFP client-side facilities are OOS • OCI SRM facilities are OOS • OCI SRM GbE/FC or OCI SRM GbE aggregate facility is OOS, and client-side facilities are OOS • OSC east and west facilities are IS, WSC east and west facilities are OOS						
7	<table> <tr> <th>If, in System Manager, the seated circuit pack displays correctly</th><th>Then</th></tr> <tr> <td>displays correctly</td><td>you have completed this procedure</td></tr> <tr> <td>does not display correctly</td><td>go to step 8</td></tr> </table>	If, in System Manager, the seated circuit pack displays correctly	Then	displays correctly	you have completed this procedure	does not display correctly	go to step 8
If, in System Manager, the seated circuit pack displays correctly	Then						
displays correctly	you have completed this procedure						
does not display correctly	go to step 8						
8	Delete the incorrect entry first from the Facilities window and then from the Inventory window. Place any incorrect in-service facility and inventory out-of-service before you delete the entry.						
9	Remove and insert the circuit pack again, or manually provision the circuit pack. See Procedure 3-2 “Manually provisioning a circuit pack or SFP” in this chapter. You have completed this procedure.						
10	Go to Procedure 3-5 “Engaging the remaining circuit packs into the backplane (for Optical Metro 5200 shelf)” in <i>Commissioning Procedures</i> , 323-1701-220. Make sure to read the introduction, the requirements, and the precautions sections.						
11	Remove the shelf cover by opening the latches on each side of the cover.						

**DANGER****Risk of personal injury or equipment damage**

Do not let go of the shelf cover when you open it. The shelf cover is not permanently attached to the shelf and you must remove the door completely. If you let go of the door when you open it, you can cause personal injury, damage to the equipment, or both.

—continued—

3-18 Provisioning circuit packs and managing traffic

Procedure 3-1 (continued)

Autoprovisioning a circuit pack or SFP

Step	Action
12	Seat a circuit pack. Lift the lock latches away from the circuit pack faceplate and slide the desired circuit pack in the desired slot to the back of the shelf and push the ends of the lock latches against the faceplate of the circuit pack to lock the circuit pack in position. <i>The top and bottom latches lock to the circuit pack cage.</i> Note: Wait for the circuit pack to autoprovision. Autoprovisioning takes approximately two minutes to complete. Do not go to the next step until the circuit pack is online. The Status LED should be green when complete.
13	Follow Procedure 1-39 “Performing a health check” in this book to run a health check on the shelf and verify that all circuit packs meet the hardware baseline. Note: Optical system identifiers are unassigned (blank) when you seat line-facing circuit packs. If your network consists of multiple independent or bridged systems, you must manually provision the optical system identifier for all line-facing equipment in each ring. Follow Procedure 3-36 “Provisioning the optical system identifier (OSID)”.
14	After a successful circuit pack autoprovisioning in the Optical Metro 5200 shelf, the seated circuit pack or SFP (if present on the circuit pack) appears in an in-service state in the Inventory window of System Manager. Circuit pack facilities are listed in the Facilities window in the following states: • OCLD facilities are IS • OTR line facility is IS, and client facility is OOS Note: When a OTR or OCLD circuit pack autoprovisions, the Flex Type, defaults to Standard. If this is a Universal OCLD or OTR, • OCI SRM facilities are OOS • OCI SRM GbE/FC or OCI SRM GbE aggregate facility is OOS, and client-side facilities are OOS • OTR line facility is IS, and client facility is OOS • Muxponder line facility is IS, and SFP client-side facilities are OOS • OFA facilities are OOS • APBE facilities are OOS Note: In the Band Power Info of the APBE, the settings are as follows; Prov Mode = perChannel, # of Channels = 0, Power Target = -27.0 dBm. These values are applicable to newly auto-provisioned APBE circuit packs that have unused facilities. These values will be inconsistent with auto-provisioned APBE circuit packs from release 7.0 or earlier, that have facilities which are still unused. • OSC east and west facilities are IS, WSC east and west facilities are OOS

—continued—

Procedure 3-1 (continued)

Autoprovisioning a circuit pack or SFP

Step	Action	
15	If , in System Manager, the seated circuit pack displays correctly	Then you have completed this procedure
	does not display correctly	go to step 16
16	Delete the incorrect entry first from the Facilities window and then from the Inventory window. Place any incorrect in-service facility and inventory out-of-service before you delete the entry. Follow: • Procedure 3-13 “Taking a circuit pack facility or SFP facility out-of-service” • Procedure 3-14 “Deleting a circuit pack or SFP facility” • Procedure 3-8 “Taking a circuit pack or SFP out-of-service” • Procedure 3-9 “Deleting a circuit pack or SFP from the inventory”	
17	Remove and insert the circuit pack again, or manually provision the circuit pack. See Procedure 3-2 “Manually provisioning a circuit pack or SFP” in this chapter.	

—end—

Procedure 3-2

Manually provisioning a circuit pack or SFP

Use this procedure to manually provision a circuit pack or SFP when autoprovisioning does not apply. For example, follow this procedure when you want to provision the circuit pack before it is physically seated in the shelf, or when the circuit pack has been deleted from the inventory, and you want to add it without reseating the circuit pack.

Note: You must provision the circuit pack before you can provision SFPs for that circuit pack.

OCM and SP circuit packs cannot be manually provisioned because they are automatically preprovisioned on the shelves for the associated fixed slots.

System Manager requires a band and channel number when you provision OCLD and OTR circuit packs. Because ITU CWDM circuit packs do not use bands or channels, you must understand how ITU CWDM wavelengths translate into System Manager bands. Use [Table 3-4](#) to find the correct band.

—continued—

Procedure 3-2 (continued)

Manually provisioning a circuit pack or SFP

Table 3-4
System Manager band and ITU CWDM wavelength mapping

System Manager band and channel	ITU CWDM wavelength (nm)
B5C1	1471.00
B6C1	1491.00
B1C1	1511.00
B2C1	1531.00
B3C1	1551.00
B4C1	1571.00
B7C1	1591.00
B8C1	1611.00
Note: Some Optical Metro 5100/5200 ITU CWDM hardware introduced before the ITU CWDM standard (G.695) was finalized has labels with a center wavelength that differs by 1 nm with respect to the finalized ITU CWDM standard (G.695). For example, for the 1471 nm wavelength, the label shows 1470 nm. However, there is no wavelength incompatibility since the passbands are the same. For example, the pre-finalized ITU CWDM standard 1470 nm channel specified a range of -5.5 to +7.5 nm, that is, a passband of 1464.5 to 1477.5 nm. The finalized ITU CWDM standard 1471 nm channel specifies a range of +/-6.5 nm, that is, the passband is still 1464.5 to 1477.5 nm. The only difference is the labeling.	

—continued—

Procedure 3-2 (continued)

Manually provisioning a circuit pack or SFP

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to manually provision circuit packs or SFPs.

ATTENTION

If you are provisioning OCI SRM SONET/SDH, OCI SRM SONET/SDH LTE, OCI SRM ESCON, OCI OC-48/STM-16, or OCI SRM GbE/FC circuit packs, or if you are planning to provision an OCI SONET/SDH circuit pack with an OC-48/STM-16 signal, you must have OCM 2.5 Gbit/s circuit packs installed in the shelf.

To upgrade OCM 1.25 Gbit/s circuit packs to OCM 2.5 Gbit/s circuit packs, follow [Procedure 3-63 “Upgrading a shelf from OCM 1.25 Gbit/s to OCM 2.5 Gbit/s circuit packs”](#), in this chapter.

For more information, refer to “[OCI compatibility](#)” in the “[OCI circuit packs](#)” chapter in *Hardware Description*, 323-1701-102.

ATTENTION

Optical system identifier (OSID) specifications should be consistent for all applicable circuit packs on the shelf unless the shelf (Optical Metro 5200 only) is being used as a bridge. Inaccuracies in alarm correlation may occur if this convention is violated.

—continued—

Procedure 3-2 (continued)

Manually provisioning a circuit pack or SFP**Action**

Step	Action																						
1	In the System Manager, select the Equipment tab.																						
2	Select the Inventory tab.																						
3	Double-click on the empty slot or subslot (slot and port) that will contain the circuit pack or SFP that you want to provision. <i>The Optical Metro Inventory—Add wizard dialog box appears.</i>																						
4	From the Circuit Pack Type drop-down list, select the type of circuit pack that you are provisioning. a. To provision an OCI SRM Transparent, an OCI SRM SONET/SDH, OCI SRM SONET/SDH LTE, or OCI SRM ESCON circuit pack, select SRM. b. To provision an OCI SRM GbE/FC or OCI SRM GbE circuit pack, select GFSRM. c. To provision a Muxponder circuit pack, select MOTR. d. To provision an SFP on a Muxponder circuit pack, select MOTRSFP. Note: You must provision the Muxponder circuit pack before you can provision SFPs on the Muxponder circuit pack.																						
5	Click the Next button.																						
6	<table> <tr> <th>If you are provisioning</th><th>Then go to</th></tr> <tr> <td>an OCLD circuit pack</td><td>step 7</td></tr> <tr> <td>an OCI circuit pack</td><td>step 8</td></tr> <tr> <td>an OCI SRM circuit pack</td><td>step 9</td></tr> <tr> <td>an OCI SRM GbE/FC or OCI SRM GbE circuit pack</td><td>step 10</td></tr> <tr> <td>an OFA circuit pack</td><td>step 11</td></tr> <tr> <td>an APBE circuit pack</td><td>step 12</td></tr> <tr> <td>an OSC circuit pack</td><td>step 13</td></tr> <tr> <td>an OTR circuit pack</td><td>step 14</td></tr> <tr> <td>a Muxponder circuit pack</td><td>step 15</td></tr> <tr> <td>an SFP</td><td>step 16</td></tr> </table>	If you are provisioning	Then go to	an OCLD circuit pack	step 7	an OCI circuit pack	step 8	an OCI SRM circuit pack	step 9	an OCI SRM GbE/FC or OCI SRM GbE circuit pack	step 10	an OFA circuit pack	step 11	an APBE circuit pack	step 12	an OSC circuit pack	step 13	an OTR circuit pack	step 14	a Muxponder circuit pack	step 15	an SFP	step 16
If you are provisioning	Then go to																						
an OCLD circuit pack	step 7																						
an OCI circuit pack	step 8																						
an OCI SRM circuit pack	step 9																						
an OCI SRM GbE/FC or OCI SRM GbE circuit pack	step 10																						
an OFA circuit pack	step 11																						
an APBE circuit pack	step 12																						
an OSC circuit pack	step 13																						
an OTR circuit pack	step 14																						
a Muxponder circuit pack	step 15																						
an SFP	step 16																						

—continued—

Procedure 3-2 (continued)

Manually provisioning a circuit pack or SFP

Step	Action
7	Complete the following steps: - Select a bit rate from the Max Bit Rate list. - Select a band from the Band drop-down list. Use Table 3-4 on page 3-21 to find the correct band for ITU CWDM circuit packs. <i>For CWDM and ITU CWDM circuit packs, System Manager populates the channel field with the correct channel number.</i> - For DWDM circuit packs, select a channel from the Channel drop-down list. - If required, enter an optical system identifier in the OSID field. - Select whether the expected far-end wavelength must be the same or any wavelength from the Exp. Far End Wavelength drop-down list. - Go to step 17.
8	Complete the following steps: - Select a bit rate from the Max Bit Rate list. - For 1.25 GB – Transparent and the 1.25 GB – Gigabit Ethernet OCl circuit packs, select the client-side wavelength from the Wavelength list. - Go to step 17.
9	Complete the following steps: - Select a bit rate from the Max Bit Rate list. - Go to step 17.
10	Complete the following steps: - Select a bit rate from the Max Bit Rate list. - Select a client-side wavelength from the Wavelength drop-down list. - Go to step 17.
11	Complete the following steps: - Select a direction from the Direction drop-down list. - Select an amplifier type from the AMP Type drop-down list. - Select an amplifier location from the Location drop-down list. - If required, enter an optical system identifier in the OSID field. - Go to step 17.

—continued—

Procedure 3-2 (continued)

Manually provisioning a circuit pack or SFP

Step	Action						
12	Complete the following steps: - Select a band from the Band Type drop-down list. - If required, enter an optical system identifier in the OSID field. - Select a direction from the Direction drop-down list. - Select a location from the Location drop-down list. - In the Associated Equipment area of the dialog box, select the equipment that is associated with this APBE by selecting a radio button. <table> <tr> <th>If in step 12e, you selected</th><th>Then</th></tr> <tr> <td>none</td><td>go to step 17</td></tr> <tr> <td>DSCM or OFA radio button</td><td>from the Type drop-down list, select an OFA or DSCM type and then go to step 17</td></tr> </table>	If in step 12e , you selected	Then	none	go to step 17	DSCM or OFA radio button	from the Type drop-down list, select an OFA or DSCM type and then go to step 17
If in step 12e , you selected	Then						
none	go to step 17						
DSCM or OFA radio button	from the Type drop-down list, select an OFA or DSCM type and then go to step 17						
13	Complete the following steps. - If required, enter an optical system identifier in the OSID field. - If the OSC will be connected to an adjacent site on the west, select Connected from the West Neighbor drop-down list. Otherwise, select Not Connected. - If the OSC will be connected to an adjacent site on the east, select Connected from the East Neighbor drop-down list. Otherwise, select Not Connected. - Go to step 17.						
14	Complete the following steps: - Select a bit rate from the Max Bit Rate drop-down list. - Select a band from the Band drop-down list. Use Table 3-4 on page 3-21 to find the correct band for ITU CWDM circuit packs. <i>For CWDM and ITU CWDM circuit packs, System Manager populates the channel field with the correct channel number.</i> - For DWDM circuit packs, select a channel from the Channel drop-down list. - Select a wavelength from the Wavelength drop-down list (not applicable to 10 GB or 10.3 GB - Enhanced OTR). - If required, enter an optical system identifier in the OSID field. - Select whether the expected far-end wavelength must be the same or any wavelength from the Exp. Far End Wavelength drop-down list. - Go to step 17.						

—continued—

Procedure 3-2 (continued)

Manually provisioning a circuit pack or SFP

Step	Action
15	Complete the following steps: - Select a bit rate from the Max Bit Rate drop-down list. - Select a band from the Band drop-down list. - Select a channel from the Channel drop-down list. - If required, enter an optical system identifier in the OSID field. - Select whether the expected far-end wavelength must be the same or any wavelength from the Exp. Far End Wavelength drop-down list. - Go to step 17.
16	Complete the following steps: - Select a bit rate from the Max Bit Rate drop-down list. - Select a client-side wavelength from the Wavelength drop-down list.
17	Click the Finished button. See Table 3-5 for the expected results of manually provisioning circuit packs.

—end—

Table 3-5
Expected results of manually provisioning circuit packs

Manually provisioned circuit pack	Expected results
OCLD, OCI, or OFA	- Equipment/Inventory window shows the following: OOS administrative state, OOS-AU-MA operational state, UNEQUIPPED secondary state - Equipment/Facility window shows the following: OOS administrative state, OOS-AU-MA operational state, SUPPORTING-ENTITY-OUTAGE secondary state
OCI SRM 1.25 Gbit/s OCI SRM SONET/SDH 2.5 Gbit/s	- Equipment/Inventory window shows the following: OOS administrative state, OOS-AU-MA operational state, UNEQUIPPED secondary state - Equipment/Facility window shows the following for each of the four facilities: OOS administrative state, OOS-AU-MA operational state, SUPPORTING-ENTITY-OUTAGE secondary state
OCI SRM SONET/SDH LTE	- Equipment/Inventory window shows the following: OOS administrative state, OOS-AU-MA operational state, UNEQUIPPED secondary state - Equipment/Facility window shows the following for each of the five facilities (four port facilities, one aggregate facility): OOS administrative state, OOS-AU-MA operational state, SUPPORTING-ENTITY-OUTAGE secondary state

Table 3-5 (continued)
Expected results of manually provisioning circuit packs

Manually provisioned circuit pack	Expected results
OCI SRM ESCON	• Equipment/Inventory window shows the following: OOS administrative state, OOS-AU-MA operational state, UNEQUIPPED secondary state • Equipment/Facility window shows the following for each of the eight facilities: OOS administrative state, OOS-AU-MA operational state, SUPPORTING-ENTITY-OUTAGE secondary state
OCI SRM GbE/FC (GFSRM) OCI SRM GbE (GFSRM)	• Equipment/Inventory window shows the following: OOS administrative state, OOS-AU-MA operational state, UNEQUIPPED secondary state • Equipment/Facility window shows the following for each of the three facilities (two port facilities, one aggregate facility): OOS administrative state, OOS-AU-MA operational state, SUPPORTING-ENTITY-OUTAGE secondary state
APBE	• Equipment/Inventory window shows the following: OOS administrative state, OOS-AU-MA operational state, UNEQUIPPED secondary state • Equipment/Facility window shows the following for each of the five facilities (four EVOA ports and port 5 [total aggregate output]): OOS administrative state, OOS-AU-MA operational state, SUPPORTING-ENTITY-OUTAGE secondary state • Equipment/Facility/Details button/Band Power Info window shows the following settings; Prov Mode = perChannel, # of Channels = 0, Power Target = -27.0 dBm. These values are the defaults for facilities on newly provisioned APBE circuit packs. These values are applicable to newly auto-provisioned APBE circuit packs that have unused facilities. These values will be inconsistent with auto-provisioned APBE circuit packs from release 7.0 or earlier, that have facilities which are still unused.
OSC	• Equipment/Inventory window shows the following: IS administrative state, OOS-AU operational state, UNEQUIPPED secondary state • Equipment/Facility window shows the following for the two OSC facilities (east and west): IS administrative state, OOS-AU operational state, SUPPORTING-ENTITY-OUTAGE secondary state • Equipment/Facility window shows the following for the two WSC facilities (east and west): OOS administrative state, OOS-AU-MA operational state, SUPPORTING-ENTITY-OUTAGE secondary state

Table 3-5 (continued)
Expected results of manually provisioning circuit packs

Manually provisioned circuit pack	Expected results
OTR	• Equipment/Inventory window shows the following: OOS administrative state, OOS-AU-MA operational state, UNEQUIPPED secondary state • Equipment/Facility window shows the following for each of the two facilities (client side and line side): OOS administrative state, OOS-AU-MA operational state, SUPPORTING-ENTITY-OUTAGE secondary state
Muxponder (MOTR)	• Equipment/Inventory window shows the following: OOS administrative state, OOS-AU-MA operational state, UNEQUIPPED secondary state • Equipment/Facility window shows the following for the line-side facility: OOS administrative state, OOS-AU-MA operational state, SUPPORTING-ENTITY-OUTAGE secondary state
SFP (MOTRSFP)	• Equipment/Inventory window shows the following: OOS administrative state, OOS-AU-MA operational state, UNEQUIPPED secondary state • Equipment/Facility window shows the following for the client-side facility: OOS administrative state, OOS-AU-MA operational state, SUPPORTING-ENTITY-OUTAGE secondary state

Procedure 3-3

Making or modifying channel assignments

Use this procedure to make or modify channel assignments using the System Manager. You can make unprotected, protected, or passthrough channel assignments.

Note 1: You cannot provision passthrough channel assignments on an OTR or Muxponder circuit pack.

Note 2: For the Muxponder 10 Gbit/s GbE/FC VCAT, if you want to modify a v-cat connection to a c-cat connection or vice versa, change the Transport drop-down list to Nil. After the Transport change to Nil is applied, the available c-cat or v-cat options based on the available paths are displayed in the Path Assignments window.

If you configure a protected channel assignment, you can perform forced, lockout, or manual traffic switches. If you configure the protected channel assignment as revertive, you can define the working path and the wait-to-restore (WTR) period. The WTR period is the amount of time traffic must wait before it reverts to the working path after the fault on the working path is cleared.

For the Muxponder circuit packs, you cannot configure the Working or Protection status of a Muxponder without deleting the Channel Assignment. The working path is the Muxponder that has the SFPs. Protected channel assignments on the Muxponder are always revertive.

OCI SRM GbE/FC or OCI SRM GbE circuit packs—provisioning path assignments

When you make channel assignments involving OCI SRM GbE/FC or OCI SRM GbE circuit packs, the client-side signals are mapped onto the aggregate signal by way of contiguous concatenation (c-cat) or virtual concatenation (v-cat). For the OCI SRM GbE/FC or OCI SRM GbE circuit packs concatenation type is the same for both ports and is determined in the provisioning of the aggregate facility.

For more information, refer to [“Network interoperability”](#) in *Network Planning and Link Engineering*, 323-1701-110.

Depending on the concatenation type and transport mode that you provisioned for the aggregate facility, and the bit rate that you provision for the client-side facility while making the channel assignment, the Transport drop-down list on the Channel Assignments dialog box displays different entries for provisioning path assignments.

—continued—

Procedure 3-3 (continued)

Making or modifying channel assignments

For OCI SRM GbE/FC or OCI SRM GbE circuit packs, see [Table 3-6](#) if the concatenation type is c-cat and [Table 3-7](#) if the concatenation type is v-cat.

Muxponder—provisioning channel assignments

Muxponder 10 Gbit/s GbE/FC circuit pack

The Muxponder 10 Gbit/s GbE/FC circuit pack supports fixed path assignments and contiguous concatenation (C-cat) mode with the following rules:

- STS-24c/VC-4-8c contiguous concatenation (C-cat) mode is supported on ports 1 to 8
- STS-48c/VC-4-16c C-cat mode is supported on ports 1, 3, 5 and 7
- Client ports 1 to 8 support STS-24c/VC-4-8c for Gigabit Ethernet, FC-100, and FICON
- Client ports 1, 3, 5 and 7 support STS 48c/VC-4-16c for FC-200 and FICON Express
- Channel assignment provisioning on ports 9 and 10 is not supported on this circuit pack
- [Table 3-8](#) lists the fixed-mapping assignments for the STS-24c/VC-4-8c and STS-48c/VC-4-16c contiguously concatenated groups

Muxponder 10 Gbit/s GbE/FC VCAT

The Muxponder 10 Gbit/s GbE/FC VCAT circuit pack supports both contiguous concatenation (C-cat) mode and virtual concatenation (V-cat) mode, ([Table 3-9](#)). This results in the following advantages

- increased number of services supported
- increased bandwidth utilization efficiency

The Muxponder 10 Gbit/s GbE/FC VCAT circuit pack also adds more flexibility by supporting flexible mapping assignments with the following rules:

- The circuit pack has a total of 192 STS-1s/VC-3s that can be utilized in various combinations on any client-side ports. There is an STS/VC pool of paths that can be associated with any of the ten client-side ports. The smallest granularity supported is STS-3c/VC-4.
- Unlike the OCI SRM GbE/FC, OCI SRM GbE/FC Enhanced, OCI SRM GbE and Muxponder 10 Gbit/s GbE/FC circuit packs, the Muxponder 10 Gbit/s GbE/FC VCAT circuit pack does not have any of the 192 STS-1/VC-3 paths fixed mapped to any of the client-side ports.

—continued—

Procedure 3-3 (continued)

Making or modifying channel assignments

- Each client-side port can have up to 48 STS-1s/VC-3s (through the provisioning of an STS-48c/VC-4-16c) provisioned against it. A maximum of 4 client-side ports can be provisioned this way, rendering the remaining 6 ports unable to carry any traffic.
- Unlike the OCI SRM GbE/FC, OCI SRM GbE/FC Enhanced, OCI SRM GbE and Muxponder 10 Gbit/s GbE/FC circuit packs, provisioning STS-48c/VC-4-16c on a port does not render the subsequent port unavailable for use.
- A user can add more paths or delete existing paths as required, provided the path is available in the pool of available STSs/VCS. This operation is service affecting.
- V-cat connections must be of the STS-3c/VC-4 granularity.
Note: Although there may be enough STS-1s/VC-3s available for a C-cat connection (in terms of number of paths or bandwidth), they must be contiguous in nature in order to provision the STS-Xc transport structure (where X can be 3, 12, 24, 48). For example, STS-1 numbers 1-9 and 16-18 may be available but they cannot be used to provision an STS-12c.
- All provisionable paths are STS-3c/VC-4 aligned. STS-2 or STS-3 is not used to provision the start of an STS-Xc or STS-3c-Xv connection.
- All provisionable paths cannot cross their natural boundary. See [Table 3-10](#) and [Table 3-11](#) for contiguous mapping assignments and for flexible v-cat mapping assignments.

OTR 10 Gbit/s Enhanced circuit pack—provisioning channel assignments

The OTR 10 Gbit/s Enhanced circuit pack uses the digital wrapper overhead communications channel for data communications traffic. The OTR 10 Gbit/s Enhanced circuit pack supports two different bit rates on the line side. As a result, the circuit pack may not be able to carry data communication traffic if the channel assignment of the two connected circuit packs is not the same. For example, if the channel assignment of the near-end is set to 10G Ethernet LAN and the channel assignment at the far-end is not, data communications traffic is not carried.

To make channel assignments on OTR circuit packs, start at the far-end (terminating shelf) and move towards the near-end (originating shelf) one shelf at a time.

—continued—

3-32 Provisioning circuit packs and managing traffic

Procedure 3-3 (continued)

Making or modifying channel assignments

Table 3-6

Provisionable bit rates for contiguous concatenation for OCI SRM GbE/FC or OCI SRM GbE circuit packs

Bit rate/ Protocol	SONET transport structure	SDH transport structure	# of STS-3c groups	Port 1 default STS-3c groups	Port 2 default STS-3c groups	Rate
GigE FC-100 FICON	STS-12c (Note 1)	VC-4-4c (Note 1)	4	1–12	25–36	622 Mbit/s
	STS-24c	VC-4-8c	8	1–24	25–48	1244 Mbit/s
	STS-48c (Note 2)	VC-4-16c (Note 2)	16	1–48	—	2488 Mbit/s
Note 1: This option is only available with the OCI SRM GbE/FC Enhanced for FICON and FC-100.						
Note 2: You can configure this option on Port 1 only. If you choose this rate, Port 2 is not available.						

Table 3-7

Provisionable bit rates for virtual concatenation for OCI SRM GbE/FC or OCI SRM GbE circuit packs

Bit rate/ Protocol	SONET transport structure	SDH transport structure	# of STS-3c groups	Port 1 default STS-3c groups	Port 2 default STS-3c groups	Rate
GigE FC-100 FICON	STS-3c-1v	VC-4-1v	1	1–3	25–27	155 Mbit/s
	STS-3c-2v	VC-4-2v	2	1–6	25–29	311 Mbit/s
	STS-3c-3v	VC-4-3v	3	1–9	25–33	467 Mbit/s
	STS-3c-4v	VC-4-4v	4	1–12	25–36	622 Mbit/s
	STS-3c-5v	VC-4-5v	5	1–15	25–39	778 Mbit/s
	STS-3c-6v	VC-4-6v	6	1–18	25–42	933 Mbit/s
	STS-3c-7v	VC-4-7v	7	1–21	25–45	1088 Mbit/s
	Nil	Nil	0	—	—	—

—continued—

Procedure 3-3 (continued)

Making or modifying channel assignments

Table 3-8
Fixed mapping assignments for the Muxponder 10 Gbit/s GbE/FC circuit pack

Port #	Port assignment rate	SONET Transport Structure	SDH Transport Structure	SONET Path assignments	SDH Path assignments
1	GbE, FC-100, FICON or FC-200, FICON Express	STS-24c or STS-48c	VC-4-8c or VC-4-16c	1-24 or 1-48	1-8 or 1-16
2	GbE, FC-100, FICON or not provisioned if port 1 is provisioned as FC-200, FICON Express	STS-24c or not applicable	VC-4-8c or not applicable	25-48 or not applicable	9-16 or not applicable
3	GbE, FC-100, FICON or FC-200, FICON Express	STS-24c or STS-48c	VC-4-8c or VC-4-16c	49-72 or 49-96	17-24 or 17-32
4	GbE, FC-100, FICON or not provisioned if port 3 is provisioned as FC-200, FICON Express	STS-24c or not applicable	VC-4-8c or not applicable	73-96 or not applicable	25-32 or not applicable
5	GbE, FC-100, FICON or FC-200, FICON Express	STS-24c or STS-48c	VC-4-8c or VC-4-16c	97-120 or 97-144	33-40 or 33-48
6	GbE, FC-100, FICON or not provisioned if port 5 is provisioned as FC-200, FICON Express	STS-24c or not applicable	VC-4-8c or not applicable	121-144 or not applicable	41-48 or not applicable
7	GbE, FC-100, FICON or FC-200, FICON Express	STS-24c or STS-48c	VC-4-8c or VC-4-16c	145-168 or 145-192	49-56 or 49-64
8	GbE, FC-100, FICON or not provisioned if port 7 is provisioned as FC-200, FICON Express	STS-24c or not applicable	VC-4-8c or not applicable	145-192 or not applicable	49-64 or not applicable
9	Not supported				
10	Not supported				

—continued—

3-34 Provisioning circuit packs and managing traffic

Procedure 3-3 (continued)

Making or modifying channel assignments

Table 3-9

Full rate efficiencies with the Muxponder 10 Gbit/s GbE/FC VCAT circuit pack

Protocol	C-cat Transports		C-cat efficiency	V-cat Transports		V-cat efficiency
	SONET	SDH		SONET	SDH	
GbE	STS-24c x 8	VC-4-8c x 8	$(8 \times 21)/192=88\%$	STS-3c-7v x 9	VC-4-7v x 9	$(9 \times 21)/192=98\%$
FC-100 FICON	STS-24c x 8	VC-4-8c x 8	$(8 \times 18)/192=75\%$	STS-3c-6v x 10	VC-4-6v x 10	$(10 \times 18)/192=94\%$
FC-200 FICON Express	STS-48c x 4	VC-4-16c x 8	$(4 \times 36)/192=75\%$	STS-3c-12v x 5	VC-4-12v x 5	$(5 \times 36)/192=94\%$

—continued—

Procedure 3-3 (continued)

Making or modifying channel assignments**Table 3-10****Flexible C-cat mapping assignments for the Muxponder 10 Gbit/s GbE/FC VCAT circuit pack**

Port Assignment Rate	Encapsulation	SONET Transport Structure	SDH Transport Structure	Port to Path Mapping (Flex vs Fixed)	Allowed SONET paths and rules	Allowed SDH paths and rules
GbE (bidirectional, uni-add and uni-drop connections)	GFP-F	STS-3c	VC-4-1c	Flex	3n+1, where n=0...63	n = 1 to 64
		STS-12c	VC-4-4c	Flex	1, 13, 25, 37, 49, 61, 73, 85, 97, 109, 121, 133, 145, 157, 169, 181	1, 5, 9, 13, 17, 21, 25, 29, 33, 37, 41, 45, 49, 53, 57, 61
		STS-24c	VC-4-8c	Flex	1, 25, 49, 73, 97, 121, 145, 169	1, 9, 17, 25, 33, 41, 49, 57
		STS-48c	VC-4-16c	Flex	1, 49, 97, 145	1, 17, 33, 49
	GFP-T	STS-24c	VC-4-8c	Flex	1, 25, 49, 73, 97, 121, 145, 169	1, 9, 17, 25, 33, 41, 49, 57
		STS-48c	VC-4-16c	Flex	1, 49, 97, 145	1, 17, 33, 49
FC-100 FICON	GFP-T	STS-24c	VC-4-8c	Flex	1, 25, 49, 73, 97, 121, 145, 169	1, 9, 17, 25, 33, 41, 49, 57
		STS-48c	VC-4-16c	Flex	1, 49, 97, 145	1, 17, 33, 49
FC-200 FICON Express	GFP-T	STS-48c	VC-4-16c	Flex	1, 49, 97, 145	1, 17, 33, 49

Note 1: Protocols such as GbE, FC-100 and FICON only require STS-24c/VC-4-16c in order to carry the maximum capacity. STS-48c/VC-4-16c is offered for these protocols for inter-operability reasons. However, FC-200 and FICON Express require a full STS-48c/VC-4-16c to do full rate.

Note 2: GbE is the only protocol allowed to be provisioned as sub-rate (provided that GFP-F is used). When provisioned as GFP-T, no sub-rate capabilities or AN / PAUSE is possible.

—continued—

Procedure 3-3 (continued)

Making or modifying channel assignments**Table 3-11****Flexible V-cat mapping assignments for the Muxponder 10 Gbit/s GbE/FC VCAT circuit pack**

Port Assignment Rate	Encapsulation	SONET Transport Structure	SDH Transport Structure	Port to Path Mapping (Flex vs Fixed)	Allowed SONET/SDH paths and rules
GbE (bidirectional, uni-add and uni-drop connections)	GFP-F	STS-3c-1v	VC-4-1v	Flex	SONET: All V-cat paths can start at $3n+1$, where $n=0\dots63$ SDH: All V-cat paths can start at n , where $n=1\dots64$
		STS-3c-2v	VC-4-2v	Flex	
		STS-3c-3v	VC-4-3v	Flex	
		STS-3c-4v	VC-4-4v	Flex	
		STS-3c-5v	VC-4-5v	Flex	
		STS-3c-6v	VC-4-6v	Flex	
		STS-3c-7v	VC-4-7v	Flex	
GbE (bidirectional, uni-add and uni-drop connections)	GFP-T	STS-3c-7v	VC-4-7v	Flex	• SONET: All V-cat paths can start at $3n+1$, where $n=0\dots63$ • SDH: All V-cat paths can start at n, where $n=1\dots64$ • When using GFP-T, must run with fullrate, no subrate transports are supported
FC-100 FICON	GFP-T	STS-3c-6v	VC-4-6v	Flex	• SONET: All V-cat paths can start at $3n+1$, where $n=0\dots63$ • SDH: All V-cat paths can start at n, where $n=1\dots64$ • Must run with fullrate, no subrate transports are supported • STS-3c-6v/VC-4-6v is sufficient to carry the maximum capacity. STS-3c-7v/VC-4-7v is offered for inter-operability reasons (this will however reduce the number of FC-100/FICON ports supported from 10 to 9)
		STS-3c-7v	VC-4-7v	Flex	

Table 3-11 (continued)

Flexible V-cat mapping assignments for the Muxponder 10 Gbit/s GbE/FC VCAT circuit pack

Port Assignment Rate	Encapsulation	SONET Transport Structure	SDH Transport Structure	Port to Path Mapping (Flex vs Fixed)	Allowed SONET/SDH paths and rules
FC-200 FICON Express	GFP-T	STS-3c-12v	VC-4-12v	Flex	• SONET: All V-cat paths can start at $3n+1$, where $n=0...63$ • SDH: All V-cat paths can start at n, where $n=1...64$ • Must run with fullrate, no subrate transports are supported • STS-3c-12v/VC-4-12v is sufficient to carry the maximum capacity. STS-3c-13v/VC-4-13v is offered for interoperability reasons (this will however reduce the number of FC-200/FICON Express ports supported from 5 to 4)
		STS-3c-13v	VC-4-13v	Flex	
Note: When provisioning V-cat paths, the “Insufficient Link Capacity” alarm is raised until the required amount of paths have been provisioned as shown above.					

—continued—

Procedure 3-3 (continued)

Making or modifying channel assignments

Requirements

Before you begin this procedure:

- Seat the circuit packs before making channel assignments.
- You must be familiar with circuit pack equipping rules. Refer to [“Site requirements and equipping rules”](#) in *Network Planning and Link Engineering*, 323-1701-110.
- You must be familiar with circuit pack compatibility rules. Refer to [“General circuit pack information”](#) in *Hardware Description*, 323-1701-102.
- You must be logged in to the System Manager as an Admin or Operator level user to make channel assignments.

System Manager provides a view of one ring. Before you begin to make channel assignments, sort the Shelf List clockwise to reflect the order of the ring. When you are done, the originating shelf is at the top of the Shelf List, followed by the passthrough shelves, in order. The terminating shelf is at the bottom. For information on sorting shelves, refer to [Procedure 1-16 “Sorting shelves”](#) in this book.



CAUTION

Risk of losing visibility

If you do not start at the far-end (terminating shelf) when you make channel assignments on OTR circuit packs, you can lose access to the remote shelves because of a temporary OTR rate mismatch between the remote and local OTR circuit packs.

—continued—

Procedure 3-3 (continued)

Making or modifying channel assignments

Know your network plan. Make your channel assignments on a band/shelf basis. Begin with the originating or terminating shelf for a particular band, and work your way through the passthrough shelves to the opposite end of the ring. To make channel assignments on OTR circuit packs, start at the far-end (terminating shelf) and move towards the near-end (originating shelf) one shelf at a time. Use the Band Scope feature (available in the System Manager Connections/Channel Assignments tab) to view all the shelves that carry a particular band in the ring. Before you start the procedure, make sure that the scope of query for Channel Assignment is set to None.

Precautions**ATTENTION**

Before you make a channel assignment for an OCI SRM SONET/SDH circuit pack, you must make sure that the four OC-12/STM-4 source signals come from a single SONET/SDH transport product that can be configured for either BITS synchronization or line timing. You cannot connect the OC-12/STM-4 signals to an OCI SRM SONET/SDH from a source that cannot function as a SONET/SDH transport product.

The four OC-12/STM-4 source traffic signals that are to be connected to the SONET/SDH SRM OCI must be frequency synchronous to a single internal clock source.

Note: This does not apply to the OCI SRM SONET/SDH LTE circuit pack.

ATTENTION

Before you make a channel assignment for an OCI SRM GbE/FC or OCI SRM GbE circuit pack, you must make sure that the appropriate concatenation type and transport mode are provisioned for the aggregate facility. See [Procedure 3-11 “Provisioning concatenation type and transport mode”](#) for more details.

ATTENTION

Before you make a channel assignment for a Muxponder circuit pack, you must make sure that the appropriate transport mode is provisioned for the line-side facility. See [Procedure 3-11 “Provisioning concatenation type and transport mode”](#) for more details.

—continued—

Procedure 3-3 (continued)

Making or modifying channel assignments

Action

Step	Action

ATTENTION

To make or modify channel assignments, begin with the originating or terminating shelf for a particular band, and work your way through the passthrough shelves until you reach the opposite end of the ring. To make or modify channel assignments on OTR circuit packs, start at the far-end (terminating shelf) and move towards the near-end (originating shelf) one shelf at a time.

- 1 In System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that terminates the traffic for the band of the channel assignments you intend to make or modify.
System Manager updates the screen with data for the selected shelf.
- 2 Select the Connections tab.
The Channel Assignments window appears.
- 3 To make sure all bands and channels are displayed in the Channel Assignments window for the selected shelf, select the None Scope button, and click **Refresh**.
- 4 Highlight the row containing the target channel ID and facility of the line-side circuit pack involved in the channel assignment to be created or modified.
Note 1: If you do not find what you are looking for, the line-side circuit pack is not seated in the shelf (seat the circuit pack, and click the **Refresh** button).
Note 2: If the facility field is empty, you cannot make the channel assignment until the facility is created (go to [Procedure 3-15, Adding a circuit pack facility or SFP facility](#)).
- 5 Select the Band Scope button, and click **Refresh**.
System Manager lists all the shelves in the ring that carry that particular band.

—continued—

Procedure 3-3 (continued)

Making or modifying channel assignments

Step	Action
ATTENTION Perform step 6 to step 24 to make or modify channel assignments at the originating or terminating shelf for a particular band first, and work your way through the passthrough shelves until you reach the opposite end of the ring. To make channel assignments on OTR circuit packs, make or modify channel assignment at the far-end (terminating shelf) first and move towards the near-end (originating shelf) one shelf at a time.	
ATTENTION When you make or modify channel assignments on OTR 10 Gbit/s Enhanced circuit packs, the Channel Assignments window can timeout because of a difference between the near-end and far-end protocols. As a result, near-end to far-end communication is lost. To restore near-end to far-end communication, make sure that you provision the channel assignments in a consistent manner as you move towards the near-end shelf.	
6	Double-click on the correct line for the channel assignment that you want to make or modify. <i>The Optical Metro Channel Assignments dialog box appears.</i> Note 1: If you are modifying a channel assignment involving an OCI SRM (End Point column), four or eight more lines appear below the line you selected. These lines list the ports of the selected OCI SRM, OCI SRM SONET/SDH, OCI SRM SONET/SDH LTE, or OCI SRM ESCON circuit pack. Double-click on the OCI SRM port for which you intend to modify a channel assignment. Note 2: If you are modifying a channel assignment involving an OCI SRM GbE/FC or OCI SRM GbE (End Point column), two more lines appear below the line you selected. These lines list the ports of the selected circuit pack. Double-click on the port for which you intend to modify a channel assignment. Note 3: If you are modifying a channel assignment involving a Muxponder (End Point column), up to ten more lines appear below the line you selected. These lines list the SFP ports of the selected circuit pack. Double-click on the port for which you intend to modify a channel assignment.
7	Verify the Wavelength Validation check box. Enable (check) or disable (uncheck) wavelength validation.
8	Click Yes to confirm a wavelength validation change.

—continued—

Procedure 3-3 (continued)

Making or modifying channel assignments

Step	Action
9	Select a mode for the channel assignment from the Mode drop-down list. This is a mandatory field. <i>When the selected Mode is Pass-through, System Manager automatically lists the east and west path facilities. When the selected Mode is unprotected, System Manager lists the facility in the east or west path, as appropriate, and enables the End point field. When the selected Mode is protected, System Manager lists the facilities for the east and west paths, and enables the End point field.</i> Note 1: If the drop-down list does not show all the options that you were expecting (for example, it does not show protected and passthrough), it is because the facilities required to have those options do not exist yet in the shelf (for example, only one OCLD facility B1C1 exists, so you cannot have the option protected or passthrough for that facility. Seat the other OCLD B1C1 and those options will appear after a refresh). Note 2: You cannot provision a passthrough channel assignment on an OTR or Muxponder circuit pack.
10	If the East path or West path fields (Line 1 or Line 2) have several facility options listed in the drop-down menus, make sure that the correct path facility is selected.
11	If you defined a protected or unprotected channel assignment, use the End point drop-down list to select the originating facility for the signal at the current shelf. This enables the protocol field. If the end point facility you want to use is not listed in the drop-down list, it is because that facility does not exist yet (for example, the circuit pack is not seated in the shelf).
If	Then go to
the channel assignment is a passthrough	step 13 . The End point field remains blank for a passthrough channel assignment.
otherwise	step 14
Note: If you are creating a channel assignment for an OCI SRM SONET/SDH circuit pack, the first port that you select for a channel assignment is automatically used as the primary clock reference for the SONET/SDH signal. The second port that you select for a channel assignment is automatically used as the secondary clock reference for the SONET/SDH signal. This applies to the OCI SRM SONET/SDH circuit pack only and not to the OCI SRM SONET/SDH LTE circuit pack. You can change the clock references at any time after making channel assignments. See Procedure 1-38 “Changing clock reference settings for the OCI SRM SONET/SDH 1310 nm”.	

—continued—

Procedure 3-3 (continued)

Making or modifying channel assignments

Step	Action												
12	Remove traffic from the OTR circuit pack, see Procedure 3-44, Removing traffic from an OTR circuit pack .												
13	Select a protocol for the channel assignment from the Bit Rate drop-down list. This is a mandatory field. Note: For passthrough assignments for OCI SRM, OCI SRM GbE/FC, and OCI SRM GbE circuit packs, select the following. <table> <tr> <td>If the passthrough assignment is for an</td><td>Then select</td></tr> <tr> <td>OCI SRM</td><td>SRM 125</td></tr> <tr> <td>OCI SRM SONET/SDH</td><td>SRM 250</td></tr> <tr> <td>OCI SRM SONET/SDH LTE</td><td>OC-48 or STM-16</td></tr> <tr> <td>OCI SRM ESCON</td><td>ESRM 250</td></tr> <tr> <td>OCI SRM GbE/FC or OCI SRM GbE</td><td>OC-48 or STM-16</td></tr> </table>	If the passthrough assignment is for an	Then select	OCI SRM	SRM 125	OCI SRM SONET/SDH	SRM 250	OCI SRM SONET/SDH LTE	OC-48 or STM-16	OCI SRM ESCON	ESRM 250	OCI SRM GbE/FC or OCI SRM GbE	OC-48 or STM-16
If the passthrough assignment is for an	Then select												
OCI SRM	SRM 125												
OCI SRM SONET/SDH	SRM 250												
OCI SRM SONET/SDH LTE	OC-48 or STM-16												
OCI SRM ESCON	ESRM 250												
OCI SRM GbE/FC or OCI SRM GbE	OC-48 or STM-16												
14	<table> <tr> <td>If</td><td>Then go to</td></tr> <tr> <td>you are provisioning channel assignments for a Muxponder</td><td>step 15</td></tr> <tr> <td>you are provisioning channel assignments for an OCI SRM GbE/FC or OCI SRM GbE</td><td>step 22</td></tr> <tr> <td>otherwise</td><td>step 23</td></tr> </table>	If	Then go to	you are provisioning channel assignments for a Muxponder	step 15	you are provisioning channel assignments for an OCI SRM GbE/FC or OCI SRM GbE	step 22	otherwise	step 23				
If	Then go to												
you are provisioning channel assignments for a Muxponder	step 15												
you are provisioning channel assignments for an OCI SRM GbE/FC or OCI SRM GbE	step 22												
otherwise	step 23												
15	For the Muxponder circuit pack, select a protocol for the channel assignment from the Bit Rate drop-down list.												
16	If Gigabit Ethernet was the bit rate selected in step 15, select the GFP encapsulation mode from the Encapsulation drop-down list. Note 1: The available options depend on the Bit Rate structure provisioned in step 13 (available for GbE traffic only) Note 2: If the encapsulation mode is changed on a port, reset the OM bins so that the OM bins reflect the current mode. See Procedure 7-12, Resetting OM counts to zero for information on how to reset OM bins.												
17	Select a client type from the Client Type drop-down list.												
18	For a protected channel assignment, select a protection mode from the Protection Mode drop-down list.												
19	Click Advanced. <i>The Optical Metro Channel Assignment Advance Details dialog box appears.</i>												
20	Set the AOC Holdoff and enable or disable Path PMs using this dialog.												
21	Click OK .												

—continued—

Procedure 3-3 (continued)

Making or modifying channel assignments

Step	Action
22	For the OCI SRM GbE/FC, OCI SRM GbE, or Muxponder circuit pack, select a transport structure from the Transport drop-down list. Note 1: If you are in v-cat mode and want to create a path assignment, do not leave the Transport field set to Nil. Note 2: If you want to modify a v-cat connection to a c-cat connection or vice versa, change the Transport drop-down list to Nil. Note 3: To complete path assignments for the Muxponder 10 Gbit/s GbE/FC VCAT, see, Procedure 3-5 “Adding path assignments” in this chapter. For the Muxponder 10 Gbit/s GbE/FC the path assignments are selected automatically based on the fixed port/path mappings Note 4: The available transport options depend on the circuit pack type and the transport structure provisioned in Procedure 3-11 “Provisioning concatenation type and transport mode” in this chapter (c-cat or v-cat and SONET or SDH).
23	Verify that the PM modes in the West, East, and End PM Mode fields are the modes you want. Use the drop-down list to choose the appropriate PM mode. If the “None” mode is chosen on a facility, facility performance is not monitored on this facility. Note 1: When you change the PM mode for the OTR, a warning message about a possible traffic hit can appear. Note 2: The End PM mode is not applicable at passthrough nodes. For more information on PM modes and performance monitoring, see “Performance monitoring description” in <i>Software and User Interface</i>, 323-1701-101.
24	For the OCI SRM ESCON, OCI SRM SONET/SDH LTE, OCI SRM GbE/FC, or OCI SRM GbE circuit pack, verify the Aggregate PM Mode in the Aggr. PM Mode field. Use the drop-down list to change the Aggregate PM Mode.
25	Enter a name for the channel assignment in the Channel Name field. This is a mandatory field. Note: The name that you put in the Channel Name field should be unique for each particular traffic path. You should also use the same name throughout the traffic path.
26	Enter a description of the channel assignment in the Channel Description field. This is a mandatory field. If you are creating a channel assignment for an SRM facility (an OCI SRM, OCI SRM SONET/SDH, OCI SRM SONET/SDH LTE, OCI SRM GbE/FC, OCI SRM GbE, or OCI SRM ESCON) or a Muxponder, enter a name for the port associated with the SRM or Muxponder facility in the Port Name field. Enter a description of the port associated with the SRM or Muxponder facility in the Port Description field.

—continued—

Procedure 3-3 (continued)

Making or modifying channel assignments

Step	Action								
27	Click OK . <i>The Optical Metro Channel Assignments dialog box closes after the channel assignment is created.</i>								
28	If you are making a channel assignment for an OTR 10 Gbit/s Enhanced circuit pack, a Confirm Channel Assignment Modify dialog box appears. Click Yes .								
29	<table> <tr> <th>If the channel assignment is</th><th>Then</th></tr> <tr> <td>unprotected</td><td>repeat step 6 to step 27 to complete the channel assignment across the entire path. In step 6 select the line that corresponds to the next shelf along the path of the channel you wish to create. If you went through all the shelves along the path and created channel assignments, go to step 35.</td></tr> <tr> <td>passthrough</td><td>repeat step 6 to step 27 to complete the channel assignment across the entire path. In step 6 select the line that corresponds to the next shelf along the path of the channel you wish to create.</td></tr> <tr> <td>protected</td><td>go to step 30 to make changes to the protection configuration</td></tr> </table>	If the channel assignment is	Then	unprotected	repeat step 6 to step 27 to complete the channel assignment across the entire path. In step 6 select the line that corresponds to the next shelf along the path of the channel you wish to create. If you went through all the shelves along the path and created channel assignments, go to step 35 .	passthrough	repeat step 6 to step 27 to complete the channel assignment across the entire path. In step 6 select the line that corresponds to the next shelf along the path of the channel you wish to create.	protected	go to step 30 to make changes to the protection configuration
If the channel assignment is	Then								
unprotected	repeat step 6 to step 27 to complete the channel assignment across the entire path. In step 6 select the line that corresponds to the next shelf along the path of the channel you wish to create. If you went through all the shelves along the path and created channel assignments, go to step 35 .								
passthrough	repeat step 6 to step 27 to complete the channel assignment across the entire path. In step 6 select the line that corresponds to the next shelf along the path of the channel you wish to create.								
protected	go to step 30 to make changes to the protection configuration								

Defining parameters for protected channel assignments

- 30 Double-click on the line showing the channel assignment you just created.
The Optical Metro Channel Assignments dialog box appears.
- 31 Click the Protection button.
The Protection dialog box appears.
- The Status area is for display purposes. The Rx Reversion area shows the WTR and Path defaults, which remain grayed out and disabled until Reversion is enabled. The Rx Switch Request area contains the switch options, along with a To drop-down list that you can use to define the target switch facility.

—continued—

Procedure 3-3 (continued)

Making or modifying channel assignments

Step	Action	
32	If you want to enable reversion	Then select the Enabled check box, and define the WTR period and the Path from the drop-lists provided. Note: If Rx reversion is enabled at one end of the path, it must also be enabled at the other end of the path.
	disable reversion	make sure that the Enabled check box is not selected. Note: You cannot disable reversion on the Muxponder circuit pack.
	make an Rx Switch Request	define the switch request by selecting the appropriate radio button, and use the drop-down list to define the target facility for the request
33	Click OK . Note: The software takes approximately 15 seconds to update the channel assignment information.	
34	Repeat step 6 to step 27 to complete the channel assignment across the entire path. In step 6 select the line that corresponds to the next shelf along the path of the channel you wish to create. Once you have completed the channel assignments for all the shelves along the path, go to step 35 .	
35	The end-to-end channel assignment through the ring is completed. If another end-to-end channel assignment needs to be made, repeat this procedure for the new channel in either the same band or in a new band.	
36	To add traffic to the end-to-end channel assignment, see the following: • Procedure 3-41 “Adding traffic to an end-to-end channel involving OCI and OCLD circuit packs” • Procedure 3-43 “Adding traffic to an end-to-end channel involving OTR circuit packs” • Procedure 3-45 “Adding traffic to an end-to-end channel involving Muxponder circuit packs”.	

—end—

Procedure 3-4

Deleting channel assignments

Use this procedure to delete channel assignments.

Requirements

System Manager provides a view of one ring. Before you begin to delete channel assignments, sort the Shelf List clockwise to reflect the order of the ring. When you are done, the originating shelf is at the top of the Shelf List, followed by the passthrough shelves, in order. The terminating shelf is at the bottom. For information on sorting shelves, refer to [Procedure 1-16 “Sorting shelves”](#) in this book.

Know your network plan. Delete channel assignments in order, from one end of the path to the opposite end. Begin with the terminating shelf for a particular band, and work your way through the passthrough shelves to the opposite end of the ring. Use the Band Scope feature (available in the System Manager Connections/Channel Assignments tab) to view all the shelves that carry a particular band in the ring. Before you start the procedure, make sure that the scope of query for Channel Assignment is set to None.

You must be logged in to the System Manager as an Admin or Operator level user to delete channel assignments.

Precautions

To avoid unnecessary alarms when deleting a channel assignment, first place the circuit pack facilities and equipment out-of-service for the circuit packs that are involved in the channel assignment before deleting the channel assignment. See the following procedures:

- [Procedure 3-13 “Taking a circuit pack facility or SFP facility out-of-service”](#)
- [Procedure 3-8 “Taking a circuit pack or SFP out-of-service”](#)

—continued—

Procedure 3-4 (continued)

Deleting channel assignments



CAUTION

Risk of loss of traffic

When you delete a channel assignment for a channel that is carrying traffic, traffic will be lost on the associated facilities. If this is a protected channel assignment, both channel assignments are deleted simultaneously during this procedure. However, if the traffic is protected by external equipment (traffic carried on other band and channel assignments), the traffic can be protected by an external switch. Make sure that the network administrator is aware before you carry out this procedure.



CAUTION

Risk of loss of data communications traffic

When you delete a channel assignment on an OTR 10 Gbit/s Enhanced circuit pack, you may lose data communications traffic. If the far-end circuit pack has a 10G Ethernet Lan channel assignment, and you delete the near-end (local) channel assignment, you will lose this data communications link. Other data communications links are not affected.

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that terminates the traffic for the band of the channel assignments you intend to delete. <i>System Manager updates the screen with data for the selected shelf.</i>
2	Click on the Selected Shelves drop-down list to return the screen to full view.
3	Select the Connections tab. <i>The Channel Assignments window displays.</i>

—continued—

Procedure 3-4 (continued)

Deleting channel assignments

Step	Action
4	To make sure that all bands and channels are displayed in the Channel Assignments window for the selected shelf, select the None Scope button, and click Refresh .
5	Select the row containing the channel, channel ID, facility, and end point channel assignment that you intend to delete. Note: For the circuit packs where several port facilities have different channel assignments, double-click on the generic circuit pack channel assignment to view the details of the ports channel assignments.
6	Select the Band Scope check box, and click Refresh . <i>System Manager lists all the shelves in the ring that carry that particular band, and all the associated channel assignments.</i>
7	If the signal is protected by external equipment and an external switch is possible, switch the traffic to the protection path (another band and channel assignment) before deleting the current channel assignment path to avoid losing the traffic going through the deleted channel assignment. To perform a manual traffic switch, refer to Procedure 3-56 "Manual switching on protected channel assignments" in this book.
8	Begin at the terminating shelf for the channel assignment. Select the row for the channel assignment you want to delete. Note: This step prepares you to delete the channel assignment. Deleting a channel assignment interrupts any traffic carried on that channel.

—continued—

Procedure 3-4 (continued)

Deleting channel assignments

Step	Action



CAUTION

Risk of traffic loss

If an external traffic switch was not performed in [step 7](#), traffic will be lost for the facilities involved in the channel assignment to be deleted. Contact your network administrator.

If the external traffic switch was performed, traffic will be interrupted.

9	Right-click and select Delete.

The Confirm Channel Assignment Delete dialog box appears.

10	Click Yes .

Note 1: The software takes approximately 15 seconds to delete the channel assignment.

Note 2: If you delete a channel assignment connected to the port on an OCI SRM SONET/SDH circuit pack that was functioning as the clock reference source (primary or secondary), the next available provisioned port on that OCI SRM SONET/SDH automatically becomes the clock reference source.

Note 3: If you delete a channel assignment connected to a port on an OCI SRM GbE/FC, OCI SRM GbE, or Muxponder circuit pack, you also delete all the paths in the port assignment.

11	Repeat steps 6 through 10 for the passthrough channel assignments and the originating channel assignment for the path.

—end—

Procedure 3-5

Adding path assignments

Use this procedure to add path assignments to the channel assignment of a Muxponder 10 Gbit/s GbE/FC VCAT, OCI SRM GbE/FC or OCI SRM GbE circuit pack in virtual concatenation (v-cat) mode.

Note 1: For the Muxponder 10 Gbit/s GbE/FC VCAT, if you want to modify a v-cat connection to a c-cat connection or vice versa, change the Transport drop-down list to Nil. After the Transport change to Nil is applied, the available c-cat or v-cat options based on the available paths are displayed in the Path Assignments window. To make a channel assignment, see [Procedure 3-3 “Making or modifying channel assignments”](#).

Note 2: For Muxponder 10 Gbit/s GbE/FC VCAT, when the Channel Assignment Transport field is modified and before pressing the Apply button, the Path Assignments window does the following:

- For v-cat paths, when going to higher path numbers (adding paths), the Path Assignments window presents all selected current paths and forces the user to select more paths as required by selected transport.
- For v-cat paths, when going to lower path numbers (deleting paths), the Path Assignments window presents all selected current paths and forces the user to de-select more path as required by selected transport.
- When adding transport from NIL (no prior paths), the Path Assignments window presents all available paths blank and forces user to select paths as required by selected transport.
- When Transport on Channel Assignment screen is changed from v-cat (e.g. STS-3C-6V) to c-cat (e.g. STS-24C) or vice-versa, the Path Assignments window presents all available paths as blank and forces the user to select paths as required by selected transport.
- For c-cat paths, when Transport on Channel Assignment screen is changed from one c-cat (e.g. STS-12C) to another c-cat (e.g. STS-24C) or vice-versa, the Path Assignments window presents all available paths as blank and forces the user to select paths as required by selected transport.
- If selected Transport on Channel Assignment screen is same as one previously provisioned (c-cat or v-cat), Path Assignments window presents all selected provisioned paths for that transport.

In all the cases above user has choice to de-select and re-select all new available paths.

—continued—

Procedure 3-5 (continued)
Adding path assignments

Requirements

The channel assignment must already exist. Within the channel assignment window, the transport structure is set to Nil (no path assignments exist). To make a channel assignment, see [Procedure 3-3 “Making or modifying channel assignments”](#).

Action

Step	Action
1	In the System Manager, select the Connections tab. <i>The Channel Assignments window displays.</i>
2	Double-click on the row containing the channel, the channel ID, the facility, and the circuit pack. <i>The ports of the selected circuit pack are displayed.</i>
3	Double-click on the port of the circuit pack for which you intend to add path assignments. <i>The Optical Metro Channel Assignments dialog box appears.</i>
4	From the Transport drop-down list, select a transport structure for the path assignments. See Table 3-6 on page 3-32 to Table 3-11 on page 3-36 for more information on the available SONET and SDH transport structures. Note: The entries available from the Transport drop-down list depend on the concatenation type, bit rate, and the transport mode that were provisioned for the aggregate facility for the GFSRM, or line facility for the Muxponder.
5	Click Apply . <i>The Path Assignments button appears.</i>
6	Click the Path Assignments button. <i>The Path Assignments window appears.</i>

—continued—

Procedure 3-5 (continued)
Adding path assignments

Step	Action				
7	Make sure that the path assignment structure for the port corresponds to the information found in Table 3-6 on page 3-32 to Table 3-11 on page 3-36 .				
8	If this path assignment is for a port on a <table> <tr> <td>OCI SRM GbE/FC or OCI SRM GbE circuit pack</td><td> Then Make sure that the path assignment structure for the port corresponds to the information found in Table 3-6 on page 3-32 or Table 3-7 on page 3-32. Note: You cannot select or deselect the selected paths. </td></tr> <tr> <td>Muxponder 10 Gbit/s GbE/FC VCAT circuit pack</td><td> Make sure that the path assignment structure for the port corresponds to the information found in Table 3-10 on page 3-35 or Table 3-11 on page 3-36. Select or deselect the paths. See Note 1, Note 2, and Note 3. </td></tr> </table> Note 1: Unavailable or too fragmented paths appear in gray in STS3c granularity and cannot be selected. Grey checked boxes indicate used paths by other ports. Grey un-checked boxes indicate un-used and un-available paths. Note 2: Available paths appear white, in the granularity reflective of the chosen Transport structure. The associated checkbox is not checked. Note 3: Currently provisioned paths appear as light blue and the associated checkbox is checked.	OCI SRM GbE/FC or OCI SRM GbE circuit pack	Then Make sure that the path assignment structure for the port corresponds to the information found in Table 3-6 on page 3-32 or Table 3-7 on page 3-32. Note: You cannot select or deselect the selected paths.	Muxponder 10 Gbit/s GbE/FC VCAT circuit pack	Make sure that the path assignment structure for the port corresponds to the information found in Table 3-10 on page 3-35 or Table 3-11 on page 3-36. Select or deselect the paths. See Note 1, Note 2, and Note 3.
OCI SRM GbE/FC or OCI SRM GbE circuit pack	Then Make sure that the path assignment structure for the port corresponds to the information found in Table 3-6 on page 3-32 or Table 3-7 on page 3-32. Note: You cannot select or deselect the selected paths.				
Muxponder 10 Gbit/s GbE/FC VCAT circuit pack	Make sure that the path assignment structure for the port corresponds to the information found in Table 3-10 on page 3-35 or Table 3-11 on page 3-36. Select or deselect the paths. See Note 1, Note 2, and Note 3.				
9	Click OK to close the Path Assignments window.				
10	Click OK to close the Channel Assignments window.				

—end—

Procedure 3-6

Deleting path assignments

Use this procedure to delete path assignments from the port assignment of a Muxponder GEFC, OCI SRM GbE/FC or OCI SRM GbE circuit pack.

Requirements

The channel assignment must already exist. Within the channel assignment window, the transport structure must be set something other than Nil (path assignments exist).

Action

Step	Action
1	In the System Manager, select the Connections tab. <i>The Channel Assignments window displays.</i>
2	Double-click on the row containing the channel, the channel ID, the facility, and the circuit pack. <i>The two ports of the selected circuit pack are displayed.</i>
3	Double-click on the port of the circuit pack for which you intend to delete path assignments. <i>The Optical Metro Channel Assignments dialog box appears.</i>
4	From the Transport drop-down list, select Nil.
5	Click Apply . <i>The Confirm Channel Assignment Modify dialog box appears.</i>
6	Click Yes to confirm the change.
7	Click the Path Assignments button. <i>The Path Assignments window displays.</i>
8	Make sure in this window that all the path assignments are grayed out.
9	Click OK to close the Path Assignments window.
10	Click OK to close the Channel Assignments window.

—end—

Procedure 3-7

Putting a circuit pack or SFP in-service

Use this procedure to put a circuit pack or SFP in-service after manual provisioning, or after the circuit pack has been taken out-of-service in the Inventory.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to put a circuit pack or SFP in-service.

Precautions

Make sure that the slot or subslot is equipped or you will raise a Circuit Pack Missing or Circuit Pack Missing - Pluggable alarm.

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the circuit pack or SFP you want to place in-service. <i>System Manager updates the screen with data for the selected shelf.</i>
2	Click on the Selected Shelves drop-down list to return the screen to full view.
3	Select the Equipment/Inventory tab.
4	Locate and right-click the line that contains the circuit pack or SFP that you want to put IS.
5	Select Modify . <i>The Optical Metro Inventory dialog box appears.</i>
6	In the State area of the Optical Metro Inventory dialog box, select IS from the Administrative drop-down list.



CAUTION

Risk of generating alarms on the network

Make sure the slot or subslot is equipped before you change the administrative state to IS or you will raise a Circuit Pack Missing or Circuit Pack Missing - Pluggable alarm on the network.

—continued—

Procedure 3-7 (continued)

Putting a circuit pack or SFP in-service

Step	Action
7	Click OK to apply the selection and exit the window. Note 1: The software takes approximately 15 seconds to put the circuit pack in-service. Note 2: When OCM 9 equipment changes from OOS to IS and there is a working line failure (LOS), traffic can take 50 to 60 seconds to recover on the unidirectional or bidirectional protection Muxponder. For OCM 10, this same recovery takes 5 to 6 seconds. —end—

Procedure 3-8

Taking a circuit pack or SFP out-of-service

Use this procedure to take a circuit pack or SFP out-of-service (OOS).

Requirements

Before you take a traffic-carrying circuit pack or SFP out-of-service, first put all related facilities OOS. To put a circuit pack or SFP facility OOS, follow [Procedure 3-13 “Taking a circuit pack facility or SFP facility out-of-service”](#) in this chapter.

When you take a circuit pack or SFP out-of-service, first make sure that no loopbacks are active on the circuit pack or SFP. To remove loopbacks, follow [Procedure 3-60 “Removing a loopback using the System Manager”](#) in this chapter.

When you take an OCI SRM, OCI SRM SONET/SDH, OCI SRM SONET/SDH LTE circuit pack OOS, you must first put all four of its port facilities OOS. When you take an OCI SRM ESCON circuit pack OOS, you must first put all eight of its facilities OOS.

When you take an OCI SRM GbE/FC or OCI SRM GbE circuit pack OOS, you must first put its facilities OOS as follows:

- 1 put the client-side facilities (Port 1 and 2) OOS
- 2 put the aggregate facility (1-AG) OOS

When you take an OTR circuit pack OOS, you must first put both of its facilities OOS.

When you take a Muxponder circuit pack OOS, you must do the following:

- 1 put the line-side facility OOS
- 2 put all existing SFP client-side facilities OOS
- 3 put all existing SFP equipment OOS

When you take an APBE circuit pack OOS, you must first put port facilities 1 through 5 OOS.

You must be logged in to the System Manager as an Admin or Operator level user to take a circuit pack or SFP out-of-service.

—continued—

Procedure 3-8 (continued)

Taking a circuit pack or SFP out-of-service

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the circuit pack you want to place out-of-service. <i>System Manager updates the screen with data for the selected shelf.</i>
2	Click on the Selected Shelves drop-down list to return the screen to full view.
3	Select the Equipment tab.
4	Select the Facility tab.
5	Locate the facility or facilities corresponding to the slot where the circuit pack or SFP is to be put OOS. Make sure that all the facilities associated with that slot (if there is more than one) show an OOS admin state and that there are no loopbacks active on the circuit pack or SFP. If not, the requirements for this procedure are not met. See Procedure 3-13 “Taking a circuit pack facility or SFP facility out-of-service” to put the facilities OOS. See Procedure 3-60 “Removing a loopback using the System Manager” to remove a loopback.
6	Select the Inventory tab. <i>The Equipment—Inventory window appears.</i>
7	Locate and right-click on the line that contains the circuit pack or SFP that you want to put OOS.
8	Select Modify. <i>The Optical Metro Inventory dialog box appears.</i>
9	In the State area of the Optical Metro Inventory dialog box, select OOS from the Administrative drop-down list.
10	Click OK to close the dialog box. <i>The Confirm Inventory OOS dialog box appears.</i>
11	Click Yes to confirm the change. Note: The software takes approximately 15 seconds to take the circuit pack or SFP OOS.
12	Verify that the circuit pack or SFP is out of service. The entries in the Admin and the Oper columns should be OOS.

—end—

Procedure 3-9

Deleting a circuit pack or SFP from the inventory

Use this procedure to delete a circuit pack or SFP from the inventory.

Requirements

Before deleting a circuit pack or SFP from the inventory, first put the circuit pack or SFP out-of-service. See [Procedure 3-8 “Taking a circuit pack or SFP out-of-service”](#).

Before deleting a circuit pack from the inventory, make sure there are no existing facilities associated with the slot and circuit pack or SFP. See [Procedure 3-14 “Deleting a circuit pack or SFP facility”](#).

You must be logged in to the System Manager as an Admin or Operator level user to delete a circuit pack or SFP from the inventory.

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the circuit pack or SFP you want to delete. <i>System Manager updates the screen with data for the selected shelf.</i>
2	Click on the Selected Shelves drop-down list to return the screen to full view.
3	Select the Equipment/Inventory tab.
4	Locate the row where the circuit pack or SFP is to be deleted from the inventory. Make sure that the circuit pack or SFP is out-of-service; the entries in the Admin and the Oper columns should be OOS. If not, the requirements for this procedure are not met. See Procedure 3-8 “Taking a circuit pack or SFP out-of-service” .
5	Select the Equipment/Facilities tab.
6	Locate the row or rows associated with the slot where the circuit pack or SFP is to be deleted. Make sure that the row (or rows) is empty (that is, no facilities exist for that slot). If not, the requirements for this procedure are not met. See Procedure 3-14 “Deleting a circuit pack or SFP facility” .
7	Select the Equipment/Inventory tab.
8	Right-click on the circuit pack or SFP to be deleted from the inventory.
9	Select Delete . <i>The Confirm Inventory Delete dialog box appears.</i>

—continued—

3-60 Provisioning circuit packs and managing traffic

Procedure 3-9 (continued)

Deleting a circuit pack or SFP from the inventory

Step	Action
10	Click Yes to confirm the change.
11	Make sure in the Equipment/Inventory window that the slot from which the circuit pack or SFP was deleted does not list a circuit pack or SFP.

—end—

Procedure 3-10

Putting a circuit pack or SFP facility in-service

Follow this procedure to put a circuit pack or SFP facility in-service (IS).

The following circuit packs have more than one facility:

- the OCI SRM or OCI SRM SONET/SDH circuit pack has four facilities, one for each of its ports. The OCI SRM ESCON circuit pack has eight facilities.
- the OCI SRM SONET/SDH LTE circuit pack has four client-side facilities, one for each of its ports, and one aggregate facility (1-AG).

Note: The aggregate facility is put in-service when the circuit pack equipment is put in-service.

- the OCI SRM GbE/FC or OCI SRM GbE circuit pack has three facilities; two client-side facilities, one for each of its ports (port 1 and port 2), and one aggregate facility (1-AG).
- the OSC circuit pack has four facilities; two for the optical supervisory channel (OSC EAST and OSC WEST) and two for the wayside channel (WSC EAST and WSC WEST).

Note: The east and west OSC facilities are automatically put in-service as soon as the OSC circuit pack is placed in-service.

- the OTR has two facilities, one for the client-side port 1 (1-CS) and one for the line-side port 2 (2-LS).
- the Muxponder circuit pack has one line-side facility (MOTR) and can have up to ten SFP client-side facilities (MOTRSFP).
- the APBE has five facilities, one for each of its ports, that is APBE EVOA port 1 through port 4 and APBE port 5.

Requirements

Before you can begin this procedure, the related circuit pack or SFP equipment must be in-service. Follow [Procedure 3-7 “Putting a circuit pack or SFP in-service”](#) if you need to put the circuit pack or SFP equipment in-service.

For the OCI SRM GbE/FC or OCI SRM GbE circuit pack, put the aggregate facility (1-AG) in-service before putting the client-side facilities (port 1 and 2) in-service.

For the APBE circuit pack, you must put port 5 IS before you can put ports 1 through 4 IS.

—continued—

Procedure 3-10 (continued)

Putting a circuit pack or SFP facility in-service

For the Muxponder circuit packs you must put port 11 (MOTR Line facility) in service before putting the client-side facilities (1-8 or 1-10) in service.

You must be logged in to the System Manager as an Admin or Operator level user to put a circuit pack facility in-service.

For the OCI SRM GbE/FC or OCI SRM GbE circuit pack, put the aggregate facility (1-AG) in-service before putting the client-side facilities (port 1 and 2) in-service.

For the APBE circuit pack, you must put port 5 IS before you can put ports 1 through 4 IS.

You must be logged in to the System Manager as an Admin or Operator level user to put a circuit pack facility in-service.

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the circuit pack or SFP facility you want to place in-service. <i>System Manager updates the screen with data for the selected shelf.</i>
2	Click on the Selected Shelves drop-down list to return the screen to full view.
3	Select the Equipment/Inventory tab. <i>The Equipment–Inventory window appears.</i>
4	Locate the row associated with the circuit pack or SFP on which the facility will be put IS. Make sure that the circuit pack or SFP is IS—the entries in the Admin column should be IS. If not, the requirements for this procedure are not met. See Procedure 3-7 , “Putting a circuit pack or SFP in-service” to put the circuit pack or SFP IS. Go to the next step.
5	Select the Equipment/Facilities tab. <i>The Equipment–Facilities window appears.</i>
6	Select the row that lists the slot number, port number, and circuit pack or SFP facility that you want to place IS.

—continued—

Procedure 3-10 (continued)

Putting a circuit pack or SFP facility in-service

Step	Action						
7	Double-click on the selected row. <i>The Optical Metro Facility dialog box appears.</i> Note 1: For the OCI SRM GbE/FC or OCI SRM GbE circuit pack, you must put the aggregate facility (1-AG) IS before you can put any of the client-side facilities (port 1 and 2) IS. Note 2: For the APBE circuit pack, you must put port 5 IS before you can put ports 1 through 4 IS. Note 3: For the Muxponder circuit packs you must put port 11 (MOTR Line facility) in service before putting the client-side facilities (1-8 or 1-10) in service.						
8	In the State area of the Optical Metro Facility dialog box select IS from the Administrative drop-down list.						
9	Click OK to close the dialog box.						
	Note: The software takes approximately 15 seconds to put the facility IS.						
10	<table> <tr> <th>If</th><th>Then</th></tr> <tr> <td>the circuit pack has several port facilities</td><td>repeat steps 6 to 9 as required for the applicable ports</td></tr> <tr> <td>otherwise</td><td>you have completed this procedure</td></tr> </table>	If	Then	the circuit pack has several port facilities	repeat steps 6 to 9 as required for the applicable ports	otherwise	you have completed this procedure
If	Then						
the circuit pack has several port facilities	repeat steps 6 to 9 as required for the applicable ports						
otherwise	you have completed this procedure						

—end—

Procedure 3-11

Provisioning concatenation type and transport mode

Follow this procedure to provision the concatenation type and the transport mode for the aggregate facility of an OCI SRM GbE/FC or OCI SRM GbE circuit pack. Follow this procedure to provision the transport mode for the line-side facility of a Muxponder circuit pack.

The concatenation type, contiguous (c-cat) or virtual (v-cat), determines how the client-side signals are mapped onto the aggregate (OC-48/STM-16 or OC-192/STM-64) signal.

The transport mode indicates whether the aggregate or line-side signal is a SONET or SDH signal.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to provision the concatenation type and transport mode.

You cannot modify the concatenation type if a channel assignment exists on this circuit pack.

You cannot modify the transport mode if any path assignments exist on this circuit pack.

Note: You can have a channel assignment without a path assignment, but you cannot have a path assignment without a channel assignment.

Action

Step	Action
1	In the System Manager, select the Equipment tab.
2	Select the Facilities tab. <i>The Facilities window appears.</i>
3	Double-click on the line or aggregate facility that you want to provision. <i>The Optical Metro Facility dialog for the selected facility appears.</i>

—continued—

Procedure 3-11 (continued)

Provisioning concatenation type and transport mode

Step	Action		
4	<table><tr><td>If you are provisioning an OCI SRM GbE/FC or OCI SRM GbE a Muxponder</td><td>Then go to step 5 step 6</td></tr></table>	If you are provisioning an OCI SRM GbE/FC or OCI SRM GbE a Muxponder	Then go to step 5 step 6
If you are provisioning an OCI SRM GbE/FC or OCI SRM GbE a Muxponder	Then go to step 5 step 6		
5	In the Aggregate Facility area, complete the following steps: a. Select a concatenation type from the Concatenation Type drop-down list. — c-Cat — v-Cat b. Select a mode for the transport structure from the Transport Mode drop-down list. — SONET — SDH Go to step 7.		
6	In the Advanced Attributes area of the Line facility, select a mode for the transport structure from the Transport Mode drop-down list. — SONET — SDH		
7	Click Apply .		
8	Click OK to close the window.		
—end—			

Procedure 3-12

Putting a WSC facility in-service on an OSC circuit pack

Use this procedure to put the east and west WSC facilities of an OSC circuit pack in-service (IS). The east and west OSC facilities are automatically in-service, as soon as the OSC circuit pack is placed in-service.

Requirements

Before you can begin this procedure, the OSC circuit pack must be IS. See [Procedure 3-7, “Putting a circuit pack or SFP in-service”](#) to put the OSC circuit pack IS.

Make sure that the OSC circuit pack is connected to the OSC trays.

You must be logged in to the System Manager as an Admin or Operator level user to out the WSC facility of an OSC circuit pack IS.

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the OSC circuit pack you want to place the WSC facility in-service. <i>System Manager updates the screen with data for the selected shelf.</i>
2	Click on the Selected Shelves drop-down list to return the screen to full view.
3	Locate the row associated with slot 20. In the Equipment/Inventory tab, make sure that the OSC circuit pack is IS—the entries in the Admin column should be IS. If not, the requirements for this procedure are not met. See Procedure 3-7, “Putting a circuit pack or SFP in-service” to put the circuit pack IS. Go to the next step.
4	Select the Equipment/Facilities tab. <i>The Equipment–Facilities window appears.</i>
5	Select the row in slot 20 that lists the WSC facility that you want to place IS.
6	Double-click on the selected row. <i>The Optical Metro Facility dialog box appears.</i>
7	Click on the drop-down list in the Mode field, and select Add-Drop or Pass Through to define WSC traffic at this shelf. <i>The selection that you make in this field applies to the east and west WSC facilities for this shelf.</i>

—continued—

Procedure 3-12 (continued)**Putting a WSC facility in-service on an OSC circuit pack**

Step	Action
8	In the State area of the dialog box, select IS from the Administrative drop-down list. Note: The selection that you make in this field applies to the east and west WSC facilities.
9	Click OK to close the dialog box.
10	To enable the WSC in the network, repeat this procedure for all the shelves that contain OSC circuit packs and that carry the way side channel in question.

—end—

Procedure 3-13

Taking a circuit pack facility or SFP facility out-of-service

Use this procedure to take a circuit pack facility or SFP facility out-of-service (OOS).

The circuit pack or SFP can remain in-service while the facility of the circuit pack or SFP is OOS.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to put a circuit pack or SFP facility OOS.

If you are taking facilities carried by the OSC circuit pack OOS, first take the east and west WSC facilities OOS, then take the east and west OSC facilities OOS. The east and west facilities are independent of each other, so you must take each individual facility OOS.

If you are taking OCI SRM GbE/FC or OCI SRM GbE facilities out-of-service, you must first take the client-side facilities (ports 1 and 2) OOS before taking the aggregate facility (1-AG) OOS.

If you are taking APBE facilities out-of-service, you must first take ports 1 through 4 OOS before taking port 5 OOS.

If you are taking Muxponder facilities out-of-service, you must first take ports 1 through 10 or 1 through 8 OOS before taking port 11 OOS.

—continued—

Procedure 3-13 (continued)

Taking a circuit pack facility or SFP facility out-of-service**Precautions****DANGER****Risk of laser not shutting down when OFA facility is OOS**

When an OFA has the Autoprovisioning Mismatch, or Circuit Pack Mismatch alarm raised, placing the OFA facility out of service or making other provisioning changes will not result in the laser being shutdown. The mismatch prevents software from recovering the facility state.

Effectively, a mismatch leaves all circuit packs in their default states, and for an OFA this means the laser is enabled even if the facility is OOS.

The Optical Metro 5100/5200 operates up to a Hazard Level of $k \times 3A$. Use only viewing instruments with proper optical attenuation.

**CAUTION****Risk of loss of traffic**

If you take a circuit pack facility out-of-service, the traffic going through that facility will be lost. However, if the traffic is protected (protected channel assignment), the traffic will only be interrupted during the user switch procedure.

For OCIs, a manual protection switch is not possible. If the traffic going through the OCI circuit pack is not protected with external equipment, traffic will be lost.

Make sure that the network administrator is aware before you carry out this procedure.

—continued—

Procedure 3-13 (continued)

Taking a circuit pack facility or SFP facility out-of-service

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the circuit pack or SFP facility you want to place out-of-service. <i>System Manager updates the screen with data for the selected shelf.</i>
2	Click on the Selected Shelves drop-down list to return the screen to full view.
3	Select the Equipment tab.
4	Select the Facilities tab.
5	Select the row that lists the slot number, port number, and circuit pack or SFP facility that you want to place OOS.
6	If the signal is protected and a manual user switch is possible, switch the traffic to the protection path before putting the facility OOS to avoid losing the corresponding traffic going through the deleted facility. To perform a manual traffic switch, refer to Procedure 4-7 “Switching traffic off a span in a path-protected network” in this book. Note: For OCIs, a manual protection switch is not possible. If the traffic going through the OCI circuit pack is not protected with external equipment, traffic will be lost.
7	Double-click on the selected row. <i>The Optical Metro Facility dialog box appears.</i> Note: For some circuit pack types (OSC, OCI SRM GbE/FC, OCI SRM GbE, Muxponder and APBE), there is a specific order that you must follow when putting facilities OOS. See the “Requirements” section of this procedure.
8	In the State area of the Optical Metro Facility dialog box select OOS from the Administrative drop-down list.
9	Click OK to close the dialog box. <i>A Confirm Facility dialog box appears.</i>
10	If a manual user switch was not performed in step 6, traffic will be lost for the facility that you are putting OOS. Contact your network administrator. Go to the next step.

—continued—

Procedure 3-13 (continued)

Taking a circuit pack facility or SFP facility out-of-service

Step	Action						
11	Click Yes to confirm the change and close the dialog box. Note 1: If another dialog box appears indicating that you cannot put this facility OOS, the requirements for this procedure are not met. For some circuit pack types (OSC, OCI SRM GbE/FC, OCI SRM GbE, Muxponder, and APBE), there is a specific order that you must follow when putting facilities OOS. See the "Requirements" section for this procedure and repeat the procedure. Note 2: The software takes approximately 15 seconds to take the facility OOS.						
12	<table><tr><th>If</th><th>Then</th></tr><tr><td>you are putting a facility OOS because you want to take the circuit pack OOS</td><td>repeat this procedure for all the port facilities associated with the circuit pack</td></tr><tr><td>otherwise</td><td>you have completed this procedure</td></tr></table>	If	Then	you are putting a facility OOS because you want to take the circuit pack OOS	repeat this procedure for all the port facilities associated with the circuit pack	otherwise	you have completed this procedure
If	Then						
you are putting a facility OOS because you want to take the circuit pack OOS	repeat this procedure for all the port facilities associated with the circuit pack						
otherwise	you have completed this procedure						

—end—

Procedure 3-14

Deleting a circuit pack or SFP facility

Use this procedure to delete a circuit pack or SFP facility.

The following circuit packs have more than one facility:

- the OCI SRM or OCI SRM SONET/SDH circuit pack has four facilities, one for each of its ports. The OCI SRM ESCON circuit pack has eight facilities.

Note: The OCI SRM ESCON circuit pack has one LOS LED for all of its eight client-side facilities. The LOS is lit if any of the eight client-side facilities is not receiving a valid signal. Delete any unused client-side facilities on the OCI SRM ESCON circuit pack so that the LOS LED does not remain lit.

- the OCI SRM SONET/SDH LTE circuit pack has four client-side facilities, one for each of its ports, and one aggregate facility (1-AG).

Note: The aggregate facility is deleted when the circuit pack equipment is deleted.

- the OCI SRM GbE/FC or OCI SRM GbE circuit pack has three facilities; two client-side facilities, one for each of its ports (port 1 and port 2), and one aggregate facility (1-AG).
- the OSC circuit pack has four facilities; two for the optical supervisory channel (OSC EAST and OSC WEST) and two for the wayside channel (WSC EAST and WSC WEST).
- the OTR has two facilities, one for the client-side port 1 (1-CS) and one for the line-side port 2 (2-LS).
- the Muxponder circuit pack has one line-side facility (MOTR) and can have up to ten SFP client-side facilities (MOTRSFP).

Note: For Muxponder 10 Gbit/s GbE/FC, SFP client-side facilities 9 and 10 are not supported. Ports 9 and 10 can be provisioned as facility objects with SFPs but they will not carry traffic.

- the APBE has five facilities, one for each of its ports, that is APBE EVOA port 1 through port 4 and APBE port 5.

—continued—

Procedure 3-14 (continued)

Deleting a circuit pack or SFP facility

Requirements

Before deleting a circuit pack or SFP facility, put the facility out-of-service. See [Procedure 3-13 “Taking a circuit pack facility or SFP facility out-of-service”](#) in this chapter.

Before deleting a circuit pack or SFP facility, delete any channel assignments associated with the facility. See [Procedure 3-4 “Deleting channel assignments”](#) in this chapter.

You must be logged in to the System Manager as an Admin or Operator level user to delete a circuit pack or SFP facility.

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the circuit pack or SFP facility that you want to delete. <i>System Manager updates the screen with data for the selected shelf.</i>
2	Click on the Selected Shelves drop-down list to return the screen to full view.
3	Select the Equipment/Facilities tab.
4	Locate the row where the circuit pack or SFP facility is to be deleted. Make sure that the facility is OOS—the entries in the Admin and the Oper columns should be OOS. If not, the requirements for this procedure are not met. See Procedure 3-13 “Taking a circuit pack facility or SFP facility out-of-service” to put the circuit pack or SFP facility OOS.
5	Select the Connections/Channel Assignments tab.
6	Make sure that the facility to be deleted is not listed in the “facility” or “end point” columns. If the facility is listed, there is still a channel assignment associated with the facility. In this case, the requirements for the procedure are not met. See Procedure 3-4 “Deleting channel assignments” to delete the channel assignment. Repeat this procedure for all the existing channel assignments involving the facility to be deleted. Then go to the next step.
7	Select the Equipment/Facilities tab.
8	Right-click on the circuit pack or SFP facility to be deleted.
9	Select Delete from the drop-down list. <i>The Confirm Facility Delete dialog box appears.</i>

—continued—

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Procedure 3-14 (continued)

Deleting a circuit pack or SFP facility

Step	Action
10	Click Yes to confirm the change.
11	Make sure in the Equipment/Facilities window that the deleted facility is not listed in the "Name" column.

—end—

Procedure 3-15

Adding a circuit pack facility or SFP facility

Use this procedure to add a circuit pack facility or SFP facility that has been deleted.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to add a circuit pack or SFP facility.

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the circuit pack or SFP facility that you want to add. <i>System Manager updates the screen with data for the selected shelf.</i>
2	Click on the Selected Shelves drop-down list to return the screen to full view.
3	Select the Equipment/Facilities tab.
4	Locate the row where the circuit pack or SFP facility is to be added. The name column is blank.
5	Right-click on the circuit pack or SFP facility to be added.
6	Select Add from the drop-down list. <i>The Optical Metro Facility dialog box appears.</i>
7	Enter a name in the Name field.
8	Click Apply .
9	Click OK to close the dialog box. <i>The circuit pack or SFP facility is added to the Equipment/Facilities window.</i>

—end—

Procedure 3-16

Setting GFP conditioning on a client-side port

Use this procedure to set generic framing procedure (GFP) conditioning on an OCI SRM GbE/FC or OCI SRM GbE client-side port.

This allows the provisioning of GFP Control Management Frames conditioning or AIS-P conditioning for client signal failures.

Requirements

Before setting the GFP conditioning on the client-side port, put the facility out-of-service. See [Procedure 3-13 “Taking a circuit pack facility or SFP facility out-of-service”](#) in this chapter.

You must be logged in to the System Manager as an Admin or Operator level user to set GFP conditioning.

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the circuit pack for which you want to set the GFP conditioning. <i>System Manager updates the screen with data for the selected shelf.</i>
2	Click on the Selected Shelves drop-down list to return the screen to full view.
3	Select the Equipment/Facilities tab.
4	Double-click the line with the OCI SRM GbE/FC or OCI SRM GbE client-side port for which you want to set the GFP conditioning. <i>The Optical Metro Facility dialog box appears.</i>
5	Make sure that the facility administrative state is OOS. If not, see Procedure 3-13 “Taking a circuit pack facility or SFP facility out-of-service” .
6	In the Advanced Attributes area, select Enable or Disable from the GFP Conditioning drop-down list.
7	Click Apply .
8	If you put the facility OOS in step 5 , put the facility back IS. See Procedure 3-10 “Putting a circuit pack or SFP facility in-service” . If the facility was originally OOS, click OK to close the Optical Metro Facility window.
9	To make sure that GFP conditioning has been enabled on both the near and far ends, measure the round trip delay. See Procedure 3-18 “Measuring round trip delay on a client-side port” .

—end—

Procedure 3-17

Provisioning GFP Frame Check Sequence (FCS)

Use this procedure to provision GFP FCS inclusion/exclusion for all supported protocols. GFP Frame Check Sequence (FCS) occupies 4 bytes in the GFP frame. You can provision the GFP FCS to be included in the GFP frame (provisioned as Enable) or excluded from the GFP frame (provisioned as Disable). Enabling allows interoperability with GFP equipment that does not support the FCS field. This parameter can be provisioned on the OCI SRM GbE, OCI SRM GbE/FC, OCI SRM GbE/FC Enhanced, Muxponder 10 Gbit/s GbE/FC and the Muxponder 10 Gbit/s GbE/FC VCAT circuit packs. The Frame Check Sequence bytes are applicable to both GbE and FC.

Requirements

Before setting the GFP conditioning on the client-side port, put the facility out-of-service. See [Procedure 3-13 “Taking a circuit pack facility or SFP facility out-of-service”](#) in this chapter.

Note 1: For the OCI SRM GbE and the OCI SRM GbE/FC the GFP Conditioning parameter must be in the Enable state in order to provision the GFP FCS parameter.

Note 2: Make sure that the GFP Frame Check Sequence (FCS) provisioning is consistent at both the near end and the far end of any connection.

You must be logged in to the System Manager as an Admin or Operator level user to provision GFP Frame Check Sequence (FCS).

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the circuit pack for which you want to set the GFP Frame Check Sequence. <i>System Manager updates the screen with data for the selected shelf.</i>
2	Click on the Selected Shelves drop-down list to return the screen to full view.
3	Select the Equipment/Facilities tab.
4	Double-click the line with the OCI SRM GbE or OCI SRM GbE/FC or OCI SRM GbE/FC Enhanced or Muxponder 10 Gbit/s GbE/FC or Muxponder 10 Gbit/s GbE/FC VCAT client-side port for which you want to set the GFP Frame Check Sequence. <i>The Optical Metro Facility dialog box appears.</i>

—continued—

Procedure 3-17 (continued)

Provisioning GFP Frame Check Sequence (FCS)

Step	Action
5	Make sure that the GFP Conditioning parameter is in the Enable state. If not, see Procedure 3-16, "Setting GFP conditioning on a client-side port" .
6	Make sure that the facility administrative state is OOS. If not, see Procedure 3-13, "Taking a circuit pack facility or SFP facility out-of-service" .
7	In the Advanced Attributes area, select Enable or Disable from the GFP Frame Check Sequence drop-down list.
8	Click Apply.
9	If you put the facility OOS in step 6 , put the facility back IS. See Procedure 3-10, "Putting a circuit pack or SFP facility in-service" . If the facility was originally OOS, click OK to close the Optical Metro Facility window.

—end—

Procedure 3-18

Measuring round trip delay on a client-side port

The OCI SRM GbE/FC, OCI SRM GbE, and Muxponder SFP client-side ports support a round trip latency measurement (RTDELAY) that returns the network latency to an accuracy of +/- 1 ms.

Use this procedure to make sure that the far-end connection has GFP conditioning enabled and to measure the round trip delay. This delay helps determine if the extended reach configuration is within range.

Requirements

To measure the round trip delay, make sure that generic framing procedure (GFP) conditioning is enabled on both the near-end and far-end OCI SRM GbE/FC or OCI SRM GbE client-side ports and that the client-side ports at the near and far-ends are in-service. Follow [Procedure 3-16 “Setting GFP conditioning on a client-side port”](#) and [Procedure 3-10 “Putting a circuit pack or SFP facility in-service”](#).

You must be logged in to the System Manager as an Admin or Operator level user to measure round trip delay.

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the circuit pack for which you want to measure the round trip delay. <i>System Manager updates the screen with data for the selected shelf.</i>
2	Click on the Selected Shelves drop-down list to return the screen to full view.
3	Select the Equipment/Facilities tab.
4	Double-click the line with the client-side port. <i>The Optical Metro Facility dialog box appears.</i>

—continued—

Procedure 3-18 (continued)

Measuring round trip delay on a client-side port

Step	Action
5	Click Refresh next to the Round Trip Delay field. <i>The Round Trip Delay field updates the round trip delay which is displayed with a 500 us resolution.</i> Note 1: The following conditions cause the Round Trip Delay field to display UNKNOWN for a GFSRM: • the far end client port is OOS • there is a line fiber cut on the near end or at the far end of OCLD • the OCLD is OOS at the local end or at the far end Note 2: The following conditions causes the Round Trip Delay field to display UNKNOWN for a Muxponder: • the port facility is OOS at the far end • there is line fiber cut at the local end or at the far end • the line facility is OOS at the local end or at the far end Note 3: If the Round Trip Delay field displays UNKNOWN and none of the conditions from Note1 and Note2 apply, click Refresh repeatedly until the system displays a numerical value. A few refresh attempts may be required because of timeout conditions. However, once a value is returned, it represents the true round trip delay time.

—end—

Procedure 3-19

Provisioning Auto-negotiation and Pause details

Use this procedure to provision auto-negotiation and pause details on a Muxponder SFP, OCI SRM GbE/FC or OCI SRM GbE circuit pack with Gigabit Ethernet as the protocol.

When you create a channel assignment on a port of a Muxponder SFP, OCI SRM GbE/FC or OCI SRM GbE circuit pack and Gigabit Ethernet is the protocol, you must verify that the Auto-negotiation and Pause details are set up correctly.

Note: To provision Auto-negotiation and Pause, Encapsulation must be set to GFP-F. See [Procedure 3-3, Making or modifying channel assignments](#).

Auto-negotiation allows Ethernet peers that share a link segment to exchange capabilities and automatically resolve the most efficient, mutually compatible, configuration. When you enable Auto-negotiation, auto-negotiation takes place automatically.

Pause is a flow control mechanism used to throttle overrunning edge devices. Pause works by having the overwhelmed node transmit a pause frame towards the overrunning node. The pause frame requests a pause in transmission for a specified period of time.

The Auto-negotiation and Pause details are available from the Optical Metro Facility dialog box for the Muxponder client side SFP, OCI SRM GbE/FC or OCI SRM GbE client-side facilities if you make a channel assignment on a port of a Muxponder SFP, OCI SRM GbE/FC or OCI SRM GbE circuit pack and you specify that Gigabit Ethernet is the protocol. If you specify any other protocol or if a port assignment does not exist, the Auto-negotiation and Pause settings are greyed out.

—continued—

Precautions



CAUTION

Risk of traffic loss or interruption

Ensure that the preamble parameter is set to the same value at the near end and far end circuit pack, otherwise traffic flow will be interrupted.

ATTENTION

Do not add traffic until the Auto-negotiation and Pause details are provisioned correctly.

ATTENTION

By default, auto-negotiation is enabled on the Muxponder client side SPF, OCI SRM GbE/FC or OCI SRM GbE. Make sure that the timeout parameter is enabled on the subtending equipment. If the timeout parameter on the subtending equipment is disabled, some alarms may not be reported.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to provision auto-negotiation and pause details.

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the Muxponder client side SFP, OCI SRM GbE/FC or OCI SRM GbE circuit pack with Gigabit Ethernet as the provisioned protocol for a client-side port. <i>System Manager updates the screen with data for the selected shelf.</i>
2	Click on the Selected Shelves drop-down list to return the screen to full view.
3	Select the Equipment/Facilities tab.
4	Double-click the line with the client-side port for which you want to provision the auto-negotiation and pause details. <i>The Optical Metro Facility dialog box appears.</i>

—continued—

Procedure 3-19 (continued)

Provisioning Auto-negotiation and Pause details

Step	Action
5	Make sure that the facility administrative state is OOS. If not, see Procedure 3-13 "Taking a circuit pack facility or SFP facility out-of-service" . Then go to the next step.
6	In the Advanced Attributes area, under the Auto-negotiation and Pause fields, click Details . <i>The Optical Metro Auto-Negotiation and Pause details dialog box appears.</i>
7	Verify that the auto negotiation and pause details are the details that you want. See Table 3-12 for provisioning possibilities for the different Auto Negotiation and PAUSETX settings.

ATTENTION

Auto Negotiation and PAUSETX cannot both be enabled. The Auto Negotiation setting can be changed only when the PAUSETX is disabled, and the PAUSETX setting can be changed only when Auto Negotiation is disabled.

- 8 Use the drop-down lists to change the values. Depending on the Auto Negotiation and PAUSETX settings, you can modify the following provisioning values:
- Auto Negotiation
 - FLOWCTRL
 - MTU
 - PASSCTRL
 - PAUSETX
 - PREAMBLECTRL (Muxponder 10 Gbit/s GbE/FC VCAT only)
- Note:** Set the PREAMBLECTRL parameter to the same value at the near end and far end circuit pack.
- 9 Click **Apply**.
- 10 Click **OK** to close the Auto Negotiation and Pause window.
- 11 If you put the facility OOS in [step 5](#), put the facility back IS. See [Procedure 3-10 "Putting a circuit pack or SFP facility in-service"](#). If the facility was originally OOS, click **OK** to close the Optical Metro Facility window.

—end—

Table 3-12
Provisioning possibilities for Auto Negotiation and PAUSETX settings

Settings	Auto negotiation disabled	Auto negotiation enabled	PAUSETX disabled	PAUSETX enabled
Provisioning possibilities				
Auto negotiation	—	—	• Enable (default) • Disable	• Disable (fixed)
FLOWCTRL	Ignored (not possible to modify the current setting)	• NONE • ASYM (default) • SYM	Depends on Auto negotiation setting	Ignored (because Auto negotiation is disabled)
MTU	• 1600 • 9600	• 1600 • 9600	• 1600 • 9600	• 1600 • 9600
PASSCTRL	• Enable • Disable (default)	• Enable • Disable (default)	• Enable • Disable (default)	• Enable • Disable (default)
PAUSETX	• Enable (default) • Disable	• Disable (fixed)	—	—
PREAMBLECTRL	• Enable • Disable (default)	• Enable • Disable (default)	• Enable • Disable (default)	• Enable • Disable (default)

Procedure 3-20

Provisioning subrate and extended reach details

Use this procedure to provision the subrate and extended reach details for the specified port when you create a channel assignment on a port of an OCI SRM GbE/FC Enhanced circuit pack and fiber channel is the protocol.

You must set both the subrate and extended reach parameters to enabled or disabled. If you set the subrate and extended reach parameters to enabled, full-rate WAN bandwidth is not required. If you set the subrate and extended reach parameters to disabled, full-rate WAN bandwidth is required.

The subrate and extended reach details are available from the Optical Metro Facility dialog box for the OCI SRM GbE/FC Enhanced client-side facilities if you make a channel assignment on a port of an OCI SRM GbE/FC Enhanced circuit pack and you specify that fiber channel is the protocol.

Note: If you specify Gigabit Ethernet as the protocol on a OCI SRM GbE/FC Enhanced circuit pack or Muxponder 10 Gbit/s GbE/FC VCAT (with framed-GFP), the auto-negotiation and pause details are available. For more information, see [Procedure 3-19 “Provisioning Auto-negotiation and Pause details”](#).

In the Subrate and Extended Reach dialog box, you can enable or disable the subrate and extended reach parameters, as well as set the buffer-to-buffer credit override. From this dialog box, you can also determine the FC link state and the buffer-to-buffer credit.

When you enable the Fiber Channel Extended Reach option on the OCI SRM GbE/FC Enhanced circuit pack (by setting the EXTREACH and SUBRATE parameters to Enabled), you can provision the following BBC Override values on the OCI SRM GbE/FC Enhanced circuit pack: Disable, 1, 2, 4, 8, 16, 32, 64, 128. When you connect FC switch E-ports to the OCI SRM GbE/FC Enhanced, the BBC value is snooped and does not need to be overridden. In this case, you must set the BBC Override value to Disable. When you connect F or N ports (for example, Disk Arrays, Fiber Channel Host Bus Adapters, or Testsets) directly to the OCI SRM GbE/FC Enhanced, set the BBC Override value to match the BBC value of the F or N port.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to provision subrate and extended reach details.

—continued—

Procedure 3-20 (continued)

Provisioning subrate and extended reach details

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the OCI SRM GbE/FC Enhanced circuit pack with FC-100/FICON as the provisioned protocol for a client-side port. <i>System Manager updates the screen with data for the selected shelf.</i>
2	Click on the Selected Shelves drop-down list to return the screen to full view.
3	Select the Equipment/Facilities tab.
4	Double-click the line with the client-side port for which you want to provision the subrate and extended reach details. <i>The Optical Metro Facility dialog box appears.</i>
5	Make sure that the facility administrative state is OOS. If not, see Procedure 3-13 "Taking a circuit pack facility or SFP facility out-of-service" . Then go to the next step.
6	In the Advanced Attributes area, under the SubRate and ExtReach fields, click Details . <i>The Optical Metro Subrate and Extended Reach dialog box appears.</i>
7	Verify that the subrate and extended reach details are the details that you want.

ATTENTION

Subrate and Extended Reach must both be enabled or both be disabled. You cannot enable one and disable the other.

8	<table> <tr> <th>If you want to</th><th>Then go to</th></tr> <tr> <td>disable subrate and extended reach</td><td>step 9</td></tr> <tr> <td>enable subrate and extended reach</td><td>step 10</td></tr> </table>	If you want to	Then go to	disable subrate and extended reach	step 9	enable subrate and extended reach	step 10
If you want to	Then go to						
disable subrate and extended reach	step 9						
enable subrate and extended reach	step 10						
9	Select Disable from the Subrate or Extended Reach drop-down list. Note: Disabling one of the attributes automatically disables the other. Go to step 12 .						
10	Select Enable from the Subrate or Extended Reach drop-down list. Note: Enabling one of the attributes automatically enables the other.						

—continued—

Procedure 3-20 (continued)**Provisioning subrate and extended reach details**

Step	Action
11	Select a value from the BBC Override drop-down list to set the buffer to buffer credit override (disable or 1 through 128).
12	Click Apply .
13	Click OK to close the Subrate and Extended Reach dialog box.
14	If you put the facility OOS in step 5 , put the facility back IS. See Procedure 3-10 "Putting a circuit pack or SFP facility in-service" . If the facility was originally OOS, click OK to close the Optical Metro Facility window.

—end—

Procedure 3-21

Changing the timing mode

Use this procedure to provision the timing mode for the following:

- aggregate facility on the OCI SRM GbE/FC or OCI SRM GbE circuit pack
- line-side facility on the Muxponder circuit pack

Two timing modes are available: local and loop timing.

Note: You cannot provision the timing mode on a protection Muxponder circuit pack. The timing mode for the protection Muxponder circuit pack is mate-timed and cannot be changed.

For local timing, the timing reference clock is provided by the circuit pack. For loop timing, the timing reference clock comes from an STS-48 signal on the backplane.

Precautions



CAUTION

Risk of traffic interruption

While it may take up to 100 seconds to achieve looptime synchronization, the impact on traffic of switching modes is minimal:

- switching from local to loop time typically has no traffic hits
- switching from loop to local time impacts only a few SONET frames (no more than 1 second of impact on traffic)

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to change the timing mode.

Action

Step	Action

1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the circuit pack with the facility for which you want to change the timing mode. <i>System Manager updates the screen with data for the selected shelf.</i>
2	Click on the Selected Shelves drop-down list to return the screen to full view.
3	Select the Equipment/Facilities tab.

—continued—

Procedure 3-21 (continued)
Changing the timing mode

Step	Action
4	Double-click the line with the facility for which you want to change the timing mode. <i>The Optical Metro Facility dialog box appears.</i>
5	Select a timing mode from the Timing Mode drop-down list.
6	Click Apply . <i>The Confirm Facility dialog box appears.</i>
7	If you are changing the timing mode, advise the network administrator that the traffic going through this facility will be interrupted for a maximum of 1 second. Click Yes in the Confirm Facility dialog box.
8	Click OK to close the Optical Metro Facility window.

—end—

Procedure 3-22

Changing the signal degrade threshold

Use this procedure to change the signal degrade threshold on a client-side facility (port 1 through port 4) of an OCI SRM SONET/SDH LTE circuit pack. The signal degrade threshold can be 10e-5 through 10e-9.

Note: The default signal degrade threshold is 10e-6.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to change the signal degrade threshold.

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the OCI SRM SONET/SDH LTE circuit pack with the signal degrade threshold that you want to change. <i>System Manager updates the screen with data for the selected shelf.</i>
2	Click on the Selected Shelves drop-down list to return the screen to full view.
3	Select the Equipment tab.
4	Select the Facilities tab.
5	Select the row that lists the slot number, port number, and circuit pack facility with the signal degrade threshold that you want to change.
6	Double-click on the selected row, or right-click and select Modify. <i>The Optical Metro Facility dialog box appears.</i>
7	In the SSRM LTE Provisioning Data area of the Optical Metro Facility dialog box, select a value from the Signal Degrade Threshold drop-down list.
8	Click OK to close the dialog box.
9	Repeat step 5 to step 8 for any other port on the OCI SRM SONET/SDH LTE circuit pack with a signal degrade threshold that you want to change.

—end—

Procedure 3-23

Provisioning the per-wavelength optical service channel (PWOSC)

Use this procedure to enable or disable the per-wavelength optical service channel (PWOSC) on in-service or out-of-service OCLD, OTR, or Muxponder circuit packs.

ATTENTION

Only disable the PWOSC feature in applications that do not require the overhead data communications channel and the reporting of alarms associated with this facility. It is not recommended that you disable the PWOSC in standard Optical Metro 5100/5200 networks.

Disabling of the PWOSC allows you to suppress the alarms associated with this feature in networks where the overhead data communication channel is not required.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to enable or disable the PWOSC.

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the circuit pack with the PWOSC that you want to enable or disable. <i>System Manager updates the screen with data for the selected shelf.</i>
2	Click on the Selected Shelves drop-down list to return the screen to full view.
3	Select the Equipment/Inventory tab.
4	Right click on the circuit pack with the PWOSC that you want to enable or disable.
5	Select Modify from the drop-down list. <i>The Optical Metro Inventory dialog box appears.</i>
6	In the Provisioning Data area, select Enable or Disable from the Overhead State drop-down list.

—continued—

3-92 Provisioning circuit packs and managing traffic

Procedure 3-23 (continued)

Provisioning the per-wavelength optical service channel (PWOSC)

Step	Action						
7	<table><tr><th>If in step 6 you</th><th>Then</th></tr><tr><td>disabled the PWOSC</td><td>a confirmation dialog box appears. Click OK.</td></tr><tr><td>enabled the PWOSC</td><td>go to the next step</td></tr></table>	If in step 6 you	Then	disabled the PWOSC	a confirmation dialog box appears. Click OK .	enabled the PWOSC	go to the next step
If in step 6 you	Then						
disabled the PWOSC	a confirmation dialog box appears. Click OK .						
enabled the PWOSC	go to the next step						
8	Click Apply .						
9	Click OK to close the Optical Metro Inventory dialog box.						
—end—							

Procedure 3-24

Setting path monitoring on an OCI SRM SONET/SDH LTE

Use this procedure to set path monitoring on a client-side facility (port 1 through port 4) of an OCI SRM SONET/SDH LTE circuit pack. Set the path monitoring value to true to monitor the Path AIS alarm on the specified facility.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to set the path monitoring value.

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the OCI SRM SONET/SDH LTE circuit pack where you want to set path monitoring on the client-side facility. <i>System Manager updates the screen with data for the selected shelf.</i>
2	Click on the Selected Shelves drop-down list to return the screen to full view.
3	Select the Equipment tab.
4	Select the Facilities tab.
5	Select the row that lists the slot number, port number, and circuit pack facility where you want to set path monitoring.
6	Double-click on the selected row, or right-click and select Modify. <i>The Optical Metro Facility dialog box appears.</i>
7	In the SSRM LTE Provisioning Data area of the Optical Metro Facility dialog box, select true from the Path Monitoring drop-down list.
8	Click OK to close the dialog box.
9	Repeat step 5 through step 8 if you want to change the path monitoring for any other port on the OCI SRM SONET/SDH LTE circuit pack.

—end—

Procedure 3-25

Manually provisioning a DSCM

Use this procedure to manually provision an DSCM.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to manually provision a DSCM.

The communication cable must not be connected between the shelf maintenance panel (port 1 or 2 of the OMX interface card west or east) and the DSCM module. For more information on the data communication cable, see [Procedure 6-9 “Connecting passive devices to the maintenance panel”](#) and [Procedure 6-10 “Connecting passive devices to the Equipment Inventory Unit in new installations”](#) in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Action

Step	Action						
1	Make sure that the communication cable is not connected between the shelf maintenance panel (port 1 or 2 of the OMX interface card west or east [EIP1 through EIP4]) and the DSCM module. <table><tr><td>If the communication cable</td><td>Then</td></tr><tr><td>is connected</td><td>auto-provisioning is complete and manual provisioning is not required. You have completed this procedure.</td></tr><tr><td>is not connected</td><td>go to step 2</td></tr></table>	If the communication cable	Then	is connected	auto-provisioning is complete and manual provisioning is not required. You have completed this procedure.	is not connected	go to step 2
If the communication cable	Then						
is connected	auto-provisioning is complete and manual provisioning is not required. You have completed this procedure.						
is not connected	go to step 2						
2	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the DSCM you want to manually provision. <i>System Manager updates the screen with data for the selected shelf.</i>						
3	Click on the Selected Shelves drop-down list to return the screen to full view.						
4	Select the Equipment tab. <i>The Equipment window appears.</i>						
5	Select the Inventory tab. <i>The Inventory tab appears.</i>						

—continued—

Procedure 3-25 (continued)

Manually provisioning a DSCM

Step	Action
6	In the Inventory window, highlight the EIP row that will contain the DSCM you want to provision. Note 1: DSCMs can only be provisioned for EIP slots (for passive devices). Note 2: If the line selected has a pre-provisioned circuit pack, you do not need to manually provision that slot.
7	Double-click the EIP row, or right-click the row and then select Add. <i>The Optical Metro Inventory – Add wizard dialog box appears.</i>
8	From the Add wizard Circuit Pack Type drop-down list, select DSCM.
9	Click Next .
10	From the DSCM Type drop-down list, select the type of DSCM that you want to provision.
11	From the Band drop-down list, select the band of the DSCM that you want to provision.
12	From the Distance drop-down list, select the DSCM distance.
13	If necessary, in the Description field, enter a description.
14	Click Finished to exit the Add wizard dialog box. <i>The Equipment/Inventory window shows the following: OOS administrative state, OOS-AU-MA operational state, and UNEQUIPPED secondary state.</i> Note: DSCMs do not have facilities, so no new facility is created in the Equipment/Facility window.

—end—

Procedure 3-26

Manually provisioning an ECT or PBE

When power is applied to an OFA or Mixed shelf, the Optical Metro 5200 automatically provisions the Equalizer Coupler Trays (ECTs) or Per Band Equalizers (PBEs) that are connected to the shelf maintenance panel.

Use this procedure to manually provision an ECT or PBE, and put the ECT or PBE in-service (IS).

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to manually provision an ECT or PBE.

The communication cable must not be connected between the shelf maintenance panel (port 1 or 2 of the OMX interface card west or east) and the ECT or PBE module. For more information on the data communication cable, see [Procedure 6-9 “Connecting passive devices to the maintenance panel”](#) and [Procedure 6-10 “Connecting passive devices to the Equipment Inventory Unit in new installations”](#) in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Action

Step	Action						
1	Make sure that the communication cable is not connected between the shelf maintenance panel (port 1 or 2 of the OMX interface card west or east [EIP1 through EIP4]) and the ECT or PBE module. <table><tr><td>If the communication cable</td><td>Then</td></tr><tr><td>is connected</td><td>auto-provisioning is complete and manual provisioning is not required. You have completed this procedure.</td></tr><tr><td>is not connected</td><td>go to step 2</td></tr></table>	If the communication cable	Then	is connected	auto-provisioning is complete and manual provisioning is not required. You have completed this procedure.	is not connected	go to step 2
If the communication cable	Then						
is connected	auto-provisioning is complete and manual provisioning is not required. You have completed this procedure.						
is not connected	go to step 2						
2	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the ECT or PBE you want to manually provision. <i>System Manager updates the screen with data for the selected shelf.</i>						
3	Click on the Selected Shelves drop-down list to return the screen to full view.						
4	Select the Equipment tab. <i>The Equipment window appears.</i>						

—continued—

Procedure 3-26 (continued)

Manually provisioning an ECT or PBE

Step	Action
5	Select the Inventory tab. <i>The Inventory tab appears.</i>
6	In the Inventory window, highlight the row that will contain the ECT or PBE you want to provision. Note: If the line selected has a pre-provisioned circuit pack, you do not need to manually provision that slot.
7	Double-click the row, or right-click the row and then select Add. <i>The Optical Metro Inventory – Add wizard dialog box appears.</i>
8	From the Add wizard Circuit Pack Type drop-down list, select ECT.
9	Click Next .
10	From the Add wizard Filter Type drop-down list, select the type of ECT or PBE that you want to provision. • Splitter • Conv. ECT • Long ECT • Dual ECT • Conv. PBE • Long PBE • Dual PBE Note: In the drop-down menu, Conv. is for C-band, Long is for L-band, and Dual is for C&L-band. Splitter is for the C- and L-band splitter/coupler with no equalization (NT0H31AD).
11	In the Description field, enter a description of the ECT or PBE that you are provisioning.
12	Click Finished . <i>The Add wizard dialog box closes.</i> <i>The Equipment/Inventory window shows the following: OOS administrative state, OOS-AU-MA operational state, and UNEQUIPPED secondary state.</i> Note: PBEs and ECTs do not have facilities, so no new facility is created in the Equipment/Facility window.

—end—

Procedure 3-27

Manually provisioning an OMX

Use this procedure to manually provision an OMX.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to manually provision an OMX.

The communication cable must not be connected between the shelf maintenance panel (port 1 or 2 of the OMX interface card west or east) and the OMX module. For more information on the data communication cable, see [Procedure 6-9 “Connecting passive devices to the maintenance panel”](#) and [Procedure 6-10 “Connecting passive devices to the Equipment Inventory Unit in new installations”](#) in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Action

Step	Action						
1	Make sure that the communication cable is not connected between the shelf maintenance panel (port 1 or 2 of the OMX interface card west or east [EIP1 through EIP4]) and the OMX module. <table><tr><td>If the communication cable</td><td>Then</td></tr><tr><td>is connected</td><td>auto-provisioning is complete and manual provisioning is not required. You have completed this procedure.</td></tr><tr><td>is not connected</td><td>go to step 2</td></tr></table>	If the communication cable	Then	is connected	auto-provisioning is complete and manual provisioning is not required. You have completed this procedure.	is not connected	go to step 2
If the communication cable	Then						
is connected	auto-provisioning is complete and manual provisioning is not required. You have completed this procedure.						
is not connected	go to step 2						
2	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the OMX you want to manually provision. <i>System Manager updates the screen with data for the selected shelf.</i>						
3	Click on the Selected Shelves drop-down list to return the screen to full view.						
4	Select the Equipment tab. <i>The Equipment window appears.</i>						
5	Select the Inventory tab. <i>The Inventory tab appears.</i>						

—continued—

Procedure 3-27 (continued)
Manually provisioning an OMX

Step	Action
6	In the Inventory window, highlight the row that will contain the OMX you want to provision. Note: If the line selected has a pre-provisioned circuit pack, you do not need to manually provision that slot.
7	Double-click the row, or right-click the row and then select Add. <i>The Optical Metro Inventory – Add wizard dialog box appears.</i>
8	From the Add wizard Circuit Pack Type drop-down list, select OMX.
9	Click Next .
10	From the OMX Type drop-down list, select the type of OMX that you want to provision. • single band dense • single band coarse • quad band dense • quad band coarse • single band ITU • multi-band ITU
11	From the Band drop-down list, select the band of the OMX that you want to provision. Note: For a single-band dense OMX and a single-band coarse OMX, select a number from 1 to 8. For a quad-band dense OMX or quad-band coarse OMX, select C Band or L Band. For a multi-band ITU OMX, select ITU4 or ITU8.
12	If necessary, in the OSID field, enter the optical system identifier that you want to assign to the OMX.
13	If necessary, in the Description field, enter a description.
14	Click Finished to exit the Add wizard dialog box. <i>The Equipment/Inventory window shows the following: OOS administrative state, OOS-AU-MA operational state, and UNEQUIPPED secondary state.</i> Note: OMXs do not have facilities, so no new facility is created in the Equipment/Facility window.

—end—

Procedure 3-28

Manually provisioning a 1310 nm splitter/coupler

Use this procedure to manually provision a 1310 nm splitter/coupler.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to manually provision a 1310 nm splitter/coupler.

The communication cable must not be connected between the shelf maintenance panel (port 1 or 2 of the OMX interface card west or east) and the 1310 nm splitter/coupler. For more information on the data communication cable, see [Procedure 6-9 “Connecting passive devices to the maintenance panel”](#) and [Procedure 6-10 “Connecting passive devices to the Equipment Inventory Unit in new installations”](#) in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Action

Step	Action						
1	Make sure that the communication cable is not connected between the shelf maintenance panel (port 1 or 2 of the OMX interface card west or east [EIP1 through EIP4]) and the 1310 nm splitter/coupler. <table><tr><td>If the communication cable</td><td>Then</td></tr><tr><td>is connected</td><td>auto-provisioning is complete and manual provisioning is not required. You have completed this procedure.</td></tr><tr><td>is not connected</td><td>go to step 2</td></tr></table>	If the communication cable	Then	is connected	auto-provisioning is complete and manual provisioning is not required. You have completed this procedure.	is not connected	go to step 2
If the communication cable	Then						
is connected	auto-provisioning is complete and manual provisioning is not required. You have completed this procedure.						
is not connected	go to step 2						
2	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the 1310 nm splitter/coupler you want to manually provision. <i>System Manager updates the screen with data for the selected shelf.</i>						
3	Click on the Selected Shelves drop-down list to return the screen to full view.						
4	Select the Equipment tab. <i>The Equipment window appears.</i>						
5	Select the Inventory tab. <i>The Inventory tab appears.</i>						

—continued—

Procedure 3-28 (continued)**Manually provisioning a 1310 nm splitter/coupler**

Step	Action
6	In the Inventory window, highlight the row that will contain the 1310 nm splitter/coupler you want to provision. Note: If the line selected has a pre-provisioned circuit pack, you do not need to manually provision that slot.
7	Double-click the row, or right-click the row and then select Add. <i>The Optical Metro Inventory – Add wizard dialog box appears.</i>
8	From the Add wizard Circuit Pack Type drop-down list, select W-SPLTR.
9	Click Next .
10	From the W-SPLTR Type drop-down list, select 1310 nm Splitter.
11	If necessary, in the Description field, enter a description.
12	Click Finished to exit the Add wizard dialog box. <i>The Equipment/Inventory window shows the following: OOS administrative state, OOS-AU-MA operational state, and UNEQUIPPED secondary state.</i>

—end—

Procedure 3-29

Manually provisioning an OSC splitter/coupler

Use this procedure to manually provision an OSC splitter/coupler.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to manually provision an OSC splitter/coupler.

The communication cable must not be connected between the shelf maintenance panel (port 1 or 2 of the OMX interface card west or east) and the OSC splitter/coupler. For more information on the data communication cable, see [Procedure 6-9 “Connecting passive devices to the maintenance panel”](#) and [Procedure 6-10 “Connecting passive devices to the Equipment Inventory Unit in new installations”](#) in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Action

Step	Action						
1	Make sure that the communication cable is not connected between the shelf maintenance panel (port 1 or 2 of the OMX interface card west or east [EIP1 through EIP4]) and the OSC splitter/coupler. <table><tr><td>If the communication cable</td><td>Then</td></tr><tr><td>is connected</td><td>auto-provisioning is complete and manual provisioning is not required. You have completed this procedure.</td></tr><tr><td>is not connected</td><td>go to step 2</td></tr></table>	If the communication cable	Then	is connected	auto-provisioning is complete and manual provisioning is not required. You have completed this procedure.	is not connected	go to step 2
If the communication cable	Then						
is connected	auto-provisioning is complete and manual provisioning is not required. You have completed this procedure.						
is not connected	go to step 2						
2	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the OSC splitter/coupler you want to manually provision. <i>System Manager updates the screen with data for the selected shelf.</i>						
3	Click on the Selected Shelves drop-down list to return the screen to full view.						
4	Select the Equipment tab. <i>The Equipment window appears.</i>						
5	Select the Inventory tab. <i>The Inventory tab appears.</i>						

—continued—

Procedure 3-29 (continued)**Manually provisioning an OSC splitter/coupler**

Step	Action
6	In the Inventory window, highlight the row that will contain the OSC splitter/coupler you want to provision. Note: If the line selected has a pre-provisioned circuit pack, you do not need to manually provision that slot.
7	Double-click the row, or right-click the row and then select Add. <i>The Optical Metro Inventory – Add wizard dialog box appears.</i>
8	From the Add wizard Circuit Pack Type drop-down list, select OSC-SPLTR.
9	Click Next .
10	From the OSC-SPLTR Type drop-down list, select the type of OSC that you want to provision. • OSC Tray without Tap • OSC Tray with Tap • OSC Tray with Dual Taps
11	If necessary, in the Description field, enter a description.
12	Click Finished to exit the Add wizard dialog box. <i>The Equipment/Inventory window shows the following: OOS administrative state, OOS-AU-MA operational state, and UNEQUIPPED secondary state.</i>

—end—

Procedure 3-30

Manually provisioning a VOA tray

Use this procedure to manually provision a VOA tray.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to manually provision a VOA tray.

The communication cable must not be connected between the shelf maintenance panel (port 1 or 2 of the OMX interface card west or east) and the VOA tray. For more information on the data communication cable, see [Procedure 6-9 “Connecting passive devices to the maintenance panel”](#) and [Procedure 6-10 “Connecting passive devices to the Equipment Inventory Unit in new installations”](#) in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Action

Step	Action						
1	Make sure that the communication cable is not connected between the shelf maintenance panel (port 1 or 2 of the OMX interface card west or east [EIP1 through EIP4]) and the VOA tray. <table><tr><td>If the communication cable</td><td>Then</td></tr><tr><td>is connected</td><td>auto-provisioning is complete and manual provisioning is not required. You have completed this procedure.</td></tr><tr><td>is not connected</td><td>go to step 2</td></tr></table>	If the communication cable	Then	is connected	auto-provisioning is complete and manual provisioning is not required. You have completed this procedure.	is not connected	go to step 2
If the communication cable	Then						
is connected	auto-provisioning is complete and manual provisioning is not required. You have completed this procedure.						
is not connected	go to step 2						
2	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the VOA tray you want to manually provision. <i>System Manager updates the screen with data for the selected shelf.</i>						
3	Click on the Selected Shelves drop-down list to return the screen to full view.						
4	Select the Equipment tab. <i>The Equipment window appears.</i>						
5	Select the Inventory tab. <i>The Inventory tab appears.</i>						

—continued—

Procedure 3-30 (continued)**Manually provisioning a VOA tray**

Step	Action
6	In the Inventory window, highlight the row that will contain the VOA tray you want to provision. Note: If the line selected has a pre-provisioned circuit pack, you do not need to manually provision that slot.
7	Double-click the row, or right-click the row and then select Add. <i>The Optical Metro Inventory – Add wizard dialog box appears.</i>
8	From the Add wizard Circuit Pack Type drop-down list, select VOA.
9	Click Next .
10	From the VOA Type drop-down list, select Manual VOA.
11	If necessary, in the Description field, enter a description.
12	Click Finished to exit the Add wizard dialog box. <i>The Equipment/Inventory window shows the following: OOS administrative state, OOS-AU-MA operational state, and UNEQUIPPED secondary state.</i>

—end—

Procedure 3-31

Manually provisioning a transponder protection tray

Use this procedure to manually provision a transponder protection tray.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to manually provision a transponder protection tray.

The communication cable must not be connected between the shelf maintenance panel (port 1 or 2 of the OMX interface card west or east) and the transponder protection tray. For more information on the data communication cable, see [Procedure 6-9 “Connecting passive devices to the maintenance panel”](#) and [Procedure 6-10 “Connecting passive devices to the Equipment Inventory Unit in new installations”](#) in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

Action

Step	Action						
1	Make sure that the communication cable is not connected between the shelf maintenance panel (port 1 or 2 of the OMX interface card west or east [EIP1 through EIP4]) and the transponder protection tray. <table><tr><td>If the communication cable</td><td>Then</td></tr><tr><td>is connected</td><td>auto-provisioning is complete and manual provisioning is not required. You have completed this procedure.</td></tr><tr><td>is not connected</td><td>go to step 2</td></tr></table>	If the communication cable	Then	is connected	auto-provisioning is complete and manual provisioning is not required. You have completed this procedure.	is not connected	go to step 2
If the communication cable	Then						
is connected	auto-provisioning is complete and manual provisioning is not required. You have completed this procedure.						
is not connected	go to step 2						
2	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the transponder protection tray you want to manually provision. <i>System Manager updates the screen with data for the selected shelf.</i>						
3	Click on the Selected Shelves drop-down list to return the screen to full view.						
4	Select the Equipment tab. <i>The Equipment window appears.</i>						
5	Select the Inventory tab. <i>The Inventory tab appears.</i>						

—continued—

Procedure 3-31 (continued)**Manually provisioning a transponder protection tray**

Step	Action
6	In the Inventory window, highlight the row that will contain the transponder protection tray you want to provision. Note: If the line selected has a pre-provisioned circuit pack, you do not need to manually provision that slot.
7	Double-click the row, or right-click the row and then select Add. <i>The Optical Metro Inventory – Add wizard dialog box appears.</i>
8	From the Add wizard Circuit Pack Type drop-down list, select TPT.
9	Click Next .
10	From the TPT Type drop-down list, select the type of transponder protection tray that you want to provision. • 4 Filter Single Mode • 2 Filter Single Mode • 4 Filter Multi Mode • 2 Filter Multi Mode
11	If necessary, in the Description field, enter a description.
12	Click Finished to exit the Add wizard dialog box. <i>The Equipment/Inventory window shows the following: OOS administrative state, OOS-AU-MA operational state, and UNEQUIPPED secondary state.</i>

—end—

Procedure 3-32

Manually provisioning an equipment inventory unit (EIU)

Use this procedure to manually provision an equipment inventory unit (EIU).

Note: Only one EIU can be connected to a shelf at a time.

The EIU is connected to a shelf maintenance panel's equipment inventory port (EIP) and then up to 16 passive devices can be connected to the EIU and displayed in the System Manager inventory list. The following passive devices can be connected to the EIU:

- OMX
- ECT or PBE
- OSC splitter/coupler
- 1310 nm splitter/coupler
- transponder protection tray
- manual VOA

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to manually provision an EIU.

The communication cable must not be connected between the shelf maintenance panel (port 1 or 2 of the OMX interface card west or east [EIP1 through EIP4]) and the EIU. For more information on the data communication cable, see [Procedure 6-10 “Connecting passive devices to the Equipment Inventory Unit in new installations”](#) and [Procedure 6-12 “Connecting the Equipment Inventory Unit to the maintenance panel”](#) in *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201.

—continued—

Procedure 3-32 (continued)

Manually provisioning an equipment inventory unit (EIU)**Action**

Step	Action
1	Make sure that the communication cable is not connected between the shelf maintenance panel (port 1 or 2 of the OMX interface card west or east [EIP1 through EIP4]) and the EIU. If the communication cable Then is connected auto-provisioning is complete and manual provisioning is not required. You have completed this procedure. is not connected go to step 2
2	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the EIU you want to manually provision. <i>System Manager updates the screen with data for the selected shelf.</i>
3	Click on the Selected Shelves drop-down list to return the screen to full view.
4	Select the Equipment tab. <i>The Equipment window appears.</i>
5	Select the Inventory tab. <i>The Inventory tab appears.</i>
6	In the Inventory window, highlight the row that will contain the EIU you want to provision. Note: If the line selected has a pre-provisioned circuit pack, you do not need to manually provision that slot.
7	Double-click the row, or right-click the row and then select Add. <i>The Optical Metro Inventory – Add wizard dialog box appears.</i>
8	From the Add wizard Circuit Pack Type drop-down list, select EIU.
9	Click Next .
10	From the EIU Type drop-down list, select 12CEIU.
11	If necessary, in the Description field, enter a description.
12	Click Finished to exit the Add wizard dialog box. <i>The Equipment/Inventory window shows the following: OOS administrative state, OOS-AU-MA operational state, and UNEQUIPPED secondary state.</i>

—continued—

3-110 Provisioning circuit packs and managing traffic

Procedure 3-32 (continued)

Manually provisioning an equipment inventory unit (EIU)

Step	Action						
13	<table><tr><th>If</th><th>Then</th></tr><tr><td>you want to manually provision a passive device connected to the EIU</td><td>go to step 14</td></tr><tr><td>otherwise</td><td>you have completed this procedure</td></tr></table>	If	Then	you want to manually provision a passive device connected to the EIU	go to step 14	otherwise	you have completed this procedure
If	Then						
you want to manually provision a passive device connected to the EIU	go to step 14						
otherwise	you have completed this procedure						
14	In the Inventory window, double-click the row containing the EIU you provisioned. When you double-click on the provisioned EIU, 16 additional EIP slots are displayed for the provisioning of passive devices connected to the EIU.						
15	In the Inventory window, highlight one of the 16 additional EIP slots where you want to provision a passive device.						
16	Double-click the row, or right-click the row and then select Add. <i>The Optical Metro Inventory – Add wizard dialog box appears.</i>						
17	From the Add wizard Circuit Pack Type drop-down list, select the passive device that you want to provision.						
18	Click Next .						
19	<table><tr><th>If you selected</th><th>Then go to</th></tr><tr><td>an OMX</td><td>step 20</td></tr><tr><td>a passive device other than an OMX</td><td>step 23</td></tr></table>	If you selected	Then go to	an OMX	step 20	a passive device other than an OMX	step 23
If you selected	Then go to						
an OMX	step 20						
a passive device other than an OMX	step 23						
20	From the OMX Type drop-down list, select the type of OMX that you want to provision.						

—continued—

Procedure 3-32 (continued)

Manually provisioning an equipment inventory unit (EIU)

Step	Action						
21	From the Band drop-down list, select the band of the OMX that you want to provision. Note: For a single-band dense OMX and a single-band coarse OMX, select a number from 1 to 8. For a quad-band coarse OMX, select C Band or L Band. For a multi-band ITU OMX, select ITU4 or ITU8.						
22	If necessary, in the OSID field, enter the optical system identifier that you want to assign to the OMX. Go to step 24 .						
23	From the Type drop-down list, select the type of passive device that you want to provision.						
24	If necessary, in the Description field, enter a description.						
25	Click Finished to exit the Add wizard dialog box. <i>The Equipment/Inventory window shows the following for the passive device: OOS administrative state, OOS-AU-MA operational state, and SUPPORTING-ENTITY-OUTAGE secondary state.</i>						
26	<table> <tr> <th>If</th><th>Then</th></tr> <tr> <td>you want to provision another passive device connected to the EIU</td><td>go to step 15</td></tr> <tr> <td>otherwise</td><td>you have completed this procedure</td></tr> </table>	If	Then	you want to provision another passive device connected to the EIU	go to step 15	otherwise	you have completed this procedure
If	Then						
you want to provision another passive device connected to the EIU	go to step 15						
otherwise	you have completed this procedure						

—end—

Procedure 3-33

Provisioning the slot number of a passive device

Use this procedure to provision the slot number of a passive device.

For more information on the user provisionable slot numbers feature, refer to [“User provisionable slot numbers” on page 6-4](#) in *Software and User Interface*, 323-1701-101.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to provision the slot number of a passive device.

The passive slot numbering feature must be enabled before you can provision or change the slot number of a passive device. See [Procedure 1-47 “Enabling or disabling passive slot numbering”](#).

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the passive device. <i>System Manager updates the screen with data for the selected shelf.</i>
2	Click on the Selected Shelves drop-down list to return the screen to full view.
3	Select the Equipment tab. <i>The Equipment window appears.</i>
4	Select the Inventory tab. <i>The Inventory tab appears.</i>
5	In the Inventory window, highlight the row that contains the passive device.
6	Right-click the row and select Edit Passive Slot Number. <i>The Edit Passive Slot Number dialog box appears.</i>
7	Enter the new slot number in the Slot field.
8	Click Apply .
9	Click OK .

—end—

Procedure 3-34

Provisioning OFA direction and location

Use this procedure to provision the OFA direction and location.

Requirements

This procedure cannot be successfully performed if the intrasite fault sectionalization (IFS) feature is currently enabled on an OSC circuit pack that is associated with the optical system ID (OSID) of the OFA that you want to provision. Disable the IFS feature on the associated OSC circuit pack before you change the OFA provisioning data and then re-enable IFS when you are have completed OFA provisioning.

Action

Step	Action						
1	<table> <tr> <th>If the IFS feature is</th><th>Then</th></tr> <tr> <td>enabled</td><td>disable IFS on the OSC circuit pack that is associated with the OSID of the OFA that you want to provision. See Procedure 3-39 “Disabling intrasite fault sectionalization (IFS)” in this chapter. Go to the next step.</td></tr> <tr> <td>disabled</td><td>go to step 2</td></tr> </table>	If the IFS feature is	Then	enabled	disable IFS on the OSC circuit pack that is associated with the OSID of the OFA that you want to provision. See Procedure 3-39 “Disabling intrasite fault sectionalization (IFS)” in this chapter. Go to the next step.	disabled	go to step 2
If the IFS feature is	Then						
enabled	disable IFS on the OSC circuit pack that is associated with the OSID of the OFA that you want to provision. See Procedure 3-39 “Disabling intrasite fault sectionalization (IFS)” in this chapter. Go to the next step.						
disabled	go to step 2						
2	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the OFA circuit pack that you want to provision. <i>System Manager updates the screen with data for the selected shelf.</i>						
3	Click on the Selected Shelves drop-down list to return the screen to full view.						
4	Select the Equipment tab.						
5	Select the Inventory tab.						
6	Double-click on the OFA circuit pack. <i>The Optical Metro Inventory dialog box appears.</i>						
7	From the Direction drop-down list, select a direction.						
8	From the Location drop-down list, select a location.						
9	Click OK. <i>The IFS Warning dialog box appears.</i>						
10	Click Yes .						

—continued—

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Procedure 3-34 (continued)

Provisioning OFA direction and location

Step	Action	
11	If	Then
	in step 1 you disabled IFS	enable IFS on the OSC circuit pack that is associated with the OSID of the OFA that you provisioned. See Procedure 3-38 “Enabling intrasite fault sectionalization (IFS)” in this chapter. You have completed this procedure.
	otherwise	you have completed this procedure
—end—		

Procedure 3-35

Provisioning APBE direction, location, and associated equipment

Use this procedure to provision the APBE direction, location, and associated equipment.

Requirements

This procedure cannot be successfully performed if the intrasite fault sectionalization (IFS) feature is currently enabled on an OSC circuit pack that is associated with the optical system ID (OSID) of the APBE that you want to provision. Disable the IFS feature on the associated OSC circuit pack before you change the APBE provisioning data and then re-enable IFS when you are have completed APBE provisioning. You must also re-equalize each in-service APBE port after you change the OFA or DSCM type.

Action

Step	Action
1	If the IFS feature is Then enabled disable IFS on the OSC circuit pack that is associated with the OSID of the APBE that you want to provision. See Procedure 3-39 “Disabling intrasite fault sectionalization (IFS)” in this chapter. Go to the next step. disabled go to step 2
2	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the APBE circuit pack that you want to provision. <i>System Manager updates the screen with data for the selected shelf.</i>
3	Click on the Selected Shelves drop-down list to return the screen to full view.
4	Select the Equipment tab.
5	Select the Inventory tab.
6	Double-click on the APBE circuit pack. <i>The Optical Metro Inventory dialog box appears.</i>
7	From the Location drop-down list, select a location.
8	From the Direction drop-down list, select a direction.
9	In the Associated Equipment area of the dialog box, select the equipment that is associated with this APBE by selecting a radio button.

—continued—

Procedure 3-35 (continued)

Provisioning APBE direction, location, and associated equipment

Step	Action
10	If in step 9 you selected the None radio button DSCM or OFA radio button Then go to step 12 step 11
11	From the Type drop-down list, select an OFA or DSCM type.
12	Click OK . <i>The IFS Warning dialog box appears.</i>
13	Click Yes .
14	If in step 11 you changed the OFA or DSCM type re-equalize each in-service APBE port. Follow Procedure 2-12 “Re-equalizing optical power of a band” in <i>Testing and Equalization Procedures</i>, 323-1701-222. Go to the next step. did not change the OFA or DSCM type go to the next step
15	If in step 1 you disabled IFS enable IFS on the OSC circuit pack that is associated with the OSID of the APBE that you provisioned. See Procedure 3-38 “Enabling intrasite fault sectionalization (IFS)” in this chapter. You have completed this procedure. otherwise you have completed this procedure
	—end—

Procedure 3-36

Provisioning the optical system identifier (OSID)

The optical system identifier (OSID) is an essential configuration element used to uniquely identify the optical components associated with the different basic systems within an Optical Metro 5100/5200 network. This is especially important in compound network topologies (for example, interconnected rings, hub-and-spoke), where multiple basic systems exist in the same network. Each basic system in the network must be identified by a unique OSID, and all line-facing circuit packs within that basic system must be provisioned with the OSID assigned to that system. OSID values can be an alphanumeric string of up to eight characters.

Only line-facing circuit packs (OCLD, OTR, Muxponder, APBE, OFA, and OSC) and the OMX can have an OSID. When line-facing circuit packs autoprovision, the OSID is unassigned and the OSID field is blank. When identical circuit packs (same band and channel) are seated in the same plane on a shelf they must have different OSIDs. If they do not, an Unassigned Optical System Identifier alarm is raised. The alarm is cleared only when the OSID on the circuit pack with the alarm is manually changed. It will not clear if the first OSID is changed or the first circuit pack is deleted.

Note: For the OCLD, OTR and Muxponder circuit packs, the Unassigned Optical System Identifier alarm is raised when the near end and far end optically connected circuit packs do not have the same OSID.

Correct OSID provisioning requires a clear understanding of the deployed network topology. It is essential to know:

- what systems are present
- which equipment at each site belongs to which system

Rules for provisioning OSIDs

If you only have one system in the network, these provisioning rules are not essential, and an unassigned OSID is acceptable.

A unique OSID must be specified for all line-facing equipment

- on systems that will have intrasite fault sectionalization enabled
- for each system at a bridge site
- for each spoke on a hub and spoke system, making sure to assign the endpoint equipment at either end of the spoke with the same OSID

—continued—

Procedure 3-36 (continued)

Provisioning the optical system identifier (OSID)

Nortel Networks recommends that you provision each system in your network with a unique OSID. The same value is used for all equipment in the system.

Using the System Manager, you can provision the OSID at the shelf level or the circuit pack level.

- When you provision the OSID at the shelf level, you assign one system number to all the line-facing circuit packs on the shelf. Make sure that you assign the same OSID to the other shelves in the system.
- When you provision the OSID at the circuit pack level, you assign one system number to one line-facing circuit pack on a shelf. Make sure that the number you assign is the same OSID as that assigned to other line-facing circuit packs on the same system.

Because bridge and hub-and-spoke shelves may contain identical circuit packs (band and channel) that belong to different systems, OSIDs should be provisioned at the circuit pack level to make sure that they are correct.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to provision the OSID.

Make sure that you comply with the [“Rules for provisioning OSIDs”](#).

Precautions

Incorrect provisioning of the OSID can cause the IFS feature to operate incorrectly.

ATTENTION

To change the OSID for a piece of equipment that currently has the same OSID as the OSC circuit pack, you must first disable IFS at the site, if it is enabled. Follow [Procedure 3-39, “Disabling intrasite fault sectionalization \(IFS\)”](#), in this book.

—continued—

Procedure 3-36 (continued)

Provisioning the optical system identifier (OSID)**CAUTION****Risk of interfering with alarm reporting**

It is imperative that the OSID for all line-facing equipment is provisioned correctly for bridge sites, for hub and spoke sites, and for sites with intrasite fault sectionalization (IFS). Refer to the [“Rules for provisioning OSIDs”](#).

Incorrect OSID provisioning can generate unnecessary alarms.

Action

Step	Action						
1	Review the “Rules for provisioning OSIDs” , and the Precautions associated with this procedure.						
2	<table border="1"> <thead> <tr> <th>If provisioning the OSID</th><th>Then</th></tr> </thead> <tbody> <tr> <td>at the shelf level</td><td>follow steps 3 to 12</td></tr> <tr> <td>at the circuit pack level</td><td>follow steps 13 to 20</td></tr> </tbody> </table>	If provisioning the OSID	Then	at the shelf level	follow steps 3 to 12	at the circuit pack level	follow steps 13 to 20
If provisioning the OSID	Then						
at the shelf level	follow steps 3 to 12						
at the circuit pack level	follow steps 13 to 20						

Provisioning the OSID at the shelf level

- 3 In the System Manager, select the Configuration tab.
- 4 Select the Naming tab.
- 5 Highlight a row containing the shelf whose OSID you want to provision.
- 6 Double-click the row, or right-click the row, and then select Modify.
The Shelf Configuration dialog box appears.

—continued—

Procedure 3-36 (continued)

Provisioning the optical system identifier (OSID)

Step	Action
7	Click the Change OSID button. <i>The Shelf Optical System ID change dialog box appears.</i>
8	In the New Optical System ID field, enter an OSID (of 8 or fewer alphanumeric characters) that you want to assign to all the line-facing circuit packs on the shelf.
9	Click OK to apply the changes. <i>The Confirm Shelf Optical System ID change dialog box appears.</i>
10	Click Yes to confirm the change. Note 1: The software takes approximately 15 seconds to change the Optical System ID. Note 2: If the shelf already had an OSID, and if IFS was enabled for that site, as mentioned in the Precautions section, you need to disable IFS for that site before you can change the OSID of the shelf.
11	Click OK in the Shelf Configuration window to close the window.
12	In the System Manager Configuration/Naming tab, make sure that the OSID column is updated for the shelf where the optical system identifier was provisioned.

Provisioning the OSID at the circuit pack level

13	In the System Manager, select the Equipment tab.
14	Select the Inventory tab.
15	Highlight a row containing the circuit pack whose OSID you want to provision.
16	Double-click the row, or right-click the row, and then select Modify. Note: When you provision the OSID at the circuit pack level, you can only modify the OSID associated with a particular line-facing circuit pack. <i>The Optical Metro Inventory dialog box appears.</i>
17	In the Optical System ID field, enter an OSID (of 8 or fewer alphanumeric characters) that you want to assign to the circuit pack. Make sure that the OSID you choose matches the OSID assigned to other line-facing circuit packs in the same system.

—continued—

Procedure 3-36 (continued)**Provisioning the optical system identifier (OSID)**

Step	Action
18	Click OK . <i>The IFS warning dialog box appears.</i>
19	Click Yes to confirm the change. Note 1: The software takes approximately 15 seconds to change the Optical System ID. Note 2: If the shelf already had an OSID, and if IFS was enabled for that site, as mentioned in the Precautions section, you need to disable IFS for that site before you can change the OSID of the shelf.
20	In the System Manager Equipment/Inventory tab, make sure that the OSID column is updated for the line-facing circuit pack where the optical system identifier was provisioned.

—end—

Procedure 3-37

Provisioning the fibering topology and fibering configuration

Use this procedure to provision the fibering topology and fibering configuration associated with the site, when the intrasite fault sectionalization (IFS) feature is to be used.

Requirements

To complete this procedure, you must

- know the fibering topology for the site (OMXs may be fibered in one of three ways: Standard, Stacked, Single-shelf.) If you are provisioning an OFA site with no OMXs, choose Standard for the fibering topology.
- know the fibering configuration at the site. The configuration is Parallel if a C/L Splitter/Coupler is present, Serial if it is absent.

If IFS is enabled, you must disable it in order to provision these fields.

Precautions

Incorrect provisioning of these site parameters can cause the IFS feature to operate incorrectly.

Action

Step	Action	
1	Select the Equipment tab.	
2	Select the Inventory tab.	
3	Double-click on the OSC circuit pack. <i>The Optical Metro Inventory dialog box appears.</i>	
4	If	Then
	IFS is disabled (no check mark in the IFS Enabled box)	go to the next step
	IFS is enabled	disable IFS. See Procedure 3-39 "Disabling intrasite fault sectionalization (IFS)" . Go to the next step.

—continued—

 Procedure 3-37 (continued)

Provisioning the fibering topology and fibering configuration

Step	Action						
5	Open the Fibering Topology drop-down list and select the appropriate topology (Nil, Standard, Stacked, or Single shelf OADM). Note 1: If you intend to enable intrasite fault sectionalization, “Nil” is not a valid option. Note 2: If the site is an OFA site, select Standard from the Fibering Topology drop-down list.						
6	Open the Fibering Configuration drop-list and select the appropriate fibering configuration (Nil, Serial, or Parallel). Note: If you intend to enable intrasite fault sectionalization, “Nil” is not a valid option.						
7	Click Apply .						
8	<table> <tr> <th>If</th><th>Then</th></tr> <tr> <td>in step 4, there was no check mark in the IFS enabled box (IFS was already disabled)</td><td>click OK. You have completed this procedure.</td></tr> <tr> <td>in step 4, you disabled IFS</td><td>enable IFS. See Procedure 3-38 “Enabling intrasite fault sectionalization (IFS)”. You have completed this procedure.</td></tr> </table>	If	Then	in step 4 , there was no check mark in the IFS enabled box (IFS was already disabled)	click OK . You have completed this procedure.	in step 4 , you disabled IFS	enable IFS. See Procedure 3-38 “Enabling intrasite fault sectionalization (IFS)” . You have completed this procedure.
If	Then						
in step 4 , there was no check mark in the IFS enabled box (IFS was already disabled)	click OK . You have completed this procedure.						
in step 4 , you disabled IFS	enable IFS. See Procedure 3-38 “Enabling intrasite fault sectionalization (IFS)” . You have completed this procedure.						

—end—

Procedure 3-38

Enabling intrasite fault sectionalization (IFS)

Use this procedure to enable the intrasite fault sectionalization (IFS) feature in Optical Metro 5100/5200. You must enable IFS on each OSC circuit pack in the ring.

Requirements

All Optical Metro 5100/5200 sites using IFS must conform to one site topology to minimize the possibility of provisioning errors and duplicate alarms. Sites must contain shelves and OMXs that are interconnected with standard wiring for terminal shelves, single-shelf wiring when only one OADM or Mixed shelf is present in a site, or multishelf wiring when there is more than one OADM or Mixed shelves at a site. All sites must be fibered using parallel wiring. The C/L bands must be split using the C/L splitter/coupler.

This fiber plan requires that the OMXs are fibered in a specific order. For each of the C- and L-bands, the OMXs must be fibered from West to East in ascending order, first dropping all the bands and then adding all the bands. In cases where only C-band OMXs or L-band OMXs are used in a ring, the C/L splitter/coupler may be omitted. Regardless, when reporting “Optical Signal Failure” alarms, the IFS feature assumes the presence of the C/L splitter/couplers.

Note: The through fibers connecting Band 1 to Band 4 and Band 5 to Band 8 are required where bands are passing through the site. Amplifiers are placed after the C/L splitter/coupler at the input of a site or before the C/L splitter/coupler at the output of a site. Fixed pads are placed at the input of each OFA to equalize bands.

Enable the IFS feature only after

- meeting all the deployment rules. Follow [Procedure 1-3 “Testing the optical continuity through the OMXs at a site”](#), in *Testing and Equalization Procedures*, 323-1701-222.
- provisioning the optical system identifier (OSID) for all line-facing equipment in the system. Follow [Procedure 3-36, “Provisioning the optical system identifier \(OSID\)”](#) in this chapter.
- provisioning the site fiber topology and the fiber configuration for each OSC in the ring. Follow [Procedure 3-37 “Provisioning the fiber topology and fiber configuration”](#), in this chapter.

—continued—

Procedure 3-38 (continued)**Enabling intrasite fault sectionalization (IFS)**

Precautions

Failure to provision the OSID for all the line-facing equipment in the network before enabling IFS, can cause Incomplete Provisioning alarms to be raised. Make sure that all line equipment at the site has been assigned an OSID before enabling IFS.

Failure to test the fiber of each site before you enable IFS can result in unexpected and incorrect performance of IFS.

All shelves in the ring must be running the same software version. Failure to do so can result in unexpected and incorrect performance of IFS.

Note: Nortel Networks recommends that you disable IFS before performing a software upgrade.

**CAUTION****Risk of generating alarms on the network**

Make sure that if the upstream facilities are deleted, the corresponding downstream facilities must also be deleted for the IFS to operate correctly. Otherwise, IFS allows the reporting of unexpected BIF alarms.

—continued—

Procedure 3-38 (continued)

Enabling intrasite fault sectionalization (IFS)

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf on which you want to enable intrasite fault sectionalization. <i>System Manager updates the screen with data for the selected shelf.</i>
2	Click on the Selected Shelves drop-down list to return the screen to full view.
3	Select the Equipment tab.
4	Select the Inventory tab.
5	Double-click on the OSC circuit pack. <i>The Optical Metro Inventory dialog box appears.</i>
6	Select the IFS Enabled checkbox. Note: If the IFS feature is grayed out and cannot be selected, the requirements for enabling IFS are not met (missing OSID, site fibering topology, or fibering configuration). See the requirements section of this procedure for more information.
7	Click OK . <i>The IFS warning dialog box appears.</i>
8	Click Yes in the IFS warning dialog box to confirm the IFS change.
9	Click OK to close the Optical Metro Inventory window.

—end—

Procedure 3-39

Disabling intrasite fault sectionalization (IFS)

Use this procedure to disable the intrasite fault sectionalization (IFS) feature at a site.

Precautions

Disable IFS at a site before

- performing a software upgrade
- adding or removing a shelf
- decommissioning a shelf
- removing the last OCLD, Muxponder, or OTR of a band in the east or west plane
- deleting the facility of the last OCLD, Muxponder, or OTR of a band in the east or west plane
- seating or unseating an OFA or APBE circuit pack
- adding or deleting an OFA or APBE facility
- making any fiber changes between the OSC trays, C&L Splitter/Couplers, OMXs, APBEs, or OFAs
- changing the optical system identifier (OSID), if it is already assigned and IFS is enabled for that circuit pack



CAUTION

Risk of generating alarms on the network

Make sure that if the upstream facilities are deleted, the corresponding downstream facilities must also be deleted for the IFS to operate correctly. Otherwise, IFS allows the reporting of unexpected Band Input Failure alarms.

—continued—

Procedure 3-39 (continued)

Disabling intrasite fault sectionalization (IFS)

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf on which you want to disable intrasite fault sectionalization. <i>System Manager updates the screen with data for the selected shelf.</i>
2	Click on the Selected Shelves drop-down list to return the screen to full view.
3	Select the Equipment tab.
4	Select the Inventory tab.
5	Double-click on the OSC circuit pack. <i>The Optical Metro Inventory dialog box appears.</i>
6	Click on the IFS Enabled checkbox to disable the IFS feature.
7	Click Apply . <i>The IFS warning dialog box appears.</i>
8	Click Yes in the IFS warning dialog box to confirm the IFS change.
9	Click OK to close the Optical Metro Inventory window.

—end—

Procedure 3-40

Removing traffic from an OCI circuit pack

Follow this procedure to remove traffic from an OCI circuit pack.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to remove traffic from an OCI circuit pack.

Precautions



CAUTION

Risk of generating alarms on the network

When you take the circuit pack facility and equipment out-of-service, you raise alarms on the downstream circuit packs that are part of the channel assignment.

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the OCI circuit pack from which you want to remove traffic. <i>System Manager updates the screen with data for the selected shelf.</i>
2	Click on the Selected Shelves drop-down list to return the screen to full view.
3	Take the OCI facility OOS. Follow Procedure 3-13 "Taking a circuit pack facility or SFP facility out-of-service" . Depending on the type of OCI, repeat this step for all the facility ports on the OCI circuit pack to remove any traffic going through the circuit pack. Note: When the OCI facility is put OOS, the traffic is lost on the OCI facility.
4	Take the OCI circuit pack OOS. Follow Procedure 3-8 "Taking a circuit pack or SFP out-of-service" .
5	Delete the channel assignment associated with the OCI facility that was put OOS. Follow Procedure 3-4 "Deleting channel assignments" . Depending on the type of OCI, repeat this step for all the channels assignments involving the OCI circuit pack.
6	Delete the OCI facility. Follow Procedure 3-14 "Deleting a circuit pack or SFP facility" .

—continued—

Procedure 3-40 (continued)

Removing traffic from an OCI circuit pack

Step	Action
7	Delete the OCI circuit pack. Follow Procedure 3-9 “Deleting a circuit pack or SFP from the inventory” . Note: In the System Manager Fault/Active alarms window, it is normal to observe an alarm on the OCLD that was associated with the OCI.
8	If required, unseat the OCI circuit pack from the slot and provision the slot for another circuit pack.

—end—

Procedure 3-41

Adding traffic to an end-to-end channel involving OCI and OCLD circuit packs

Use this procedure to add traffic to an end-to-end channel involving OCI and OCLD circuit packs.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to add traffic to an OCLD circuit pack.

To verify the end-to-end channel assignment set-up on the system, a network diagram is required. It is used to view and map all the shelves involved in the end-to-end channel assignment (near end shelf, far end shelf, passthrough shelves).

Action

Step	Action
1	Refer to a network diagram to map the end-to end channel assignment to be created. Make sure that for this new channel assignment, the OCI and OCLD circuit packs are seated in the near-end shelf, the far-end shelf, and any involved passthrough shelves.
2	Refer to a network diagram to map the end-to-end system connections. Make sure that the fibering of the system is completed for all the connections where this end-to-end channel is involved. Refer to the procedures in “Connecting components” in <i>Connection Procedures</i> , 323-1701-221.
3	In the System Manager Equipment/Inventory tab, make sure that on the near end shelf the OCLD and its corresponding OCI circuit pack are both in an IS state (Admin column). If not, see Procedure 3-7, “Putting a circuit pack or SFP in-service” to put the circuit packs IS.
4	Repeat step 3 for the far end shelf, and for the passthrough shelves (only OCLDs appear in the passthrough shelves).
5	On the near end shelf, make sure that the OCI – OCLD channel assignment exists. If it does not exist, provision a channel assignment for the OCLD and OCI circuit packs in the connection. Follow Procedure 3-3 “Making or modifying channel assignments” , in this chapter.
6	Repeat step 5 for the far end shelf, and for the passthrough shelves (only OCLDs appear in the passthrough shelves).

—continued—

Procedure 3-41 (continued)

Adding traffic to an end-to-end channel involving OCI and OCLD circuit packs

Step	Action
7	Connect the corresponding OCI circuit pack to the traffic source. Follow one of the following procedures in “Connecting components” in <i>Connection Procedures</i>, 323-1701-221: • Connecting OCI SRM circuit packs to subtending equipment through a patch panel • Connecting OCI SRM GbE/FC or OCI SRM GbE circuit packs to subtending equipment • Connecting OCI circuit packs to subtending equipment • Connecting OCI SRM ESCON circuit packs to subtending equipment through a patch panel
8	On the near end shelf, make sure that the OCI facility (or associated port facility) is in-service. If not, follow Procedure 3-10 “Putting a circuit pack or SFP facility in-service”, in this chapter.
9	Repeat step 8 for the far end shelf.
10	On the near end shelf, make sure that the OCLD facility is in-service. If not, follow Procedure 3-10 “Putting a circuit pack or SFP facility in-service”, in this chapter. Note: Each channel assignment involves two or three facilities at each shelf in the path. Each facility has a status. The channel assignment status reflects the status of the sum of the two or three facilities involved. If any of the facilities are OOS, the System Manager sets the status to OOS and the channel assignment cannot carry traffic. The only exception is when a channel assignment involves an OCLD that is part of a protected channel and even though one OCLD is OOS, the traffic can still be carried over the other OCLD.
11	Repeat step 10 for the far end shelf and for the passthrough shelves. <i>The end-to-end channel assignment should now be able to carry traffic error-free, and no more alarms should be raised on the involved circuit packs.</i>
12	Follow Procedure 1-6 “Testing the Optical Metro 5100/5200 system” in <i>Testing and Equalization Procedures</i>, 323-1701-222, to verify the above conditions. This procedure makes sure that if your signal is protected, the path you are testing is the active path that carries the traffic. If you are having problems, contact your next level of support.

—end—

Procedure 3-42

Removing traffic from an OCLD circuit pack

Use this procedure to remove traffic from an OCLD circuit pack.

Requirements

If the OCLD where the traffic is to be removed is a passthrough OCLD, use the network diagram to view and map all the shelves involved in the end-to-end channel assignment and determine if a protection path exists.

You must be logged in to the System Manager as an Admin or Operator level user to remove traffic from an OCLD circuit pack.

Precautions



CAUTION

Risk of traffic loss or interruption

When you remove traffic from an unprotected OCLD, the traffic is lost throughout the procedure. However, if the traffic is protected (protected channel assignment), the traffic will only be interrupted during the user switch procedure. Make sure that the network administrator is aware before following this procedure.

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the OCLD circuit pack from which you want to remove traffic. <i>System Manager updates the screen with data for the selected shelf.</i>
2	Click on the Selected Shelves drop-down list to return the screen to full view.
3	Select the Connections tab.
4	Select the Channel Assignment tab.

—continued—

Procedure 3-42 (continued)

Removing traffic from an OCLD circuit pack

Step	Action										
5	Check to see if the OCLD circuit pack is part of a protected or unprotected channel assignment. <table> <tr> <th>If</th><th>Then</th></tr> <tr> <td>Mode column states Active or Protected</td><td> OCLD is part of a protected channel assignment. Make sure that you have switched traffic off the path you want to remove traffic from by following Procedure 3-48 "Forcing traffic to one path on a protected channel". Go to step 6. </td></tr> <tr> <td>Mode column states Unprot-east or Unprot-west</td><td> OCLD is part of an unprotected channel assignment. Advise the network administration that the traffic going through this OCLD will be lost. Go to step 6. </td></tr> <tr> <td>Mode column states Pass-through</td><td> Verify if the OCLD is part of a protected or unprotected channel assignment. Refer to a network diagram to map the end-to-end channel assignment to determine if the passthrough shelf is carrying customer traffic. If it is carrying customer traffic and a protected path exists, switch the traffic off the path to be removed by following Procedure 3-48 "Forcing traffic to one path on a protected channel". If the passthrough channel assignment is unprotected, advise your system administrator that the traffic going through this OCLD will be lost. Go to step 6. </td></tr> <tr> <td>Mode column is blank</td><td> There are no channel assignments on the OCLD. Go to step 6. </td></tr> </table>	If	Then	Mode column states Active or Protected	OCLD is part of a protected channel assignment. Make sure that you have switched traffic off the path you want to remove traffic from by following Procedure 3-48 "Forcing traffic to one path on a protected channel". Go to step 6.	Mode column states Unprot-east or Unprot-west	OCLD is part of an unprotected channel assignment. Advise the network administration that the traffic going through this OCLD will be lost. Go to step 6.	Mode column states Pass-through	Verify if the OCLD is part of a protected or unprotected channel assignment. Refer to a network diagram to map the end-to-end channel assignment to determine if the passthrough shelf is carrying customer traffic. If it is carrying customer traffic and a protected path exists, switch the traffic off the path to be removed by following Procedure 3-48 "Forcing traffic to one path on a protected channel". If the passthrough channel assignment is unprotected, advise your system administrator that the traffic going through this OCLD will be lost. Go to step 6.	Mode column is blank	There are no channel assignments on the OCLD. Go to step 6.
If	Then										
Mode column states Active or Protected	OCLD is part of a protected channel assignment. Make sure that you have switched traffic off the path you want to remove traffic from by following Procedure 3-48 "Forcing traffic to one path on a protected channel". Go to step 6.										
Mode column states Unprot-east or Unprot-west	OCLD is part of an unprotected channel assignment. Advise the network administration that the traffic going through this OCLD will be lost. Go to step 6.										
Mode column states Pass-through	Verify if the OCLD is part of a protected or unprotected channel assignment. Refer to a network diagram to map the end-to-end channel assignment to determine if the passthrough shelf is carrying customer traffic. If it is carrying customer traffic and a protected path exists, switch the traffic off the path to be removed by following Procedure 3-48 "Forcing traffic to one path on a protected channel". If the passthrough channel assignment is unprotected, advise your system administrator that the traffic going through this OCLD will be lost. Go to step 6.										
Mode column is blank	There are no channel assignments on the OCLD. Go to step 6.										

—continued—

Procedure 3-42 (continued)

Removing traffic from an OCLD circuit pack

Step	Action
6	Take the OCLD facility OOS. Follow Procedure 3-13 "Taking a circuit pack facility or SFP facility out-of-service" . Note: When the OCLD facility is put OOS, no more traffic goes through that OCLD facility. The next steps ensure the proper deletion of the OCLD circuit pack.
7	Take the OCLD circuit pack OOS. Follow Procedure 3-8 "Taking a circuit pack or SFP out-of-service" .
8	If the OCLD channel assignment was protected, follow Procedure 3-65 "Converting a protected channel assignment to an unprotected channel assignment on an OCLD path" to keep the existing traffic on the current active path. When following the procedure, you will notice that the protection channel assignment is automatically deleted when the active path is transformed into an unprotected path. Go to the next step.
9	If not already done by default in the previous step, delete the channel assignment associated with the OCLD facility that was put OOS. Follow Procedure 3-4 "Deleting channel assignments" .
10	Delete the OCLD circuit pack. Follow Procedure 3-9 "Deleting a circuit pack or SFP from the inventory" .
11	If required, unseat the OCLD circuit pack from the slot and provision the slot for another circuit pack.

—end—

Procedure 3-43

Adding traffic to an end-to-end channel involving OTR circuit packs

Use this procedure to add traffic to an end-to-end channel involving an OTR circuit pack.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to add traffic to an OTR circuit pack.

To verify the end-to-end channel assignment set-up on the system, a network diagram is required. It is used to view and map all the shelves involved in the end-to-end channel assignment (near-end shelf, far-end shelf, and passthrough shelves).

Action

Step	Action
1	Refer to a network diagram to map the end-to-end channel assignment to be created. Make sure that for this new channel assignment, the OTR circuit packs are seated in the near-end shelf, the far-end shelf, and that all the required circuit packs are seated in the passthrough shelves.
2	Refer to a network diagram to map the end-to-end system connections. Make sure that the fibering of the system is completed for all the connections where this end-to-end channel is involved. Refer to the procedures in “Connecting components” in <i>Connection Procedures</i> , 323-1701-221.
3	In the System Manager Equipment/Inventory tab, make sure that the OTR circuit pack state on the near-end shelf is IS (Admin column). If the OTR circuit pack is not IS, see Procedure 3-7, “Putting a circuit pack or SFP in-service” , in this chapter to put the circuit pack IS.
4	Repeat step 3 for all the circuit packs involved in the end-to-end channel, checking the state of the circuit packs in the far end shelf and the passthrough shelves.
5	On the near-end shelf, make sure that the OTR channel assignment exists. If the OTR channel assignment does not exist, provision a channel assignment using Procedure 3-3, “Making or modifying channel assignments” , in this chapter.

—continued—

Procedure 3-43 (continued)

Adding traffic to an end-to-end channel involving OTR circuit packs

Step	Action						
6	Repeat step 5 for all circuit packs involved in the end-to-end channel, creating channel assignments in the far-end shelf and the passthrough shelves. Note: If OTR 2.5 Gbit/s Flex circuit packs are used, passthrough shelves must have OCLD 2.5 Gbit/s Flex or OCLD 2.5 Gbit/s Universal circuit packs.						
7	Make sure that the OTR circuit pack is connected to the subtending equipment.						
	<table> <tr> <th>If</th><th>Then go to</th></tr> <tr> <td>connecting through a Transponder Protection Tray</td><td>Procedure 3-25 “Connecting OTR circuit packs to subtending equipment through a Transponder Protection Tray” in <i>Connection Procedures</i>, 323-1701-221</td></tr> <tr> <td>otherwise</td><td>Procedure 3-24 “Connecting OTR circuit packs to subtending equipment” in <i>Connection Procedures</i>, 323-1701-221</td></tr> </table>	If	Then go to	connecting through a Transponder Protection Tray	Procedure 3-25 “Connecting OTR circuit packs to subtending equipment through a Transponder Protection Tray” in <i>Connection Procedures</i> , 323-1701-221	otherwise	Procedure 3-24 “Connecting OTR circuit packs to subtending equipment” in <i>Connection Procedures</i> , 323-1701-221
If	Then go to						
connecting through a Transponder Protection Tray	Procedure 3-25 “Connecting OTR circuit packs to subtending equipment through a Transponder Protection Tray” in <i>Connection Procedures</i> , 323-1701-221						
otherwise	Procedure 3-24 “Connecting OTR circuit packs to subtending equipment” in <i>Connection Procedures</i> , 323-1701-221						
8	On the near-end shelf, make sure that the OTR client-side facility is IS. If it is not IS, follow Procedure 3-10, “Putting a circuit pack or SFP facility in-service” , in this chapter.						
9	Repeat step 8 for the far-end shelf.						
10	On the near-end shelf, make sure that the OTR line-side facility is IS. If it is not IS, follow Procedure 3-10, “Putting a circuit pack or SFP facility in-service” , in this chapter. Note: Each channel assignment involves two or three facilities at each shelf in the path. Each facility has a status. The channel assignment status reflects the status of the sum of the two or three facilities involved. If any of the facilities are out-of-service (OOS), the System Manager sets the status to OOS and the channel assignment cannot carry traffic. For a channel assignment involving an OTR circuit pack, if the channel assignment is a protected channel, both the client-side and the line-side facilities on the active path for the 10 Gbit/s or 2.5 Gbit/s Flex signal must be IS. If the client-side and the line-side facilities are OOS on the inactive path, there is no protection.						
11	Repeat step 10 to verify the line-side facility states of the circuit packs involved in the passthrough shelves and the far end shelf before going to step 12 .						

—continued—

Procedure 3-43 (continued)

Adding traffic to an end-to-end channel involving OTR circuit packs

Step	Action
12	Follow Procedure 1-6 “Testing the Optical Metro 5100/5200 system” in <i>Testing and Equalization Procedures</i>, 323-1701-222, to verify the above conditions. This procedure makes sure that if your signal is protected, the path you are testing is the active path that carries the traffic. If you are having problems, contact your next level of support. <i>The end-to-end traffic assignment should now be able to carry error-free traffic. No alarms should be raised on the involved circuit packs (System manager Fault/Active alarms tab).</i>

—end—

Procedure 3-44

Removing traffic from an OTR circuit pack

Use this procedure to remove traffic from an OTR circuit pack (either an OTR 10 Gbit/s or OTR 2.5 Gbit/s Flex).

You can remove traffic from an OTR that is part of a protected channel assignment without losing traffic. In a protected channel assignment, there are two OTRs, one for east traffic and one for west traffic. You can force all the traffic to one OTR circuit pack at each end of the path before you take the other OTR out-of-service (OOS).

If you remove traffic from an OTR that is part of an unprotected channel assignment, you lose traffic.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to remove traffic from an OTR.

Precautions

**CAUTION****Risk of traffic loss or interruption**

When you remove traffic from an unprotected OTR, the traffic is lost throughout the procedure. If the traffic is protected (protected channel assignment), the traffic will only be interrupted during the user switch procedure. Make sure your network administrator is aware before following this procedure.

—continued—

Procedure 3-44 (continued)

Removing traffic from an OTR circuit pack**Action**

Step	Action								
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the OTR circuit pack from which you want to remove traffic. <i>System Manager updates the screen with data for the selected shelf.</i>								
2	Click on the Selected Shelves drop-down list to return the screen to full view.								
3	Select the Connections/Channel Assignments tab. <i>The Channel Assignments window appears.</i>								
4	Check to see if the OTR circuit pack is part of a protected or unprotected channel assignment. <table> <tr> <th>If the</th><th>Then</th></tr> <tr> <td>Mode column states Active or Protected</td><td> the OTR is part of a protected channel assignment. Make sure that you have switched traffic away from the path from which you want to remove traffic. Follow Procedure 3-48 “Forcing traffic to one path on a protected channel”, in this chapter. Go to step 5. </td></tr> <tr> <td>Mode column states Unprot-east or Unprot-west</td><td> the OTR is part of an unprotected channel assignment. Advise your network administrator that the traffic going through this OTR will be lost. Go to step 5. </td></tr> <tr> <td>Mode column is blank</td><td> there is no channel assignments on the OTR. Go to step 5. </td></tr> </table>	If the	Then	Mode column states Active or Protected	the OTR is part of a protected channel assignment. Make sure that you have switched traffic away from the path from which you want to remove traffic. Follow Procedure 3-48 “Forcing traffic to one path on a protected channel”, in this chapter. Go to step 5.	Mode column states Unprot-east or Unprot-west	the OTR is part of an unprotected channel assignment. Advise your network administrator that the traffic going through this OTR will be lost. Go to step 5.	Mode column is blank	there is no channel assignments on the OTR. Go to step 5.
If the	Then								
Mode column states Active or Protected	the OTR is part of a protected channel assignment. Make sure that you have switched traffic away from the path from which you want to remove traffic. Follow Procedure 3-48 “Forcing traffic to one path on a protected channel”, in this chapter. Go to step 5.								
Mode column states Unprot-east or Unprot-west	the OTR is part of an unprotected channel assignment. Advise your network administrator that the traffic going through this OTR will be lost. Go to step 5.								
Mode column is blank	there is no channel assignments on the OTR. Go to step 5.								

—continued—

Procedure 3-44 (continued)

Removing traffic from an OTR circuit pack

Step	Action
5	Take the OTR LINE facility OOS. Follow Procedure 3-13 “Taking a circuit pack facility or SFP facility out-of-service” , in this chapter. Note: When the OTR LINE facility is put OOS, no more traffic goes through that OTR facility. If a user protection switch was performed, no traffic was going through that OTR facility. The next steps ensure the proper deletion of the OTR circuit pack.
6	Take the OTR CLIENT facility OOS. Follow Procedure 3-13 “Taking a circuit pack facility or SFP facility out-of-service” , in this chapter.
7	Take the OTR circuit pack OOS. Follow Procedure 3-8 “Taking a circuit pack or SFP out-of-service” , in this chapter.
8	If the OTR channel assignment was protected, follow Procedure 3-66 “Converting a protected channel assignment to an unprotected channel assignment on an OTR path” , in this chapter to keep the existing traffic on the current active path. When following the procedure, the protection channel assignment is automatically deleted when the active path is transformed into an unprotected path.
9	If not already done by default in step 8 , delete the channel assignment associated with the OTR facility that was put OOS. Follow Procedure 3-4 “Deleting channel assignments” , in this chapter.
10	Delete the OTR facility. Follow Procedure 3-14, “Deleting a circuit pack or SFP facility” , in this chapter.
11	Delete the OTR circuit pack. Follow Procedure 3-9 “Deleting a circuit pack or SFP from the inventory” , in this chapter.
12	If required, unseat the OTR circuit pack from the slot and provision the slot for another circuit pack.

—end—

Procedure 3-45

Adding traffic to an end-to-end channel involving Muxponder circuit packs

Use this procedure to add traffic to an end-to-end channel involving a Muxponder circuit pack.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to add traffic to a Muxponder circuit pack.

To verify the end-to-end channel assignment set-up on the system, a network diagram is required. It is used to view and map all the shelves involved in the end-to-end channel assignment (near-end shelf, far-end shelf, and passthrough shelves).

Action

Step	Action
1	Refer to a network diagram to map the end-to-end channel assignment to be created. Make sure that for this new channel assignment, the Muxponder circuit packs are seated in the near-end shelf, the far-end shelf, and that all the required circuit packs are seated in the passthrough shelves.
2	Refer to a network diagram to map the end-to-end system connections. Make sure that the fibering of the system is completed for all the connections where this end-to-end channel is involved. Refer to the procedures in “Connecting components” in <i>Connection Procedures</i> , 323-1701-221.
3	In the System Manager Equipment/Inventory tab, make sure that the Muxponder circuit pack state on the near-end shelf is IS (Admin column). If the circuit pack is not IS, see Procedure 3-7, “Putting a circuit pack or SFP in-service” , in this chapter to put the circuit pack IS.
4	Repeat step 3 for all the circuit packs involved in the end-to-end channel, checking the state of the circuit packs in the far end shelf and the passthrough shelves.
5	On the near-end shelf, make sure that the Muxponder channel assignment exists. If the Muxponder channel assignment does not exist, provision a channel assignment using Procedure 3-3, “Making or modifying channel assignments” , in this chapter.

—continued—

Procedure 3-45 (continued)

Adding traffic to an end-to-end channel involving Muxponder circuit packs

Step	Action
6	Repeat step 5 for all circuit packs involved in the end-to-end channel, creating channel assignments in the far-end shelf and the passthrough shelves.
7	Make sure that the Muxponder circuit pack is connected to the subtending equipment. See the appropriate procedure in Chapter 3 “Connecting components” in <i>Connection Procedures</i> , 323-1701-221.
8	On the near-end shelf, make sure that the Muxponder SFP client-side facilities are IS. If the client-side facilities are not IS, follow Procedure 3-10, “Putting a circuit pack or SFP facility in-service” , in this chapter.
9	Repeat step 8 for the far-end shelf.
10	On the near-end shelf, make sure that the Muxponder line-side facility is IS. If it is not IS, follow Procedure 3-10, “Putting a circuit pack or SFP facility in-service” , in this chapter. Note: Each channel assignment involves two or three facilities at each shelf in the path. Each facility has a status. The channel assignment status reflects the status of the sum of the two or three facilities involved. If any of the facilities are out-of-service (OOS), the System Manager sets the status to OOS and the channel assignment cannot carry traffic. For a channel assignment involving a Muxponder circuit pack, if the channel assignment is a protected channel, both the client-side and the line-side facilities on the active path must be IS. If the client-side and the line-side facilities are OOS on the inactive path, there is no protection.
11	Repeat step 10 to verify the line-side facility states of the circuit packs involved in the passthrough shelves and the far-end shelf before going to step 12 .
12	Follow Procedure 1-6 “Testing the Optical Metro 5100/5200 system” in <i>Testing and Equalization Procedures</i> , 323-1701-222, to verify the above conditions. This procedure makes sure that if your signal is protected, the path you are testing is the active path that carries the traffic. If you are having problems, contact your next level of support. <i>The end-to-end traffic assignment should now be able to carry error-free traffic. No alarms should be raised on the involved circuit packs (System Manager Fault/Active alarms tab).</i>

—end—

Procedure 3-46

Removing traffic from a Muxponder circuit pack

Use this procedure to remove traffic from a Muxponder circuit pack.

If you remove traffic from the Working Muxponder, you will lose traffic.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to remove traffic from a Muxponder circuit pack.

Precautions



CAUTION

Risk of traffic loss or interruption

When you remove traffic from the Working Muxponder, the traffic is lost throughout the procedure. Make sure your network administrator is aware before following this procedure.

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the Muxponder circuit pack from which you want to remove traffic. <i>System Manager updates the screen with data for the selected shelf.</i>
2	Click on the Selected Shelves drop-down list to return the screen to full view.
3	Select the Connections/Channel Assignments tab. <i>The Channel Assignments window appears.</i>

—continued—

Procedure 3-46 (continued)

Removing traffic from a Muxponder circuit pack

Step	Action								
4	Check to see if the Muxponder circuit pack is the working or protection Muxponder. <table> <tr> <th>If</th><th>Then</th></tr> <tr> <td>the path is protected and you are removing traffic from the Protection Muxponder</td><td> make sure that you have switched traffic away from the path from which you want to remove traffic. Follow Procedure 3-48 “Forcing traffic to one path on a protected channel”, in this chapter. Go to step 5. </td></tr> <tr> <td>the path is protected and you are removing traffic from the Working Muxponder</td><td> advise your network administrator that the traffic going through this Muxponder will be lost. Go to step 5. </td></tr> <tr> <td>the path is unprotected</td><td> advise your network administrator that the traffic going through this Muxponder will be lost. Go to step 5. </td></tr> </table>	If	Then	the path is protected and you are removing traffic from the Protection Muxponder	make sure that you have switched traffic away from the path from which you want to remove traffic. Follow Procedure 3-48 “Forcing traffic to one path on a protected channel”, in this chapter. Go to step 5.	the path is protected and you are removing traffic from the Working Muxponder	advise your network administrator that the traffic going through this Muxponder will be lost. Go to step 5.	the path is unprotected	advise your network administrator that the traffic going through this Muxponder will be lost. Go to step 5.
If	Then								
the path is protected and you are removing traffic from the Protection Muxponder	make sure that you have switched traffic away from the path from which you want to remove traffic. Follow Procedure 3-48 “Forcing traffic to one path on a protected channel”, in this chapter. Go to step 5.								
the path is protected and you are removing traffic from the Working Muxponder	advise your network administrator that the traffic going through this Muxponder will be lost. Go to step 5.								
the path is unprotected	advise your network administrator that the traffic going through this Muxponder will be lost. Go to step 5.								
5	Take the Muxponder line-side facility OOS. Follow Procedure 3-13 “Taking a circuit pack facility or SFP facility out-of-service”, in this chapter. Note: When the line-side facility is put OOS, no more traffic goes through that facility. If a user protection switch was performed, no traffic was going through that facility. The next steps ensure the proper deletion of the Muxponder circuit pack.								
6	Take all existing SFP client-side facilities OOS. Follow Procedure 3-13 “Taking a circuit pack facility or SFP facility out-of-service”, in this chapter.								
7	Take the Muxponder circuit pack OOS. Follow Procedure 3-8 “Taking a circuit pack or SFP out-of-service”, in this chapter.								

—continued—

Procedure 3-46 (continued)

Removing traffic from a Muxponder circuit pack

Step	Action
8	If the Muxponder channel assignment was protected, follow Procedure 3-67 “Converting a protected channel assignment to an unprotected channel assignment on a Muxponder path” , in this chapter to keep the existing traffic on the current active path. When following the procedure, the protection channel assignment is automatically deleted when the active path is transformed into an unprotected path.
9	If not already done by default in step 8 , delete the channel assignment associated with the Muxponder facility that was put OOS. Follow Procedure 3-4 “Deleting channel assignments” , in this chapter.
10	Delete the line-side and client-side facilities. Follow Procedure 3-14, “Deleting a circuit pack or SFP facility” , in this chapter.
11	Delete the Muxponder circuit pack. Follow Procedure 3-9 “Deleting a circuit pack or SFP from the inventory” , in this chapter.
12	If required, unseat the Muxponder circuit pack from the slot and provision the slot for another circuit pack.

—end—

Procedure 3-47

Adding path protection to an unprotected path

Use this procedure to add path protection to an unprotected path.

You can configure protected channel assignments as revertive or nonrevertive. Protected Muxponder channel assignments are always revertive.

If you configure the channel assignment as revertive, you can configure the working OCLD, Muxponder, or OTR path and the wait-to-restore (WTR) period. The WTR period is the amount of time traffic must wait before it reverts to the working path after the fault on the working path is cleared.

Note: Changing an unprotected channel assignment to a protected channel assignment is not traffic affecting.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to add path protection to an unprotected path.

To add the end-to-end protection path on the system, a network diagram is required. It is used to view and map all the shelves involved in the end-to-end channel assignment (near end shelf, far end shelf, and passthrough shelves).

You must have the same type of OCLDs, Muxponders, or OTRs installed and in-service at the end points of the path as well as any passthrough sites, if applicable, before you can add path protection.

Note: Changing an unprotected channel assignment to a protected channel assignment can only occur if the two circuit packs forming the protected channel assignment are the same wavelength.

You must install a Transponder Protection Tray before you can add path protection for the OTR circuit packs.

—continued—

Procedure 3-47 (continued)

Adding path protection to an unprotected path

Precautions



CAUTION

Risk of traffic loss

For the OTR circuit packs, adding path protection is traffic-affecting if the Transponder Protection Tray is not already installed. In order to install the tray, the client signal has to be disrupted while the fiber between the Transponder Protection Tray and the OTR is connected. If the Transponder Protection Tray needs to be installed, advise your network administrator before following this procedure.

Action

Step	Action
1	Refer to a network diagram to map the end-to-end protection path to be created. Make sure that for this new path, all the required circuit packs are seated in the near end shelf, the far end shelf, and all the passthrough shelves.
2	Refer to a network diagram to map the end-to-end system connections. Make sure that the fiber of the system is completed for all the connections where this end-to-end protection channel is involved. Refer to the procedures in "Connecting components" in <i>Connection Procedures</i> , 323-1701-221. Note: If you need to fiber the system with a new Transponder Protection Tray (when OTR circuit packs are involved), you must disconnect the fiber carrying the traffic. Advise your network administrator that the traffic will be lost during the fiber reconnection to subtending equipment before proceeding.
3	On the near end shelf, far end shelf and any passthrough shelves involved, make sure that the circuit packs and facilities required for path protection are all in-service (IS). If the circuit packs and facilities are not IS, follow Procedure 3-7, Putting a circuit pack or SFP in-service , in this chapter to place the circuit packs IS and Procedure 3-10, Putting a circuit pack or SFP facility in-service , in this chapter to place the facilities IS. Note: If some facilities or circuit packs in the end-to-end protection path remain OOS, the inactive protection path will not be able to carry traffic if a problem occurs with the active path.
4	In the System Manager, click on the selected shelves drop-down list and double-click on where you are creating the protection path. Note: If performing this step for the first time, select the near end shelf. <i>System Manager updates the screen with data for the selected shelf.</i>

—continued—

Procedure 3-47 (continued)

Adding path protection to an unprotected path

Step	Action						
5	Select the Connections/Channel Assignment tab. <i>The Channel Assignments window appears.</i>						
6	Locate and double-click on the line that contains the unprotected path that you want to protect. <i>The Optical Metro Channel Assignments window appears.</i>						
7	In the Channel Characteristics area, select either of the following						
	<table> <tr> <th>If</th><th>Then</th></tr> <tr> <td>you are on the end point of the connection</td><td>select Protected from the Mode drop-down list</td></tr> <tr> <td>you are on a passthrough shelf</td><td>select Passthrough from the Mode drop-down list</td></tr> </table>	If	Then	you are on the end point of the connection	select Protected from the Mode drop-down list	you are on a passthrough shelf	select Passthrough from the Mode drop-down list
If	Then						
you are on the end point of the connection	select Protected from the Mode drop-down list						
you are on a passthrough shelf	select Passthrough from the Mode drop-down list						
	Note: You cannot provision passthrough channel assignments on an OTR or Muxponder circuit pack.						
8	Select the appropriate protection facility from the East path and/or West path drop-down list.						
9	Select the appropriate bit rate from the Bit Rate drop-down list.						
10	Enter the appropriate text in the Channel Name field.						
11	Enter the appropriate text in the Channel Description field.						
12	Make sure that all the others fields selected in the Channel Assignment tab are correct.						
13	Click OK .						
	<table> <tr> <th>If</th><th>Then</th></tr> <tr> <td>you are on the end point of the connection path</td><td> <i>the Confirm Channel Assignment Modify dialog box appears.</i> Click Yes. Go to step 14. </td></tr> <tr> <td>you are on a passthrough shelf</td><td>go to step 21</td></tr> </table>	If	Then	you are on the end point of the connection path	<i>the Confirm Channel Assignment Modify dialog box appears.</i> Click Yes . Go to step 14 .	you are on a passthrough shelf	go to step 21
If	Then						
you are on the end point of the connection path	<i>the Confirm Channel Assignment Modify dialog box appears.</i> Click Yes . Go to step 14 .						
you are on a passthrough shelf	go to step 21						
	Note: The software takes approximately 15 seconds to modify the channel assignment.						
	<i>The Optical Metro Channel Assignments window closes.</i>						

—continued—

Procedure 3-47 (continued)

Adding path protection to an unprotected path

Step	Action
14	If you want to enable revertive switching Then go to step 15. Note 1: When Rx Reversion is enabled at one end of the path, it is mandatory that Rx Reversion is also enabled at the other end of the path. Note 2: Reversion is always enabled on the Muxponder. otherwise step 21
15	Double-click on the line showing the channel assignment you just protected. Select the channel assignment where the mode is currently Active. <i>The Optical Metro Channel Assignments window appears.</i>
16	Click the Protection button.
17	In the Rx Reversion area, check the Enabled check box to enable revertive protection switching.
18	In the Rx Reversion area, select the path you want to configure as the working path from the Path drop-down list.
19	In the Rx Reversion area, select the WTR period from the WTR drop-down list. Note: You can set the WTR period from between 1 to 12 minutes, in 1-minute intervals. The default is 5 minutes.
20	Click OK. Note: The software takes approximately 15 seconds to implement the settings.
21	Repeat step 4 through step 20 for every shelf along the protected path (passthrough shelves and far end shelves). <i>The end-to-end channel protection path should now be able to carry error-free traffic if the traffic is switched from the active path to this inactive path. No more alarms should be raised on the involved circuit packs (System Manager Fault/Active alarms tab).</i>
22	Follow Procedure 1-6 “Testing the Optical Metro 5100/5200 system” in <i>Testing and Equalization Procedures</i>, 323-1701-222, to verify the above conditions. Make sure that you execute a force switch at the beginning of that procedure to validate that the inactive protection path adding during this procedure is able to carry traffic. If you are having problems, contact your next level of support.

—end—

Procedure 3-48

Forcing traffic to one path on a protected channel

Use this procedure to force traffic to one path on a protected channel by operating a force switch.

For more information on protection switching, including the hierarchy of protection switching commands and system operations, see the “[Protection switching](#)” chapter in *Software and User Interface*, 323-1701-101.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to force traffic to one path on a protected channel.

For OCLDs, OTRs, or Muxponders in uni-directional protection mode, you must set the force switch at both ends of the protection path that is not currently receiving signals from either end in order to effectively set the switch.

To identify both ends of the path, a network diagram is required. It is used to view and map all the shelves involved in the end-to-end channel assignment (especially the near end shelf and the far end shelf).

For Muxponders in bi-directional protection mode, set the force switch at one end of the path only.

Precautions

If you have enabled revertive switching and traffic is forced to the protection path, once the force switch is released, traffic switches back to the working path if it is available and capable of carrying traffic.

If you have not enabled revertive switching, once the force switch is released, traffic remains on the path it was switched to, unless the current path is unavailable of carrying traffic and the other path is, in which case, traffic will be switched to the valid traffic path.

Note: The Muxponder circuit pack supports revertive switching only.

—continued—

Procedure 3-48 (continued)

Forcing traffic to one path on a protected channel



CAUTION

Risk of traffic interruption

When traffic is forced from the active working path to the inactive protection path, traffic is temporarily interrupted.



CAUTION

Risk of traffic interruption

When you force traffic to one path on a protected channel, the single path operates like an unprotected path. Traffic can be lost if there is a fiber cut or equipment failure on the active path.

Action

Step	Action						
1	Before forcing traffic to one path, you must confirm that the path is operational. A force switch executed on a problematic protection path causes traffic loss. In the System Manager Connections/Channel Assignments tab, decide which protection path is going to be used for the force switch. Follow Procedure 3-56, "Manual switching on protected channel assignments" , in this chapter to perform a manual switch on that inactive path and verify that it is able to carry error-free traffic. The manual switch only operates if the protection path is operational.						
2	<table> <tr> <th>If</th><th>Then</th></tr> <tr> <td>in step 1, the manual switch was successful</td><td>repeat the manual switch to switch the traffic back to the original active path so the inactive path is ready for a force switch. Go to step 3.</td></tr> <tr> <td>in step 1, the manual switch was not successful</td><td>before proceeding, advise the network administrator that traffic will be lost if the force switch is performed. Go to step 3.</td></tr> </table>	If	Then	in step 1 , the manual switch was successful	repeat the manual switch to switch the traffic back to the original active path so the inactive path is ready for a force switch. Go to step 3 .	in step 1 , the manual switch was not successful	before proceeding, advise the network administrator that traffic will be lost if the force switch is performed. Go to step 3 .
If	Then						
in step 1 , the manual switch was successful	repeat the manual switch to switch the traffic back to the original active path so the inactive path is ready for a force switch. Go to step 3 .						
in step 1 , the manual switch was not successful	before proceeding, advise the network administrator that traffic will be lost if the force switch is performed. Go to step 3 .						
3	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf with the OCLD, Muxponder, or OTR on which you want to perform the force switch. <i>System Manager updates the screen with data for the selected shelf.</i>						

—continued—

Procedure 3-48 (continued)

Forcing traffic to one path on a protected channel

Step	Action
4	Click on the Selected Shelves drop-down list to return the screen to full view.
5	Select the Connections/Channel Assignments tab. <i>The Channel Assignments window appears.</i>
6	Locate and double-click on the protected connection on which you wish to perform the forced switch. Note 1: You can execute a force switch on the currently active path. The active path is then marked as forced and no traffic interruption occurs as no switch is performed (equivalent to a lockout). The same result occurs if you perform a force switch from the inactive path but select the switch to be applied on the active path. Note 2: If you perform a force switch on the inactive path from the inactive path, the result is the same as if you performed the switch from the active path. After the switch, the path that was inactive is set to active and the Prov. State column displays Force. <i>The Optical Metro Channel Assignments window appears.</i>
7	Identify the active OCLD, Muxponder, or OTR. <i>The active circuit pack appears in bold text in the Rx Traffic Path for BxCx – <NE Name> field at the bottom of the window.</i>
8	Click the Protection button. <i>The Optical Metro Protection dialog box appears.</i>
9	In the Rx Switch Request area of the dialog box, select the Force radio button. <i>If the Force radio button is already selected, a force switch is already active on the circuit pack. Go to step 16.</i>
10	In the To field, make sure that the facility that you want to force the traffic to is selected. Note 1: The To field drop-down list defaults to the corresponding circuit pack. Note 2: Traffic will be forced to the circuit pack that is selected in the To field regardless of the current state of the circuit pack (see step 1).
11	Click OK . <i>A Confirm Protection Force dialog box appears.</i>
12	Click Yes to confirm the protection switch request. Note: Wait until the force switch is complete. This can take several seconds. The switch is complete when the Optical Metro Protection dialog box closes.

—continued—

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Procedure 3-48 (continued)

Forcing traffic to one path on a protected channel

Step	Action	
13	Click OK to close the Channel Assignments window.	
14	If	Then
	you performed the force switch on a Muxponder in bi-directional protection mode	click Refresh to update the state of the far-end shelf. Go to the next step.
	otherwise	go to the next step
15	Check for the following expected results: • In the System Manager Connections/Channel Assignment tab, the Path State and Prov. State columns display Force on the forced OCLD, Muxponder, or OTR (channel assignment from which the force switch was performed). On the channel assignment of the other OCLD, Muxponder, or OTR, only the Path State column displays Force. • In the System Manager Fault/Active tab for that shelf, a new minor “Forced Switch to East/West Path Active” alarm appears.	
16	If	Then
	you performed the force switch on a Muxponder in bi-directional protection mode	you have completed this procedure
	otherwise	go to the next step
17	Repeat step 1 to step 15 for the OCLD, OTR, or Muxponder at the other end of the path (see Requirements section of procedure).	

—end—

Procedure 3-49

Removing a manual, force, or lockout switch from a protection path

Use this procedure to remove a manual, force, or lockout switch from a protection path.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to remove a manual, force, or lockout switch.

Precautions



CAUTION

Risk of traffic interruption

If you have enabled revertive switching and traffic was switched to the protection path, removing a manual or force switch results in the traffic being switched back to the working path if it is available and capable of carrying traffic. During the revertive switch, traffic is temporarily interrupted.

Note 1: Releasing a lockout switch does not cause the traffic to switch as a lockout can only be performed on the predefined working path. If the lockout was performed when an automatic protection switch was active, the traffic auto-switches back to the protection path to recover traffic once the lockout is released (if the automatic switch is still active due to a problem with the locked out working path).

Note 2: If you have not enabled revertive switching, once the switch is released, traffic remains on the path to which it was switched, as long as the current path is capable of carrying traffic or the mate path is not.

—continued—

Procedure 3-49 (continued)

Removing a manual, force, or lockout switch from a protection path**Action**

Step	Action						
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf with the OCLD, OTR, or Muxponder that has the manual, force, or lockout switch that you want to remove. <i>System Manager updates the screen with data for the selected shelf.</i>						
2	Click on the Selected Shelves drop-down list to return the screen to full view.						
3	Select the Connections/Channel Assignments tab. <i>The Channel Assignments window appears.</i>						
4	Locate and double-click on the protected connection from which you want to remove the switch. <i>The Optical Metro Channel Assignment window appears.</i>						
5	Click the Protection button. <i>The Optical Metro Protection dialog box appears.</i>						
6	In the Rx Switch Request area of the dialog box, select the Release radio button.						
7	Click OK . Note: Wait until the switch is released. This can take several seconds. The switch is released when the Optical Metro Protection dialog box closes.						
8	Click OK to close the Channel Assignments window.						
9	<table> <tr> <th>If</th><th>Then</th></tr> <tr> <td>you removed the switch from a Muxponder in bi-directional protection mode</td><td>click Refresh to update the state of the far-end shelf. Go to the next step.</td></tr> <tr> <td>otherwise</td><td>go to the next step</td></tr> </table>	If	Then	you removed the switch from a Muxponder in bi-directional protection mode	click Refresh to update the state of the far-end shelf. Go to the next step.	otherwise	go to the next step
If	Then						
you removed the switch from a Muxponder in bi-directional protection mode	click Refresh to update the state of the far-end shelf. Go to the next step.						
otherwise	go to the next step						
10	Check for the following expected results: - The manual, force, or lockout switch is released. The Path State and Prov. State columns in the Channel Assignments window are clear for the protection connection where the switch was removed. - In the System Manager Fault/Active alarms tab, any alarms specifically related to the lockout, forced, or manual switch that was removed (Manual, Force switch to east/west path active, or Path lockout active) are cleared. - If revertive switching was enabled, the traffic reverts back to the active path once the manual or force switch is released and the working path is available. The revertive switch causes a short traffic interruption.						

—continued—

Procedure 3-49 (continued)**Removing a manual, force, or lockout switch from a protection path**

Step	Action	
11	If	Then
	the switch was removed from a Muxponder in bi-directional protection mode	you have completed this procedure
	otherwise	go to the next step
12	If a switch was set on a circuit pack at the other end of the path, repeat step 1 through step 8 to remove the switch from that circuit pack.	

—end—

Procedure 3-50

Creating two unprotected paths from one protected OCLD path

Use this procedure to create two unprotected paths from one OCLD protected path by deleting the protected channel assignment and replacing it with two unprotected channel assignments.

Requirements

You will have to perform some tasks on the System Manager and on-site to physically install the OCI circuit pack that will be part of the new unprotected path.

Know your network plan. You should know the protection path you want to convert to an unprotected path and identify the end points of the protected path as well as any passthrough shelves for the protection path.

You must be logged in to the System Manager as an Admin or Operator level user to convert a protected channel assignment to an unprotected channel assignment.

You will need the items listed in the following table during the procedure.

Item	Quantity	Supplied
OCI circuit pack compatible with the OCLD in the protection channel (see Note)	2	No
Optical fibers for connections with the new OCI circuit packs	variable	No
ESD/antistatic protection equipment (wrist strap or foot strap)	1	No
Note: Refer to “ OCI compatibility ” in Chapter 5 of <i>Hardware Description</i> , 323-1701-102, to confirm that the OCI is capable of supporting the bit rate required and works with the OCLD that is currently part of the protected channel.		

—continued—

Procedure 3-50 (continued)**Creating two unprotected paths from one protected OCLD path**

Precautions

When you create two unprotected paths from one protected path, you add another path to your network, but you lose protection for both paths. If there is an equipment or facility fault on either unprotected path, traffic will be lost.

**CAUTION****Risk of generating alarms on the network**

When you convert a protected channel assignment to an unprotected channel assignment, you will raise alarms on the downstream circuit packs that are part of the channel assignment until you complete this procedure.

**CAUTION****Risk of a traffic interruption**

A short traffic interruption occurs when the first channel assignment of the two terminating shelves is changed from protected to unprotected mode. When this step is repeated on the other terminating shelf, no traffic interruption occurs.

**CAUTION****Risk of equipment damage**

Make sure you know how to handle electronic components correctly before you begin installation procedures. Incorrect handling can cause damage to static-sensitive components.

To avoid possible damage to circuit packs by electrostatic discharge (ESD), use the following precautions:

- Wear a grounded antistatic wrist strap connected to the shelf maintenance panel, or shoe straps, when handling circuit packs. Use the manufacturer's instructions to test ESD protection before handling circuit packs.
- Handle circuit packs by their edges only. Do not touch the electronic components or any exposed printed circuits.

—continued—

Procedure 3-50 (continued)

Creating two unprotected paths from one protected OCLD path**Action**

Step	Action
1	System Manager provides a view of one ring. Before you begin to convert a protected channel assignment to an unprotected channel assignment, sort the Shelf List clockwise to reflect the order of the ring. When you are done, the originating shelf is at the top of the Shelf List, followed by the passthrough shelves, in order. The terminating shelf is at the bottom. For information on sorting shelves, refer to Procedure 1-16 “Sorting shelves” in this book.
2	At the near end shelf and far end shelf sites, make sure that there is another OCI circuit pack available to set up the new additional unprotected OCLD path. Refer to “OCI compatibility” in Chapter 5 of Hardware Description , 323-1701-102, to confirm that the OCI circuit pack is capable of supporting the bit rate required and works with the OCLD that is currently part of the protected channel. If there is a problem, stop the procedure and contact your next level of support.
3	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that terminates the traffic for the band of the channel assignment you intend to convert from protected to unprotected. <i>System Manager updates the screen with data for the selected shelf.</i>
4	Click on the Selected Shelves drop-down list to return the screen to full view.
5	Select the Connections/Channel Assignments tab. <i>The Channel Assignments window appears.</i>
6	To make sure that all bands and channels are displayed in the Channel Assignments window for the selected shelf, select the None Scope button, and click Refresh .
7	Double-click on the line that contains the protected channel assignment that you want to convert to an unprotected channel assignment. <i>The Optical Metro Channel Assignments window appears.</i>

—continued—

Procedure 3-50 (continued)

Creating two unprotected paths from one protected OCLD path

Step	Action						
8	Make sure that existing traffic, which is part of the protected channel assignment, is on the active OCLD path. Identify which OCLD is active. <i>The active OCLD appears in bold text in the Rx Traffic Path for BxCx – <NE Name> field at the bottom of the window.</i> <table> <tr> <th>If the active path is</th><th>Then</th></tr> <tr> <td>not on the OCLD that will carry the existing traffic, which was part of the protected channel assignment</td><td>select Cancel to close the Optical Metro Channel Assignments window. Go to step 9.</td></tr> <tr> <td>on the OCLD that will carry the existing traffic, which was part of the protected channel assignment</td><td>select Cancel to close the Optical Metro Channel Assignment window. Go to step 11.</td></tr> </table>	If the active path is	Then	not on the OCLD that will carry the existing traffic, which was part of the protected channel assignment	select Cancel to close the Optical Metro Channel Assignments window. Go to step 9 .	on the OCLD that will carry the existing traffic, which was part of the protected channel assignment	select Cancel to close the Optical Metro Channel Assignment window. Go to step 11 .
If the active path is	Then						
not on the OCLD that will carry the existing traffic, which was part of the protected channel assignment	select Cancel to close the Optical Metro Channel Assignments window. Go to step 9 .						
on the OCLD that will carry the existing traffic, which was part of the protected channel assignment	select Cancel to close the Optical Metro Channel Assignment window. Go to step 11 .						
9	Make sure revertive switching is disabled. Follow Procedure 3-64 “Enabling or disabling revertive protection switching” , in this chapter.						
10	Perform a manual switch to switch the traffic to the OCLD facility that will carry the existing traffic. Follow Procedure 3-56 “Manual switching on protected channel assignments” , in this chapter.						
11	Double-click on the line that contains the protected channel assignment that you want to convert to an unprotected channel assignment. The line to be selected is the one showing Active in the Mode column. If the Protected line is selected, traffic is lost during step 13. <i>The Optical Metro Channel Assignments window appears.</i>						
12	From the Mode drop-down list, select Unprot-east or Unprot-west. Click OK. <i>The Confirm Channel Assignment Modify dialog box appears.</i>						
13	Click Yes. Note: Wait until the change from protected to unprotected is complete. This can take several seconds. The change is complete when the Channel Assignments dialog box closes. If this is first time this step is performed (on one of the terminating shelves), a short traffic interruption occurs. When this step is repeated on the other terminating shelf, no traffic interruption occurs. <i>Alarms are raised against the downstream circuit packs that are part of the protection path that you are removing. On the OCLD part of the protection path deleted, an “Alarm Indication Signal” NSA alarm is raised on the receiver.</i>						
14	Repeat step 2 through step 13 for the other end point of the channel assignment.						

—continued—

Procedure 3-50 (continued)

Creating two unprotected paths from one protected OCLD path

Step	Action
15	Insert the OCI circuit pack that will be part of the newly created unprotected path into the shelf. Follow Procedure 7-1 "Inserting circuit packs" in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201.
16	Connect the OCI circuit packs to the subtending equipment. Follow the procedure according to the type of OCI, in the "Connecting components" chapter in <i>Connection Procedures</i> , 323-1701-221.
17	Repeat step 15 and step 16 for the other end point of the channel assignment.
18	For the near end shelf and the far end shelf, make a channel assignment for the new OCI circuit pack using Procedure 3-3 "Making or modifying channel assignments" , in this chapter.
19	On the near end shelf, make sure that the OCI facility (or associated port facility) is in-service (IS). If it is not IS, follow Procedure 3-10, Putting a circuit pack or SFP facility in-service , in this chapter.
20	Repeat step 19 for the far end shelf.
21	On the near end shelf, make sure that the OCLD facility is IS. If the OCLD facility is not IS (IS state is the default), follow Procedure 3-10, Putting a circuit pack or SFP facility in-service , in this chapter. Note: Each channel assignment involves two to three facilities at each shelf in the path. Each facility has a status. The channel assignment reflects the status of the sum of the two or three facilities involved. If any of the facilities are out-of-service (OOS), the System Manager sets the status to OOS and the channel assignment cannot carry traffic.
22	Repeat step 21 for the passthrough shelves and the far end shelf. <i>The newly created end-to-end channel unprotected path should now be able to carry error-free traffic. No more alarms should be raised on the involved circuit packs (System Manager Fault/Active alarms tab).</i>
23	Follow Procedure 1-6 "Testing the Optical Metro 5100/5200 system" in <i>Testing and Equalization Procedures</i> , 323-1701-222, to verify the above conditions. If you are having problems, contact your next level of support.

—end—

Procedure 3-51

Creating two unprotected paths from one protected OTR path

Use this procedure to create two unprotected paths from one OTR protected path by deleting the protected channel assignment and replacing it with two unprotected channel assignments.

Requirements

You will have to perform some tasks on the System Manager and on-site to physically connect the subtending client equipment to the OTR circuit pack that will be part of the new unprotected path.

Know your network plan. You should know the protection path you want to convert to an unprotected path and identify the end points of the protected path as well as any passthrough shelves for the protection path.

You must be logged in to the System Manager as an Admin or Operator level user to convert a protected channel assignment to an unprotected channel assignment.

You need the items listed in the following table during the procedure.

Item	Quantity	Supplied
Optical fibers for connections with the OTR circuit pack and the subtending equipment (probably SC-LC)	variable	No
ESD/antistatic protection equipment (wrist strap or foot strap)	1	No

Precautions

When you create two unprotected paths from one protected path, you add another path to your network, but you lose protection for both paths. If there is an equipment or facility fault on either unprotected path, traffic is lost.

—continued—

Procedure 3-51 (continued)

Creating two unprotected paths from one protected OTR path



CAUTION

Risk of generating alarms on the network

When you convert a protected channel assignment to an unprotected channel assignment, you will raise alarms on the downstream circuit packs that are part of the channel assignment until you complete this procedure.



CAUTION

Risk of traffic interruption

Traffic may be interrupted when you convert a protected channel assignment to an unprotected channel assignment on an OTR path. This occurs if you disconnect the subtending client equipment from the Transponder Protection Tray to reconnect it to the OTR of the newly created unprotected channel assignment.



CAUTION

Risk of equipment damage

Make sure you know how to handle electronic components correctly before you begin installation procedures. Incorrect handling can cause damage to static-sensitive components.

To avoid possible damage to circuit packs by electrostatic discharge (ESD), use the following precautions:

- Wear a grounded antistatic wrist strap connected to the shelf maintenance panel, or shoe straps, when handling circuit packs. Follow the manufacturer's instructions to test ESD protection before handling circuit packs.
- Handle circuit packs by their edges only. Do not touch the electronic components or any exposed printed circuits.

—continued—

Procedure 3-51 (continued)

Creating two unprotected paths from one protected OTR path**Action**

Step	Action
1	System Manager provides a view of one ring. Before you begin to convert a protected channel assignment to an unprotected channel assignment, sort the Shelf List clockwise to reflect the order of the ring. When you are done, the originating shelf is at the top of the Shelf List, followed by the passthrough shelves, in order. The terminating shelf is at the bottom. For information on sorting shelves, refer to Procedure 1-16 "Sorting shelves" in this book.
2	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that terminates the traffic for the band of the channel assignment you intend to convert from protected to unprotected. <i>System Manager updates the screen with data for the selected shelf.</i>
3	Click on the Selected Shelves drop-down list to return the screen to full view.
4	Select the Connections/Channel Assignments tab. <i>The Channel Assignments window appears.</i>
5	To make sure that all bands and channels are displayed in the Channel Assignments window for the selected shelf, select the None Scope button, and click Refresh .

Verify if the OTR path that will carry the existing traffic is already in use

6	Double-click on the line that contains the protected channel assignment that you want to convert to an unprotected channel assignment. <i>The Optical Metro Channel Assignments window appears.</i>
7	Make sure that existing traffic, which is part of the protected channel assignment, is on the active OTR path. Identify which OTR is active. <i>The active OTR appears in bold text in the Rx Traffic Path for BxCx – <NE Name> field at the bottom of the window.</i>

If the active path is	Then
not on the OTR facility that will carry the existing traffic, which was part of the protected channel assignment	select Cancel to close the Optical Metro Channel Assignments window. Go to step 8 .
on the OTR facility that will carry the existing traffic, which was part of the protected channel assignment	select Cancel to close the Optical Metro Channel Assignments window. Go to step 10 .

—continued—

Procedure 3-51 (continued)

Creating two unprotected paths from one protected OTR path

Step	Action
8	Make sure revertive switching is disabled. Follow Procedure 3-64 “Enabling or disabling revertive protection switching” , in this chapter.
9	Perform a manual switch to switch the traffic to the OTR facility that will carry the existing traffic. Follow Procedure 3-56 “Manual switching on protected channel assignments” , in this chapter.
10	Double-click on the line that contains the protected channel assignment that you want to convert to an unprotected channel assignment. The line to be selected is the one showing Active in the Mode column. If the Protected line is selected, the traffic is lost during step 12 . <i>The Optical Metro Channel Assignment window appears.</i>
11	From the Mode drop-down list, select Unprot-east or Unprot-west. Click OK . <i>The Confirm Channel Assignment Modify dialog box appears</i>
12	Click Yes . Note: Wait until the change from protected to unprotected is complete. This can take several seconds. The change is complete when the Channel Assignment window closes. <i>Alarms are raised against the downstream circuit packs that are part of the protection path you are removing. On the OTR part of the protection path deleted, an “Alarm Indication Signal” NSA alarm is raised on the receiver.</i>
13	Repeat step 2 through step 12 for the other end point of the channel assignment.

Rewiring the subtending client equipment to the OTRs, bypassing the Transponder Protection Tray

- 14 Prior to physically disconnecting the fibers from the unused OTR client ports, place those client facilities out-of-service (OOS). Follow [Procedure 3-13 “Taking a circuit pack facility or SFP facility out-of-service”](#), in this chapter.
- 15 Put on the antistatic protection devices (foot strap or wrist strap).
- 16 Remove the shelf cover by releasing the lock latches on the sides and lifting the door off its pivots.

**DANGER****Risk of personal injury or equipment damage**

Do not let go of the shelf cover when you open it. The shelf cover is not permanently attached to the shelf. You must remove the door completely. If you let go of the door when you open it, you can cause personal injury, damage to the equipment, or both.

—continued—

Procedure 3-51 (continued)

Creating two unprotected paths from one protected OTR path

Step	Action						
17	<table> <tr> <th>If you want to</th><th>Then</th></tr> <tr> <td>remove the fiber connections involving the Transponder Protection Tray in the unprotected channel that currently carries traffic</td><td>advise your network administrator that traffic currently on the unprotected channel will be lost during the disconnection procedure. Go to step 18.</td></tr> <tr> <td>leave the subtending client equipment connected to the Transponder Protection Tray for the unprotected channel carrying traffic.</td><td>You do not lose traffic if you select this option. Go to step 26.</td></tr> </table>	If you want to	Then	remove the fiber connections involving the Transponder Protection Tray in the unprotected channel that currently carries traffic	advise your network administrator that traffic currently on the unprotected channel will be lost during the disconnection procedure. Go to step 18 .	leave the subtending client equipment connected to the Transponder Protection Tray for the unprotected channel carrying traffic.	You do not lose traffic if you select this option. Go to step 26 .
If you want to	Then						
remove the fiber connections involving the Transponder Protection Tray in the unprotected channel that currently carries traffic	advise your network administrator that traffic currently on the unprotected channel will be lost during the disconnection procedure. Go to step 18 .						
leave the subtending client equipment connected to the Transponder Protection Tray for the unprotected channel carrying traffic.	You do not lose traffic if you select this option. Go to step 26 .						
18	Prior to physically disconnecting the fiber link between the subtending client equipment and the Transponder Protection Tray, place OTR client port facilities OOS for both the OTR that is part of the newly created unprotected channel assignment as well as on the OTR path that is going to form the second new unprotected path. Follow Procedure 3-13 "Taking a circuit pack facility or SFP facility out-of-service", in this chapter. Note: Traffic is lost at this point in the procedure. <i>Alarms are raised against the OTR circuit packs that are part of the new unprotected channel assignment and the protection path that is going to form the second new unprotected path.</i>						
19	Put on the proper ESD/antistatic protection devices (wrist strap or foot strap).						
20	Remove the shelf cover by releasing the lock latches on the sides and lifting the door off its pivots.						
 DANGER Risk of personal injury or equipment damage Do not let go of the shelf cover when you open it. The shelf cover is not permanently attached to the shelf. You must remove the door completely. If you let go of the door when you open it, you can cause personal injury, damage to the equipment, or both.							
21	For the channel assignment that is active and supposed to carry the unprotected traffic (traffic lost, because client side ports put OOS in step 18), disconnect the fibers between the client ports (Tx and Rx) on the OTR and the associated Transponder protection Tray ports.						

—continued—

Procedure 3-51 (continued)

Creating two unprotected paths from one protected OTR path

Step	Action
22	For the same channel assignment as step 21 , disconnect the fibers between the Transponder Protection Tray port and the client subtending equipment. For more information on routing of the fibers in the Transponder Protection Tray, refer to Procedure 8-13, "Routing fibers for the Transponder Protection Tray" in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201.
23	Reconnect the new fibers (probably FC-LC) between the client subtending equipment and the OTR client port of the unprotected path to restore traffic on that path. Refer to Procedure 3-24 "Connecting OTR circuit packs to subtending equipment" in <i>Connection Procedures</i> , 323-1701-221.
24	For the OTR that is part of the newly created unprotected channel assignment, place the OTR client port facility in-service (IS). Follow Procedure 3-10 "Putting a circuit pack or SFP facility in-service" , in this chapter. <i>The end-to-end unprotected path should now be stored and carrying error-free traffic. No more alarms should be raised on the involved circuit packs (System Manager Fault/Active alarms tab).</i>
25	Follow Procedure 1-6 "Testing the Optical Metro 5100/5200 system" in <i>Testing and Equalization Procedures</i> , 323-1701-222, to verify the above conditions. If you are having problems, contact your next level of support.

Rewiring the subtending client equipment to the OTR of the new second unprotected path

26	For the inactive channel assignment that will form the second unprotected path, disconnect the fibers between the client ports (Tx and Rx) on the OTR and the associated Transponder protection Tray ports.
27	Connect the new fibers from the client subtending equipment to the standby OTR client ports. Refer to Procedure 3-24 "Connecting OTR circuit packs to subtending equipment" in <i>Connection Procedures</i> , 323-1701-221.
28	For the new unprotected path, place the facility of the OTR client ports IS. Follow Procedure 3-10 "Putting a circuit pack or SFP facility in-service" , in this chapter.
29	Put the shelf cover back on the shelf and remove the antistatic foot strap or wrist strap.
30	Repeat step 14 through step 29 for the other end point of the channel assignment.

—continued—

Procedure 3-51 (continued)**Creating two unprotected paths from one protected OTR path**

Step	Action
31	Make a channel assignment for the standby OTR. Follow Procedure 3-3 “Making or modifying channel assignments”, in this chapter. <i>The new end-to-end unprotected path should now be able to carry error-free traffic. No more alarms should be raised on the involved circuit packs (System Manager Fault/Active alarms tab).</i>
32	Follow Procedure 1-6 “Testing the Optical Metro 5100/5200 system” in <i>Testing and Equalization Procedures</i>, 323-1701-222, to verify the above conditions. If you are having problems, contact your next level of support.

—end—

Procedure 3-52

Creating two unprotected paths from one protected Muxponder path

Use this procedure to create two unprotected paths from one Muxponder protected path by deleting the protected channel assignment and replacing it with two unprotected channel assignments.

Requirements

You will have to perform some tasks on the System Manager and on-site to physically connect the subtending client equipment to the Muxponder circuit pack that will be part of the new unprotected path.

Know your network plan. You should know the protection path you want to convert to an unprotected path and identify the end points of the protected path as well as any passthrough shelves for the protection path.

You must be logged in to the System Manager as an Admin or Operator level user to convert a protected channel assignment to an unprotected channel assignment.

You need the items listed in the following table during the procedure.

Item	Quantity	Supplied
Muxponder SFPs	variable	No
Optical fibers for connections with the Muxponder SFPs and the subtending equipment	variable	No
ESD/antistatic protection equipment (wrist strap or foot strap)	1	No

Precautions

When you create two unprotected paths from one protected path, you add another path to your network, but you lose protection for both paths. If there is an equipment or facility fault on either unprotected path, traffic is lost.

—continued—

Procedure 3-52 (continued)**Creating two unprotected paths from one protected Muxponder path**

**CAUTION****Risk of generating alarms on the network**

When you convert a protected channel assignment to an unprotected channel assignment, you will raise alarms on the downstream circuit packs that are part of the channel assignment until you complete this procedure.

**CAUTION****Risk of a traffic interruption**

A short traffic interruption occurs when the first channel assignment of the two terminating shelves is changed from protected to unprotected mode. When this step is repeated on the other terminating shelf, no traffic interruption occurs.

**CAUTION****Risk of equipment damage**

Make sure you know how to handle electronic components correctly before you begin installation procedures. Incorrect handling can cause damage to static-sensitive components.

To avoid possible damage to circuit packs by electrostatic discharge (ESD), use the following precautions:

- Wear a grounded antistatic wrist strap connected to the shelf maintenance panel, or shoe straps, when handling circuit packs. Use the manufacturer's instructions to test ESD protection before handling circuit packs.
- Handle circuit packs by their edges only. Do not touch the electronic components or any exposed printed circuits.

—continued—

Procedure 3-52 (continued)

Creating two unprotected paths from one protected Muxponder path**Action**

Step	Action						
1	System Manager provides a view of one ring. Before you begin to convert a protected channel assignment to an unprotected channel assignment, sort the Shelf List clockwise to reflect the order of the ring. When you are done, the originating shelf is at the top of the Shelf List, followed by the passthrough shelves, in order. The terminating shelf is at the bottom. For information on sorting shelves, refer to Procedure 1-16 "Sorting shelves" in this book.						
2	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that terminates the traffic for the band of the channel assignment you intend to convert from protected to unprotected. <i>System Manager updates the screen with data for the selected shelf.</i>						
3	Click on the Selected Shelves drop-down list to return the screen to full view.						
4	Select the Connections/Channel Assignments tab. <i>The Channel Assignments window appears.</i>						
5	To make sure that all bands and channels are displayed in the Channel Assignments window for the selected shelf, select the None Scope button, and click Refresh .						
6	Locate and double-click on the line that contains the protected channel assignment that you want to convert to an unprotected channel assignment. <i>The Optical Metro Channel Assignments window appears.</i>						
7	Make sure that existing traffic, which is part of the protected channel assignment, is on the Working Muxponder path. Identify which Muxponder is the Working Muxponder. <i>The active Muxponder appears in bold text in the Rx Traffic Path for BxCx – <NE Name> field at the bottom of the window.</i>						
<table> <tr> <th>If the active path is</th><th>Then</th></tr> <tr> <td>not on the Working Muxponder</td><td>select Cancel to close the Optical Metro Channel Assignments window. Go to step 8.</td></tr> <tr> <td>on the Working Muxponder</td><td>select Cancel to close the Optical Metro Channel Assignments window. Go to step 9.</td></tr> </table>		If the active path is	Then	not on the Working Muxponder	select Cancel to close the Optical Metro Channel Assignments window. Go to step 8 .	on the Working Muxponder	select Cancel to close the Optical Metro Channel Assignments window. Go to step 9 .
If the active path is	Then						
not on the Working Muxponder	select Cancel to close the Optical Metro Channel Assignments window. Go to step 8 .						
on the Working Muxponder	select Cancel to close the Optical Metro Channel Assignments window. Go to step 9 .						

—continued—

Procedure 3-52 (continued)

Creating two unprotected paths from one protected Muxponder path

Step	Action
8	Perform a manual switch to switch the traffic to the Working Muxponder that will carry the existing traffic. Follow Procedure 3-56 “Manual switching on protected channel assignments”, in this chapter. Note: A manual switch will fail if the working path is incapable of carrying traffic.
9	Locate and double-click on the line that contains the protected channel assignment that you want to convert to an unprotected channel assignment. The line to be selected is the one showing the Protection Muxponder. <i>The Optical Metro Channel Assignment window appears.</i>
10	From the Mode drop-down list, select Unprot-east or Unprot-west. Click OK. <i>The Confirm Channel Assignment Modify dialog box appears</i>
11	Click Yes. Note: Wait until the change from protected to unprotected is complete. This can take several seconds. The change is complete when the Channel Assignment window closes. <i>Alarms are raised against the downstream circuit packs that are part of the protection path you are removing. On the Muxponder part of the protection path deleted, an “Alarm Indication Signal” NSA alarm is raised on the receiver.</i>
12	Repeat step 2 through step 11 for the other end point of the channel assignment.
13	Insert the SFPs into the Muxponder circuit pack that will be part of the newly created unprotected path into the shelf. Follow Procedure 7-1 “Inserting circuit packs” in <i>Installing Optical Metro 5200 Shelves and Components</i>, 323-1701-201.
14	Connect the SFPs to the subtending equipment. Follow the procedure in the “Connecting components” chapter in <i>Connection Procedures</i>, 323-1701-221.
15	Repeat step 13 and step 14 for the other end point of the channel assignment.
16	For the near end shelf and the far end shelf, make a channel assignment for the new Muxponder circuit pack using Procedure 3-3 “Making or modifying channel assignments”, in this chapter.
17	On the near end shelf, make sure that the SFP facilities are in-service (IS). If they are not IS, follow Procedure 3-10, Putting a circuit pack or SFP facility in-service, in this chapter.
18	Repeat step 17 for the far end shelf.

—continued—

Procedure 3-52 (continued)

Creating two unprotected paths from one protected Muxponder path

Step	Action
19	On the near end shelf, make sure that the Muxponder line-side facility is IS. If the line-side facility is not IS (IS state is the default), follow Procedure 3-10, Putting a circuit pack or SFP facility in-service , in this chapter.
20	Repeat step 19 for the far end shelf. <i>The newly created end-to-end channel unprotected path should now be able to carry error-free traffic. No more alarms should be raised on the involved circuit packs (System Manager Fault/Active alarms tab).</i>
21	Follow Procedure 1-6 “Testing the Optical Metro 5100/5200 system” in <i>Testing and Equalization Procedures</i> , 323-1701-222, to verify the above conditions. If you are having problems, contact your next level of support.

—end—

Procedure 3-53

Locking out an active path

Use this procedure to set a lockout on the active path of a protected channel assignment.

For non-revertive connections, a lockout prevents the selected OCLD or OTR from switching to the protected channel. You cannot perform a lockout on the current inactive path, the lockout can only be applied to the current active path.

If a lockout is performed on a revertive connection that is currently selecting traffic from the protection path, traffic will switch to the working path and stay there.

For more information on protection switching, including the hierarchy of protection switching commands and system operations, see the [“Protection switching”](#) chapter in *Software and User Interface*, 323-1701-101.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to lockout the active path which prevents it from switching to the protection path.

In order to lockout an active path of a protected circuit, first identify the corresponding active OCLDs or OTRs in uni-directional protection mode associated with the path that needs to be locked out. The lockout must be performed at both ends of the path.

To identify both ends of the path, a network diagram is required. It is used to map all the shelves involved in the end-to-end channel assignment (especially the near end shelf and the far end shelf).

—continued—

Procedure 3-53 (continued)
Locking out an active path

Precautions



CAUTION

Risk of traffic loss

When you set a lockout, protection switching cannot occur. Traffic is lost if there is a fiber cut or equipment failure on the active path.



CAUTION

Risk of traffic loss or traffic interruption

If you have enabled revertive switching, the lockout ensures that the provisioned working path is active and locked out. This implies that if the traffic is on the protected path (because of an automatic protection switch), the lockout command reverts traffic to the predefined working path. If the predefined working path has problems, traffic will be lost. If the predefined working path does not have problems, a short traffic interruption occurs during the switch from the protection path to the working path.

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf with the channel assignment on which you want to perform a lockout. <i>System Manager updates the screen with data for the selected shelf.</i>
2	Click on the Selected Shelves drop-down list to return the screen to full view.
3	Select the Connections/Channel Assignments tab. <i>The Channel Assignments window appears.</i>

—continued—

Procedure 3-53 (continued)
Locking out an active path

Step	Action						
4	Verify that no current automatic switch is active on the path which you want to perform a lockout. The Path state column shows Auto Sw for both the current active and inactive paths if there is an automatic switch.						
	<table> <tr> <th>If</th><th>Then go to</th></tr> <tr> <td>no current automatic switch is active</td><td>step 11</td></tr> <tr> <td>an automatic switch is active</td><td>step 5</td></tr> </table>	If	Then go to	no current automatic switch is active	step 11	an automatic switch is active	step 5
If	Then go to						
no current automatic switch is active	step 11						
an automatic switch is active	step 5						
5	Note the facility associated with the current inactive path (for the inactive path, the Mode column will be Protected).						
6	Verify if revertive switching is enabled. Double-click on the protected connection you wish to perform the lockout on. <i>The Optical Metro Channel Assignments window appears.</i>						
7	Click the Protection button. <i>The Optical Metro Protection dialog box opens.</i>						
8	Verify if Rx Reversion is enabled.						
	<table> <tr> <th>If</th><th>Then go to</th></tr> <tr> <td>Rx Reversion is not enabled</td><td>step 10</td></tr> <tr> <td>Rx Reversion is enabled</td><td>step 9</td></tr> </table>	If	Then go to	Rx Reversion is not enabled	step 10	Rx Reversion is enabled	step 9
If	Then go to						
Rx Reversion is not enabled	step 10						
Rx Reversion is enabled	step 9						
9	In the Rx Reversion area of the window, the working path selected is the current inactive path noted in step 5 . If you perform a lockout on this pre-defined working path, traffic switches to a potentially non-working path and you can lose traffic. If there are no problems with the pre-defined working path, only a short traffic interruption occurs during the traffic switch. Advise your network administrator of this situation before going to step 10 .						
10	Click on Cancel to close the window.						
11	Locate and double-click on the protected connection on which you want to perform the lockout. <i>The Optical Metro Channel Assignments window appears.</i>						
12	Identify which facility is active. <i>The active facility appears in bold text in the Rx Traffic Path for BxCx – <NE Name> field at the bottom of the window.</i>						
13	Click Protection to open the Protection dialog box.						
	<table> <tr> <th>If the active path is</th><th>Then go to</th></tr> <tr> <td>on the facility you wish to perform the lockout command on</td><td>step 15</td></tr> <tr> <td>not on the facility you wish to perform the lockout on</td><td>step 14</td></tr> </table>	If the active path is	Then go to	on the facility you wish to perform the lockout command on	step 15	not on the facility you wish to perform the lockout on	step 14
If the active path is	Then go to						
on the facility you wish to perform the lockout command on	step 15						
not on the facility you wish to perform the lockout on	step 14						

—continued—

Procedure 3-53 (continued)
Locking out an active path

Step	Action						
14	Verify if revertive protection switching is enabled or disabled. <i>In the Rx Reversion area, if the enabled box is checked, this implies that revertive protection switching is enabled. If it is not checked, this implies that revertive protection switching is disabled.</i> <table> <tr> <th>If revertive switching is</th><th>Then</th></tr> <tr> <td>disabled</td><td> click Cancel to close the Channel Assignments window. Follow Procedure 3-56, “Manual switching on protected channel assignments”, in this chapter to manually switch working traffic to the other path. Go to step 15. </td></tr> <tr> <td>enabled</td><td> you need to disable revertive switching by unchecking the enabled box. Click OK to close the Channel Assignments window. Follow Procedure 3-56, “Manual switching on protected channel assignments”, in this chapter to manually switch working traffic to the other path. Go to step 15. </td></tr> </table>	If revertive switching is	Then	disabled	click Cancel to close the Channel Assignments window. Follow Procedure 3-56, “Manual switching on protected channel assignments”, in this chapter to manually switch working traffic to the other path. Go to step 15.	enabled	you need to disable revertive switching by unchecking the enabled box. Click OK to close the Channel Assignments window. Follow Procedure 3-56, “Manual switching on protected channel assignments”, in this chapter to manually switch working traffic to the other path. Go to step 15.
If revertive switching is	Then						
disabled	click Cancel to close the Channel Assignments window. Follow Procedure 3-56, “Manual switching on protected channel assignments”, in this chapter to manually switch working traffic to the other path. Go to step 15.						
enabled	you need to disable revertive switching by unchecking the enabled box. Click OK to close the Channel Assignments window. Follow Procedure 3-56, “Manual switching on protected channel assignments”, in this chapter to manually switch working traffic to the other path. Go to step 15.						
15	In the Rx Switch Request area of the dialog box, select the Lockout radio button. <i>If the Lockout radio button is already selected, this implies a lockout is already active on the facility. Go to step 19.</i>						
16	Click OK. <i>The Confirm Protection Lockout dialog box appears.</i>						
17	Click Yes to confirm the protection switch request. Note: Wait until the lockout is complete. This can take several seconds. The switch is complete when the Channel Assignments window closes.						

—continued—

Procedure 3-53 (continued)
Locking out an active path

Step	Action
18	Check for the following expected results: • The Path State and Prov. State columns in the Channel Assignments window display Lockout on the facility that is locked out. • The Path State column in the Channel Assignments window displays Lockout on the other facility of this protection path. • In the System Manager Fault/Active alarms tab, a new minor “Path Lockout Active” alarm appears. • Protection switching on the active path is prohibited. If there is a problem with the locked-out active path, an automatic protection switch does not occur and traffic is lost.
19	Repeat step 1 to step 18 for the facility at the other end of the path.

ATTENTION

Be sure you remove the lockout from both ends of the path after you complete the procedure that required the lockout. Follow [Procedure 3-49, “Removing a manual, force, or lockout switch from a protection path”](#), in this chapter.

If in [step 14](#) you disabled revertive switching, make sure that you re-enable it after you remove the lockout. Follow [Procedure 3-64, “Enabling or disabling revertive protection switching”](#), in this chapter.

—end—

Procedure 3-54

Performing a lockout on a Muxponder circuit pack

Use this procedure to set a lockout on a protected Muxponder circuit pack. A lockout prevents the selected working Muxponder from switching to the protection Muxponder circuit pack.

For more information on protection switching, including the hierarchy of protection switching commands and system operations, see the “[Protection switching](#)” chapter in *Software and User Interface*, 323-1701-101.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to lockout the active path which prevents it from switching to the protection path.

In order to lockout an active path of a protected circuit, first identify the corresponding active Muxponder in uni-directional protection mode associated with the path that needs to be locked out. The lockout must be performed at both ends of the path.

To identify both ends of the path, a network diagram is required. It is used to map all the shelves involved in the end-to-end channel assignment (especially the near end shelf and the far end shelf).

For Muxponders in bi-directional protection mode, set the lockout at one end of the path only.

Precautions



CAUTION

Risk of traffic loss

When you set a lockout, protection switching cannot occur. Traffic is lost if there is a fiber cut or equipment failure on the active path.

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf with the channel assignment on which you want to perform a lockout. <i>System Manager updates the screen with data for the selected shelf.</i>

—continued—

Procedure 3-54 (continued)

Performing a lockout on a Muxponder circuit pack

Step	Action						
2	Click on the Selected Shelves drop-down list to return the screen to full view.						
3	Select the Connections/Channel Assignments tab. <i>The Channel Assignments window appears.</i>						
4	Verify that no current automatic switch is active on the path on which you want to perform a lockout. The Path state column shows Auto Sw for both the current Active and Protected paths if there is an automatic switch. The path state also shows Auto Sw - R if there is an automatic switch as a result of a far-end failure in a bidirectional connection.						
5	<table> <tr> <th>If</th><th>Then go to</th></tr> <tr> <td>no current automatic switch is active</td><td>step 7</td></tr> <tr> <td>an automatic switch is active</td><td>step 6</td></tr> </table>	If	Then go to	no current automatic switch is active	step 7	an automatic switch is active	step 6
If	Then go to						
no current automatic switch is active	step 7						
an automatic switch is active	step 6						
6	Note that a traffic lockout on the Muxponder only occurs on the working path. If there is an automatic switch active as a result of a fault on the path and the Protected path is active, the protection scheme performs a switch back to the path when executing a lockout on the path. Traffic will be lost. If there are no problems with the working path, only a short traffic interruption occurs during the automatic switch. Advise your network administrator of the this situation before going to the next step.						
7	Locate and double-click on the protected connection on which you want to perform the lockout. <i>The Optical Metro Channel Assignments window appears.</i>						
8	Identify the facility. The facility appears as Active-W in the Revertive column of the Channel Assignments window						
9	Click the protection button to open the Protection dialog box.						
10	In the Rx Switch Request area of the dialog box, select the Lockout radio button. <i>If the Lockout radio button is already selected, this implies a lockout is already active on the facility. Go to step 15.</i>						
11	Click OK . <i>The Confirm Protection Lockout dialog box appears.</i>						

—continued—

Procedure 3-54 (continued)

Performing a lockout on a Muxponder circuit pack

Step	Action	
12	Click Yes to confirm the protection switch request. Note: Wait until the lockout is complete. This can take several seconds. The switch is complete when the Optical Metro Protection dialog box closes.	
13	Click OK to close the Optical Metro Channel Assignments dialog box.	
14	If	Then
	you performed the lockout on a Muxponder in bi-directional protection mode	click Refresh to update the state of the far-end shelf. Go to the next step.
	otherwise	go to the next step
15	Check for the following expected results: - The Path State and Prov. State columns in the Channel Assignments window display Lockout on the facility that is locked out. - The Path State column in the Channel Assignments window displays Lockout on the other facility of this protection path. - In the System Manager Fault/Active alarms tab, a new minor "Path Lockout Active" alarm appears. - Protection switching on the active path is prohibited. If there is a problem with the locked-out active path, an automatic protection switch does not occur and traffic is lost.	
16	If	Then
	you performed the force switch on a Muxponder in bi-directional protection mode	you have completed this procedure
	otherwise	go to the next step
17	Repeat step 1 to step 15 for the Muxponder at the other end of the path (see Requirements section of procedure).	

ATTENTION

Be sure you remove the lockout from both ends of the path after you complete the procedure that required the lockout. Follow [Procedure 3-49, "Removing a manual, force, or lockout switch from a protection path"](#), in this chapter.

—end—

Procedure 3-55

Force switching on OCM circuit packs

Use this procedure to set a force switch on an OCM circuit pack.

You cannot set a force switch on an OCM in a shelf if the OCM is out-of-service (OOS), has failed, or is missing.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to set a force switch.

Precautions

**CAUTION****Risk of traffic loss**

When the OCM with a force switch is having problems, the traffic does not automatically revert to the mate OCM to avoid traffic loss. Traffic remains on the OCM with the force switch and traffic is lost.

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the OCM on which you want to perform a force switch. <i>System Manager updates the screen with data for the selected shelf.</i>
2	Click on the Selected Shelves drop-down list to return the screen to full view.
3	Select the Equipment tab.
4	Select the Inventory tab.
5	Verify that the OCM that you want to force traffic to is in-service (IS), has not failed, and is not missing from the shelf. If any of these conditions are present, you cannot force traffic to that OCM. Follow Procedure 3-7, Putting a circuit pack or SFP in-service , in this chapter.
6	Select the OCM that you want to force traffic away from.

—continued—

Procedure 3-55 (continued)

Force switching on OCM circuit packs

Step	Action
7	Click the Protection button, or right-click the selected OCM and select Protection from the popup menu. <i>The Optical Metro OCM Protection window appears.</i>
8	In the Switch Request area of the Optical Metro OCM Protection window, select the Force radio button.
9	In the To drop-down list, make sure that the OCM that you want to force the traffic onto is selected. If necessary, open the drop-down list and select the OCM.
10	Click OK . <i>The Confirm OCM Protection dialog box appears.</i>
11	Click Yes on the Confirm OCM Protection dialog box. <i>The force switch is set on the OCM that is selected in the To field on the Optical Metro OCM Protection window.</i> Note: Wait until the force switch is complete. This can take several seconds. The switch is complete when the Confirm OCM Protection dialog box and the Optical Metro OCM Protection window close.
12	Check for the following expected results: • The OCM force switch is complete: — In the Equipment/Inventory tab, select one of the two OCM in the shelf. — Click on the Protection button, or right-click on the selected OCM and select Protection from the pop-up menu. — In the Optical Metro OCM Protection window, check that the required OCM is active in the OCM Selection column. • In the System Manager Fault/Active alarms window, a new “Force Switch to OCM x active” NSA alarm appears. This alarm remains until the OCM force switch is released (see Procedure 3-58, “Removing a force switch from an OCM”, in this chapter).

—end—

Procedure 3-56

Manual switching on protected channel assignments

Use this procedure to set a manual switch on protected channel assignments. When you set a manual switch, traffic only switches to the specified path if the path is available and operational.

For more information on protection switching, including the hierarchy of protection switching commands and system operations, see the “[Protection switching](#)” chapter in *Software and User Interface*, 323-1701-101.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to set a manual switch.

For OCLDs, OTRs, or Muxponders in uni-directional protection mode, you must set the manual switch at both ends of a protection path that is not currently receiving signals from either end in order to effectively set the switch.

To identify both ends of the path, a network diagram is required. It is used to map all the shelves involved in the end-to-end channel assignment (especially the near end shelf and the far end shelf).

For Muxponders in bi-directional protection mode, set the manual switch at one end of the path only.

Precautions

**CAUTION****Traffic interruption**

A short traffic interruption occurs during the manual switch from the working path to the protection path.

—continued—

Procedure 3-56 (continued)

Manual switching on protected channel assignments**Action**

Step	Action						
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf with the OCLD, Muxponder, or OTR facility on which you want to perform a manual switch. <i>System Manager updates the screen with data for the selected shelf.</i>						
2	Click on the Selected Shelves drop-down list to return the screen to full view.						
3	Select the Connections/Channel Assignments tab. <i>The Channel Assignments window appears.</i>						
4	Locate and double-click on the protected connection you wish to perform the manual switch on. <i>The Optical Metro Channel Assignments window appears.</i>						
5	Identify which facility is active. <i>The active facility appears in bold text in the Rx Traffic Path for BxCx – <NE Name> field at the bottom of the window.</i>						
6	Click the Protection button. <i>The Protection dialog box appears.</i>						
7	In the Rx Switch Request area, select the Manual radio button.						
<table> <tr> <th>If</th><th>Then</th></tr> <tr> <td>the Manual radio button is already selected</td><td>a manual switch is already active on the facility. Go to step 15.</td></tr> <tr> <td>otherwise</td><td>go to the next step</td></tr> </table>		If	Then	the Manual radio button is already selected	a manual switch is already active on the facility. Go to step 15 .	otherwise	go to the next step
If	Then						
the Manual radio button is already selected	a manual switch is already active on the facility. Go to step 15 .						
otherwise	go to the next step						
8	In the To field, make sure that the facility you want to perform the manual switch to is selected. Note: The To field drop-down list defaults to the corresponding OCLD, Muxponder, or OTR circuit pack of the inactive path						

—continued—

Procedure 3-56 (continued)

Manual switching on protected channel assignments

Step	Action						
9	Click OK . <i>The Confirm Protection Manual dialog box appears.</i>						
10	Click Yes to confirm the manual switch request. <i>The manual switch is set on the facility that is selected.</i> Note: Wait until the manual switch is complete. This can take several seconds. The switch is complete when Optical Metro Protection dialog box closes.						
11	Click OK to close the Channel Assignments dialog box.						
12	<table> <tr> <th>If</th><th>Then</th></tr> <tr> <td>you performed the manual switch on a Muxponder in bi-directional protection mode</td><td>click Refresh to update the state of the far-end shelf. Go to the next step.</td></tr> <tr> <td>otherwise</td><td>go to the next step</td></tr> </table>	If	Then	you performed the manual switch on a Muxponder in bi-directional protection mode	click Refresh to update the state of the far-end shelf. Go to the next step.	otherwise	go to the next step
If	Then						
you performed the manual switch on a Muxponder in bi-directional protection mode	click Refresh to update the state of the far-end shelf. Go to the next step.						
otherwise	go to the next step						
13	Check for the following expected results: a. Traffic is only switched to the circuit pack that was specified if the path being switched to is available and operational. b. If revertive protection is enabled and the manual switch was performed to switch on the defined protection path, check for the following: — The Path State and Prov. State columns in the Channel Assignments window display Manual on the circuit pack where the switch was performed. — The Path State column in the Channel Assignments window displays Manual on the circuit pack that was pre-defined as the working path in the Revertive protection option. — In the System Manager Fault/Active alarms window, a new “Manual Switch to East/West path active” NSA alarm appears. Note: The “Manual Switch to East/West path active” alarm and the Path State and Prov. State columns remain until the manual switch is release using Procedure 3-42, “Removing a manual, force, or lockout switch from a protection path”, in this chapter.						
14	<table> <tr> <th>If</th><th>Then</th></tr> <tr> <td>you performed the manual switch on a Muxponder in bi-directional protection mode</td><td>you have completed this procedure</td></tr> <tr> <td>otherwise</td><td>go to the next step</td></tr> </table>	If	Then	you performed the manual switch on a Muxponder in bi-directional protection mode	you have completed this procedure	otherwise	go to the next step
If	Then						
you performed the manual switch on a Muxponder in bi-directional protection mode	you have completed this procedure						
otherwise	go to the next step						
15	Repeat step 1 through step 13 for the facility at the other end of the path.						

—end—

Procedure 3-57

Manual switching on OCM circuit packs

Use this procedure to set a manual switch on OCM circuit packs. When you set a manual switch, traffic only switches to the specified OCM when the path is working and the circuit pack in-service.

You cannot set a manual equipment switch if the OCM you are switching to has any of the following conditions:

- is out-of-service
- has failed
- is missing
- the quality of the signal coming from the active OCLD to the OCM is faulty

When the OCM manually switched is having problems, the traffic automatically reverts to the mate OCM to avoid traffic loss.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to set a manual switch.

Precautions



CAUTION

Traffic interruption

A short traffic interruption occurs during the manual switch from the working OCM to the protection OCM.

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the OCM you want to perform a manual switch on. <i>System Manager updates the screen with data for the selected shelf.</i>
2	Click on the Selected Shelves drop-down list to return the screen to full view.
3	Select the Equipment tab.
4	Select the Inventory tab.

—continued—

Procedure 3-57 (continued)

Manual switching on OCM circuit packs

Step	Action
5	Verify that the OCM that you want to manually switch traffic to is in-service, has not failed, and is not missing from the shelf. If any of these conditions are present, you cannot manually switch the traffic to that OCM. Follow Procedure 3-7, Putting a circuit pack or SFP in-service , in this chapter.
6	Select the OCM that you want to manually switch the traffic from, and either - click the Protection button located above the column headers - or right-click the OCM and select Protection from the popup menu <i>The Optical Metro OCM Protection window appears.</i>
7	In the To field, make sure that the OCM that you want to switch the traffic to is selected. If necessary, open the drop-down list and select the correct OCM from the list.
8	In the Switch Request area of the dialog box, select the Manual radio button.
9	Click Apply . <i>The Confirm OCM Protection dialog box appears.</i>
10	Click Yes . <i>Wait until the manual switch is complete. This can take several seconds. The switch is complete when the Optical Metro OCM Protection window becomes active again.</i>
11	In the Optical Metro OCM Protection window, verify that the OCM under the OCM Selection column is the one the traffic was manually switched to.
12	Click OK or Cancel to close the Optical Metro OCM Protection window.

—end—

Procedure 3-58

Removing a force switch from an OCM

Use this procedure to remove a force switch from an OCM circuit pack.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to remove a force switch.

Action

Step	Action
1	In the System Manager, select the shelf with the OCM that has the force switch active.
2	Select the Equipment tab.
3	Select the Inventory tab. <i>The Equipment–Inventory window appears.</i>
4	Select the OCM that you want to remove the switch from, and either - click the Protection button located above the column headers - or right-click the OCM and select Protection from the popup menu <i>The Optical Metro OCM Protection window appears.</i>
5	In the Switch Request area of the dialog box, select the Release radio button.
6	Click Apply . <i>The Confirm OCM Protection dialog box appears.</i>
7	Click OK to confirm the change. <i>The force switch is released from the OCM selected in the To field on the Optical Metro OCM Protection window.</i> Note: Wait until the change is complete. This can take several seconds. The release is complete when the Confirm OCM Protection dialog box and the OCM Protection window close.

—continued—

Procedure 3-58 (continued)**Removing a force switch from an OCM**

Step	Action
8	Check for the following expected results: a. The OCM force switch is released: — In the Equipment/Inventory tab, select one of the two OCM in the shelf. — Click the Protection button, or right-click on the selected OCM and select Protection from the pop-up menu. — In the Optical Metro OCM Protection window, check that the Release radio button is selected in the Switch request area. Click Cancel to close the window. b. In the System Manager Fault/Active alarms window, the “Force Switch to OCM x active” NSA alarm clears.

—end—

Procedure 3-59

Creating and modifying a loopback using the System Manager

Use this procedure to set up facility or terminal loopbacks using System Manager.

To support pre-service operations practices and test-related activities in some applications, SONET network elements may need to provide loopbacks for SONET and DS_n signals. In general, loopbacks involve the use of external test equipment to monitor the looped back signal.

Two types of loopback are available: terminal loopbacks and facility loopbacks (see [Figure 3-1 on page 3-195](#)). A terminal loopback connects the signal being fed to the transmitter to the associated receiver. A facility loopback connects the incoming received signal to the transmitter in the return direction.

[Table 3-13](#) indicates which loopback type is supported for specific circuit packs.

—continued—

Procedure 3-59 (continued)

Creating and modifying a loopback using the System Manager**Table 3-13**
Supported loopbacks (per circuit pack type)

Circuit pack	Facility loopback	Terminal loopback
OCI	√	√
OCI SRM SONET/SDH	√ (see Note 4)	√ (see Note 5)
OCI SRM SONET/SDH LTE	√ (see Note 4)	√ (see Note 4)
OCI SRM	√ (see Note 4)	√ (see Note 5)
OCI SRM ESCON - client-side port	√ (see Note 1)	√ (see Note 4)
OCI SRM GbE/FC or OCI SRM GbE - client-side port	√ (see Note 4)	√ (see Note 4)
OTR - client-side	√ (see Note 2)	
OTR - line-side	√ (see Note 2)	
Muxponder - line-side	√	
Muxponder - SFP client-side port	√ (see Note 4)	√ (see Note 4)
OCLD	√	√
OSC	√ (see Note 3)	

Note 1: Applies to one client-side port at a time.**Note 2:** Client and line-side facility loopbacks cannot be enabled at the same time.**Note 3:** Not recommended because facility loopbacks on the OSC port can cause a loss of the communications path to the site. To clear the loopback, you must visit the site.**Note 4:** Multiple ports can be independently enabled at the same time.**Note 5:** Applies to all ports simultaneously, therefore all ports must be in an out-of-service (OOS) state.

—continued—

Procedure 3-59 (continued)

Creating and modifying a loopback using the System Manager

Other engineering notes

Note 1: You can only create loopbacks on OCI and OCLD circuit packs that are part of a channel assignment. If the circuit pack is not part of a channel assignment, you cannot create a loopback for it using software.

Note 2: When a client facility loopback is active on the OTR 2.5 Gbit/s Flex circuit pack, a Surrogate Payload Signal (SPS) is injected on the line side. Previous versions of the OTR 2.5 Gbit/s Flex circuit pack can behave differently when a client facility loopback is active.

Note 3: The OTR 10 Gbit/s Enhanced circuit pack does not perform any conditioning (that is, AIS is not sent out the client side TX interface) when a line-side facility loopback is active. Instead an unframed signal is sent out the client side TX interface. This applies for the OC-192, STM-64 and 10G Ethernet WAN protocols. For the 10G Ethernet LAN and 10G Clear Channel protocols, the client side TX interface laser is shut off when a line-side loopback is active.

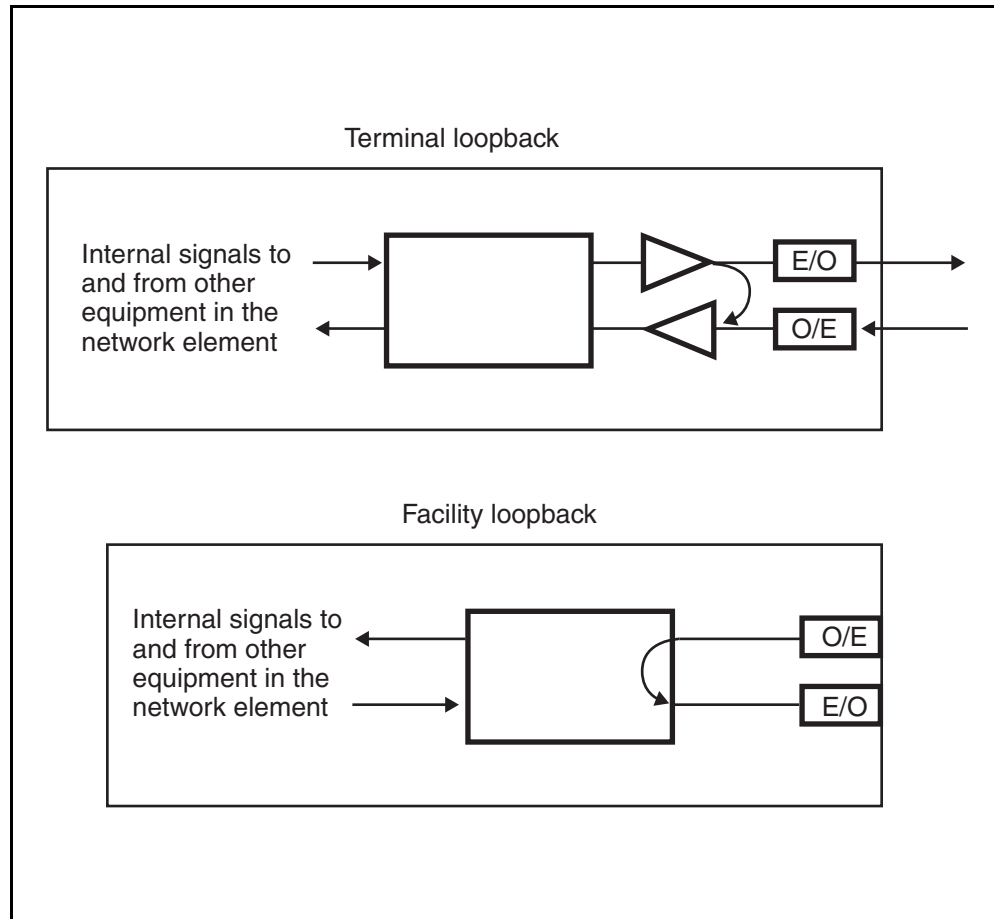
—continued—

Procedure 3-59 (continued)

Creating and modifying a loopback using the System Manager

Figure 3-1
Terminal and facility loopbacks

OM2327

**Requirements**

You must be logged in to the System Manager as an Admin or Operator level user to create a loopback using software.

To identify the path, a network diagram is required. It is used to determine the path (near end shelf, far end shelf, and passthrough shelves) of the channel assignment on which you are creating the facility or terminal loopback. You must be aware of where the customer traffic is going to be lost if no protection path is available.

—continued—

Procedure 3-59 (continued)

Creating and modifying a loopback using the System Manager

Precautions



CAUTION

Risk of traffic loss

Traffic will be lost on the path where the loopback is created, if a user switch is not possible. Loopbacks interrupt the flow of traffic, change the normal transmission, and often require coordinated activity as two or more network elements are affected. Because of this potential impact on the network, the use of loopbacks in the SONET network as routine practice is discouraged.

If the user switch procedure is possible, the traffic is only interrupted during the user switch procedure. Make sure that the network administrator is aware before executing this procedure.

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the circuit pack or SFP on which you want to perform a loopback. <i>System Manager updates the screen with data for the selected shelf.</i>
2	Click on the Selected Shelves drop-down list to return the screen to full view.
3	Select the Connections/Channel Assignments tab. <i>The Channel Assignments window appears.</i>
4	To make sure that all bands and channels are displayed in the Channel Assignments window for the selected shelf, select the None Scope button, and click Refresh .
5	Locate and double-click on the channel assignment line that contains the facility on which you want to create a loopback (if you want to create a loopback on an OSC circuit pack, go to step 8). <i>The Optical Metro Channel Assignment window appears.</i>
6	Verify if the channel assignment is protected. If the channel assignment is protected, you can determine which facility is active by looking at the Active facility in bold text in the Rx Traffic Path for BxCx - <NE Name> field at the bottom of the window.
7	Click on Cancel to close the Optical Metro Channel Assignment window.

—continued—

Procedure 3-59 (continued)

Creating and modifying a loopback using the System Manager

Step	Action						
8	Refer to your network diagram to determine if the user switch protects the customer traffic (it depends on the location of the loopback to be performed). If the signal is protected and a manual user switch is possible, it is highly recommended to switch the traffic to the protection channel assignment path before putting the circuit pack facility out-of-service (OOS). When a facility is put OOS, the traffic going through that facility is lost. To perform a manual traffic switch, refer to Procedure 4-7 “Switching traffic off a span in a path-protected network” in Chapter 3.						
9	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the circuit pack or SFP on which you want to perform a loopback. <i>System Manager updates the screen with data for the selected shelf.</i>						
10	Click on the Selected Shelves drop-down list to return the screen to full view.						
11	Select the Equipment tab.						
12	Select the Facilities tab.						
13	<table> <tr> <th>If</th><th>Then go to</th></tr> <tr> <td>you are creating a loopback</td><td>step 14</td></tr> <tr> <td>you are modifying a loopback type (that is, from terminal to facility or from facility to terminal)</td><td>step 20</td></tr> </table>	If	Then go to	you are creating a loopback	step 14	you are modifying a loopback type (that is, from terminal to facility or from facility to terminal)	step 20
If	Then go to						
you are creating a loopback	step 14						
you are modifying a loopback type (that is, from terminal to facility or from facility to terminal)	step 20						
14	Double-click the line with the circuit pack for which you want to create the loopback.						
15	To create a loopback, you must place the facility OOS. Follow Procedure 3-13 “Taking a circuit pack facility or SFP facility out-of-service” , in this chapter. Note 1: Terminal loopbacks on an OCI SRM or OCI SRM SONET/SDH circuit pack apply to all ports on the circuit pack simultaneously. When creating a terminal loopback on an OCI SRM or OCI SRM SONET/SDH, place all port facilities OOS. Note 2: For a line-side facility loopback on the Muxponder circuit pack, place all client-side and line-side facilities OOS. Note 3: If the user switch was not possible to protect the traffic carried on that facility, you will lose the traffic when putting the facility OOS. Advise your network administrator before executing this step.						
16	In the Equipment/Facilities tab, double-click on the facility that was put OOS in step 15 .						
17	In the Loop Back area, select the Terminal radio button or the Facility radio button, depending on the type of loopback that you want to create.						
18	Click the OK button.						

—continued—

Procedure 3-59 (continued)

Creating and modifying a loopback using the System Manager

Step	Action
19	Check for the following expected results: • In the System Manager Equipment/Facility tab, verify that the Loop Back column correctly identifies what type of loopback is currently applied on the facility (Terminal or Facility). • If you performed a facility loopback, the Tx and Rx of a circuit pack are connected. • If you performed a terminal loopback, the loopback sends a signal through the circuit pack and backplane, and back through the circuit pack. • In the System Manager Fault/Active alarms window, a minor “Facility/Terminal loopback” alarm appears. Note: Loopbacks normally involve the use of external test equipment to monitor the looped back signal. Prepare the test set-up to monitor the signal. You have completed this procedure.
20	Double-click the line with the circuit pack for which you want to modify the loopback.
21	In the Loop Back area, select the None radio button.
22	Click Apply .
23	In the Loop Back area, select the Terminal radio button or the Facility radio button, depending on the type of loopback that you want to create.
24	Click the OK button.

—continued—

Procedure 3-59 (continued)**Creating and modifying a loopback using the System Manager**

Step	Action
25	Check for the following expected results: • In the System Manager Equipment/Facility tab, verify that the Loop Back column correctly identifies what type of loopback is currently applied on the facility (Terminal or Facility). • If you performed a facility loopback, the Tx and Rx of a circuit pack are connected. • If you performed a terminal loopback, the loopback sends a signal through the circuit pack and backplane, and back through the circuit pack. • In the System Manager Fault/Active alarms window, a minor "Facility/Terminal loopback" alarm appears.

Note: Loopbacks normally involve the use of external test equipment to monitor the looped back signal. Prepare the test set-up to monitor the signal.

—end—

Procedure 3-60

Removing a loopback using the System Manager

Use this procedure to remove a loopback using the System Manager.

For more information on different types of loopbacks (terminal and facility loopbacks), refer to the introduction of the [Procedure 3-59 “Creating and modifying a loopback using the System Manager”](#).

When the procedure is completed, the loopback is removed, and the traffic returns to normal transmission behavior.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to remove a loopback using the System Manager.

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the circuit pack on which you want to remove the loopback. <i>System Manager updates the screen with data for the selected shelf.</i>
2	Click on the Selected Shelves drop-down list to return the screen to full view.
3	Select the Equipment tab.
4	Select the Facilities tab.
5	Double-click the line with the circuit pack for which you want to remove the loopback.
6	In the Loop Back area, select the None radio button. This action automatically deselects the Terminal or Facility radio buttons.
7	Click the OK button.
8	Put the facility or facilities back in-service (when creating the terminal or facility loopback, the facility was put OOS). Follow Procedure 3-10 “Putting a circuit pack or SFP facility in-service” . Then go to the next step.

—continued—

Procedure 3-60 (continued)

Removing a loopback using the System Manager

Step	Action
9	Check for the following expected results: • In the System Manager Equipment/Facility tab, verify that the Loop Back column correctly identifies None for the facility where the loopback was removed. • In the System Manager Fault/Active alarms window, the minor "Facility/Terminal loopback" alarm disappears. • On that facility, the traffic goes back to the normal transmission behavior (facility or terminal loopback removed). Refer to the next steps to accurately verify this condition.
10	If any external test set equipment was connected to the system to test the loopback, remove those connections and re-connect any client equipment that was present before executing the Procedure 3-59 "Creating and modifying a loopback using the System Manager".
11	Follow Procedure 1-6 "Testing the Optical Metro 5100/5200 system" in <i>Testing and Equalization Procedures</i>, 323-1701-222, to verify the normal transmission behavior of the traffic. If the channel assignment on which the facility was removed is protected, make sure you execute a manual switch or a force switch before executing this procedure, to validate that you are indeed testing the path where the loopback was removed. If you are having problems, contact your next level of support.

—end—

Procedure 3-61

Provisioning primary and secondary clock references for an OCI SRM SONET/SDH or OCI SRM SONET/SDH LTE

Use this procedure to provision the timing reference source for an OCI SRM SONET/SDH or OCI SRM SONET/SDH LTE circuit pack. You must have one connected port provisioned as primary. If applicable, you can provision another connected port as secondary.

Note: Although the timing reference source of the first two connected ports is auto-provisioned for an OCI SRM SONET/SDH circuit pack, you can use this procedure to modify the provisioned timing reference source.

For an OCI SRM SONET/SDH LTE circuit pack, you can also provision a synchronization status messaging value (Auto or do not use for synchronization [DUS]).

Note: If the OCI SRM SONET/SDH LTE has a terminal (physical) loopback, and this circuit pack is defined as the primary timing reference, you will receive multiple “Degraded primary clock SSM” events”. If you would like to put a terminal loopback on a port that is being used as the timing reference (and there is only one timing reference on the OCI SRM SONET/SDH LTE circuit pack), the outgoing SSM should be provisioned to send DUS prior to establishing the loopback.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to provision the primary and secondary clock references.

—continued—

Procedure 3-61 (continued)**Provisioning primary and secondary clock references for an OCI SRM SONET/SDH or OCI SRM SONET/SDH LTE**

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the OCI SRM SONET/SDH or OCI SRM SONET/SDH LTE circuit pack for which you want to provision the timing reference source. <i>System Manager updates the screen with data for the selected shelf.</i>
2	Click on the Selected Shelves drop-down list to return the screen to full view.
3	Select the Connections/Channel Assignments tab.
4	Right-click on the line with the OCI SRM SONET/SDH or OCI SRM SONET/SDH LTE circuit pack. Note: If Timing Ref. does not appear in the menu, you must first provision the connection or connections.
5	Select Timing Ref. from the menu. <i>The Optical Metro Timing window appears.</i>
6	In the Provisioning area, determine the connected port that you want to define as the primary timing reference source and select Primary from the drop-down list.

—continued—

Procedure 3-61 (continued)

Provisioning primary and secondary clock references for an OCI SRM SONET/SDH or OCI SRM SONET/SDH LTE

Step	Action
7	If the circuit pack is an OCI SRM SONET/SDH LTE OCI SRM SONET/SDH Then go to the next step step 10
8	Select a synchronization status messaging value for the primary timing reference from the Sync. Status Message drop-down list.
9	If there is more than one connected port otherwise Then go to the next step step 13
10	In the Provisioning area, determine the connected port that you want to define as the secondary timing reference source and select Secondary from the drop-down list.
11	If the circuit pack is an OCI SRM SONET/SDH LTE OCI SRM SONET/SDH Then go to the next step step 13
12	Select a synchronization status messaging value for the secondary timing reference from the Sync. Status Message drop-down list.
13	Click Apply . Note: It can take up to 10 seconds for the changes to take place. When the change is complete, the status updates in the Optical Metro Timing window. You can also click the Refresh button to update the status.
14	Check the Status area of the Optical Metro Timing window for the following expected results if provisioning is successful: - in the Provisioned column, the connected ports reflect the desired provisioning. - in the Clock Signal column, all the connected ports are listed as good.
15	Click OK to close the Optical Metro Timing window.

—end—

Procedure 3-62

Manual switching of clock references for an OCI SRM SONET/SDH or OCI SRM SONET/SDH LTE

Use this procedure to put the active clock reference timer on standby and to make the standby clock reference the active clock reference for an OCI SRM SONET/SDH or OCI SRM SONET/SDH LTE circuit pack.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to manually switch clock references.

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the OCI SRM SONET/SDH or OCI SRM SONET/SDH LTE circuit pack on which you want to perform a manual switch of the clock references. <i>System Manager updates the screen with data for the selected shelf.</i>
2	Click on the Selected Shelves drop-down list to return the screen to full view.
3	Select the Connections/Channel Assignments tab.
4	Right-click the line for the OCI SRM SONET/SDH or OCI SRM SONET/SDH LTE circuit pack.
5	Select Timing Ref. from the menu. <i>The Optical Metro Timing window appears.</i>
6	The status section of the Optical Metro Timing window indicates the status of the available clock reference timers. Make sure that the clock signal for the port timer in standby (Status column is standby) and is valid (Clock Signal column is good). If the clock signal for the standby clock timer is Then
	not valid stop the procedure. The clock switch cannot be performed.
	valid (Clock Signal column is good) go to step 7

—continued—

Procedure 3-62 (continued)

Manual switching of clock references for an OCI SRM SONET/SDH or OCI SRM SONET/SDH LTE

Step	Action
7	In the Switch Request area, select the Manual radio button.
8	In the To field, select the port that you would like to make the active clock reference timer. Note: There are only two ports listed in the To field. These two ports are always the ports of the specified clock reference timers. In the Provisioning area of the Optical Metro Timing window, you can see which of the SRM ports are provisioned as primary and secondary clock references.
9	Click Apply. Note: It can take up to 10 seconds for the changes to take place. When the change is complete, the status updates in the Timing window. You can also click the Refresh button to update the status.
10	Check the Status area of the Optical Metro Timing window for the following expected results if the switch is successful: • In the Status column, the previously active clock reference is listed as standby and the previous standby clock reference is listed as active. • In the Clock Signal column, the new active clock reference is listed as good. • The clock reference switch did not interrupt traffic on the OCI SRM SONET/SDH or OCI SRM SONET/SDH LTE circuit pack.
11	Click OK to close the Optical Metro Timing window.

—end—

Procedure 3-63

Upgrading a shelf from OCM 1.25 Gbit/s to OCM 2.5 Gbit/s circuit packs

Use this procedure to upgrade a shelf with one or two OCM 1.25 Gbit/s circuit packs to two OCM 2.5 Gbit/s circuit packs.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to upgrade a shelf from OCM 1.25 Gbit/s to OCM 2.5 Gbit/s circuit packs.

You need the items listed in the following table during the procedure.

Item	Quantity	Supplied
OCM 2.5 Gbit/s circuit pack compatible with the other circuit packs in the shelf (see Note)	variable (1 or 2)	No
ESD/antistatic protection equipment (wrist strap or foot strap)	1	No
Note: Refer to the compatibility matrix tables in Chapter 4 of <i>Hardware Description</i> , 323-1701-102, to confirm that the OCM 2.5 Gbit/s is capable of supporting the bit rate required and works with the other related circuit packs in the shelf.		

Precautions



CAUTION

Risk of traffic loss

When you reseal an OCM, traffic is not impacted if the other OCM is operational. If the OCM being resealed is the active OCM, an automatic protection switch to the other OTR occurs without traffic being affected. If the second OCM is not working correctly, OCLD and OCI traffic in the shelf will be lost.



CAUTION

Risk of equipment damage

Make sure you know how to handle electronic components correctly before you begin installation procedures. Incorrect handling can cause damage to static-sensitive components.

—continued—

Procedure 3-63 (continued)

Upgrading a shelf from OCM 1.25 Gbit/s to OCM 2.5 Gbit/s circuit packs

ATTENTION

If the STATUS indicator lamp on the OCM circuit pack is flashing, the circuit pack is the active database-carrying circuit pack during a database copy operation. Do not remove the active database-carrying circuit pack during the database copy to the standby circuit pack.

To avoid possible damage to circuit packs by electrostatic discharge (ESD), use the following precautions:

- Wear a grounded antistatic wrist strap connected to the shelf maintenance panel, or shoe straps, when handling circuit packs. Follow the manufacturer's instructions to test ESD protection before handling circuit packs.
- Handle circuit packs by their edges only. Do not touch the electronic components or any exposed printed circuits.

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the OCM circuit pack(s) to be upgraded. <i>System Manager updates the screen with data for the selected shelf.</i>
2	Click on the Selected Shelves drop-down list to return the screen to full view.
3	In the Fault/Active alarms tab, note the current alarms present on the shelf.
4	In order to avoid losing OCLD and OCI traffic on the shelf, you need to make sure that the OCM remaining in the shelf when the second one is upgraded is operational. You can perform a manual OCM switch to verify if this OCM is operational. Refer to Procedure 3-57 , " Manual switching on OCM circuit packs ", in this chapter. If it is not operational (or if there is only one OCM circuit pack in the shelf), advise your network administrator that you will lose the traffic going through the OCIs and OCLDs of that shelf before going to the next step.
5	Select the Equipment tab. <i>The Equipment window appears and displays the Inventory, Facilities, and Telemetry tabs.</i>
6	Select the Inventory tab. <i>The Equipment window appears and displays the Inventory worksheet.</i>

—continued—

Procedure 3-63 (continued)

Upgrading a shelf from OCM 1.25 Gbit/s to OCM 2.5 Gbit/s circuit packs

Step	Action						
7	You must upgrade the OCM circuit pack in slot 10 first. <table> <tr> <th>If</th><th>Then</th></tr> <tr> <td>there is an OCM 1.25 Gbit/s in the slot</td><td> put the OCM circuit pack out-of-service (OOS). Follow Procedure 3-8, “Taking a circuit pack or SFP out-of-service”, in this chapter. Do not put the other OCM circuit pack OOS at the same time to avoid losing traffic. Go to step 8. </td></tr> <tr> <td>there is not an OCM 1.25 Gbit/s in the slot</td><td> Follow step 8 and step 9 and then go to step 12. </td></tr> </table> Note: In the System Manager Fault/Active alarms tab, it is normal to observe a major “Protection not available” NSA alarm on the remaining OCM circuit pack in the shelf. This alarm only clears when the new OCM is put in-service (IS).	If	Then	there is an OCM 1.25 Gbit/s in the slot	put the OCM circuit pack out-of-service (OOS). Follow Procedure 3-8, “Taking a circuit pack or SFP out-of-service”, in this chapter. Do not put the other OCM circuit pack OOS at the same time to avoid losing traffic. Go to step 8.	there is not an OCM 1.25 Gbit/s in the slot	Follow step 8 and step 9 and then go to step 12.
If	Then						
there is an OCM 1.25 Gbit/s in the slot	put the OCM circuit pack out-of-service (OOS). Follow Procedure 3-8, “Taking a circuit pack or SFP out-of-service”, in this chapter. Do not put the other OCM circuit pack OOS at the same time to avoid losing traffic. Go to step 8.						
there is not an OCM 1.25 Gbit/s in the slot	Follow step 8 and step 9 and then go to step 12.						
8	Put on the antistatic protection devices (foot strap or wrist strap).						
9	Remove the shelf cover by releasing the lock latches on the sides and lifting the door off its pivots.						
 DANGER Risk of personal injury or equipment damage Do not let go of the shelf cover when you open it. The shelf cover is not permanently attached to the shelf. You must remove the door completely. If you let go of the door when you open it, you can cause personal injury, damage to the equipment, or both.							
10	On the OCM 1.25 Gbit/s circuit pack you want to upgrade, release the lock latches at the top and bottom of the circuit pack and pull the circuit pack out of the shelf.						
11	Place the OCM 1.25 Gbit/s circuit pack on an antistatic surface.						
12	In the System Manager Equipment/Inventory tab, double-click on the empty slot where the new OCM 2.5 Gbit/s is going to be placed.						

—continued—

Procedure 3-63 (continued)

Upgrading a shelf from OCM 1.25 Gbit/s to OCM 2.5 Gbit/s circuit packs

Step	Action						
13	In the Optical Metro Inventory window, select 2.5GB - Transparent from the Max Bit Rate list. Click on OK to apply the change and close the window.						
14	Seat the OCM 2.5 Gbit/s circuit pack and wait two minutes. Note: Wait two minutes for the new OCM circuit pack to boot up, copy the new load from the SP circuit pack, and to synchronize configuration data with the active OCM circuit pack.						
15	In the State area of the Optical Metro Inventory dialog box, select IS from the Administrative drop list.						
16	Click OK to apply the selection and exit the window. Note 1: At the Optical Metro 5200 shelf, the Active indicator lamp on the OCM circuit pack lights when the circuit pack comes online. Note 2: In the System Manager Fault window, the system displays a Major "OCM Pair Mismatch" NSA alarm until there are two OCM circuit packs with the same Max Bit Rate in the shelf.						
17	<table border="0"> <tr> <td>If you have just upgraded the OCM circuit pack in</td><td>Then</td></tr> <tr> <td>slot 10</td><td>repeat step 7 to step 16 for the other OCM circuit pack</td></tr> <tr> <td>slot 9</td><td>go to step 18</td></tr> </table>	If you have just upgraded the OCM circuit pack in	Then	slot 10	repeat step 7 to step 16 for the other OCM circuit pack	slot 9	go to step 18
If you have just upgraded the OCM circuit pack in	Then						
slot 10	repeat step 7 to step 16 for the other OCM circuit pack						
slot 9	go to step 18						
18	The system should be in the same state that it was before upgrading the OCM circuit packs. In the System Manager Fault/Active alarms tab, check that the current alarms present on the shelf are the same as those noted in step 3 .						

—end—

Procedure 3-64

Enabling or disabling revertive protection switching

Use this procedure to enable or disable revertive protection switching on OTR or OCLD protected channel assignments.

Revertive protection switching implies that the user defines a preferred working path. In the event of a failure on the working path, traffic is switched to the protection path. When the fault on the working path is cleared, traffic will switch back to the provisioned working path after the defined wait-to-restore (WTR) period has expired.

Requirements

You must be logged in to the System Manager as an Admin or Operator level user to enable or disable revertive protection switching.

You must determine the preferred working path for the protected channel assignment as well as the wait-to-restore period. The wait-to-restore period is a hold off timer for the traffic on the protection path to switch back to the provisioned working path once the working path becomes available.

The settings for revertive protection switching must be consistent at both ends of the path on a protected channel assignment. To identify both ends of the path, a network diagram is required. It is used to map all the shelves involved in the end-to-end channel assignment (especially the near end shelf and the far end shelf).

Precautions



CAUTION

Risk of short traffic interruption

If the working path selected differs from the current active path, traffic will be switched to the defined working path. During that switch, there will be a short traffic interruption

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf with the OCLD or OTR on which you want to enable or disable revertive protection switching. <i>System Manager updates the screen with data for the selected shelf.</i>

—continued—

Procedure 3-64 (continued)

Enabling or disabling revertive protection switching

Step	Action						
2	Click on the Selected Shelves drop-down list to return the screen to full view.						
3	Select the Connections/Channel Assignments tab. <i>The Channel Assignments window appears.</i>						
4	Double click on the protected connection on which you want to enable or disable revertive protection switching. <i>The Optical Metro Channel Assignments window is displayed.</i>						
5	Identify which circuit pack is active. <i>The active circuit pack appears in bold text in the Rx Traffic Path for BxCx – <NE Name> field at the bottom of the window.</i>						
6	Click the Protection button. <i>The Protection dialog box appears.</i>						
7	<table> <tr> <th>If you intend to</th><th>Then go to</th></tr> <tr> <td>enable revertive protection switching</td><td>step 8</td></tr> <tr> <td>disable revertive protection switching</td><td>step 12</td></tr> </table>	If you intend to	Then go to	enable revertive protection switching	step 8	disable revertive protection switching	step 12
If you intend to	Then go to						
enable revertive protection switching	step 8						
disable revertive protection switching	step 12						
8	In the Rx Reversion area, check the Enabled check box.						
9	In the Rx Reversion area, select the WTR period from the WTR drop-down list. Note: You can set the WTR period from between 1 min. to 12 min., in 1-min. intervals. The default is 5 min.						
10	In the Rx Reversion area, select the path you want to configure as the working path from the Path drop-down list. Note: If the working path selected differs from the current active path, and if that selected path is able to carry traffic, the traffic will be switched to that path. If the selected path is currently not able to carry traffic, the traffic will not be switched to that path, it will wait for the problems to be cleared before switching (considering WTR period).						
	<table> <tr> <th>If</th><th>Then</th></tr> <tr> <td>the selected working path differs from the current active path</td><td>click OK. A Confirm Protection Revertive Mode dialog box appears. Go to step 11.</td></tr> <tr> <td>the selected working path is the current active path</td><td>go to step 13</td></tr> </table>	If	Then	the selected working path differs from the current active path	click OK . A Confirm Protection Revertive Mode dialog box appears. Go to step 11 .	the selected working path is the current active path	go to step 13
If	Then						
the selected working path differs from the current active path	click OK . A Confirm Protection Revertive Mode dialog box appears. Go to step 11 .						
the selected working path is the current active path	go to step 13						

—continued—

Procedure 3-64 (continued)

Enabling or disabling revertive protection switching

Step	Action						
11	Click Yes to confirm the change. Note: A short traffic interruption occurs during the switch. The software takes approximately 15 seconds to update the channel assignment information. Go to step 14 .						
12	In the Rx Reversion area, make sure that the Enabled check box is not checked.						
13	Click OK . Note: The software takes approximately 15 seconds to update the channel assignment information.						
14	Check for the following expected results.						
	<table> <tr> <th>If you</th><th>Then</th></tr> <tr> <td>disabled revertive protection switching</td><td>the Revertive column in the Channel Assignments window displays Inactive for both the working and protection paths.</td></tr> <tr> <td>enabled revertive protection switching</td><td> - the Revertive column in the Channel Assignment window displays Active-W for the defined working path and Active-P for the defined protection path. - if the Revertive switch was enabled on a path presently not able to carry traffic, the Fault/Active Alarms window displays a minor "Automatic switch to protection path" alarm until the problems are cleared on the defined working path, and the traffic automatically switches back to the working path (after the WTR period). </td></tr> </table>	If you	Then	disabled revertive protection switching	the Revertive column in the Channel Assignments window displays Inactive for both the working and protection paths.	enabled revertive protection switching	- the Revertive column in the Channel Assignment window displays Active-W for the defined working path and Active-P for the defined protection path. - if the Revertive switch was enabled on a path presently not able to carry traffic, the Fault/Active Alarms window displays a minor "Automatic switch to protection path" alarm until the problems are cleared on the defined working path, and the traffic automatically switches back to the working path (after the WTR period).
If you	Then						
disabled revertive protection switching	the Revertive column in the Channel Assignments window displays Inactive for both the working and protection paths.						
enabled revertive protection switching	- the Revertive column in the Channel Assignment window displays Active-W for the defined working path and Active-P for the defined protection path. - if the Revertive switch was enabled on a path presently not able to carry traffic, the Fault/Active Alarms window displays a minor "Automatic switch to protection path" alarm until the problems are cleared on the defined working path, and the traffic automatically switches back to the working path (after the WTR period).						
15	Repeat step 1 to step 14 for the OCLD or OTR at the other end of the protected path.						

—end—

Procedure 3-65

Converting a protected channel assignment to an unprotected channel assignment on an OCLD path

Use this procedure to convert a protected channel assignment to an unprotected channel assignment on an OCLD path and also to delete the OCLD protection path.

Requirements

You have to perform some tasks on the System Manager and some tasks on-site to physically remove the OCLD circuit packs that were part of the protection path as well as installation of filler cards in the slots where the OCLDs were removed.

Know your network plan. You should know the path (i.e. end points as well as any passthrough shelves) of the unprotected channel assignment you want to create as well as the protection path you want to delete.

You must be logged in to the System Manager as an Admin or Operator level user to convert a protected channel assignment to an unprotected channel assignment.

You will need the items listed in the following table during the procedure.

Item	Quantity	Supplied
OCLD filler cards	depends on network configuration	No
ESD/antistatic protection equipment (wrist strap or foot strap)	1	No

Precautions

Traffic on the newly created unprotected channel assignment will be lost if there is an equipment or facility fault on that unprotected path.



CAUTION

Risk of generating alarms on the network

When you convert a protected channel assignment to an unprotected channel assignment, you will raise alarms on the downstream circuit packs that are part of the channel assignment until you complete this procedure.

—continued—

Procedure 3-65 (continued)**Converting a protected channel assignment to an unprotected channel assignment on an OCLD path**

**CAUTION****Risk of short traffic interruption**

A short traffic interruption occurs when the first channel assignment of the two terminating shelves is changed from protected to unprotected mode. When this step is repeated on the other terminating shelf, no traffic interruption occurs.

**CAUTION****Risk of equipment damage**

Make sure you know how to handle electronic components correctly before you begin installation procedures. Incorrect handling can cause damage to static-sensitive components.

To avoid possible damage to circuit packs by electrostatic discharge (ESD), use the following precautions:

- Wear a grounded antistatic wrist strap connected to the shelf maintenance panel, or shoe straps, when handling circuit packs. Follow the manufacturer's instructions to test ESD protection before handling circuit packs.
- Handle circuit packs by their edges only. Do not touch the electronic components or any exposed printed circuits.

—continued—

Procedure 3-65 (continued)

Converting a protected channel assignment to an unprotected channel assignment on an OCLD path

Action

Step	Action						
1	System Manager provides a view of one ring. Before you begin to convert a protected channel assignment to an unprotected channel assignment, sort the Shelf List clockwise to reflect the order of the ring. When you are done, the originating shelf is at the top of the Shelf List, followed by the passthrough shelves, in order. The terminating shelf is at the bottom. For information on sorting shelves, refer to Procedure 1-16 “Sorting shelves” in this book.						
2	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that terminates the traffic for the band of the channel assignment you intend to convert from protected to unprotected. <i>System Manager updates the screen with data for the selected shelf.</i>						
3	Click on the Selected Shelves drop-down list to return the screen to full view.						
4	Select the Connections/Channel Assignments tab. <i>The Channel Assignments window appears.</i>						
5	To make sure that all bands and channels are displayed in the Channel Assignments window for the selected shelf, select the None Scope button, and click Refresh .						
6	Double-click on the line that contains the protected channel assignment that you want to convert to an unprotected channel assignment. <i>The Optical Metro Channel Assignments window appears.</i>						
7	Make sure that the traffic is on the path that will form the new unprotected channel assignment. Identify which OCLD is active. <i>The active OCLD appears in bold text in the Rx Traffic Path for BxCx – <NE Name> field at the bottom of the window.</i>						
<table> <tr> <th>If the active path is</th><th>Then</th></tr> <tr> <td>not on the OCLD that will form the newly created unprotected channel assignment</td><td>select Cancel to close the Optical Metro Channel Assignments window. Go to step 8.</td></tr> <tr> <td>on the OCLD that will form the newly created unprotected channel assignment</td><td>select Cancel to close the Optical Metro Channel Assignments window. Go to step 10.</td></tr> </table>		If the active path is	Then	not on the OCLD that will form the newly created unprotected channel assignment	select Cancel to close the Optical Metro Channel Assignments window. Go to step 8 .	on the OCLD that will form the newly created unprotected channel assignment	select Cancel to close the Optical Metro Channel Assignments window. Go to step 10 .
If the active path is	Then						
not on the OCLD that will form the newly created unprotected channel assignment	select Cancel to close the Optical Metro Channel Assignments window. Go to step 8 .						
on the OCLD that will form the newly created unprotected channel assignment	select Cancel to close the Optical Metro Channel Assignments window. Go to step 10 .						
8	Make sure revertive switching is disabled. Follow Procedure 3-64, “Enabling or disabling revertive protection switching” , in this chapter.						

—continued—

Procedure 3-65 (continued)

Converting a protected channel assignment to an unprotected channel assignment on an OCLD path

Step	Action
9	Perform a manual switch to switch the traffic to the OCLD facility that will form the new unprotected channel assignment. Follow Procedure 3-56 “Manual switching on protected channel assignments” , in this chapter.
10	Repeat step 2 through step 9 at the other end point of the channel assignment.
11	In the System Manager, for the shelf that terminates the traffic of the channel assignment you intend to convert from protected to unprotected, select the Connections/Channel Assignments tab. <i>The Channel Assignments window appears.</i>
12	To make sure that all bands and channels are displayed in the Channel Assignments window for the selected shelf, select the None Scope button, and click Refresh .
13	Double-click on the line that will form the new unprotected channel assignment. <i>The Optical Metro Channel Assignments window appears.</i>
14	From the Mode drop-down list, select Unprot-east or Unprot-west.
15	Click OK to confirm the selection. <i>The Confirm Channel Assignment Modify dialog box appears</i>
16	Click Yes . Note: Wait until the change from protected to unprotected is complete. This can take several seconds. The change is complete when the Confirm Channel Assignment Modify dialog box and the Optical Metro Channel Assignments window close. If this is the first time the step is performed (on one of the terminating shelves), a short traffic interruption occurs. When the step is repeated on the other terminating shelf, no traffic interruption occurs. <i>Alarms will be raised against the downstream circuit packs that are part of the protection path you are deleting. On the OCLD part of the protected path deleted, an “Alarm Indication Signal” NSA alarm is raised on the receiver.</i>
17	Repeat step 11 to step 16 for the other end point of the channel assignment.

—continued—

Procedure 3-65 (continued)

Converting a protected channel assignment to an unprotected channel assignment on an OCLD path

Step	Action
<i>Deleting the OCLD circuit packs that were part of the protection path</i>	
18	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the near end shelf that terminates the traffic for the new unprotected channel.
19	For the OCLD circuit pack that was part of the deleted protection path, take the associated circuit pack facilities out-of-service. Follow Procedure 3-13 "Taking a circuit pack facility or SFP facility out-of-service" , in this chapter.
20	For the OCLD circuit pack that was part of the deleted protection path, take the associated circuit pack out-of-service. Follow Procedure 3-8 "Taking a circuit pack or SFP out-of-service" , in this chapter.
21	For the OCLD circuit pack that was part of the deleted protection path, delete the associated OCLD circuit pack facility. Follow Procedure 3-14 "Deleting a circuit pack or SFP facility" , in this chapter.
22	For the OCLD circuit pack that was part of the deleted protection path, delete the associated circuit pack inventory. Follow Procedure 3-9 "Deleting a circuit pack or SFP from the inventory" , in this chapter.
23	Repeat step 19 to step 22 for all OCLDs that were part of the protection path. <i>This includes OCLDs that were part of the end points of the protection path as well as any passthrough shelves that were part of the protection path.</i> In the System Manager, click on the Selected Shelves drop-down list, and double-click on the far end or passthrough shelf that carries the traffic for the new unprotected channel

—continued—

Procedure 3-65 (continued)

Converting a protected channel assignment to an unprotected channel assignment on an OCLD path

Step	Action

Removing OCLD circuit packs that were part of the protection channel assignment

24	Put on the proper ESD/antistatic protection equipment (wrist strap or foot strap).
25	Remove the shelf cover by releasing the lock latches on the sides and lifting the door off its pivots.



DANGER

Risk of personal injury or equipment damage

Do not let go of the shelf cover when you open it. The shelf cover is not permanently attached to the shelf. You must remove the door completely. If you let go of the door when you open it, you can cause personal injury, damage to the equipment, or both.

26	Disconnect the optical fibers between the OCLD and OMX that was part of the deleted protection path. Note: Fit dust caps on all the disconnected optical connectors.
27	On the OCLD circuit pack you want to remove, release the lock latches at the top and bottom of the circuit pack.
28	Slide the circuit pack out of the guides and put the circuit pack on an antistatic surface.
29	Install a filler card in the slot where the OCLD was removed. Follow Procedure 7-5 "Inserting filler cards" in <i>Installing Optical Metro 5200 Shelves and Components</i> .
30	Put the shelf cover back on the shelf and remove the ESD/antistatic protection device.
31	Make sure that you have executed step 24 to step 30 for all OCLDs along the protected path.

This includes OCLDs that were part of the end points of the protection path as well as any passthrough shelves that were part of the protection path.

—end—

Procedure 3-66

Converting a protected channel assignment to an unprotected channel assignment on an OTR path

Use this procedure to:

- convert a protected channel assignment to an unprotected channel assignment on an OTR path
- delete the OTR protection path

Requirements

You will have to perform some tasks on the System Manager and some tasks on-site to physically manipulate the fiber connections between the subtending client equipment and the OTR of the newly created unprotected channel assignment as well as removal of the OTR circuit packs that were part of the protection path and installation of filler cards in the slots where the OTRs were removed.

Know your network plan. You should know the path (i.e. end points as well as any passthrough shelves) of the unprotected channel assignment you want to create as well as the protection path you want to delete.

You must be logged in to the System Manager as an Admin or Operator level user to convert a protected channel assignment to an unprotected channel assignment.

You need the items listed in the following table during the procedure.

Item	Quantity	Supplied
Filler cards	depends on network configuration	No
ESD/antistatic protection equipment (wrist strap or foot strap)	1	No

—continued—

Procedure 3-66 (continued)

Converting a protected channel assignment to an unprotected channel assignment on an OTR path

Precautions

Traffic on the newly created unprotected channel assignment is lost if there is an equipment or facility fault on that unprotected path.



CAUTION

Risk of traffic interruption

Traffic may be interrupted when you convert a protected channel assignment to an unprotected channel assignment on an OTR path. This occurs if you disconnect the subtending client equipment from the Transponder Protection Tray to reconnect it to the OTR of the newly created unprotected channel assignment.



CAUTION

Risk of generating alarms on the network

When you convert a protected channel assignment to an unprotected channel assignment, you will raise alarms on the downstream circuit packs that are part of the channel assignment until you complete this procedure.



CAUTION

Risk of equipment damage

Make sure you know how to handle electronic components correctly before you begin installation procedures. Incorrect handling can cause damage to static-sensitive components.

To avoid possible damage to circuit packs by electrostatic discharge (ESD), use the following precautions:

- Wear a grounded antistatic wrist strap connected to the shelf maintenance panel, or shoe straps, when handling circuit packs. Follow the manufacturer's instructions to test ESD protection before handling circuit packs.
- Handle circuit packs by their edges only. Do not touch the electronic components or any exposed printed circuits.

—continued—

Procedure 3-66 (continued)

Converting a protected channel assignment to an unprotected channel assignment on an OTR path

Action

Step	Action
1	System Manager provides a view of one ring. Before you begin to convert a protected channel assignment to an unprotected channel assignment, sort the Shelf List clockwise to reflect the order of the ring. When you are done, the originating shelf is at the top of the Shelf List, followed by the passthrough shelves, in order. The terminating shelf is at the bottom. For information on sorting shelves, refer to Procedure 1-16 "Sorting shelves" in this book.
2	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that terminates the traffic for the band of the channel assignment you intend to convert from protected to unprotected. <i>System Manager updates the screen with data for the selected shelf.</i>
3	Click on the Selected Shelves drop-down list to return the screen to full view.
4	Select the Connections/Channel Assignments tab. <i>The Channel Assignments window appears.</i>
5	To make sure that all bands and channels are displayed in the Channel Assignments window for the selected shelf, select the None Scope button, and click Refresh .
6	Double-click on the line that contains the protected channel assignment that you want to convert to an unprotected channel assignment. <i>The Optical Metro Channel Assignments window appears.</i>

—continued—

Procedure 3-66 (continued)

Converting a protected channel assignment to an unprotected channel assignment on an OTR path

Step	Action						
7	Make sure that the traffic is on the path that will form the new unprotected channel assignment. Identify which OTR is active. <i>The active OTR appears in bold text in the Rx Traffic Path for BxCx – <NE Name> field at the bottom of the window.</i> <table> <tr> <th>If the active path is</th><th>Then</th></tr> <tr> <td>not on the OTR that will form the newly created unprotected channel assignment</td><td>select Cancel to close the Optical Metro Channel Assignments window. Go to step 8.</td></tr> <tr> <td>on the OTR that will form the newly created unprotected channel assignment</td><td>select Cancel to close the Optical Metro Channel Assignments window. Go to step 10.</td></tr> </table>	If the active path is	Then	not on the OTR that will form the newly created unprotected channel assignment	select Cancel to close the Optical Metro Channel Assignments window. Go to step 8 .	on the OTR that will form the newly created unprotected channel assignment	select Cancel to close the Optical Metro Channel Assignments window. Go to step 10 .
If the active path is	Then						
not on the OTR that will form the newly created unprotected channel assignment	select Cancel to close the Optical Metro Channel Assignments window. Go to step 8 .						
on the OTR that will form the newly created unprotected channel assignment	select Cancel to close the Optical Metro Channel Assignments window. Go to step 10 .						
8	Make sure that revertive switching is disabled. Follow Procedure 3-64 , “Enabling or disabling revertive protection switching”, in this chapter.						
9	Perform a manual switch to switch the traffic to the OTR facility that will form the new unprotected channel assignment. Follow Procedure 3-56 “Manual switching on protected channel assignments”, in this chapter.						
10	Repeat step 2 to step 7 at the other end point of the channel assignment.						
11	In the System Manager, for the shelf that terminates the traffic of the channel assignment you intend to convert from protected to unprotected, select the Connections/Channel Assignments tab. <i>The Channel Assignments window appears.</i>						
12	To make sure that all bands and channels are displayed in the Channel Assignments window for the selected shelf, select the None Scope button, and click Refresh .						
13	Double-click on the line that will form the new unprotected channel assignment. <i>The Optical Metro Channel Assignments window appears.</i>						
14	From the Mode drop-down list, select Unprot-east or Unprot-west.						
15	Click OK to confirm the selection. <i>The Confirm Channel Assignment Modify dialog box appears.</i>						

—continued—

Procedure 3-66 (continued)

Converting a protected channel assignment to an unprotected channel assignment on an OTR path

Step	Action
16	Click Yes. Note: Wait until the change from protected to unprotected is complete. This can take several seconds. The change is complete when the Confirm Channel Assignment Modify dialog box and the Channel Assignments dialog box close. <i>Alarms will be raised against the downstream circuit packs that are part of the protection path you are deleting. On the OTR line port part of the protected path deleted, an "Alarm Indication Signal" NSA alarm is raised on the receiver.</i>
17	Repeat step 11 to step 16 for the other end point of the channel assignment.

Connecting between subtending client equipment and the OTR of the newly created unprotected channel assignment

- 18 The OTR 10 Gbit/s has a Transponder Protection Tray as part of the protected channel assignment. You have the option to leave the subtending client equipment connected to the Transponder Protection Tray which is also connected the OTR client port of the newly created unprotected channel assignment or connect the subtending client equipment directly to the OTR client port of the newly created unprotected channel assignment.

**CAUTION****Risk of traffic interruption**

If you plan to connect the subtending client equipment directly to the OTR client port, traffic will be interrupted. This occurs when you disconnect the subtending client equipment from the Transponder Protection Tray to reconnect it to the OTR of the newly created unprotected channel assignment.

If you want to	Then go to
leave the subtending client equipment connected to the Transponder Protection Tray	step 28
by-pass the Transponder Protection Tray and connect the subtending client equipment directly to the OTR client port	step 19

—continued—

Procedure 3-66 (continued)

Converting a protected channel assignment to an unprotected channel assignment on an OTR path

Step	Action
19	Prior to physically disconnecting the fiber link between the subtending client equipment and the Transponder Protection Tray, place OTR client port facilities out-of-service for both the OTR that is part of the newly created unprotected channel assignment as well as on the OTR that is part of the protected path you will be deleting. Follow Procedure 3-13 "Taking a circuit pack facility or SFP facility out-of-service", in this chapter. Note: The OTR traffic will be lost at this point in the procedure. <i>Alarms are raised against the OTR circuit packs that are part of the new unprotected channel assignment and the protection path you are deleting.</i>
20	Put on the proper ESD/antistatic protection equipment (wrist strap or foot strap).
21	Remove the shelf cover by releasing the lock latches on the sides and lifting the door off its pivots.
	 DANGER Risk of personal injury or equipment damage Do not let go of the shelf cover when you open it. The shelf cover is not permanently attached to the shelf. You must remove the door completely. If you let go of the door when you open it, you can cause personal injury, damage to the equipment, or both.
22	For the channel assignment that will carry the unprotected traffic (its facilities are currently OOS), disconnect the optical fibers between the client ports (Tx and Rx) on the OTR and the associated Transponder Protection Tray ports.
23	For the same channel assignment, disconnect the fibers between the Transponder Protection Tray port and the client subtending equipment. Refer to Procedure 8-13, "Routing fibers for the Transponder Protection Tray" in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201.
24	Reconnect the new fibers (probably SC-LC) between the client subtending equipment and the OTR client port of the unprotected path to retrieve traffic in that path. Follow Procedure 3-24 "Connecting OTR circuit packs to subtending equipment" in <i>Connection Procedures</i> , 323-1701-221.

—continued—

Procedure 3-66 (continued)

Converting a protected channel assignment to an unprotected channel assignment on an OTR path

Step	Action
25	For the OTR that is part of the newly created unprotected channel assignment, place the OTR client port facility in-service (IS). Follow Procedure 3-10 "Putting a circuit pack or SFP facility in-service" , in this chapter. <i>The end-to-end unprotected path should now be restored and able to carry error-free traffic. No more alarms should be raised on the involved circuit packs (System Manager Fault/Active alarms tab).</i>
26	Follow Procedure 1-6 "Testing the Optical Metro 5100/5200 system" in <i>Testing and Equalization Procedures</i> , 323-1701-222, to verify the above conditions. If you are having problems, contact your next level of support.
27	Repeat step 18 to step 26 for the other end point of the channel assignment.

Deleting the OTR circuit packs that were part of the protection path

28	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the near end shelf that terminates the traffic for the new unprotected channel. <i>System Manager updates the screen with data for the selected shelf.</i>
29	Click on the Selected Shelves drop-down list to return the screen to full view.
30	For the OTR circuit pack that was part of the deleted protection path, take the associated circuit pack port facilities out-of-service (OOS). Follow Procedure 3-13 "Taking a circuit pack facility or SFP facility out-of-service" , in this chapter. Note: The 10 Gbit/s OTR has a client side port (i.e. 1-CS) facility and a line side port (i.e. 2-LS) facility.
31	For the OTR circuit pack that was part of the deleted protection path, take the associated circuit pack equipment OOS. Follow Procedure 3-8 "Taking a circuit pack or SFP out-of-service" , in this chapter.
32	For the OTR circuit pack that was part of the deleted protection path, delete the associated OTR circuit pack facilities (Line and client side). Follow Procedure 3-14, "Deleting a circuit pack or SFP facility" , in this chapter.
33	For the OTR circuit pack that was part of the deleted protection path, delete the associated OTR circuit pack equipment. Follow Procedure 3-14 "Deleting a circuit pack or SFP from the inventory" , in this chapter.
34	Repeat step 30 to step 33 for all OTRs that were part of the protection path. <i>This includes OTRs that were part of the end points of the protection path as well as any passthrough shelves that were part of the protection path.</i>

—continued—

Procedure 3-66 (continued)

Converting a protected channel assignment to an unprotected channel assignment on an OTR path

Step	Action
<i>Removing OTR circuit packs that were part of the protection channel assignment</i>	
35	If not already done, remove the shelf cover from the shelf. See step 20 and step 21 in this procedure.
36	For the channel assignment that was deleted, disconnect the optical fibers between the client ports (Tx and Rx) on the OTR and the associated Transponder Protection Tray ports. Note: Fit dust caps on all the disconnected optical connectors.
37	For the channel assignment that was deleted, disconnect the optical fibers between the OTR line ports (Tx and Rx) and the OMX. Note: Fit dust caps on all the disconnected optical connectors and fibers.
38	On the circuit pack you want to remove, release the lock latches at the top and bottom of the circuit pack.
39	Slide the circuit pack out of the guides and put the circuit pack on an antistatic surface.
40	Install a filler card in the slot where the OTR was removed. Follow Procedure 7-5 "Inserting filler cards" in <i>Installing Optical Metro 5200 Shelves and Components</i> , 323-1701-201.
41	Put the shelf cover back on the shelf and remove the ESD/antistatic protection device.
42	Make sure that you have executed step 35 to step 41 for all OTRs along the protected path. <i>This includes OTRs that were part of the end points of the protection path as well as any passthrough shelves that were part of the protection path.</i>
—end—	

Procedure 3-67

Converting a protected channel assignment to an unprotected channel assignment on a Muxponder path

Use this procedure to:

- convert a protected channel assignment to an unprotected channel assignment on a Muxponder path
- delete the Muxponder protection path

Requirements

You have to perform some tasks on the System Manager and some tasks on-site to physically manipulate the fiber connections between the subtending client equipment and the Muxponder of the newly created unprotected channel assignment as well as removal of the Muxponder circuit packs that were part of the protection path.

Know your network plan. You should know the path (i.e. end points as well as any passthrough shelves) of the unprotected channel assignment you want to create as well as the protection path you want to delete.

You must be logged in to the System Manager as an Admin or Operator level user to convert a protected channel assignment to an unprotected channel assignment.

You need the items listed in the following table during the procedure.

Item	Quantity	Supplied
Filler cards	depends on network configuration	No
ESD/antistatic protection equipment (wrist strap or foot strap)	1	No

—continued—

Procedure 3-67 (continued)

Converting a protected channel assignment to an unprotected channel assignment on a Muxponder path

Precautions

Traffic on the newly created unprotected channel assignment is lost if there is an equipment or facility fault on that unprotected path.



CAUTION

Risk of traffic interruption

A short traffic interruption occurs when the first channel assignment of the two terminating shelves is changed from protected to unprotected mode. When this step is repeated on the other terminating shelf, no traffic interruption occurs.



CAUTION

Risk of generating alarms on the network

When you convert a protected channel assignment to an unprotected channel assignment, you will raise alarms on the downstream circuit packs that are part of the channel assignment until you complete this procedure.



CAUTION

Risk of equipment damage

Make sure you know how to handle electronic components correctly before you begin installation procedures. Incorrect handling can cause damage to static-sensitive components.

To avoid possible damage to circuit packs by electrostatic discharge (ESD), use the following precautions:

- Wear a grounded antistatic wrist strap connected to the shelf maintenance panel, or shoe straps, when handling circuit packs. Follow the manufacturer's instructions to test ESD protection before handling circuit packs.
- Handle circuit packs by their edges only. Do not touch the electronic components or any exposed printed circuits.

—continued—

Procedure 3-67 (continued)

Converting a protected channel assignment to an unprotected channel assignment on a Muxponder path**Action**

Step	Action						
1	System Manager provides a view of one ring. Before you begin to convert a protected channel assignment to an unprotected channel assignment, sort the Shelf List clockwise to reflect the order of the ring. When you are done, the originating shelf is at the top of the Shelf List, followed by the passthrough shelves, in order. The terminating shelf is at the bottom. For information on sorting shelves, refer to Procedure 1-16 "Sorting shelves" in this book.						
2	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that terminates the traffic for the band of the channel assignment you intend to convert from protected to unprotected. <i>System Manager updates the screen with data for the selected shelf.</i>						
3	Click on the Selected Shelves drop-down list to return the screen to full view.						
4	Select the Connections/Channel Assignments tab. <i>The Channel Assignments window appears.</i>						
5	To make sure that all bands and channels are displayed in the Channel Assignments window for the selected shelf, select the None Scope button, and click Refresh .						
6	Locate and double-click on the line that contains the protected channel assignment that you want to convert to an unprotected channel assignment. <i>The Optical Metro Channel Assignments window appears.</i>						
7	Make sure that existing traffic, which is part of the protected channel assignment, is on the Working Muxponder path. Identify which Muxponder is the Working Muxponder. <i>The active Muxponder appears in bold text in the Rx Traffic Path for BxCx – <NE Name> field at the bottom of the window.</i>						
<table> <tr> <th>If the active path is</th><th>Then</th></tr> <tr> <td>not on the Working Muxponder</td><td>select Cancel to close the Optical Metro Channel Assignments window. Go to step 8.</td></tr> <tr> <td>on the Working Muxponder</td><td>select Cancel to close the Optical Metro Channel Assignments window. Go to step 9.</td></tr> </table>		If the active path is	Then	not on the Working Muxponder	select Cancel to close the Optical Metro Channel Assignments window. Go to step 8 .	on the Working Muxponder	select Cancel to close the Optical Metro Channel Assignments window. Go to step 9 .
If the active path is	Then						
not on the Working Muxponder	select Cancel to close the Optical Metro Channel Assignments window. Go to step 8 .						
on the Working Muxponder	select Cancel to close the Optical Metro Channel Assignments window. Go to step 9 .						

—continued—

Procedure 3-67 (continued)**Converting a protected channel assignment to an unprotected channel assignment on a Muxponder path**

Step	Action
8	Perform a manual switch to switch the traffic to the Working Muxponder that will carry the existing traffic. Follow Procedure 3-56 “Manual switching on protected channel assignments” , in this chapter.
9	Locate and double-click on the line that contains the protected channel assignment that you want to convert to an unprotected channel assignment. The line to be selected is the one showing the Protection Muxponder. <i>The Optical Metro Channel Assignment window appears.</i>
10	From the Mode drop-down list, select Unprot-east or Unprot-west. Click OK . <i>The Confirm Channel Assignment Modify dialog box appears</i>
11	Click Yes . Note: Wait until the change from protected to unprotected is complete. This can take several seconds. The change is complete when the Channel Assignment window closes. <i>Alarms are raised against the downstream circuit packs that are part of the protection path you are removing. On the Muxponder part of the protection path deleted, an “Alarm Indication Signal” NSA alarm is raised on the receiver.</i>
12	Repeat step 2 through step 11 for the other end point of the channel assignment.

—end—

Procedure 3-68

Reseating a circuit pack

Use this procedure to reseat a circuit pack on the Optical Metro 5100/5200 shelf.

Requirements

This procedure prompts the user to take the circuit pack facility and equipment out-of-service prior to the physical reseating of the circuit pack and then prompts the user to place the circuit pack back in-service. Refer to [“Circuit pack and facility states” on page 3-1](#) for an overview on circuit pack facilities and a description on the different facility ports available.

Know your network plan. You should know the path (that is, end points as well as any passthrough shelves) of the channel assignment on which you want to reseat a circuit pack. You must be aware of where the customer traffic is going to be lost if no protection path is available. If a protection path is available, you must know your network to execute the proper manual switch procedure to protect traffic.

You need the items listed in the following table during the procedure.

Item	Quantity	Supplied
ESD/antistatic protection equipment (wrist strap or foot strap)	1	No

Precautions



CAUTION

Risk of equipment damage

Make sure you know how to handle electronic components correctly before you begin installation procedures. Incorrect handling can cause damage to static-sensitive components.

—continued—

Procedure 3-68 (continued)

Reseating a circuit pack**CAUTION****Risk of traffic loss, traffic interruption, or visibility loss**

When you reseal an OCI, traffic going through the circuit pack is lost for the whole duration the procedure.

When you reseal an OTR, Muxponder, OFA, APBE, or an OCLD and there is no protection path available, traffic going through the circuit pack is lost for the whole duration of the procedure.

When you reseal an OTR, Muxponder, OFA, APBE, or an OCLD and the traffic is protected (protection channel assignment), traffic going through the circuit pack is interrupted only during the switch procedure.

When you reseal an SP, the visibility to that shelf is lost for the whole duration of the procedure. The traffic going through that shelf is not impacted. In the case of an Muxponder 10 Gbit/s GbE/FC VCAT circuit pack, when the SP is reseated, the OM current count bin displays and invalid data flag (IDF).

When you reseal an OSC and there is no direct DCN access to the site, the visibility to the shelves in this site is lost for the whole duration of the procedure. The traffic going through that site is not impacted.

When you reseal an OCM and the other OCM in the shelf is operational, traffic on the shelf is only interrupted during the protection switch. Refer to [Procedure 3-57 “Manual switching on OCM circuit packs”](#) in this chapter for the OCM protection switching procedure.

Since both OCM circuit packs are required to provide a Muxponder protection scheme, the protection path is unavailable when one of the two OCM circuit packs is reseated. If your network currently supports protected service using Muxponders, make sure that traffic is active on the Muxponder's working path.

Make sure that the network administrator is aware of the possible impacts before performing this procedure.

—continued—

Procedure 3-68 (continued)

Reseating a circuit pack

To avoid possible damage to circuit packs by electrostatic discharge (ESD), use the following precautions:

- Wear a grounded antistatic wrist strap connected to the shelf maintenance panel, or shoe straps, when handling circuit packs. Follow the manufacturer's instructions to test ESD protection before handling circuit packs.
- Handle circuit packs by their edges only. Do not touch the electronic components or any exposed printed circuits.

Action

Step	Action														
1	<table> <tr> <th>If the circuit pack you want to reseat is</th><th>Then</th></tr> <tr> <td>an OCI</td><td>advise your network administrator that traffic going through that circuit pack will be lost. Go to step 15.</td></tr> <tr> <td>an OTR, OCLD, or Muxponder</td><td>go to step 2</td></tr> <tr> <td>an OFA or an APBE</td><td>go to step 10</td></tr> <tr> <td>an SP</td><td>go to step 13</td></tr> <tr> <td>an OSC</td><td>go to step 12</td></tr> <tr> <td>an OCM</td><td>go to step 14</td></tr> </table>	If the circuit pack you want to reseat is	Then	an OCI	advise your network administrator that traffic going through that circuit pack will be lost. Go to step 15 .	an OTR, OCLD, or Muxponder	go to step 2	an OFA or an APBE	go to step 10	an SP	go to step 13	an OSC	go to step 12	an OCM	go to step 14
If the circuit pack you want to reseat is	Then														
an OCI	advise your network administrator that traffic going through that circuit pack will be lost. Go to step 15 .														
an OTR, OCLD, or Muxponder	go to step 2														
an OFA or an APBE	go to step 10														
an SP	go to step 13														
an OSC	go to step 12														
an OCM	go to step 14														
2	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf that contains the circuit pack you want to reseat. <i>System Manager updates the screen with data for the selected shelf.</i>														
3	Click on the Selected Shelves drop-down list to return the screen to full view.														
4	Select the Connections/Channel Assignments tab. <i>The Channel Assignments window appears.</i>														
5	To make sure that all bands and channels are displayed in the Channel Assignments window for the selected shelf, select the None Scope button, and click Refresh .														
6	Double-click on the channel assignment line that contains the facility for the circuit pack you want to reseat. <i>The Optical Metro Channel Assignments window appears.</i>														

—continued—

Procedure 3-68 (continued)

Reseating a circuit pack

Step	Action						
7	Verify if the channel assignment is protected. <table> <tr> <th>If the channel assignment is</th><th>Then</th></tr> <tr> <td>not protected</td><td> you will lose traffic during the reseal of the circuit pack. Advise your network administrator. Go to step 15. </td></tr> <tr> <td>protected</td><td> determine which facility is active by looking at the Active facility in bold text in the Rx Traffic Path for BxCx - <NE Name> field at the bottom of the window Go to step 8. </td></tr> </table>	If the channel assignment is	Then	not protected	you will lose traffic during the reseal of the circuit pack. Advise your network administrator. Go to step 15.	protected	determine which facility is active by looking at the Active facility in bold text in the Rx Traffic Path for BxCx - <NE Name> field at the bottom of the window Go to step 8.
If the channel assignment is	Then						
not protected	you will lose traffic during the reseal of the circuit pack. Advise your network administrator. Go to step 15.						
protected	determine which facility is active by looking at the Active facility in bold text in the Rx Traffic Path for BxCx - <NE Name> field at the bottom of the window Go to step 8.						
8	Click on Cancel to close the Optical Metro Channel Assignment window.						
9	If the signal is protected and a manual user switch is possible, it is highly recommended to switch the traffic to the protection channel assignment path before reseating the card. When a circuit pack is reseated, the traffic going through that circuit pack is lost. To perform a manual traffic switch, refer to Procedure 4-7 "Switching traffic off a span in a path-protected network". When completed, go to step 15.						
10	If the intrasite fault sectionalization (IFS) feature is enabled at this site for the OSID provisioned for this slot, disable IFS. <table> <tr> <th>If IFS</th><th>Then</th></tr> <tr> <td>is enabled</td><td> disable it at this site. Follow Procedure 3-39 "Disabling intrasite fault sectionalization (IFS)" in this chapter. Go to the next step. </td></tr> <tr> <td>is not enabled</td><td>go to the next step</td></tr> </table>	If IFS	Then	is enabled	disable it at this site. Follow Procedure 3-39 "Disabling intrasite fault sectionalization (IFS)" in this chapter. Go to the next step.	is not enabled	go to the next step
If IFS	Then						
is enabled	disable it at this site. Follow Procedure 3-39 "Disabling intrasite fault sectionalization (IFS)" in this chapter. Go to the next step.						
is not enabled	go to the next step						

—continued—

Procedure 3-68 (continued)

Reseating a circuit pack

Step	Action								
11	Refer to your network plan to determine if the channels going through the OFA or APBE that you want to reseat are protected.								
	<table> <tr> <th>If</th><th>Then</th></tr> <tr> <td>none of the channels are protected</td><td> you lose the traffic for all these channels during the reseat of the circuit pack. Advise your network administrator. Go to step 15. </td></tr> <tr> <td>some of the channels are protected</td><td> you lose traffic for all the unprotected channels during the reseat of the circuit pack. Advise your network administrator about the channels that will be lost. For the protected channels, if a manual user switch is possible, it is highly recommended to switch the traffic to the protection channel assignment path before reseating the APBE or OFA circuit pack (to avoid traffic loss). To perform a manual traffic switch, refer to Procedure 4-7 "Switching traffic off a span in a path-protected network". Go to step 15. </td></tr> <tr> <td>all of the channels are protected and a manual user switch is possible</td><td> it is highly recommended to switch the traffic to the protection channel assignment path before reseating the APBE or OFA circuit pack (to avoid traffic loss). To perform a manual traffic switch, refer to Procedure 4-7 "Switching traffic off a span in a path-protected network". Go to step 15. </td></tr> </table>	If	Then	none of the channels are protected	you lose the traffic for all these channels during the reseat of the circuit pack. Advise your network administrator. Go to step 15.	some of the channels are protected	you lose traffic for all the unprotected channels during the reseat of the circuit pack. Advise your network administrator about the channels that will be lost. For the protected channels, if a manual user switch is possible, it is highly recommended to switch the traffic to the protection channel assignment path before reseating the APBE or OFA circuit pack (to avoid traffic loss). To perform a manual traffic switch, refer to Procedure 4-7 "Switching traffic off a span in a path-protected network". Go to step 15.	all of the channels are protected and a manual user switch is possible	it is highly recommended to switch the traffic to the protection channel assignment path before reseating the APBE or OFA circuit pack (to avoid traffic loss). To perform a manual traffic switch, refer to Procedure 4-7 "Switching traffic off a span in a path-protected network". Go to step 15.
If	Then								
none of the channels are protected	you lose the traffic for all these channels during the reseat of the circuit pack. Advise your network administrator. Go to step 15.								
some of the channels are protected	you lose traffic for all the unprotected channels during the reseat of the circuit pack. Advise your network administrator about the channels that will be lost. For the protected channels, if a manual user switch is possible, it is highly recommended to switch the traffic to the protection channel assignment path before reseating the APBE or OFA circuit pack (to avoid traffic loss). To perform a manual traffic switch, refer to Procedure 4-7 "Switching traffic off a span in a path-protected network". Go to step 15.								
all of the channels are protected and a manual user switch is possible	it is highly recommended to switch the traffic to the protection channel assignment path before reseating the APBE or OFA circuit pack (to avoid traffic loss). To perform a manual traffic switch, refer to Procedure 4-7 "Switching traffic off a span in a path-protected network". Go to step 15.								

—continued—

Procedure 3-68 (continued)

Reseating a circuit pack

Step	Action						
12	Verify if there is a direct DCN access to one of the shelves in the site (10Base T-1X port connected to the direct DCN access on one shelf).						
	<table> <tr> <th>If</th><th>Then</th></tr> <tr> <td>there is no DCN access</td><td>advise you network administrator that the visibility to the shelves in this site is going to be lost for the whole duration of the procedure. Go to step 15.</td></tr> <tr> <td>there is direct DCN access</td><td>you do not lose visibility since the 10Base T-2X ports of the shelves should all be interconnected. Go to step 15.</td></tr> </table>	If	Then	there is no DCN access	advise you network administrator that the visibility to the shelves in this site is going to be lost for the whole duration of the procedure. Go to step 15 .	there is direct DCN access	you do not lose visibility since the 10Base T-2X ports of the shelves should all be interconnected. Go to step 15 .
If	Then						
there is no DCN access	advise you network administrator that the visibility to the shelves in this site is going to be lost for the whole duration of the procedure. Go to step 15 .						
there is direct DCN access	you do not lose visibility since the 10Base T-2X ports of the shelves should all be interconnected. Go to step 15 .						
13	When you reseal an SP, the visibility to that shelf is lost for the whole duration of the procedure. Advise your system administrator before going to step 17 .						
14	Make sure the other OCM circuit pack in the shelf is operational. You can perform a manual OCM switch to verify if the other OCM is operational. Refer to Procedure 3-57 , “ Manual switching on OCM circuit packs ”, in this chapter. If other OCM circuit pack is not operational, advise your network administrator that you will lose the traffic going through the OCIs and OCLDs of that shelf before going to step 16 .						
15	For the circuit pack you want to reseal, make sure that all the associated port facilities applicable to the circuit pack are out-of-service (OOS). Follow Procedure 3-13 “ Taking a circuit pack facility or SFP facility out-of-service ”, in this chapter. Note: Take note of what port facility is in-service (IS) so that you can place it back in-service in step 28 . <i>Some circuit packs have several port facilities associated with the circuit pack. Make sure that all port facilities applicable to the circuit pack are in the OOS state.</i>						
16	For the circuit pack you want to reseal, place the circuit pack equipment OOS. Follow Procedure 3-8 “ Taking a circuit pack or SFP out-of-service ”, in this chapter.						

Reseating the circuit pack

- 17 Put on the proper ESD/antistatic protection equipment (wrist strap or foot strap).

—continued—

Procedure 3-68 (continued)

Reseating a circuit pack

Step	Action
18	Remove the shelf cover by releasing the lock latches on the sides and lifting the door off its pivots.  DANGER Risk of personal injury or equipment damage Do not let go of the shelf cover when you open it. The shelf cover is not permanently attached to the shelf. You must remove the door completely. If you let go of the door when you open it, you can cause personal injury, damage to the equipment, or both.
19	On the circuit pack you want to reseat, release the lock latches at the top and bottom of the circuit pack.
20	Pull the circuit pack toward you until it is half way out of its slot.
21	Wait 60 seconds.
22	Push the circuit pack towards the back of the shelf and engage the circuit pack into the backplane connector.
23	Push the ends of the lock latches against the faceplate of the filler card to lock the card in place.
24	Wait two minutes for the circuit pack to initialize.
25	If the circuit pack you resealed is Then go to an OCI, OCLD, OTR, Muxponder, step 26 OCM, OFA, APBE, or OSC an SP step 29

—continued—

Procedure 3-68 (continued)

Reseating a circuit pack

Step	Action
26	Place the circuit pack equipment IS. Follow Procedure 3-7 “Putting a circuit pack or SFP in-service” , in this chapter.
27	If the circuit pack you reseated is Then go to an OCI, OCLD, OTR, Muxponder, step 28 OFA, APBE or OSC an OCM step 29
28	For the circuit pack port facilities noted in step 15 , put them all IS. Follow Procedure 3-10 “Putting a circuit pack or SFP facility in-service” , in this chapter.
29	Put the shelf cover back on the shelf and remove the ESD/antistatic protection devices (foot strap or wrist strap).
30	If the circuit pack you reseated is Then go to an OFA or APBE step 31 otherwise step 32
31	If in step 10 , you Then disabled IFS at this site enable IFS. Follow Procedure 3-38 “Enabling intrasite fault sectionalization (IFS)” in <i>Provisioning and Operating Procedures</i> , 323-1701-310. Go to the next step. otherwise go to the next step

—continued—

Procedure 3-68 (continued)

Reseating a circuit pack

Step	Action	
32	If	Then
	in step 9 (for the OTR, Muxponder, and OCLD) or if in step 10 (for the APBE and OFA) of this procedure you performed a manual user switch procedure	the end-to-end channel assignment on which a circuit pack was reseated should be able to carry traffic error-free, and no more alarms should be raised on the circuit packs involved (System Manager Fault/Active alarms tab). Follow Procedure 1-6 “Testing the Optical Metro 5100/5200 system” in <i>Testing and Equalization Procedures</i> , 323-1701-222, to verify the above conditions. This procedure makes sure that that if your signal is protected, the path you are testing (the one on which the circuit pack was reseated) is the active path that carries the traffic. If you are having problems, contact your next level of support
	you were reseating an SP or an OSC circuit pack	then make sure the visibility to the shelf or site in question is recovered
	you were reseating an OCM	make sure this reseated OCM is operational. You can perform a manual OCM switch to verify that. Refer to Procedure 3-57, “Manual switching on OCM circuit packs” , in this chapter. If it is not operational, advise your network administrator, the circuit pack will probably need to be replaced
	any other conditions (reseat of unprotected OTR, Muxponder, OCLD, APBE or OFA, reseat of OCI)	the end-to-end channel assignment on which a circuit pack was reseated should be able to carry traffic error-free, and no more alarms should be raised on the circuit packs involved (System Manager Fault/Active alarms tab). Follow Procedure 1-6 “Testing the Optical Metro 5100/5200 system” in <i>Testing and Equalization Procedures</i> , 323-1701-222, to verify the above conditions. If you are having problems, contact your next level of support.

—end—

Shelf management procedures

Use the procedures in this chapter to manage shelves in the network.

There are several types of Optical Metro 5100/5200 networks: path-protected, unprotected, linear add/drop multiplexer (OADM), and meshed ring. To add shelves to any of those networks, you must follow specific customer Method of Procedures (MOPs), because this type of system reconfiguration involves precise equalization considerations. To get a MOP procedure for your system, contact Nortel Networks to order your specific customer MOP document.

If the Optical Metro 5100/5200 network is path-protected, you can add shelves to the network without affecting the traffic flow. Traffic interruption occurs if you have an unprotected or linear OADM system.

Precautions

**CAUTION****Risk of shelf malfunction**

Nortel Networks recommends that you do not use cellular phones at any Optical Metro 5100/5200 site. The use of cellular phones in proximity to Optical Metro 5100/5200 equipment can cause shelf malfunction.

**CAUTION****Risk of losing connection**

Verify that you are in contact with the primary shelf before proceeding with any shelf configurations changes.

Procedure list

[Table 4-1](#) lists the procedures in this chapter.

Table 4-1
Shelf management procedures

Procedure	Page	Comments
4-1 Decommissioning a shelf	4-3	Mandatory procedure if you are physically removing a shelf from an Optical Metro 5100/5200 network. If you do not decommission the shelf first, the System Manager continues to display the shelf in the network list. Once a shelf is decommissioned, it is automatically deleted from the shelf list. You must remove the connections on the shelf before you can decommission it
4-2 Deleting a shelf	4-9	Deleting the shelf happens automatically after decommissioning.
4-3 Restarting a shelf	4-10	Optional. Use this procedure for maintenance purposes only.
4-4 Changing configuration information for a shelf	4-13	Optional.
4-5 Configuring shelf surveillance and external management	4-17	Optional.
4-6 Removing an external management entry	4-20	Optional.
4-7 Switching traffic off a span in a path-protected network	4-22	Optional.

Procedure 4-1

Decommissioning a shelf

Use this procedure to decommission a shelf.

When you decommission a shelf, the System Manager deletes the IP address that you assigned during commissioning procedures and restores the shelf to the default IP address that was assigned at the factory.

When you complete this procedure, the selected shelf is decommissioned, is not carrying traffic, and is automatically removed from the shelf list.

Notes for decommissioned shelves

When you decommission a shelf

- it cannot carry traffic until you commission it again. If you want to commission this shelf again, refer to the procedures in the [“Commissioning a shelf”](#) chapter in *Commissioning Procedures*, 323-1701-220.
- the channel assignments no longer exist. The channel assignments need to be recreated on the replacement shelf.
- IFS is disabled and needs to be enabled on the replacement shelf
- if protected channels were going through the shelf, a manual user switch procedure most likely occurred. Once the replacement shelf is put in place, you need to test the restored protection path to verify that it is able to carry traffic.

Requirements

You must be logged into the System Manager as an Admin level user to decommission a shelf.

Know your network plan. You should know the path (that is, end points as well as any passthrough shelves) of the channel assignment going through the shelf to decommission. You must be aware of where the customer traffic will be lost, if no protection path is available. If a protection path is available, you must understand your network to execute the proper manual switch procedure to protect the traffic.

—continued—

Procedure 4-1 (continued) Decommissioning a shelf

Precautions



CAUTION

Risk of loss of traffic

When you decommission a shelf, that shelf cannot carry traffic. Decommissioning a shelf removes all the information that you entered with the commissioning wizard. You must recommission the shelf before the shelf can carry traffic. If all the traffic going through this shelf is protected (protected channel assignments), the traffic will only be interrupted during the user switch procedure. Make sure that the network administrator is aware before following this procedure.

Action

Step	Action
1	Open a new System Manager session using the IP address of either • the primary shelf of the network (case 1) • the shelf you intend to decommission (case 2 or 3) Note: Do not log into the System Manager using a different IP address than one listed above, because only the cases listed above are considered in this procedure. Record on which shelf the System Manager IP session was opened (primary or shelf itself).
2	In the System Manager, click on the Selected shelves drop-down list, and double-click on the network name. <i>System Manager updates the screen with the data for the selected shelf.</i>

—continued—

 Procedure 4-1 (continued)
Decommissioning a shelf

Step	Action
3	Refer to your network plan to determine if the channels going through the shelf to be decommissioned are protected or not protected.
If	Then
none of the channels are protected	you lose the traffic for all of these channels during the shelf decommissioning procedure. Contact your network administrator before proceeding to step 4 .
some, but not all, of the channels are protected	you lose traffic for all of the unprotected channels during the decommissioning of the shelf. Contact your network administrator about the channels that will be lost. For the protected channels, if a manual user switch is possible, switch the traffic to the protection channel assignment path before decommissioning the shelf (to avoid traffic loss). To perform a manual traffic switch, see Procedure 4-7 “Switching traffic off a span in a path-protected network” . Then, go to step 4 .
all of the channels are protected and a manual user switch is possible	switch the traffic to the protection channel assignment path before decommissioning the shelf (to avoid traffic loss). To perform a manual traffic switch, see Procedure 4-7 “Switching traffic off a span in a path-protected network” . Then, go to step 4 .
4	Before you decommission an Optical Metro 5100/5200 shelf, disable the intrasite fault sectionalization feature in all shelves that contain an OSC circuit pack. Follow Procedure 3-39 “Disabling intrasite fault sectionalization (IFS)” . Note: Failure to disable IFS can result in incorrect identification of failed fiber spans within a site. Also, failure to disable IFS can raise an Intrasite Communication Failure alarm at the OSC shelf for the site in question.

—continued—

4-6 Shelf management procedures

Procedure 4-1 (continued)

Decommissioning a shelf

Step	Action						
5	Delete all the channel assignments on the shelf before you decommission it. If you need to keep the information about those channel assignments before deleting them, make sure you record all the information corresponding to the channels assignments before deleting them. Follow Procedure 3-4 “Deleting channel assignments”. If the channels were not protected, or if the manual user switch could not be performed, many new alarms are raised on the system at this point, since the traffic on those channels is lost when the channel assignments are deleted. Note: If you try to decommission a shelf that has provisioned channel assignments, a dialog box prompts you to delete the channel assignments first. The system does not let you continue the decommissioning procedure.						
6	<table><tr><td>If in step 1 you used the IP address of</td><td>Then go to</td></tr><tr><td>the primary shelf</td><td>step 8</td></tr><tr><td>the shelf to be decommissioned</td><td>step 7</td></tr></table>	If in step 1 you used the IP address of	Then go to	the primary shelf	step 8	the shelf to be decommissioned	step 7
If in step 1 you used the IP address of	Then go to						
the primary shelf	step 8						
the shelf to be decommissioned	step 7						
7	Make note of whether or not the primary shelf is still in contact with the shelf that you intend to delete. If you are connected directly on port 10BaseT-1X of the shelf you intend to delete, you can decommission this shelf even if it has lost contact with the primary shelf.						
8	In the System Manager, select the Configuration tab.						
9	Select the Naming tab.						
10	<table><tr><td>If you</td><td>Then go to</td></tr><tr><td>need to keep the information for the shelf before decommissioning it</td><td>step 11</td></tr><tr><td>do not need the information for the shelf before decommissioning it</td><td>step 14</td></tr></table>	If you	Then go to	need to keep the information for the shelf before decommissioning it	step 11	do not need the information for the shelf before decommissioning it	step 14
If you	Then go to						
need to keep the information for the shelf before decommissioning it	step 11						
do not need the information for the shelf before decommissioning it	step 14						
11	Double-click on the row that contains the name of the shelf that you want to decommission. <i>The Shelf Configuration window appears.</i>						
12	Record all the commissioning information that appears in the Naming, Communications, and Time tabs.						
13	Click Cancel to close the Shelf Configuration window.						
14	Select the row that contains the name of the shelf you want to decommission.						
15	From the Admin menu (at the top of the System Manager window), select Decommission Shelf.						

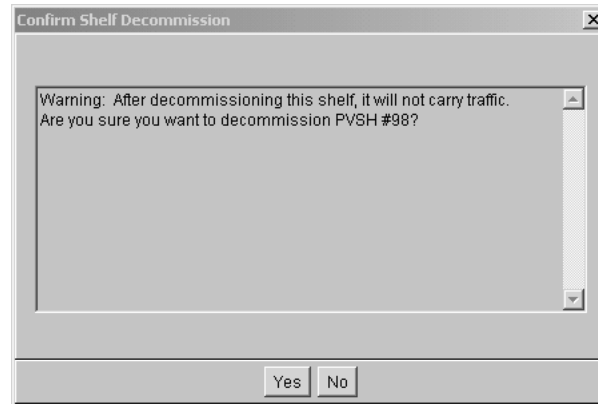
—continued—

Procedure 4-1 (continued)
Decommissioning a shelf

Step	Action

The Confirm Shelf Decommission Delete dialog box appears.

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Note: Another way to bring up this dialog box is to select the NE Admin tab under Admin, right-click on the row that contains the name of the shelf you want to decommission, and then select Decommission.

16	In the Confirm Shelf Decommission Delete dialog box, click Yes to delete the commissioning information.	
17	If in step 1 you used the IP address of the primary shelf (case 1) the shelf to be decommissioned (case 2 and 3)	Then go to step 20 step 18
18	If in step 7 you noted that the contact between the primary shelf and the shelf being decommissioned was lost (case 2) the contact between the primary shelf and the shelf being decommissioned was working fine (case 3)	Then go to step 19 step 22
19	If you opened the System Manager using the IP address of the decommissioned shelf (case 2), the System Manager automatically closes, and you need to restart the System Manager by logging into one of the remaining shelves in the network.	
20	In the System Manager, make sure that the decommissioned shelf appears to have lost contact with the network (blue dot). See " Notes for decommissioned shelves " on page 4-3.	
21	Delete the shelf from the network. Follow Procedure 4-2 "Deleting a shelf" . You have completed the procedure for case 2.	

—continued—

4-8 Shelf management procedures

Procedure 4-1 (continued)

Decommissioning a shelf

Step	Action
22	The System Manager automatically closes, and you need to restart the System Manager by logging into one of the remaining shelves in the network.
23	In the System Manager, make sure that the decommissioned shelf is deleted from the network (it is not listed anymore in the drop-down menu for the Selected shelf option). See “Notes for decommissioned shelves” on page 4-3 .

—end—

Procedure 4-2 Deleting a shelf

A shelf should always be decommissioned first before it is physically removed from the network. For more information on decommissioning the shelf, see [Procedure 4-1 “Decommissioning a shelf”](#).

Note: If a shelf is physically removed from the network without decommissioning it, the delete button can be used via the System Manager (SMI) Configuration/Shelf List Tab to remove it from the network list.

Requirements

You must decommission the shelf in order to remove it from the network list. If you do not decommission the shelf first, the System Manager continues to display the shelf each time the network list is refreshed. Deleting a shelf does not decommission the shelf.

Action

Step	Action
1	Decommission the shelf. Follow Procedure 4-1 “Decommissioning a shelf”. Note: Depending on the size of the system, System Manager can take several minutes to update the information on the screen. <i>The deleted shelf no longer appears in the Selected Shelves drop-down menu.</i>

—end—

Procedure 4-3 Restarting a shelf

Use this procedure to restart a shelf from the System Manager.

Requirements

You must be logged into the System Manager as an Admin level user to restart a shelf.

Precautions



CAUTION

Risk of incorrectly identifying failed fiber spans

If a fiber failure occurs in the network during a shelf restart and intrasite fault sectionalization is enabled, there is a risk of incorrect identification of a failed fiber span.



CAUTION

Shelf restart on a live network interrupts System Manager

A shelf restart typically takes one to two minutes to initialize successfully, and re-establish the System Manager session. The maximum time limit is three minutes.

Action

Step	Action								
1	Open a new System Manager session using the IP address of one of the shelves in the network. <table> <tr> <td>If you use the IP address of</td><td>Then note that you are in</td></tr> <tr> <td>the shelf to be restarted and it is not the only primary shelf in the network</td><td>case 1</td></tr> <tr> <td>the only primary shelf in the network and it is the shelf that you want to restart, or if you want to restart the only primary shelf in the network (regardless of the IP used to open the session)</td><td>case 2</td></tr> <tr> <td>any other shelf</td><td>case 3</td></tr> </table>	If you use the IP address of	Then note that you are in	the shelf to be restarted and it is not the only primary shelf in the network	case 1	the only primary shelf in the network and it is the shelf that you want to restart, or if you want to restart the only primary shelf in the network (regardless of the IP used to open the session)	case 2	any other shelf	case 3
If you use the IP address of	Then note that you are in								
the shelf to be restarted and it is not the only primary shelf in the network	case 1								
the only primary shelf in the network and it is the shelf that you want to restart, or if you want to restart the only primary shelf in the network (regardless of the IP used to open the session)	case 2								
any other shelf	case 3								
2	In System Manager, select the whole network in the Selected shelves drop-down menu (click on the Network name). <i>System Manager updates the screen with data for the network.</i>								

—continued—

Procedure 4-3 (continued)

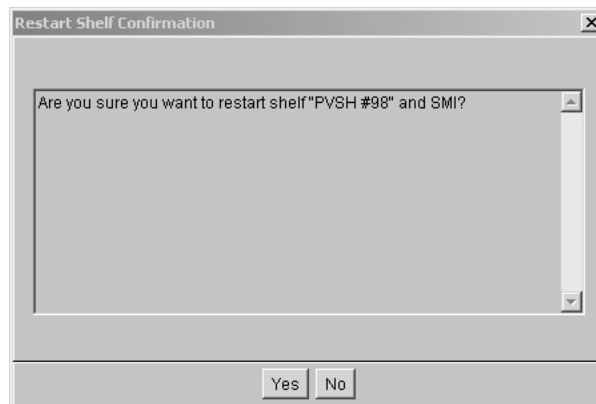
Restarting a shelf

Step	Action

3	In the System Manager, select the Configuration tab.
4	Select the Communications tab.
5	Right-click on the shelf that you want to restart.
6	Select Restart.

The Restart Shelf Confirmation dialog box appears.

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7	Click Yes .

8	If you noted in step 1 that you were	Then

case 1	the System Manager automatically shuts down. Go to step 9 .
case 2	the System Manager automatically shuts down. Go to step 10 .
case 3	the System Manager may temporarily report a Loss of Contact alarm against the shelf re-started. After 3 minutes, the Loss of Contact alarm against the restarted shelf should clear.

You have completed this procedure for case 3.

—continued—

4-12 Shelf management procedures

Procedure 4-3 (continued)

Restarting a shelf

Step	Action
9	Either re-open a System Manager session using the IP of another shelf in the network, or wait 3 minutes before re-opening the System Manager through the same IP address. If you re-open the System Manager session using another IP address, System Manager may temporarily report a Loss of Contact alarm against the restarted shelf. In both cases, after 3 minutes, the Loss of Contact alarm against the restarted shelf should clear. You have completed the procedure for case 1.
10	Wait 3 minutes before re-opening the System Manager (you re-started the only primary shelf of the network). During this time, several Loss of Contact alarms can be seen on the network. After 3 minutes, when you re-open the System Manager, the Loss of Contact alarm should clear.

—end—

Procedure 4-4

Changing configuration information for a shelf

Use this procedure to change the configuration information for a shelf.

Use the following specific procedures for provisioning the shelf configuration changes required:

- [Procedure 1-25 Provisioning Ethernet port alarms on page 1-51](#)
- [Procedure 1-26 Provisioning Ethernet and serial ports on page 1-53](#)
- [Procedure 1-27 Provisioning Ethernet port 2 access control on page 1-55](#)
- [Procedure 1-28 Provisioning IP forwarding on Ethernet port 1 on page 1-58](#)
- [Procedure 1-29 Defining or changing advanced communications settings for the network on page 1-59](#)
- [Procedure 1-30 Assigning IP addresses for Ethernet port 2 and Serial port 1 on page 1-62](#)
- [Procedure 1-31 Enabling or disabling the DNS proxy service on page 1-65](#)
- [Procedure 1-32 Setting up the DNS proxy service on page 1-67](#)

If you change the NE configuration (for example, change the NE TID or NE IP address) (relevant for all configurations—private or public IP configurations) for Optical Metro 5100/5200 network elements, do not make the change and then attempt to rediscover the NE from OMEA. The correct procedure is as follows: first delete the NE from OMEA and then make the change, and finally manage the NE again.

See *Optical Manager Element Adapter, Standard Operations Guide*, 450-3121-301, for procedures on deleting a network element and managing a network element.

Requirements

You must be logged into the System Manager as an Admin level user to change configuration information for a shelf.

—continued—

Precautions



CAUTION

Risk of losing visibility

If you provision incorrect information in the Configuration window, you can lose access to one or more shelves and impact intershell communication.



CAUTION

Risk of incorrect backup file

After you change the shelf configuration, backup the configuration data of all affected shelves. See [Procedure 1-36, “Backing up shelf configuration data” on page 1-95](#), for more information.

ATTENTION

If you have to change the IP address of the primary shelf, and some shelves have their internal OSPF area ID set to the default value of 0.0.0.0, you can avoid a loss of contact by explicitly setting the OSPF area ID for these shelves to the current IP address of the primary shelf, before changing the IP address of the primary shelf. See [Procedure 1-29, “Defining or changing advanced communications settings for the network” on page 1-59](#).

ATTENTION

If you change the IP address of the primary shelf, the primary shelf must be restarted. All the other shelves in the network that communicate with the primary shelf must also be modified to include the new primary shelf IP address and must be restarted. After restarting they will be able to download the shelf list from the primary shelf.

ATTENTION

If a remote shelf has been reconfigured to connect to a new primary network element, you must manually update the shelf list on the original primary network element to reflect this new configuration. The shelf list on the original primary network element does not automatically delete the reconfigured remote shelf from its shelf list.

—continued—

Procedure 4-4 (continued)

Changing configuration information for a shelf**Action**

Step	Action
1	In System Manager, select the whole network in the Selected shelves drop-down menu (click on the Network name). <i>System Manager updates the screen with data for the network.</i>
2	Click on the Selected Shelves drop-down list to return the screen to full view.
3	Select the Configuration tab.
4	Select the Naming tab.
5	Select the row that contains the name of the shelf for which you want to change the configuration information.
6	From the Edit menu on the top of the System Manager window, select Modify. You can also right-click on the shelf where the configuration information is to be changed, and select Modify. <i>The Shelf Configuration window appears.</i>
7	In the Shelf Configuration window, there are several tabs where different configuration information can be modified for the shelf (Naming, Communications, and Time). Browse through the tabs and enter the configuration information changes you want to perform. Note 1: Use the specific procedures for provisioning the shelf configuration changes required: Procedure 1-25 Provisioning Ethernet port alarms on page 1-51 Procedure 1-26 Provisioning Ethernet and serial ports on page 1-53 Procedure 1-27 Provisioning Ethernet port 2 access control on page 1-55 Procedure 1-28 Provisioning IP forwarding on Ethernet port 1 on page 1-58 Procedure 1-29 Defining or changing advanced communications settings for the network on page 1-59 Procedure 1-30 Assigning IP addresses for Ethernet port 2 and Serial port 1 on page 1-62 Procedure 1-31 Enabling or disabling the DNS proxy service on page 1-65 Procedure 1-32 Setting up the DNS proxy service on page 1-67 Note 2: In the Communications tab, if you modify the Port control settings to disable all the ports on the shelf, you will not be able to use the System Manager to access that shelf locally afterwards. You will need to access that shelf from another shelf in the network that carries the same band. Note 3: In the Communications tab, if you modify the Port control settings to disable all the ports on the shelf, and all the other shelves of the network also have their ports disabled, you will need to contact Nortel Networks to re-establish communication with your network.

—continued—

Procedure 4-4 (continued)

Changing configuration information for a shelf

Step	Action
8	Click OK to apply the changes.
9	If there is a major configuration change (such as a shelf IP change), a caution box warns you that the shelf is going to be re-started. If you originally opened the System Manager session using the old IP of this shelf, you will get a warning that the System Manager session will shut down. Click Yes to confirm the change. Note 1: A configuration change has no impact on the shelf traffic. Note 2: Depending on the size of the system, the Network Manager can take several minutes to update the information on the screen.
10	If a remote shelf has been reconfigured to connect to a new primary network element: • you must ensure that the internal OSPF area ID is changed to match that used in the new network. See Procedure 1-29 “Defining or changing advanced communications settings for the network” on page 1-59 • you must manually delete the remote shelf from the shelf list on the original primary network element to reflect this new configuration. The shelf list on the original primary network element does not automatically delete the reconfigured remote shelf from its shelf list. See Procedure 4-2 “Deleting a shelf”.

—end—

Procedure 4-5

Configuring shelf surveillance and external management

Use this procedure to configure surveillance and external management for a shelf.

The Shelf Configuration—Surveillance window contains information about where an Optical Metro 5100/5200 shelf sends SNMP traps for surveillance purposes. Each shelf can send traps to two external managers (recommended) up to a maximum of eight external managers.

The SNMP external manager receives the SNMP trap messages that the Optical Metro 5100/5200 shelf generates. You can decode the traps using the management information base (MIB) after the external manager compiles it.

The MIB file for the System Manager is a text file describing the SNMP agent that exists on an Optical Metro 5100/5200 shelf. You can order the MIB file from Nortel for Release 8.0 (NT0H70NA). Use the external manager to compile the MIB file so the MIB file can decode the traps sent from an Optical Metro 5100/5200 shelf.

Requirements

You must be logged into the System Manager as an Admin level user to configure surveillance and external management for a shelf.

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf where the surveillance and external management will be configured. <i>System Manager updates the screen with data for the selected shelf.</i>
2	Click on the Selected Shelves drop-down list to return the screen to full view.
3	Select the Configuration tab.
4	Select the Surveillance tab.
5	Double-click on the index (1 to 8) of one of the listed shelves, or right-click on the index and select Modify from the drop-down menu. If this is a first-time configuration, right-click and select Add from the drop-down menu. Note: As of Release 5.0, the shelf index 1 to 4 (type: per shelf) are dedicated to the managers that want only NE-based alarms, and index 5 to 8 (type: ringwide) are dedicated to the managers that want ring-wide alarms.

—continued—

4-18 Shelf management procedures

Procedure 4-5 (continued)

Configuring shelf surveillance and external management

Step	Action
	<i>The External Manager Entry window appears.</i>
	Note: For field definitions and possible values for the External Manager Entry window, see Table 4-2 on page 4-19 .
6	Enter the external Manager IP Address.
7	Enter the Trap port, if required.
	Note: The default Trap port is 162. The Trap port must match the trap port set on the external manager.
8	Enter the Trap community, if required.
	<i>The default Trap community is public. The community string must match the community string set on the external manager or it will not receive the traps from Optical Metro 5100/5200 shelves.</i>
9	From the Filter menu, select the items that will be reported to the external manager.
10	Select the Include security events/alarms check box if you want security-related information included as part of the items selected in step 9 .
11	Click OK on the External Manager Entry window.
	In the System Manager Configuration/Surveillance tab, the following shelf index columns are updated with the configured information:
	• IP address • Port • Community • Filter • Include security events/alarms

—continued—

 Procedure 4-5 (continued)

Configuring shelf surveillance and external management

Table 4-2
External Manager Entry window fields

Field name	Definition	Value/range
Shelf	Name of the shelf that will be configured to communicate with the external management system.	Defaults to the name of the shelf selected in the shelf surveillance window.
Manager IP address	SNMP address.	Address between 0.0.0.0 and 255.255.255.255
Trap Port	The communication port used by the receiving external management system.	The industry standard port number is 162. This can be changed to any number between 1 to 65535.
Trap Community	A text identifier for the receiving external management system.	Character string up to 20 characters.
Filter	The filter you select determines what type of information is sent to the external manager.	Select one of the three menu items: • All (alarms/events/user requests) • Alarms only • Alarms/events only • Service affecting alarms only • Service affecting alarms only, plus AIS, RDI and PM
Include security events/alarms	Check box to include security information with the items selected from the Filter drop-down list.	• Check the box to include security information • Uncheck the box to exclude security information

—end—

Procedure 4-6

Removing an external management entry

Use this procedure to remove an external management entry.

Requirements

You must be logged into the System Manager as an Admin level user to remove external management for a shelf.

Action

Step	Action
1	In the System Manager, click on the Selected Shelves drop-down list, and double-click on the shelf where the surveillance and external management will be removed. <i>System Manager updates the screen with data for the network.</i>
2	Click on the Selected Shelves drop-down list to return the screen to full view.
3	Select the Configuration tab.
4	Select the Surveillance tab. <i>The External Manager window appears.</i>
5	Right-click on the desired listed shelf index, and select Delete from the drop-down menu. <i>A Confirm Delete dialog box appears.</i>
6	Click Yes to delete the external management entry. In the System Manager Configuration/Surveillance tab, the following shelf index columns on which the external management entries were deleted are empty: • IP address • Port • Community • Filter • Include security events/alarms

—continued—

Procedure 4-6 (continued)**Removing an external management entry**

Step	Action
7	If you double-click again on the external management entry that was deleted (double-click on the associated shelf list index), you observe that the external management entries are reset to the default values: • Manager IP address: empty • Trap Port: 162 • Trap Community: public • Filter: All (alarms/events/user requests) • Include security events/alarms: not selected —end—

Procedure 4-7

Switching traffic off a span in a path-protected network

Use this procedure to switch traffic off a span in an Optical Metro 5100/5200 ring with minimal traffic disruption. You may need to use this procedure if you need to add a shelf at an existing site, add a new shelf and site to the ring, add an optical component, such as an OSC, to a site, or perform maintenance on the fiber span.

Requirements

You must have Admin or Operator level user privileges to carry out this procedure.

The steps involved in switching traffic off a span in a path-protected network require the following:

- 1 Know your network plan to be able to gather information on existing protected channel assignments. You will use the network planning information to find existing internally protected channel assignments that traverse through the span you want to switch traffic away from. Only the end points of the channel assignment need to be determined.
- 2 Use the network plan to identify the OCLD, OTR, and Muxponder facilities that are part of the existing internally protected channel assignments and that carry working traffic on the span you want to switch traffic away from.
- 3 Perform a Force switch on all identified OCLD, OTR, and Muxponder facilities to switch traffic away from that span.

Precautions



CAUTION

Risk of service interruption

When you force traffic to one path on a protected channel, the single path operates like an unprotected path. There is a risk of losing traffic if there is a fiber cut or equipment failure on the active path.

—continued—

 Procedure 4-7 (continued)

Switching traffic off a span in a path-protected network

**CAUTION****Risk of traffic interruption**

When the protected traffic is switched from the working path to the protection path, a short traffic interruption is observed.

**CAUTION****Risk of traffic loss**

If there are unprotected channels that traverse through the span you want to switch traffic away from, this traffic cannot be switched. The traffic going through the unprotected channels will be lost when you follow the next part of the work assignment (for example, performing maintenance on the fiber span).

Action

Step	Action

1	Use network planning information to find existing internally protected channel assignments that traverse through the span from which you want to switch traffic away. Only the two end points of the channel assignment need to be determined. Passthrough nodes do not need to be determined since passthrough nodes do not need to be switched. For example in Figure 4-1, Site A Band 5 and Site C Band 5 are end points of an internally protected channel assignment that traverse through the span off which the traffic will be switched. Note: The System Manager - Channel Assignments can be used to find and verify existing internally protected channel assignments that the network planning information captures.

—continued—

Procedure 4-7 (continued)

Switching traffic off a span in a path-protected network

Step	Action
2	Make photocopies of Table 4-3 so that you have enough copies to record each existing internally protected channel assignment that traverse through the span you want to switch traffic away from.

Table 4-3
Existing internally protected channel assignments that traverse through the span you want to switch traffic off of

End point shelf information	Channel number	Switch to OCLD, OTR, or MOTR westbound	Switch to OCLD, OTR, or MOTR eastbound
Site name:	1	Facility ____ ☐	Facility ____ ☐
	2	Facility ____ ☐	Facility ____ ☐
	3	Facility ____ ☐	Facility ____ ☐
	4	Facility ____ ☐	Facility ____ ☐
Shelf name:			
Band number:			
Site name:	1	Facility ____ ☐	Facility ____ ☐
	2	Facility ____ ☐	Facility ____ ☐
	3	Facility ____ ☐	Facility ____ ☐
	4	Facility ____ ☐	Facility ____ ☐
Shelf name:			
Band number:			
Site name:	1	Facility ____ ☐	Facility ____ ☐
	2	Facility ____ ☐	Facility ____ ☐
	3	Facility ____ ☐	Facility ____ ☐
	4	Facility ____ ☐	Facility ____ ☐
Shelf name:			
Band number:			
Site name:	1	Facility ____ ☐	Facility ____ ☐
	2	Facility ____ ☐	Facility ____ ☐
	3	Facility ____ ☐	Facility ____ ☐
	4	Facility ____ ☐	Facility ____ ☐
Shelf name:			
Band number:			

—continued—

Procedure 4-7 (continued)

Switching traffic off a span in a path-protected network

Step	Action						
3	Using the Network map, select one of the channel assignments that traverses through the span you want to switch traffic away from. <table> <tr> <th>If the channel assignment is</th><th>Then go to</th></tr> <tr> <td>protected</td><td>step 4</td></tr> <tr> <td>not protected</td><td>step 8</td></tr> </table>	If the channel assignment is	Then go to	protected	step 4	not protected	step 8
If the channel assignment is	Then go to						
protected	step 4						
not protected	step 8						
4	In Table 4-3 , for the selected protected channel assignment, record the site name of the end point in the “Site name” field.						
5	In Table 4-3 , for the selected protected channel assignment, record the shelf name of the end point in the “Shelf name” field.						
6	In Table 4-3 , for the selected protected channel assignment, record the band number in the “Band number” field.						
7	In Table 4-3 , for the selected protected channel assignment, mark the OCLD, OTR, or Muxponder facility that does not receive a signal from the span you want to switch traffic away from. <table> <tr> <th>If they are</th><th>Then</th></tr> <tr> <td>westbound signals</td><td>in the Switch to OCLD, OTR, or Muxponder westbound column, mark the OCLD, OTR, or Muxponder Facility box for the associated channel and enter the associated facility number (from 1 to 8). Then go to step 9.</td></tr> <tr> <td>eastbound signals</td><td>in the Switch to OCLD, OTR, or Muxponder eastbound column, mark the OCLD, OTR, or Muxponder Facility box for the associated channel and enter the associated facility number (from 11 to 18). Then go to step 9.</td></tr> </table>	If they are	Then	westbound signals	in the Switch to OCLD, OTR, or Muxponder westbound column, mark the OCLD, OTR, or Muxponder Facility box for the associated channel and enter the associated facility number (from 1 to 8). Then go to step 9 .	eastbound signals	in the Switch to OCLD, OTR, or Muxponder eastbound column, mark the OCLD, OTR, or Muxponder Facility box for the associated channel and enter the associated facility number (from 11 to 18). Then go to step 9 .
If they are	Then						
westbound signals	in the Switch to OCLD, OTR, or Muxponder westbound column, mark the OCLD, OTR, or Muxponder Facility box for the associated channel and enter the associated facility number (from 1 to 8). Then go to step 9 .						
eastbound signals	in the Switch to OCLD, OTR, or Muxponder eastbound column, mark the OCLD, OTR, or Muxponder Facility box for the associated channel and enter the associated facility number (from 11 to 18). Then go to step 9 .						

—continued—

Procedure 4-7 (continued)

Switching traffic off a span in a path-protected network**Step Action**

For example in [Figure 4-1](#), the end point at Site A Band 5 receives a signal on the westbound OCLD, OTR, or Muxponder and a signal on the eastbound OCLD, OTR, or Muxponder. The eastbound OCLD, OTR, or Muxponder is the OCLD, OTR, or Muxponder which does not receive a signal from the span that traffic will be switched off of. The end point at Site C Band 5 receives a signal on the westbound OCLD, OTR, or Muxponder and a signal on the eastbound OCLD, OTR, or Muxponder. The westbound OCLD, OTR, or Muxponder is the OCLD, OTR, or Muxponder which does not receive a signal from the span off of which traffic will be switched.

[Table 4-4](#) provides an example of how to fill in [Table 4-3](#) for internally protected connections displayed in [Figure 4-1](#) for channel 1 only.

Table 4-4

Example of how to fill [Table 4-3](#) for channel 1 displayed in [Figure 4-1](#)

End point shelf information	Channel number	Switch to OCLD, OTR, or MOTR westbound	Switch to OCLD, OTR, or MOTR eastbound
Site name: Site A Shelf name: SiteA_Band5 Band number: 5	1	Facility ____ ☐	Facility __18__ ☒
	2	Facility ____ ☐	Facility ____ ☐
	3	Facility ____ ☐	Facility ____ ☐
	4	Facility ____ ☐	Facility ____ ☐
Site name: Site C Shelf name: SiteC_Band5 Band number: 5	1	Facility __1__ ☒	Facility ____ ☐
	2	Facility ____ ☐	Facility ____ ☐
	3	Facility ____ ☐	Facility ____ ☐
	4	Facility ____ ☐	Facility ____ ☐

- 8** For the unprotected channels that traverse through the span you want to switch traffic away from, this traffic cannot be switched. The traffic going through those unprotected channels will be lost when you perform the next part of your work assignment (such as performing maintenance on the fiber span). Take note of these unprotected channels and advise your network administrator before proceeding to the next step.

—continued—

Procedure 4-7 (continued)

Switching traffic off a span in a path-protected network

Step	Action
9	Repeat step 3 to step 8 for all the channels assignments that traverse through the span you want to switch traffic away from. When all the channel assignments going through the span have been evaluated and recorded, go to the next step.
10	For each shelf listed in Table 4-3, switch traffic to each marked OCLD, OTR, or Muxponder facility. Follow Procedure 3-48 "Forcing traffic to one path on a protected channel". Note: As stated in Procedure 3-48 "Forcing traffic to one path on a protected channel", it is recommended that you perform a Manual switch prior to the Force switch to make sure that the protection path is available and capable of carrying traffic. If the Manual Switch fails, determine the reason for the failure based on the active alarms at the shelf where the Manual Switch failed. Correct the fault before proceeding.
11	Once you have completed step 10 for each shelf listed in Table 4-3 , the protected traffic is switched away from the DWDM fiber span. You can proceed with the next part of the work assignment on that span (for example, you can perform maintenance on the fiber span).

—end—

Upgrading Optical Metro 5100/5200 software

Refer to the change application procedure (CAP) for the software upgrade paths from releases 6.0, 6.1, 7.0 and 7.01, see CAP NTY434AJ.

You must log in to the primary shelf of System Manager as an Admin level user to upgrade the software.

Optical Trunk Switch OAM&P

Networking configuration

The Optical Trunk Switch must have an IP address to be accessible through a network. When you first communicate with the Optical Trunk Switch, the unit uses the default local IP address. For details, refer to [Procedure 6-1 “Communicating with the Optical Trunk Switch”](#). It is highly recommended to change the default IP address so that the OTS is remotely accessible. For details, refer to [Procedure 6-2 “Provisioning the Optical Trunk Switch”](#).

[Table 6-1](#) lists the default values for the Optical Trunk Switch.

Table 6-1
IP default values

Name	TL1 name	Default value
Local IP address	IP_ADDRESS	192.170.1.1
Sub-network IP mask	SUBNETMASK	255.255.255.0
Gateway IP address	GTWY_ADDRESS	0.0.0.0

For a list of events, autonomous messages, and alarms for the Optical Trunk Switch, see [“Optical Trunk Switch events, autonomous messages and alarms”](#) in *Trouble Clearing and Alarm Reference Guide*, 323-1701-542.

Optical Trunk Switch commands

You can control traffic switching through the front panel buttons, TL1, or menu interface commands.

Note 1: The Optical Trunk Switch performs an automatic protection switch when the input power is below -30 dBm and the system can confirm that a protection path is available.

Note 2: For ease of use, Nortel Networks recommends that you use the menu interface.

If one or both of the primary links fail, traffic automatically switches bi-directionally to the standby links. When the primary link is repaired the OTS does not switch back to the primary path unless a Switchback command is issued. Traffic can be restored to it when:

- there is a failure in one or both of the standby links
- the PRI/STNBY/SWBK button on the front of either Optical Trunk Switch is pushed while in automatic mode (traffic is bi-directionally switched in less than 100 ms)
- the PRI/STNBY/SWBK button on the front of each Optical Trunk Switch is pushed while the module is in manual mode (there is no time limit for traffic switching)
- switchback is triggered through the TL1 or menu interface

When two Optical Trunk Switches are in opposite states, you can synchronize them by initiating a switchback from either module. This synchronization works when the primary link is operational.

TL1 commands

TL1 is an industry-recognized common language protocol used to exchange messages between network elements and an operations system.

[Table 6-2](#) lists the TL1 commands that you can use to operate the Optical Trunk Switch. For detailed information about these commands, see *TL1 Interface*, 323-1701-190.

Table 6-2
Optical Trunk Switch TL1 interface commands

Command	Description
act-user	Activates the TL1 user administration session.
alw-msg-all	Allows reporting of autonomous messages.
canc-user	Terminates the TL1 administration session.

Table 6-2 (continued)
Optical Trunk Switch TL1 interface commands

Command	Description
dwnld-sw	Initiates an FTP software download. <i>This command is not Telcordia-compliant.</i>
ed-dat	Sets real-time clock date and time.
ed-eqpt	Sets equipment information.
ed-pid	Changes a user's password (PID).
ent-sys	Changes the Optical Trunk Switch IP values. Note: You can only enter one parameter per command.
inh-msg-all	Inhibits reporting of autonomous messages.
init-log	Clears the current log.
init-sys	Causes a module reset.
menu	Initiates menu command interface. <i>This command is not Telcordia-compliant.</i>
rtrv-alm-eqpt	Displays current equipment alarm conditions.
rtrv-eqpt	Displays equipment information.
rtrv-hdr	Displays current date and time.
rtrv-log	Displays current log.
rtrv-netype	Displays product identification and software version number.

Menu commands

You can use menu commands to access the Optical Trunk Switch. Most of the information available from the TL1 interface is also available from the menu interface.

[Table 6-3](#) lists the main menu commands. Use the characters in the square brackets to select a menu entry.

Table 6-3
Main menu commands

Entry	Command	Description
[a]	Card Information	Displays system level information, such as card ID, card type, and card IP. The information on this screen is read-only.
[b]	Card Operations	Allows the selection of the operations possible on the card by "Card Operations Menu".
[c]	Card Logs and Alarms	Allows the selection of the actions possible on the card by "Card Logs and Alarms Menu".
[x]	Exit	Exits from the menu system and returns to the TL1 interface.

[Table 6-4](#) lists the commands on the Card Operations screen.

Table 6-4
Card Operations screen commands

Entry	Command	Description
[a]	Change Date	Use this command to enter the new current date.
[b]	Change Time	Use this command to enter the new current time.
[c]	Change Card ID	Use this command to change the Optical Trunk Switch ID.
[d]	Change IP Address	Use this command to change the IP address of the module. The default is 192.170.1.1. The change takes effect after the next system reset.
[e]	Change IP Net Mask	Use this command to change the IP network address mask of the Optical Trunk Switch. The default is 255.255.255.0. The change takes effect after the next reset.
[f]	Change IP Gateway Address	Use this command to change the Optical Trunk Switch IP gateway address. The change takes effect after the next reset.
[g]	Change Mode Between Automatic and Manual	Use this command to change the operating mode; for example, from manual to automatic.
[h]	Change Optical Switch Position	Use this command to change the position of the Optical Trunk Switch.

Table 6-4 (continued)
Card Operations screen commands

Entry	Command	Description
[i]	Trigger Switch-back to PRI	Use this command to trigger the switch to the primary path.
[j]	Enable/Disable Autonomous Messages	Use this command to toggle autonomous messages on or off.
[k]	FTP Software Download	Use this command to initiate an FTP software download to the Optical Trunk Switch from the specified external server.
[r]	Reset Card	Use this command to reset the Optical Trunk Switch. This command terminates the menu session.
[p]	Previous Menu	Use this command to go to the previous menu.
[x]	Exit	Use this command to exit the menu system and return to the TL1 interface.

[Table 6-5](#) lists the commands on the Card Logs and Alarms screen.

Table 6-5
Card Logs and Alarms screen commands

Entry	Command	Description
[a]	Display Logs	Use this command to display the list of the 25 most recent logs.
[b]	Delete Logs	Use this command to delete all the logs currently available.
[c]	Display Alarms	Use this command to display all the alarms on the Optical Trunk Switch.
[p]	Previous Menu	Use this command to go to the previous menu.
[x]	Exit	Use this command to exit the menu system and return to the TL1 interface.

Procedure list

Table 6-6 lists the procedures in this chapter.

Table 6-6
Optical Trunk Switch operation procedures

Procedure	Page	Comments
6-1 Communicating with the Optical Trunk Switch	6-7	Required to: • set-up initial communications with the Optical Trunk Switch • open an Optical Trunk Switch TL1 session • access the Optical Trunk Switch menu system • close the Optical Trunk Switch menu system • close the Optical Trunk Switch TL1 session
6-2 Provisioning the Optical Trunk Switch	6-12	Required to change the date, time and networking configuration information
6-3 Operating the Optical Trunk Switch	6-14	Required to: • change mode between Automatic and Manual • change the optical switch position • trigger switch-back to PRI • restore traffic
6-4 Configuring the Optical Trunk Switch telemetry alarms	6-19	Required to configure the Optical Trunk Switch telemetry alarms on the System Manager.

Table 6-7 lists the process flow for the OTS.

Table 6-7
Optical Trunk Switch process flow

Action	Refer to
Understand how to connect to the OTS	Procedure 6-1 “Communicating with the Optical Trunk Switch”
Know that the date, time and networking configuration should be changed. The date and time should be synchronized with the network’s date and time. It is also highly recommended to change the default IP networking information.	Procedure 6-2 “Provisioning the Optical Trunk Switch”
Know that the available commands (using front panel buttons, user session interface, and TL1) on the OTS can be service-affecting.	Procedure 6-3 “Operating the Optical Trunk Switch”

Procedure 6-1

Communicating with the Optical Trunk Switch

Use this procedure to:

- 1 set-up communications with the Optical Trunk Switch
- 2 open an Optical Trunk Switch TL1 session
- 3 if required, access the Optical Trunk Switch menu system
- 4 if required, close the Optical Trunk Switch menu system
- 5 close the Optical Trunk Switch TL1 session

The steps above must be made in the specified order for proper functionality.

Note 1: There can be only one user logged into the switch at a time.

Note 2: After it has been idle for 10 minutes, the menu session automatically closes and returns to the TL1 session.

Note 3: If autonomous messages are disabled and it has been idle for 10 minutes, the TL1 session automatically closes. The TL1 session remains open if autonomous messages are enabled.

Requirements

To set-up initial communications with the Optical Trunk Switch, make sure you know the IP address of the Optical Trunk Switch. If you do not have this information, the procedure instructs you to reset the IP address of the Optical Trunk Switch to the manufacturing default value (192.170.1.1). If the reset is required, advise your network administrator before making the IP address change.

To access the Optical Trunk Switch menu system, make sure you have the valid user identifier. The default is OEM_User.

You will need the items listed in the following table during the procedure.

Item	Quantity	Supplied
RJ45 cross 10Base-T network cable	1	No

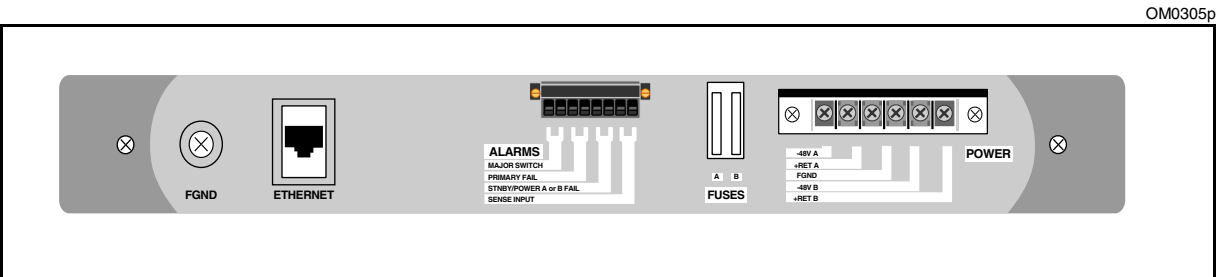
—continued—

Procedure 6-1 (continued)
Communicating with the Optical Trunk Switch

Action

Step	Action
1	To initiate communications with the Optical Trunk Switch, set your PC TCP/IP settings to: • IP Address: 192.170.1.2 • Subnet Mask: 255.255.255.0 • Default Gateway: 192.170.1.2
2	Restart your PC to apply the TCP/IP settings changes.
3	Connect the Optical Trunk Switch to the PC Ethernet card using an RJ45 cross 10Base-T network cable. Note: The Ethernet connector is located on the back of the Optical Trunk Switch mode (see Figure 6-1).

Figure 6-1
Optical Trunk Switch - back panel



4	Open a DOS session on your PC. Make sure you have communication with the Optical Trunk Switch module.	
	If	Then type the following in the DOS window:
	you do not know the IP address of the Optical Trunk switch, or if it still has the manufacturing default IP address	ping 192.170.1.1 Go to the next step.
	you know the IP address of the Optical Trunk switch (and it is different from the manufacturing default IP address)	ping x.x.x.x Go to the next step.

—continued—

Procedure 6-1 (continued)

Communicating with the Optical Trunk Switch

Step	Action
5	If the output from the command in step 4 is “host unreachable”, “request timed out”, or something similar Then make sure that step 1 to step 4 were performed correctly. If the steps were performed correctly, advise your network administrator and then reset the default IP values of the Optical Trunk Switch module by pressing and holding the AUTO/MAN button for about 20 seconds (or until the UNIT ON/FAIL indicator lamp turns red and then green again). Go to step 4. “reply from x.x.x.x ...” communication with the Optical Trunk Switch module is working. Go to step 6.
6	In the DOS window, type: <pre>telnet x.x.x.x</pre> where x.x.x.x is the IP address of the Optical Trunk Switch. For example, the default IP address is 192.170.1.1. <i>A start up message appears followed by a prompt indicating that an TL1 session has been opened.</i>
7	In the TL1 session, you now have access to the TL1 interface commands listed in Table 6-2 on page 6-2. When you have completed the required tasks in the TL1 interface, you can: • terminate the TL1 session, go to step 12 • log in to the Optical Trunk Switch interface menu, go to step 8 Note: For ease of use, Nortel Networks recommends that you use the menu interface commands rather than the TL1 session commands.

—continued—

Procedure 6-1 (continued)

Communicating with the Optical Trunk Switch

Step	Action						
8	Log in to the Optical Trunk Switch using the TL1 user ID (default is: OEM_User) and password (default is: OEM_%#1). For default TL1 user ID and password, type: <pre>act-user::OEM_User:x::OEM_%#1;</pre> For any other TL1 user ID and password, type: <pre>act-user::<user ID>:x::<password>;</pre> Note: The default login ID and password are case sensitive. Type these commands exactly as they appear in the documentation. <table> <tr> <th>If</th><th>Then</th></tr> <tr> <td>the command executes successfully</td><td>a success message with a warning about user access privilege is displayed</td></tr> <tr> <td>there is an error</td><td> an error message of the following form is displayed (see table below for definitions): <pre> <sid> <date> <time> M <ctag> DENY <errcde> /*<error text>*/ ; </pre> Repeat this step ensuring that the proper login ID and password are used and that the command is entered exactly as it appears in the documentation. </td></tr> </table>	If	Then	the command executes successfully	a success message with a warning about user access privilege is displayed	there is an error	an error message of the following form is displayed (see table below for definitions): <pre> <sid> <date> <time> M <ctag> DENY <errcde> /*<error text>*/ ; </pre> Repeat this step ensuring that the proper login ID and password are used and that the command is entered exactly as it appears in the documentation.
If	Then						
the command executes successfully	a success message with a warning about user access privilege is displayed						
there is an error	an error message of the following form is displayed (see table below for definitions): <pre> <sid> <date> <time> M <ctag> DENY <errcde> /*<error text>*/ ; </pre> Repeat this step ensuring that the proper login ID and password are used and that the command is entered exactly as it appears in the documentation.						

where	
<uid>	is the user identifier
<ctag>	is the correlation tag
<pid>	is the private identifier or password
<sid>	is the source identifier
<date>	is in the form YYYY-MM-DD
<time>	is in the form hh:mm:ss
<errcde>	is the code for the error encountered
<error text>	is a brief text description of the error

- 9 To launch a new session, type:
- ```
menu;
```

—continued—

## Procedure 6-1 (continued)

**Communicating with the Optical Trunk Switch**

| Step                             | Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |               |      |                             |                                                                                                                                   |                                  |                                                                                                                                        |
|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| 10                               | <p>You are now in the main menu for the Optical Trunk Switch. In the main menu, the commands listed in <a href="#">Table 6-3 on page 6-4</a> are available and listed on the screen.</p> <p>From the main menu:</p> <table> <tr> <th>If you select</th><th>Then</th></tr> <tr> <td>the Card Operations command</td><td>the Card Operations screen<br/>commands listed in <a href="#">Table 6-4 on page 6-4</a> are available and are listed on the screen</td></tr> <tr> <td>the Card Logs and Alarms command</td><td>the Card Logs and Alarms screen<br/>commands listed in <a href="#">Table 6-5 on page 6-5</a> are available and are listed on the screen</td></tr> </table> | If you select | Then | the Card Operations command | the Card Operations screen<br>commands listed in <a href="#">Table 6-4 on page 6-4</a> are available and are listed on the screen | the Card Logs and Alarms command | the Card Logs and Alarms screen<br>commands listed in <a href="#">Table 6-5 on page 6-5</a> are available and are listed on the screen |
| If you select                    | Then                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |               |      |                             |                                                                                                                                   |                                  |                                                                                                                                        |
| the Card Operations command      | the Card Operations screen<br>commands listed in <a href="#">Table 6-4 on page 6-4</a> are available and are listed on the screen                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |      |                             |                                                                                                                                   |                                  |                                                                                                                                        |
| the Card Logs and Alarms command | the Card Logs and Alarms screen<br>commands listed in <a href="#">Table 6-5 on page 6-5</a> are available and are listed on the screen                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |               |      |                             |                                                                                                                                   |                                  |                                                                                                                                        |
| 11                               | <p>When you have completed the required tasks in the Optical Trunk Switch menu interface, exit the interface. Type the following command:</p> <p>x</p> <p><i>The system returns you to the TL1 interface.</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                |               |      |                             |                                                                                                                                   |                                  |                                                                                                                                        |
| 12                               | <p>When you have completed the required tasks in the TL1 interface, terminate the TL1 session.</p> <p>For default TL1 user ID, type:</p> <pre>canc-user::OEM_User:x;</pre> <p>For any other TL1 login ID, type:</p> <pre>canc-user::&lt;user ID&gt;:x;</pre> <p><b>Note:</b> The TL1 user ID (default is OEM_User) is case sensitive. Type this command exactly as it appears in the preceeding example.</p> <p>—end—</p>                                                                                                                                                                                                                                                        |               |      |                             |                                                                                                                                   |                                  |                                                                                                                                        |

## Procedure 6-2

# Provisioning the Optical Trunk Switch

---

Use this procedure to:

- 1 change the date and time
- 2 change the networking configuration information

### Requirements

Before performing this procedure, make sure that

- if this is the first time that you are provisioning the OTS, you probably have a computer connected directly to the OTS and need to connect with the default IP address. Otherwise, contact your network administrator for IP address information to connect remotely
- communications with the OTS is established (see [Procedure 6-1, “Communicating with the Optical Trunk Switch”](#))
- you know how to open the OTS user session interface (see [Procedure 6-1, “Communicating with the Optical Trunk Switch”](#)) and navigate among the various menu levels and commands

### Action

| Step | Action                                                                                                                                                                                                |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | Connect to the user session interface. For details, refer to <a href="#">Procedure 6-1 “Communicating with the Optical Trunk Switch”</a> .                                                            |
| 2    | From the main menu, select the Card Operations mode by selecting:<br>[b] Card Operations menu<br>For more information on the Card Operations screen menu, see <a href="#">Table 6-4 on page 6-4</a> . |
| 3    | Change the date by selecting:<br>[b] Change Date<br>This is recommended to synchronize with the networks' System Manager (SMI) date.                                                                  |
| 4    | Change the time by selecting:<br>[c] Change Time<br>This is recommended to synchronize with the networks' SMI time.                                                                                   |
| 5    | Change the Card ID (if applicable) by selecting:<br>[d] Change Card ID                                                                                                                                |

—continued—

---

Procedure 6-2 (continued)**Provisioning the Optical Trunk Switch**

---

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

---

|                                                                                                                                                                                                                                                                                                                                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p style="text-align: center;"><b>ATTENTION</b></p> <p>Steps 6 to 8 are highly recommended if the OTS is to be remotely accessed. If the OTS is not remotely accessible, a visit to the OTS site may be required to restore traffic in some cases. Your network administrator should provide the IP address, Net Mask, and gateway address to apply.</p> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

- |          |                                                                                                                                    |
|----------|------------------------------------------------------------------------------------------------------------------------------------|
| <b>6</b> | Change the IP address by selecting:<br>[d] Change IP Address                                                                       |
| <b>7</b> | Change the IP Net Mask by selecting:<br>[e] Change IP Net Mask                                                                     |
| <b>8</b> | Change the IP Gateway Address by selecting:<br>[f] Change IP Gateway Address                                                       |
| <b>9</b> | Reset the OTS to apply the networking configuration changes. Reset the OTS by turning the OTS power to off and then back on again. |

—end—

## Procedure 6-3

# Operating the Optical Trunk Switch

---

Use this procedure to

- change mode between Automatic and Manual
- change Optical Switch Position
- trigger Switch-back to PRI
- restore traffic

### ATTENTION

Although there are two modes in which you can operate the Optical Trunk Switch (OTS), Automatic and Manual, Automatic is the recommended operating mode.

### Automatic Operating Mode

Automatic operating mode is the normal operating mode and is the recommended method for the OTS. You can operate the OTS in Automatic mode using the front panel buttons ([step 1](#) to [step 3](#)), the user session interface ([step 4](#) to [step 11](#)), or TL1. For more information, refer to “[Optical Trunk Switch commands](#)” on [page 6-2](#).

## Requirements

Before performing this procedure, make sure that

- you know how the OTS functions. For more information on the OTS, see the chapter “[Optical Trunk Switch](#)” in *Hardware Description*, 323-1701-102.
- if you wish to restore traffic, make sure that the OTS is connected to the other optical components as instructed in [Procedure 3-18](#), “[Connecting trunk switches to optical components](#)” in *Connection Procedures*, 323-1701-221
- communications with the OTS is established (see [Procedure 6-1](#), “[Communicating with the Optical Trunk Switch](#)”)
- you know how to open the OTS user session interface (see [Procedure 6-1](#), “[Communicating with the Optical Trunk Switch](#)”) and navigate among the various menu levels and commands
- the primary and standby links have optical continuity, that is, no loss of signal.

—continued—

## Procedure 6-3 (continued)

## Operating the Optical Trunk Switch

## Precautions

**CAUTION****Risk of traffic loss of interruption**

Traffic can be lost or interrupted if inappropriate actions are taken. Ensure the network administrator is aware before following this procedure.

## Action

| Step | Action |
|------|--------|
|------|--------|

**Front panel buttons**

- 1 Ensure that the OTS is in Automatic mode by verifying that the \*AUTO/MAN indicator lamp is lit green. If it is not lit green, press the \*AUTO/MAN button once.
- 2 Ensure that the OTS is carrying traffic on the primary fiber pair by verifying that the PRI ACT indicator lamp is lit green. Press the PRI/STNBY \*SWBK button once.  
**Note:** Step 2 should have triggered a switch-back to the primary fiber pair. Traffic is bi-directionally restored on the primary fiber pair on both line-facing OTSs. If you were unsuccessful, or traffic is not yet restored, go to [step 3](#).
- 3 If at [step 2](#) you were unable to switch the traffic to the primary fiber pair (the PRI ACT indicator lamp did not remain lit green), make sure both line-facing OTSs are set to Automatic. Repeat [step 1](#) and [step 2](#) for the opposite line-facing OTS. The primary and standby links should be optically and physically operating normally.

**User session interface**

- 4 Connect to the user session interface. For details, refer to [Procedure 6-1 "Communicating with the Optical Trunk Switch"](#).

—continued—

## Procedure 6-3 (continued)

**Operating the Optical Trunk Switch**

---

| Step | Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5    | Ensure that the OTS is in Automatic mode by selecting:<br>[a] Card Information menu<br>The Optical Mode field should display AUTOMATIC. If it does not display AUTOMATIC, go to <a href="#">step 6</a> . If it does display AUTOMATIC, go to <a href="#">step 8</a> .                                                                                                                                                                                                                                                                                                            |
| 6    | From the Card Operations menu, change the Optical mode to Automatic by selecting:<br>[g] Change Mode Between Automatic and Manual                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 7    | Ensure that the OTS is in Automatic mode by selecting:<br>[a] Card Information menu<br>The Optical Mode field should display AUTOMATIC. If it does not display AUTOMATIC, go to <a href="#">step 6</a> . If it does display AUTOMATIC, go to <a href="#">step 8</a> .                                                                                                                                                                                                                                                                                                            |
| 8    | It is recommended to have the OTS carry traffic on the primary fiber pair. Ensure that the Switch Position is set to Primary by selecting:<br>[a] Card Information menu<br>The Switch Position field should display Primary. If it does not display Primary, go to <a href="#">step 9</a> . If it does display Primary, go to <a href="#">step 10</a> .                                                                                                                                                                                                                          |
| 9    | From the Card Operations menu, trigger a switch-back to the primary fiber pair by selecting:<br>[i] Trigger Switch-back to PRI<br><b>Note:</b> Step 9 should have triggered a switch-back to the primary fiber pair. Traffic is bi-directionally restored on the primary fiber pair on both line-facing OTSs. To verify that <a href="#">step 9</a> was successful, repeat <a href="#">step 8</a> . If the Optical Mode still does not display AUTOMATIC, or the Switch Position still does not display Primary, or the traffic is not restored, go to <a href="#">step 10</a> . |

—continued—



## Procedure 6-3 (continued)

**Operating the Optical Trunk Switch**

| Step | Action                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10   | <p>If you are unable to switch the traffic to the primary fiber pair or are unable to restore traffic, make sure both line-facing OTSs Optical Mode and Switch Position are set to AUTOMATIC and Primary respectively. Repeat <a href="#">step 4</a> to <a href="#">step 10</a> for the opposite line-facing OTS.</p> <p><b>Note:</b> The primary and standby links should be optically and physically operating normally.</p> |
| 11   | Traffic should be restored. Both line-facing OTSs' Optical Mode and Switch Position should display AUTOMATIC and Primary respectively.                                                                                                                                                                                                                                                                                         |

**Manual Operating Mode**

Manual operating mode is not recommended. This mode requires user invention on both line-facing OTSs to restore traffic. For example, if a fiber cut were to occur, the traffic would not be restored until an operator manually sets the OTS traffic on the appropriate path (the trunk).

If you still choose to operate in Manual, you can operate the OTS using the front panel buttons ([step 12](#) to [step 13](#)), the user session interface ([step 14](#) to [step 17](#)), or TL1. For details, refer to “[Optical Trunk Switch commands](#)” on [page 6-2](#).

**CAUTION****Risk of affecting service**

When the OTS is in Manual mode and you switch to the primary or standby link, the module switches traffic regardless of whether or not that link is operating normally. This switching is not synchronized with the OTS at the other end of the link, and may be service-affecting.

—continued—

## Procedure 6-3 (continued)

**Operating the Optical Trunk Switch**

---

| Step | Action |
|------|--------|
|------|--------|

---

**Front panel buttons**

- 12** Ensure that the OTS is in Manual mode by verifying that the \*AUTO/MAN indicator lamp is lit red. If it is not lit red, press the \*AUTO/MAN button once.

**ATTENTION**

For traffic continuity in Manual mode, the active fiber pair (Primary or Standby) must be synchronized with the OTS at the other end of the link.

- 13** To toggle between the primary and standby pair, press the PRI/STNBY \*SWBK button once. The PRI ACT or STNBY ACT indicator lamp should be lit green depending on which Primary or Standby path was selected.

**Note:** This is a single-ended action and traffic will not be restored unless the OTS at the other end of the link shares the same active path. If you were unsuccessful in restoring traffic, repeat [step 12](#) and [step 13](#) for the other line-facing OTS located at the other end of the link.

**User session interface**

- 14** Connect to the user session interface. For details, refer to [Procedure 6-1 "Communicating with the Optical Trunk Switch"](#).

- 15** Ensure that the OTS is in Manual mode by selecting:

[a] Card Information menu

The Optical Mode field should display MANUAL. If it does not display MANUAL, go to [step 16](#). If it does display MANUAL, go to [step 17](#).

- 16** From the Card Operations menu, change the Optical Mode to Manual by selecting:

[g] Change Mode Between Automatic and Manual

**ATTENTION**

For traffic continuity in Manual mode, the active fiber pair (Primary or Standby) must be synchronized with the OTS at the other end of the link.

- 17** From the Card Operations menu, toggle between the primary and standby pair by selecting:

[h] Change Optical Switch Position

**Note:** This is a single-ended action and traffic will not be restored unless the OTS at the other end of the link shares the same active path. If traffic is not restored, repeat [step 14](#) to [step 17](#) for the other line-facing OTS located at the other end of the link.

—end—

## Procedure 6-4

# Configuring the Optical Trunk Switch telemetry alarms

Use this procedure to configure the Optical Trunk Switch telemetry alarms on the System Manager.

[Table 6-8](#) lists the alarms that can appear for the Optical Trunk Switch.

**Table 6-8**  
**Optical Trunk Switch alarms**

| Input port | Description                  | Recommended alarm severity | Recommended alarm description          | Location                |
|------------|------------------------------|----------------------------|----------------------------------------|-------------------------|
| 1          | Module on Standby link       | Major                      | Opt Trunk Sw operating on Standby link | MAJOR SWITCH relay      |
| 2          | Module primary link failure  | Major                      | Opt Trunk Sw Primary link failure      | PRIMARY FAIL relay      |
| 3          | Module standby or power fail | Major                      | Opt Trunk Sw Stnby link or Pwr AB fail | STNBY/POWER A or B FAIL |

## Requirements

You must be logged into the System Manager as an Admin level user to configure telemetry alarms.

The user must connect the telemetry ports of the Optical Trunk Switch to the Maintenance panel of the Optical Metro 5100/5200 shelf for the system to adequately report the provisioned Optical Trunk Switch alarms.

## Action

| Step | Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | <p>Connect the telemetry ports of the Optical Trunk Switch to the Maintenance panel of the shelf for the system to adequately report the provisioned Optical Trunk Switch alarms. The user must do that prior to provisioning the Optical Trunk Switch alarms to understand the connectivity of the telemetry input and output ports on the Maintenance panel.</p> <p>To achieve the telemetry port connections, refer to <a href="#">Procedure 6-1“Connecting shelf alarms and telemetry equipment to the central office alarm system”</a> in <i>Installing Optical Metro 5200 Shelves and Components</i>, 323-1701-201.</p> |

—continued—

Procedure 6-4 (continued)

**Configuring the Optical Trunk Switch telemetry alarms**

---

| Step | Action                                                                                                      |
|------|-------------------------------------------------------------------------------------------------------------|
| 2    | In the System Manager, click on the Equipment tab.                                                          |
| 3    | Click on the Telemetry tab.<br><i>The System Manager lists the shelves that have telemetry connections.</i> |

**Configuring the Input port**

- |   |                                                                                                                                                                                                                                                     |
|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4 | Double click on the Input port that you want to configure.<br><i>The Parallel Telemetry Input window appears.</i><br><b>Note:</b> The information in the telemetry window is specific to each cell. Double click on a cell to view the information. |
| 5 | Enter a description of the input device, using the recommended description information from <a href="#">Table 6-8 on page 6-19</a> .                                                                                                                |
| 6 | From the pull-down menu, select the alarm severity using the recommended severity information from <a href="#">Table 6-8 on page 6-19</a> .                                                                                                         |
| 7 | Enter the alarm text (alarm description) that you want the System Manager to display when it raises an alarm for the Input port. Use the recommended alarm description from <a href="#">Table 6-8 on page 6-19</a> .                                |
| 8 | Place the Input port in-service by clicking the radio button.                                                                                                                                                                                       |
| 9 | Click on the <b>OK</b> button to apply the change and close the Parallel Telemetry Input window.                                                                                                                                                    |

—end—

---

# Performance monitoring procedures

---

Use the procedures in this chapter to make performance monitoring (PM) and operational measurement (OM) queries, view performance parameter (PP) statistics, browse historical counts, and set threshold and count controls.

Performance monitoring allows you to sectionalize and isolate faults without affecting service. To use performance monitoring to troubleshoot the Optical Metro 5100/5200 systems, refer to the *Trouble Clearing and Alarm Reference Guide*, 323-1701-542.

## Before you begin

Before you begin the procedures in this chapter, make sure that you have

- read the [“Performance monitoring description”](#) chapter in *Software and User Interface*, 323-1701-101
- completed the installation of the System Manager and the Web browser using the procedures in the [“Installing the System Manager”](#) chapter in *Commissioning Procedures*, 323-1701-220
- correctly configured a remote connection between the System Manager computer and the Optical Metro 5100/5200 network, if required, according to the procedures in the [“Configuring a remote connection to the System Manager”](#) chapter in *Commissioning Procedures*, 323-1701-220

## Procedure list

Table 7-1 lists the procedures in this chapter.

**Table 7-1**  
**Performance monitoring procedures**

| Procedure                                                                                     | Page | Comments                                                                                                                                                                                             |
|-----------------------------------------------------------------------------------------------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7-1 Making a PM query                                                                         | 7-3  | See Table 3-40 in the “Performance monitoring procedures” chapter of <i>Software and User Interface</i> , 323-1701-101, for other ways to make Performance Monitoring queries.                       |
| 7-2 Viewing facility history counts                                                           | 7-6  | Required to view history counts for a facility performance parameter.                                                                                                                                |
| 7-3 Resetting facility counts to zero                                                         | 7-7  | Required if an invalid data flag appears, or if needed for testing.                                                                                                                                  |
| 7-4 Viewing performance parameter threshold details                                           | 7-9  | Required to view details for a selected facility or equipment parameter.                                                                                                                             |
| 7-5 Enabling or disabling TCA reporting at the parameter level                                | 7-12 | As required.                                                                                                                                                                                         |
| 7-6 Enabling or disabling facility TCA reporting for a specified interval, port, or direction | 7-14 | As required.                                                                                                                                                                                         |
| 7-7 Adjusting PM threshold values                                                             | 7-16 | Required to adjust facility parameter thresholds and user provisionable equipment parameter thresholds.                                                                                              |
| 7-8 Resetting PM thresholds to default values                                                 | 7-18 | Useful for individual Performance Parameters.                                                                                                                                                        |
| 7-9 Performing shelf-level operations                                                         | 7-20 | Required to reset all threshold values, bin counts, and user provisionable values, set facility TCA type, enable or disable TCA reporting, and provision PM bin zero suppression at the shelf level. |
| 7-10 Performing card-level operations                                                         | 7-24 | Required to reset all threshold values, bin counts, and user provisionable values, and enable or disable TCA reporting at the circuit pack level.                                                    |
| 7-11 Making an OM query                                                                       | 7-27 | Only supported on the OCI SRM GbE/FC and OTR 10 Gbit/s Enhanced circuit packs.                                                                                                                       |
| 7-12 Resetting OM counts to zero                                                              | 7-30 | Only supported on the OCI SRM GbE/FC and OTR 10 Gbit/s Enhanced circuit packs.                                                                                                                       |
| 7-13 Refreshing PM information                                                                | 7-32 | As required.                                                                                                                                                                                         |

---

## Procedure 7-1

### Making a PM query

---

Use this procedure to select options to define your PM query and to view the results of the query.

For other ways to initiate PM queries, refer to [Table 3-40 on page 3-64](#) in the “[Performance monitoring description](#)” chapter of *Software and User Interface*, 323-1701-101.

### Requirements

You must be logged into the System Manager to perform this procedure. To log into the network, follow [Procedure 1-1, “Logging into the network” on page 1-7](#).

### Action

| Step | Action                                                                                                                                                                                                                                                                                                                               |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | In System Manager, select the Performance Monitor tab.<br><i>The Launch PMs window appears.</i>                                                                                                                                                                                                                                      |
| 2    | Click the <b>Launch</b> button, or check the <b>Auto Launch</b> check box if you want PMs to launch automatically each time you select the Performance Monitor tab for this session.<br><i>The Optical Metro Performance Monitor window appears.</i>                                                                                 |
| 3    | In the Location section of the Performance Monitor window, select a shelf to query from the drop-down list in the NE field.                                                                                                                                                                                                          |
| 4    | In the Location section of the Performance Monitor window, select a circuit pack to query from the drop-down list in the Slot field.<br><i>In the Performance parameters section of the Performance Monitor window, the options displayed are updated to reflect the parameters available for the type of circuit pack selected.</i> |
| 5    | Select the direction (Tx or Rx) from the drop-down list provided.                                                                                                                                                                                                                                                                    |

—continued—

## 7-4 Performance monitoring procedures

---

### Procedure 7-1 (continued)

#### Making a PM query

---

| Step | Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 6    | <p>Select the port you want to query. If the selected circuit pack has multiple ports, select the port you want to query from the drop-down list in the Port field.</p> <p><b>Note 1:</b> Port numbers in the drop-down list correspond to the physical alignment of the ports on the circuit pack, beginning with Port 1 at the top of the circuit pack.</p> <p><b>Note 2:</b> For paths and aggregate ports, select “aggr/paths”.</p> <p><b>Note 3:</b> You may also select “All”, which will query all the performance parameters (PPs) on that slot in the selected direction. When you choose “All”, the option to select or de-select individual PPs is disabled.</p> |
| 7    | <p>Use the check boxes beside the parameters in the Performance parameters section of the Performance Monitor window to specify which parameters you want to query.</p> <p><b>Note 1:</b> If you want to retrieve the performance statistics for all the parameters in the list, click the <b>Select All</b> check box. If you want to deselect all the items in the list so that you can change your query, click the <b>Unselect All</b> check box, before you make your selection.</p> <p><b>Note 2:</b> You cannot use the check box to select Performance parameters for the OCI SRM circuit packs.</p>                                                                |
| 8    | <p>In the Output options section, select how you want the query results displayed.</p> <p><b>Note:</b> If you want to add the results of this query to the results from the previous query, click the <b>Append to current list</b> radio button. If you click the <b>Create new list</b> radio button, any previous query results are replaced with the new results.</p>                                                                                                                                                                                                                                                                                                   |
| 9    | <p>Click <b>Retrieve</b>.</p> <p><i>The Optical Metro Performance Monitor retrieves performance statistics for both equipment and facilities. To view Equipment PMs, select the Equipment tab at the bottom left of the Performance Monitor window. To view Facility PMs, select the Facility tab.</i></p>                                                                                                                                                                                                                                                                                                                                                                  |

—continued—



## Procedure 7-1 (continued)

**Making a PM query**

| Step | Action |
|------|--------|
|------|--------|

**Note 1:** If you query the performance parameters for the OCI SRM GbE/FC or OCI SRM GbE (GFSRM), or the OTR 10 Gbit/s Enhanced circuit packs, two additional tabs are available at the bottom left of the Performance Monitor window: Generic operational measurement (OMs) and Ethernet operational measurements (OMs). Generic and Ethernet OMs are only supported on OTR 10 Gbit/s Enhanced circuit packs when a 10G Ethernet LAN bit rate is provisioned. For additional information, see [Procedure 7-11, “Making an OM query”](#) in this chapter.

**Note 2:** The Degrade, Fail, and User Threshold performance parameters will not display a threshold value if the information is not available. Refer to *Technical Specifications*, 323-1701-180, for more information on optical power threshold values.

**Note 3:** The Threshold Crossing Alert (TCA) column indicates whether or not a count has crossed the TCA threshold for a facility performance parameter.

**Note 4:** The Threshold Crossing Alert (TCA) Status column indicates whether TCA reporting is currently enabled or disabled for each facility performance parameter.

**Note 5:** The Timestamp column shows the local time when the facility performance parameter bin was opened.

**10** To update the results in the list, do one of the following:

- a. To update all of the results, click **Refresh All** or move the cursor over the results area, right-click on one result line, and select Refresh all rows from the pop-up menu.
- b. To update just one result, select the row, right-click, and select Refresh selected row from the pop-up menu.

*If you choose to refresh all of the results, the entire list in the selected window is updated.*

—end—

## Procedure 7-2

### Viewing facility history counts

---

Use this procedure to view the history counts for a facility performance parameter (PP).

#### Requirements

You must be logged into the System Manager to perform this procedure. To log into the network, follow [Procedure 1-1, “Logging into the network”](#) on page 1-7.

You must have completed [Procedure 7-1, “Making a PM query”](#) before performing this procedure.

For help, refer to [Table 3-40 on page 3-64](#) in the “[Performance monitoring description](#)” chapter of *Software and User Interface*, 323-1701-101.

#### Action

| Step | Action                                                                                                                                                                                                                  |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | In the Optical Metro Performance Monitor window, select the Facility tab at the bottom left of the window.                                                                                                              |
| 2    | Select a facility performance parameter interval (15-minute or 1-day) in the Facility PM Query Results list.<br><br><b>Note:</b> You cannot view facility history counts for an Untimed performance parameter interval. |
| 3    | Double-click on the highlighted row, or right-click on the row and select the View Details/Modify Attributes menu item.                                                                                                 |
| 4    | Click on the <b>Historical counts</b> tab on the right side of the Details section in the Performance Monitor window.<br><br><i>The historical counts for the selected performance parameter are displayed.</i>         |
| 5    | Scroll through the history counts for the specified parameter.                                                                                                                                                          |
| 6    | To exit, click on the <b>Cancel</b> button at the bottom right of the Performance Monitor window.                                                                                                                       |

—end—

---

## Procedure 7-3

### Resetting facility counts to zero

---

Use this procedure to reset current and historical facility counts to zero for a performance parameter. Follow [Procedure 7-9 “Performing shelf-level operations”](#) to reset all bin counts on a shelf to zero.

It is recommended that you perform this procedure if an invalid data flag (IDF) appears in the Facility PM Query Results table.

#### Requirements

You must be logged into the System Manager to perform this procedure. To log into the network, follow [Procedure 1-1, “Logging into the network”](#) on page 1-7.

You must have completed [Procedure 7-1, “Making a PM query”](#) before performing this procedure.

For help, refer to [Table 3-40 on page 3-64](#) in the “Performance monitoring description” chapter of *Software and User Interface*, 323-1701-101.

#### Action

| Step | Action                                                                                                                  |
|------|-------------------------------------------------------------------------------------------------------------------------|
| 1    | In the Optical Metro Performance Monitor window, select the Facility tab at the bottom left of the window.              |
| 2    | Select a facility performance parameter in the Facility PM Query Results list.                                          |
| 3    | Double-click on the highlighted row, or right-click on the row and select the View Details/Modify Attributes menu item. |
| 4    | Click on the <b>Current count</b> tab on the right side of the Details section in the Performance Monitor window.       |

*The Current count section of the Performance Monitor window is displayed.*

—continued—

Procedure 7-3 (continued)

**Resetting facility counts to zero**

---

| Step | Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5    | <p>Check the <b>Reset current and historical counts</b> box or the <b>Reset current count</b> box and click <b>Apply</b>.</p> <p><i>A question dialog box appears.</i></p> <p><b>Note 1:</b> When you select “Reset current and historical counts”, you reset both current and historical counts for the selected performance parameter to zero. If you select “Reset current count”, you reset the current bin count for the selected performance parameter to zero.</p> <p><b>Note 2:</b> If a Threshold Crossing Alert (TCA) has been raised due to a bin count meeting or exceeding its threshold, resetting the count of that bin to zero clears the TCA.</p> <p><b>Note 3:</b> For untimed intervals, you can only reset the current count.</p> <p><b>Note 4:</b> When events occur on a shelf, the event is time stamped using the time of day (TOD) clock on the shelf, which is synchronized to Greenwich Mean Time (GMT). When the System Manager displays the time stamp for an event, it converts GMT to the local time of the computer that the System Manager is running on. As a result, when you reset the 1-day bin, the time stamp for this event is not 00:00:00, but the time of the local system at 00:00:00 GMT. For example, if your local system is running on Eastern Standard Time, the time stamp would be 19:00:00 and not 00:00:00.</p> |
| 6    | <p>To confirm the reset, click <b>Yes</b>.</p> <p><i>A report dialog box appears indicating if the operation was successful.</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 7    | <p>Click <b>OK</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 8    | <p>Click the <b>Refresh All</b> button or move the cursor over the results area, right-click on one result line, and select Refresh all rows from the pop-up menu to view the updated counts in the Current Count column of the Facility PM Query Results table.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 9    | <p>To exit, click on the <b>Cancel</b> button at the bottom right of the Performance Monitor window.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

—end—

---

## Procedure 7-4

### Viewing performance parameter threshold details

---

Use this procedure to view details for a selected facility or equipment performance parameter.

[Table 7-2](#) lists the details that you can view.

**Table 7-2**  
**Threshold performance parameter details**

| Details                       | Description                                                                                                                                                                                     |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Current threshold             | This field indicates the current threshold value defined by the user.                                                                                                                           |
| TCA description               | This field indicates the Threshold Crossing Alert (TCA) description.                                                                                                                            |
| Set to default threshold      | This field indicates whether the current threshold value is set to default threshold.                                                                                                           |
| TCA enabled for current       | This field indicates whether TCA is enabled for the current threshold.                                                                                                                          |
| TCA port/direction operations | This field enables or disables all 15-minute and/or 1-day TCAs in one or both directions of a port.<br><b>Note:</b> This field is only available for facility performance parameter thresholds. |

### Requirements

You must be logged into the System Manager to perform this procedure. To log into the network, follow [Procedure 1-1, “Logging into the network”](#) on page 1-7.

You must have completed [Procedure 7-1, “Making a PM query”](#) before performing this procedure.

For help, refer to [Table 3-40 on page 3-64](#) in the “Performance monitoring description” chapter of *Software and User Interface*, 323-1701-101.

—continued—

Procedure 7-4 (continued)

**Viewing performance parameter threshold details****Action**

| Step                                                                        | Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |    |      |                                                                           |                              |                                                                             |                              |           |                                                              |
|-----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|------|---------------------------------------------------------------------------|------------------------------|-----------------------------------------------------------------------------|------------------------------|-----------|--------------------------------------------------------------|
| 1                                                                           | In the Optical Metro Performance Monitor window, select the Facility or the Equipment tab at the bottom left of the window.                                                                                                                                                                                                                                                                                                                                                                                                         |    |      |                                                                           |                              |                                                                             |                              |           |                                                              |
| 2                                                                           | Select a facility or equipment performance parameter interval (15-minute or 1-day) in the Facility or Equipment PM Query Results list.<br><b>Note:</b> You cannot view threshold details for an Untimed performance parameter interval.                                                                                                                                                                                                                                                                                             |    |      |                                                                           |                              |                                                                             |                              |           |                                                              |
| 3                                                                           | Double-click on the highlighted row, or right-click on the row and select the View Details/Modify Attributes menu item.                                                                                                                                                                                                                                                                                                                                                                                                             |    |      |                                                                           |                              |                                                                             |                              |           |                                                              |
| 4                                                                           | <table><tr><th>If</th><th>Then</th></tr><tr><td>at <a href="#">step 2</a>, you selected a facility performance parameter</td><td>go to <a href="#">step 5</a></td></tr><tr><td>at <a href="#">step 2</a>, you selected an equipment performance parameter</td><td>go to <a href="#">step 7</a></td></tr><tr><td>otherwise</td><td>you cannot view threshold details for the selected parameter</td></tr></table><br><b>Note:</b> For a complete list of details that you can view, refer to <a href="#">Table 7-2 on page 7-9</a> . | If | Then | at <a href="#">step 2</a> , you selected a facility performance parameter | go to <a href="#">step 5</a> | at <a href="#">step 2</a> , you selected an equipment performance parameter | go to <a href="#">step 7</a> | otherwise | you cannot view threshold details for the selected parameter |
| If                                                                          | Then                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |    |      |                                                                           |                              |                                                                             |                              |           |                                                              |
| at <a href="#">step 2</a> , you selected a facility performance parameter   | go to <a href="#">step 5</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |    |      |                                                                           |                              |                                                                             |                              |           |                                                              |
| at <a href="#">step 2</a> , you selected an equipment performance parameter | go to <a href="#">step 7</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |    |      |                                                                           |                              |                                                                             |                              |           |                                                              |
| otherwise                                                                   | you cannot view threshold details for the selected parameter                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |    |      |                                                                           |                              |                                                                             |                              |           |                                                              |
| 5                                                                           | Click on the <b>Threshold</b> tab on the right side of the Details section in the Performance Monitor window to view the user-defined current threshold value for the selected facility performance parameter.<br><i>Threshold information for the selected facility performance parameter is displayed.</i>                                                                                                                                                                                                                        |    |      |                                                                           |                              |                                                                             |                              |           |                                                              |
| 6                                                                           | Go to <a href="#">step 8</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |    |      |                                                                           |                              |                                                                             |                              |           |                                                              |

—continued—

## Procedure 7-4 (continued)

## Viewing performance parameter threshold details

| Step                                                                                                             | Action                                                                                            |                                           |
|------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-------------------------------------------|
| 7                                                                                                                | <b>If</b>                                                                                         | <b>Then</b>                               |
|                                                                                                                  | you want to view the user-defined current threshold value                                         | click on the <b>User Threshold</b> tab    |
|                                                                                                                  | you want to view the degrade threshold value                                                      | click on the <b>Degrade Threshold</b> tab |
|                                                                                                                  | you want to view the fail threshold value                                                         | click on the <b>Fail Threshold</b> tab    |
| <i>The selected threshold information is displayed in the Details section of the Performance Monitor window.</i> |                                                                                                   |                                           |
| <b>Note:</b> For a complete list of details that you can view, refer to <a href="#">Table 7-2 on page 7-9</a> .  |                                                                                                   |                                           |
| 8                                                                                                                | To exit, click on the <b>Cancel</b> button at the bottom right of the Performance Monitor window. |                                           |

—end—

## Procedure 7-5

# Enabling or disabling TCA reporting at the parameter level

---

Use this procedure to enable or disable notification for facility or equipment thresholds, as required.

### Requirements

You must be logged into the System Manager to perform this procedure. To log into the network, follow [Procedure 1-1, “Logging into the network”](#) on page 1-7.

You must have completed [Procedure 7-1, “Making a PM query”](#) before performing this procedure.

For help, refer to [Table 3-40 on page 3-64](#) in the “[Performance monitoring description](#)” chapter of *Software and User Interface*, 323-1701-101.

### Precautions

#### ATTENTION

If you disable TCA reporting on a bin that has raised a TCA, the TCA is cleared. If you enable TCA reporting on a bin that has a count that meets or exceeds its threshold, a TCA is raised.

### Action

| Step | Action                                                                                                                                                                                                                                        |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | In the Optical Metro Performance Monitor window, select the Facility or the Equipment tab at the bottom left of the window.                                                                                                                   |
| 2    | Select a facility or equipment performance parameter (15-minute or 1-day) in the Facility or Equipment PM Query Results list.<br><b>Note:</b> You cannot enable or disable threshold reporting for an Untimed performance parameter interval. |
| 3    | Double-click on the highlighted row, or right-click on the row and select the View Details/Modify Attributes menu item.                                                                                                                       |

—continued—



## Procedure 7-5 (continued)

**Enabling or disabling TCA reporting at the parameter level**

| Step | Action                                                                                                                                                                                                                                    |                                                                                                                    |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| 4    | <b>If</b>                                                                                                                                                                                                                                 | <b>Then</b>                                                                                                        |
|      | you are enabling or disabling facility TCA reporting                                                                                                                                                                                      | click on the <b>Threshold</b> tab on the right side of the Details section in the Performance Monitor window.      |
|      | you are enabling or disabling equipment TCA reporting                                                                                                                                                                                     | click on the <b>User Threshold</b> tab on the right side of the Details section in the Performance Monitor window. |
| 5    | Check the <b>TCA enabled for current</b> check box to enable threshold crossing alert notification for the parameter. Un-check the check box to disable the threshold crossing alert.                                                     |                                                                                                                    |
| 6    | Click the <b>Apply</b> button.                                                                                                                                                                                                            |                                                                                                                    |
| 7    | Click <b>Yes</b> to confirm the change.<br><i>A report dialog box appears indicating if the operation was successful.</i>                                                                                                                 |                                                                                                                    |
| 8    | Click <b>OK</b> .                                                                                                                                                                                                                         |                                                                                                                    |
| 9    | Click the <b>Refresh All</b> button or move the cursor over the PM Query Results area, right-click on one result line and select Refresh all rows from the pop-up menu to view the updated TCA reporting status in the TCA Status column. |                                                                                                                    |
| 10   | To exit, click on the <b>Cancel</b> button at the bottom right of the Performance Monitor window.                                                                                                                                         |                                                                                                                    |

—end—

## Procedure 7-6

### Enabling or disabling facility TCA reporting for a specified interval, port, or direction

---

Use this procedure to enable or disable Threshold Crossing Alert (TCA) reporting on all facility parameters associated with a specified interval, port, or direction on a circuit pack.

**Note 1:** If you plan to enable or disable TCA reporting for either 15-minute or 1-day intervals, you can only apply the action to the current direction. When performing a PM query, select the appropriate slot number, port, and direction as described in steps 4 to 6 in [Procedure 7-1 “Making a PM query”](#), in this book.

**Note 2:** If you plan to enable or disable TCA reporting for both 15-minute and 1-day intervals, you can apply the action to the current direction or the current port; applying the action to the current port enables or disables TCA reporting in both directions for the specified port.

**Note 3:** You cannot enable or disable facility TCA reporting for an Untimed performance parameter interval.

### Requirements

You must be logged into the System Manager to perform this procedure. To log into the network, follow [Procedure 1-1, “Logging into the network” on page 1-7](#). You must have completed [Procedure 7-1, “Making a PM query”](#) before performing this procedure. For help, refer to [Table 3-40 on page 3-64](#) in the [“Performance monitoring description”](#) chapter of *Software and User Interface*, 323-1701-101.

Know the interval (15-minute or 1-day), the slot number, the port number, and the direction of the circuit pack that you want to enable or disable TCA reporting for before you begin this procedure.

**Note:** If you want to enable or disable TCA reporting in a specific direction on a port, be sure to specify that direction when performing your PM query.

### Precautions

#### ATTENTION

If you disable TCA reporting on a bin that has raised a TCA, the TCA is cleared. If you enable TCA reporting on a bin that has a count that meets or exceeds its threshold, a TCA is raised.

—continued—

---

 Procedure 7-6 (continued)

**Enabling or disabling facility TCA reporting for a specified interval, port, or direction**


---

**Action**

| Step | Action                                                                                                                                                                                                                                                                                                                        |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | In the Optical Metro Performance Monitor window, select the Facility tab at the bottom left of the window.                                                                                                                                                                                                                    |
| 2    | Select the facility parameter associated with the port, the direction, and the interval for which you want to enable/disable TCA reporting for in the Facility PM Query Results list.<br><br><i><b>Note:</b> You cannot enable or disable threshold facility TCA reporting for an Untimed performance parameter interval.</i> |
| 3    | Double-click on the highlighted row, or right-click on the row and select the View Details/Modify Attributes menu item.                                                                                                                                                                                                       |
| 4    | Click on the <b>Threshold</b> tab on the right side of the Details section in the Performance Monitor window.<br><br><i>Threshold information for the selected facility performance parameter is displayed.</i>                                                                                                               |
| 5    | Select an option from the drop-down list beside the <b>TCA port/direction operations</b> field.<br><br><i>The selected item is displayed.</i>                                                                                                                                                                                 |
| 6    | Select the appropriate interval from the next drop-down list.<br><br><i>The selected interval is displayed.</i>                                                                                                                                                                                                               |
| 7    | If required, select the appropriate item from the last drop-down list and click the <b>Apply</b> button.<br><br><i>A question dialog box appears.</i>                                                                                                                                                                         |
| 8    | To confirm the change, click <b>Yes</b> .<br><br><i>A report dialog box appears indicating if the operation was successful.</i>                                                                                                                                                                                               |
| 9    | Click <b>OK</b> .                                                                                                                                                                                                                                                                                                             |
| 10   | Click the <b>Refresh All</b> button or move the cursor over the results area, right-click on one result line, and select Refresh all rows from the pop-up menu to view the updated TCA reporting status in the TCA Status column.                                                                                             |
| 11   | To exit, click on the <b>Cancel</b> button at the bottom right of the Performance Monitor window.                                                                                                                                                                                                                             |

—end—

---

## Procedure 7-7

### Adjusting PM threshold values

---

Use this procedure to adjust facility or equipment threshold values, as required.

#### Requirements

You must be logged into the System Manager to perform this procedure. To log into the network, follow [Procedure 1-1, “Logging into the network”](#) on page 1-7.

You must have completed [Procedure 7-1, “Making a PM query”](#) before performing this procedure.

Users can define their own equipment thresholds. The user provisionable threshold ranges are bounded by the following rule:

Degrade High > User High > User Low > Degrade Low

Equipment degrade, fail, clear, and user provisionable default threshold values for specific circuit packs are listed in [Chapter 2, “Circuit pack specifications”](#) in *Technical Specifications*, 323-1701-180.

For more information on performance monitoring, see [Chapter 3, “Performance monitoring description”](#) in *Software and User Interface*, 323-1701-101.

#### Precautions

##### ATTENTION

If you decrease the threshold value for a bin, you can cause the TCA for that bin to raise. If you increase the threshold value for a bin, you can cause the TCA for that bin to clear.

#### Action

| Step | Action                                                                                                                                                                                                                                      |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | In the Optical Metro Performance Monitor window, select the Facility or the Equipment tab at the bottom left of the window.                                                                                                                 |
| 2    | Select a facility or equipment performance parameter interval (15-minute or 1-day) in the Facility or Equipment PM Query Results list.<br><b>Note:</b> You cannot adjust PM threshold values for an Untimed performance parameter interval. |

—continued—

## Procedure 7-7 (continued)

**Adjusting PM threshold values**

| Step                                                                        | Action                                                                                                                                                                                                                                                                                                                                                                                                             |    |            |                                                                           |                        |                                                                             |                        |
|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|------------|---------------------------------------------------------------------------|------------------------|-----------------------------------------------------------------------------|------------------------|
| 3                                                                           | Double-click on the highlighted row, or right-click on the row and select the View Details/Modify Attributes from the pop-up menu.                                                                                                                                                                                                                                                                                 |    |            |                                                                           |                        |                                                                             |                        |
| 4                                                                           | <table> <tr> <th>If</th><th>Then go to</th></tr> <tr> <td>at <a href="#">step 2</a>, you selected a facility performance parameter</td><td><a href="#">step 5</a></td></tr> <tr> <td>at <a href="#">step 2</a>, you selected an equipment performance parameter</td><td><a href="#">step 7</a></td></tr> </table> <p><b>Note:</b> You cannot modify the threshold value if the power level is “not available”.</p> | If | Then go to | at <a href="#">step 2</a> , you selected a facility performance parameter | <a href="#">step 5</a> | at <a href="#">step 2</a> , you selected an equipment performance parameter | <a href="#">step 7</a> |
| If                                                                          | Then go to                                                                                                                                                                                                                                                                                                                                                                                                         |    |            |                                                                           |                        |                                                                             |                        |
| at <a href="#">step 2</a> , you selected a facility performance parameter   | <a href="#">step 5</a>                                                                                                                                                                                                                                                                                                                                                                                             |    |            |                                                                           |                        |                                                                             |                        |
| at <a href="#">step 2</a> , you selected an equipment performance parameter | <a href="#">step 7</a>                                                                                                                                                                                                                                                                                                                                                                                             |    |            |                                                                           |                        |                                                                             |                        |
| 5                                                                           | Click on the <b>Threshold</b> tab on the right side of the Details section in the Performance Monitor window.<br><i>Threshold information for the selected facility performance parameter is displayed.</i>                                                                                                                                                                                                        |    |            |                                                                           |                        |                                                                             |                        |
| 6                                                                           | Go to <a href="#">step 8</a> .                                                                                                                                                                                                                                                                                                                                                                                     |    |            |                                                                           |                        |                                                                             |                        |
| 7                                                                           | Click on the <b>User Threshold</b> tab on the right side of the Details section in the Performance Monitor window.<br><i>Threshold information is displayed in the Details section of the Performance Monitor window.</i>                                                                                                                                                                                          |    |            |                                                                           |                        |                                                                             |                        |
| 8                                                                           | Enter the appropriate threshold value in the Current threshold text field.                                                                                                                                                                                                                                                                                                                                         |    |            |                                                                           |                        |                                                                             |                        |
| 9                                                                           | Click the <b>Apply</b> button.<br><i>A question dialog box appears. The System Manager validates the new value. If the value falls outside an acceptable range, the change is not applied and an Attention dialog box appears. If the Attention dialog box appears, click OK and return to <a href="#">step 8</a>.</i>                                                                                             |    |            |                                                                           |                        |                                                                             |                        |
| 10                                                                          | To confirm the change, click <b>Yes</b> .<br><i>A report dialog box appears indicating if the operation was successful.</i>                                                                                                                                                                                                                                                                                        |    |            |                                                                           |                        |                                                                             |                        |
| 11                                                                          | Click <b>OK</b> .                                                                                                                                                                                                                                                                                                                                                                                                  |    |            |                                                                           |                        |                                                                             |                        |
| 12                                                                          | Click the <b>Refresh All</b> button or move the cursor over the results area, right-click on one result line, and select Refresh all rows from the pop-up menu to view the updated threshold values in the Facility or Equipment PM Query Results table.                                                                                                                                                           |    |            |                                                                           |                        |                                                                             |                        |
| 13                                                                          | To exit, click on the <b>Cancel</b> button at the bottom right of the Performance Monitor window.                                                                                                                                                                                                                                                                                                                  |    |            |                                                                           |                        |                                                                             |                        |

—end—

## Procedure 7-8

### Resetting PM thresholds to default values

---

Use this procedure to reset the facility or equipment threshold values for a performance parameter to the factory defaults.

Follow [Procedure 7-9 “Performing shelf-level operations”](#) to reset all facility or equipment threshold values on a shelf to the factory defaults.

#### Requirements

You must be logged into the System Manager to perform this procedure. To log into the network, follow [Procedure 1-1, “Logging into the network”](#) on page 1-7.

You must have completed [Procedure 7-1, “Making a PM query”](#) before performing this procedure.

For help, refer to [Table 3-40 on page 3-64](#) in the “[Performance monitoring description](#)” chapter of *Software and User Interface*, 323-1701-101.

#### Precautions

##### ATTENTION

If you decrease the threshold value for a bin, you can cause the TCA for that bin to raise. If you increase the threshold value for a bin, you can cause the TCA for that bin to clear.

#### Action

| Step | Action                                                                                                                                                                                                                                                 |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | In the Optical Metro Performance Monitor window, select the Facility or the Equipment tab at the bottom left of the window.                                                                                                                            |
| 2    | Select a facility or equipment performance parameter interval (15-minute or 1-day) in the Facility or Equipment PM Query Results list.<br><b>Note:</b> You cannot reset PM thresholds to default values for an Untimed performance parameter interval. |
| 3    | Double-click on the highlighted row, or right-click on the row and select the View Details/Modify Attributes menu item.                                                                                                                                |

—continued—

## Procedure 7-8 (continued)

**Resetting PM thresholds to default values**

| Step | Action                                                                                                                                                                                                                                                           |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4    | <p><b>If</b></p> <p>at <a href="#">step 2</a>, you selected a facility performance parameter</p> <p>at <a href="#">step 2</a>, you selected an equipment performance parameter</p> <p><b>Then</b> go to <a href="#">step 5</a></p> <p><a href="#">step 7</a></p> |
| 5    | <p>Click on the <b>Threshold</b> tab on the right side of the Details section in the Performance Monitor window.</p> <p><i>Threshold information for the selected facility performance parameter is displayed.</i></p>                                           |
| 6    | Go to <a href="#">step 8</a> .                                                                                                                                                                                                                                   |
| 7    | <p>Click on the <b>User Threshold</b> tab on the right side of the Details section in the Performance Monitor window.</p> <p><i>Threshold information is displayed in the Details section of the Performance Monitor window.</i></p>                             |
| 8    | <p>Check the <b>Set to default threshold</b> box and click <b>Apply</b>.</p> <p><i>A question dialog box appears.</i></p>                                                                                                                                        |
| 9    | <p>To confirm the change, click <b>Yes</b>.</p> <p><i>A report dialog box appears indicating if the operation was successful.</i></p>                                                                                                                            |
| 10   | Click <b>OK</b> .                                                                                                                                                                                                                                                |
| 11   | <p>Click the <b>Refresh All</b> button or move the cursor over the results area, right-click on one result line, and select Refresh all rows from the pop-up menu to view the updated threshold values in the Facility or Equipment PM Query Results table.</p>  |
| 12   | To exit, click on the <b>Cancel</b> button at the bottom right of the Performance Monitor window.                                                                                                                                                                |

—end—

## Procedure 7-9

### Performing shelf-level operations

---

Use this procedure to do one of the following:

- reset all 15-minute and/or 1-day threshold values for all facility parameters on a shelf to the factory defaults
- reset all bin counts on a shelf to zero
- reset all user threshold values for all equipment parameters on a shelf to default
- enable or disable Threshold Crossing Alert (TCA) reporting for all 15 minute and/or 1-day counts for all facility parameters on a shelf
- enable or disable TCA reporting for user thresholds
- select Facility TCA type
- provision PM bin zero suppression

[Table 7-3 on page 7-22](#) lists all performance monitoring (PM) options available at the shelf-level and their impact on Threshold Crossing Alerts (TCA).

### Requirements

You must be logged into the System Manager to perform this procedure. To log into the network, follow [Procedure 1-1, “Logging into the network” on page 1-7](#).

You must have completed [Procedure 7-1, “Making a PM query”](#) before performing this procedure.

For help, refer to [Table 3-30 on page 3-45](#) for the facility PP threshold default values and [Table 3-31 on page 3-47](#) for the facility PP user-provisionable threshold ranges in the [“Performance monitoring description”](#) chapter of *Software and User Interface*, 323-1701-101.

### Precautions

#### **ATTENTION**

If you decrease the threshold value for a bin, you can cause the TCA for that bin to raise. If you increase the threshold value for a bin, you can cause the TCA for that bin to clear.

—continued—



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Procedure 7-9 (continued)  
**Performing shelf-level operations**

---

## Action

| Step | Action                                                                                                                                                                              |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | In the Location section of the Optical Metro Performance Monitor window, select the appropriate shelf from the NE drop-down list.                                                   |
| 2    | From the Main Menu, select Edit and then select the Shelf level parameters menu item.<br><i>The Shelf Level Parameters portion of the window is enabled.</i>                        |
| 3    | Select the options that you want to apply to the shelf based on <a href="#">Table 7-3 on page 7-22</a> and click the <b>Apply</b> button.<br><i>A question dialog box appears.</i>  |
| 4    | To confirm the change, click <b>Yes</b> .<br><i>A report dialog box appears indicating if the operation was successful.</i>                                                         |
| 5    | Click <b>OK</b> .                                                                                                                                                                   |
| 6    | To close the Shelf Level Parameters window, click on the <b>Cancel</b> button at the bottom right of the Performance Monitor window.                                                |
| 7    | Click the <b>Refresh All</b> button or move the cursor over the results area, right-click on one result line, and select Refresh all rows from the pop-up menu to view the changes. |

—end—

**Table 7-3**  
**Shelf-level performance monitoring operations**

| PM options                           | Meaning                                                           | Values                                                                                                                                 | Comments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------------|-------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reset all PP counts                  | All current and historical counts on the shelf are reset to zero. | Check box                                                                                                                              | If a TCA is currently raised on a bin, resetting the bin count to zero clears the TCA.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Set all 15 Min thresholds to default | Reset all 15-minute thresholds to the default value               | Check box                                                                                                                              | <ul style="list-style-type: none"> <li>• If you decrease the threshold value for a bin, you may raise the TCA for that bin.</li> <li>• If you increase the threshold value for a bin, you may clear the TCA for that bin.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Set all 1 Day thresholds to default  | Reset all 1-day thresholds to the default value                   |                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Set all User thresholds to default   | Reset all user defined thresholds to the default value            |                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Reset all OM counts                  | Resets all the OM counts on the shelf to zero.                    | Check box                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Facility TCA Type                    | Select a Facility TCA type                                        | <ul style="list-style-type: none"> <li>• Alarm (default)</li> <li>• Event</li> <li>• Summary Alarm</li> <li>• Summary Event</li> </ul> | <ul style="list-style-type: none"> <li>• If you select Alarm, TCAs are raised as alarms with a warning severity for each current 15-min or 1-day bin that has crossed it's TCA threshold</li> <li>• If you select Event, TCAs are raised as events for each current 15-min or 1-day bin that has crossed it's TCA threshold.</li> <li>• If you select Summary Alarm, a maximum of two summary TCAs, one for current 15-min bin and one for current 1-day bin, are raised as minor alarms for each direction of a facility no matter how many PPs are collected on that facility</li> <li>• If you select Summary Event, a maximum of two summary TCAs, one for current 15-min bin and one for current 1-day bin, are raised as events for each direction of a facility no matter how many PPs are collected on that facility</li> </ul> |

**Table 7-3 (continued)**  
**Shelf-level performance monitoring operations**

| PM options                | Meaning                                                                                                                                                        | Values                                                                                                                                  | Comments                                                                                                                                                                                                                                                 |
|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TCA for all 15 Min counts | Enable or disable TCA reporting for 15-minute counts                                                                                                           | <ul style="list-style-type: none"> <li>• Keep current settings (default)</li> <li>• Enable</li> <li>• Disable</li> </ul>                | <ul style="list-style-type: none"> <li>• if you disable TCA reporting on a bin with a current TCA raised, you clear the TCA.</li> <li>• if you enable TCA reporting on a bin count that meets or exceeds its threshold value, a TCA is raised</li> </ul> |
| TCA for all 1 Day counts  | Enable or disable TCA reporting for 1-day counts                                                                                                               |                                                                                                                                         |                                                                                                                                                                                                                                                          |
| TCA for User thresholds   | Enable or disable TCA reporting for user thresholds                                                                                                            |                                                                                                                                         |                                                                                                                                                                                                                                                          |
| Zero Suppression          | When a zero suppression is used, the current bin is not rolled over into history if the bin has a 0 count and the bin does not have an invalid data flag (IDF) | <ul style="list-style-type: none"> <li>• All Zero Suppression</li> <li>• No Zero Suppression</li> <li>• SDH Zero Suppression</li> </ul> | <ul style="list-style-type: none"> <li>• all PM modes perform zero suppression</li> <li>• no zero suppression for all PM modes</li> <li>• perform zero suppression only for SDH mode</li> </ul>                                                          |

## Procedure 7-10

### Performing card-level operations

---

Use this procedure to do one of the following:

- reset all 15-minute and/or 1-day threshold values for all facility parameters on a card to the factory defaults
- reset all 15-minute and/or 1-day bin counts on a card to zero
- reset all Untimed bin counts on a card to zero
- reset all user threshold values for all equipment parameters on a card to default
- enable or disable Threshold Crossing Alert (TCA) reporting for all 15 minute and/or 1-day counts for all facility parameters on a card
- enable or disable TCA reporting for user thresholds

[Table 7-4 on page 7-26](#) lists all performance monitoring (PM) options available at the card-level and their impact on Threshold Crossing Alerts (TCA).

### Requirements

You must be logged into the System Manager to perform this procedure. To log into the network, follow [Procedure 1-1, “Logging into the network” on page 1-7](#).

You must have completed [Procedure 7-1, “Making a PM query”](#) before performing this procedure.

For help, refer to [Table 3-30 on page 3-45](#) for the facility PP threshold default values and [Table 3-31 on page 3-47](#) for the facility PP user-provisionable threshold ranges in the [“Performance monitoring description”](#) chapter of *Software and User Interface*, 323-1701-101.

### Precautions

#### **ATTENTION**

If you decrease the threshold value for a bin, you can cause the TCA for that bin to raise. If you increase the threshold value for a bin, you can cause the TCA for that bin to clear.

—continued—

---

Procedure 7-10 (continued)  
**Performing card-level operations**

---

## Action

| Step | Action                                                                                                                                                                                    |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | In the Location section of the Optical Metro Performance Monitor window, select a circuit pack to query from the drop-down list in the Slot field.                                        |
| 2    | From the Main Menu, select Edit and then select the Card level parameters menu item.<br><i>The Card Level Parameters portion of the window is enabled.</i>                                |
| 3    | Select the options that you want to apply to the circuit pack based on <a href="#">Table 7-4 on page 7-26</a> and click the <b>Apply</b> button.<br><i>A question dialog box appears.</i> |
| 4    | To confirm the change, click <b>Yes</b> .<br><i>A report dialog box appears indicating if the operation was successful.</i>                                                               |
| 5    | Click <b>OK</b> .                                                                                                                                                                         |
| 6    | To close the Card Level Parameters window, click on the <b>Cancel</b> button at the bottom right of the Performance Monitor window.                                                       |
| 7    | Click the <b>Refresh All</b> button or move the cursor over the results area, right-click on one result line, and select Refresh all rows from the pop-up menu to view the changes.       |

—end—

**Table 7-4**  
**Card-level performance monitoring operations**

| PM options                           | Meaning                                                                              | Values                                                                                                                   | Comments                                                                                                                                                                                                                                                 |
|--------------------------------------|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reset all 15-min counts              | All 15-minute current and historical counts on the circuit pack are reset to zero    | Check box                                                                                                                | If a TCA is currently raised on a bin, resetting the bin count to zero clears the TCA.                                                                                                                                                                   |
| Reset all 1-day counts               | All 1-day current counts and historical counts on the circuit pack are reset to zero |                                                                                                                          | If a TCA is currently raised on a bin, resetting the bin count to zero clears the TCA.                                                                                                                                                                   |
| Reset all Untimed counts             | All Untimed counts on the circuit pack are reset to zero                             |                                                                                                                          | There is no TCA associated to the Untimed bin.                                                                                                                                                                                                           |
| Set all 15 Min thresholds to default | Reset all 15-minute thresholds to the default value                                  | Check box                                                                                                                | <ul style="list-style-type: none"> <li>• If you decrease the threshold value for a bin, you may raise the TCA for that bin.</li> <li>• If you increase the threshold value for a bin, you may clear the TCA for that bin.</li> </ul>                     |
| Set all 1 Day thresholds to default  | Reset all 1-day thresholds to the default value                                      |                                                                                                                          |                                                                                                                                                                                                                                                          |
| Set all User thresholds to default   | Reset all user defined thresholds to the default value                               |                                                                                                                          |                                                                                                                                                                                                                                                          |
| TCA for all 15 Min counts            | Enable or disable TCA reporting for 15-minute counts                                 | <ul style="list-style-type: none"> <li>• Keep current settings (default)</li> <li>• Enable</li> <li>• Disable</li> </ul> | <ul style="list-style-type: none"> <li>• if you disable TCA reporting on a bin with a current TCA raised, you clear the TCA.</li> <li>• if you enable TCA reporting on a bin count that meets or exceeds its threshold value, a TCA is raised</li> </ul> |
| TCA for all 1 Day counts             | Enable or disable TCA reporting for 1-day counts                                     |                                                                                                                          |                                                                                                                                                                                                                                                          |
| TCA for User thresholds              | Enable or disable TCA reporting for user thresholds                                  |                                                                                                                          |                                                                                                                                                                                                                                                          |

---

## Procedure 7-11

### Making an OM query

---

Use this procedure to make an operational measurement (OM) query on the OCI SRM GbE/FC, OCI SRM GbE, OTR 10 Gbit/s Enhanced, and Muxponder 10 Gbit/s GbE/FC VCAT circuit packs and to view the results of the OM query.

Two types of OMs are supported:

- Generic OMs, which are not specific to an interface type
- Ethernet OMs, which are only collected for Ethernet interfaces

The OCI SRM GbE/FC, OCI SRM GbE, OTR 10 Gbit/s Enhanced and Muxponder 10 Gbit/s GbE/FC VCAT circuit packs support generic and Ethernet OMs. Generic and Ethernet OMs are only available on OTR 10 Gbit/s Enhanced circuit packs when a 10G Ethernet LAN bit rate is provisioned.

For OMs that do not count, System Manager displays one of the following:

- Not Available—the OM does not exist because provisioning is not complete or because the software was unable to retrieve the value from the circuit pack
- N/A—the circuit pack does not support this OM
- 0 (zero)—the count is zero because the action that is counting never happens on this circuit pack

For more information on OMs, see the [“Performance monitoring description”](#) chapter in *Software and User Interface*, 323-1701-101.

**Note:** Generic OMs can be queried on the LAN side and the WAN side of the Fiber Channel (FC)/FICON but can only be queried on the LAN side for Gigabit Ethernet traffic.

## Requirements

You must be logged into the System Manager to perform this procedure. To log into the network, follow [Procedure 1-1, “Logging into the network” on page 1-7](#).

—continued—

Procedure 7-11 (continued)

**Making an OM query**

---

**Action**

| Step | Action                                                                                                                                                                                                                                                                                                                                                            |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | In the System Manager, select the Performance Monitor tab.<br><i>The Launch PMs window appears.</i>                                                                                                                                                                                                                                                               |
| 2    | Click the <b>Launch</b> button, or check the <b>Auto Launch</b> check box if you want PMs to launch automatically each time you select the Performance Monitor tab for this session.<br><i>The Optical Metro Performance Monitor window appears.</i>                                                                                                              |
| 3    | To view Generic OMs, select the Generic OMs tab at the bottom left of the Performance Monitor window. To view Ethernet OMs, select the Ethernet OMs tab.                                                                                                                                                                                                          |
| 4    | In the Location section of the Performance Monitor window, select a shelf to query from the drop-down list in the NE field.                                                                                                                                                                                                                                       |
| 5    | In the location section of the Performance Monitor window, select the slot where the circuit pack that you want to query is located. Use the drop-down list in the Slot field.                                                                                                                                                                                    |
| 6    | Select the port you want to query from the drop-down list in the Port field or select All from the drop-down list in the Port field to query all ports.<br><b>Note:</b> You can only select the client signal port ("1CS") for the OTR 10 Gbit/s Enhanced circuit pack.                                                                                           |
| 7    | In the Output options section, select how you want the query results displayed.<br><b>Note:</b> If you want to add the results of this query to the results from the previous query, click the <b>Append to current list</b> radio button. If you want to replace any previous query results with the new results, click the <b>Create new list</b> radio button. |

—continued—



## Procedure 7-11 (continued)

**Making an OM query**

| Step | Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8    | <p>Click <b>Retrieve</b>.</p> <p><i>The Optical Metro Performance Monitor retrieves operational measurements for the selected circuit pack. To view Generic OMs, select the Generic OMs tab at the bottom left of the Performance Monitor window. To view Ethernet OMs, select the Ethernet OMs tab.</i></p> <p><b>Note 1:</b> AlignErr, CarSenErr, SingleCollFr, MultiCollFr, SQETestErr, DeferTrans, LateColl, and ExcessColl are not supported in the Ethernet OMs display for the OCI SRM GbE/FC or OCI SRM GbE circuit pack. These are Ethernet OMs for half duplex mode only which the OCI SRM GbE/FC or OCI SRM GbE circuit pack does not support. These OMs appear in the OM Query results but their value is always 0. For details on the supported Generic OMs parameters for the OCI SRM GbE/FC or OCI SRM GbE circuit pack, refer to <a href="#">Table 3-32</a> in the “Performance monitoring description” chapter in <i>Software and User Interface</i>, 323-1701-101.</p> <p><b>Note 2:</b> AlignErr, CarSenErr, SingleCollFr, MultiCollFr, SQETestErr, DeferTrans, LateColl, ExcessColl, InternalMacTxErr, InternalMacRxErr, SymbolErr, InPauseFr and OutPauseFr are not supported in the Ethernet OMs display for the OTR 10 Gbit/s Enhanced circuit pack provisioned with a 10G Ethernet LAN bit rate. InOctetsErr, OutFramesDiscds and OutOctetsErr are not supported in the Generic OMs display for the OTR 10 Gbit/s Enhanced circuit pack provisioned with a 10G Ethernet LAN bit rate.</p> |
| 9    | <p>To update the results in the list, do one of the following:</p> <ul style="list-style-type: none"> <li>To update all of the results, click <b>Refresh All</b>, or move the cursor over the results area, right-click on one result, and select Refresh all rows from the pop-up menu.</li> <li>To update just one result, select the row, right-click, and select Refresh selected row from the pop-up menu.</li> </ul> <p><i>If you choose to refresh all the results, the entire lists in the selected window is updated.</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

—end—

## Procedure 7-12

### Resetting OM counts to zero

---

Use this procedure to reset either the Generic operational measurements (OMs) or Ethernet OMs (or both) to zero for the OCI SRM GbE/FC, OCI SRM GbE, OTR 10 Gbit/s Enhanced or Muxponder 10 Gbit/s GbE/FC VCAT circuit packs.

**Note:** Resetting OM counts to zero is done at the circuit pack level and not at the shelf level. Therefore, you can reset the OM counts for a specific circuit pack and not for all the OCI SRM GbE/FC, OCI SRM GbE, OTR 10 Gbit/s Enhanced or Muxponder 10 Gbit/s GbE/FC VCAT circuit packs in a shelf.

### Requirements

You must be logged into the System Manager to perform this procedure. To log into the network, follow [Procedure 1-1, “Logging into the network” on page 1-7](#).

You must have completed [Procedure 7-11, “Making an OM query”](#) before performing this procedure.

### Action

---

| Step | Action |
|------|--------|
|------|--------|

---

#### ***Resetting both generic OM and Ethernet OM counts to zero***

- 1 From the Main menu, select Edit, and then select the Card level parameters menu item.  
*The Card Level Parameters portion of the Performance Monitor window appears.*
- 2 Check one or more of the following check boxes; **Reset all 15 min OM counts, Reset all 1 day OM counts, Reset all Untimed OM counts.**
- 3 Click **Apply**.  
*A question dialog box appears.*

**Note:** When events occur on a shelf, the event is time stamped using the time of day (TOD) clock on the shelf, which is synchronized to Greenwich Mean Time (GMT). When the System Manager displays the time stamp for an event, it converts GMT to the local time of the computer that the System Manager is running on. As a result, when you reset, the time stamp is not 00:00:00, but the time of the local system at 00:00:00 GMT. For example, if your local system is running on Eastern Standard Time, the time stamp would be 19:00:00 and not 00:00:00.

—continued—

## Procedure 7-12 (continued)

**Resetting OM counts to zero**

| Step | Action                                                                                                                                                                            |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4    | To confirm the reset, click <b>Yes</b> .<br><i>A report box appears indicating if the operation was successful.</i>                                                               |
| 5    | Click <b>OK</b> .                                                                                                                                                                 |
| 6    | Click Cancel to close the Card Level Parameters portion of this window.                                                                                                           |
| 7    | Click the <b>Refresh All</b> button to view the updated counts in the Generic OM or Ethernet OM Query Results table.<br><i>The entire list in the selected window is updated.</i> |

—end—

## Procedure 7-13

### Refreshing PM information

---

Use this procedure to refresh performance monitoring information in the Equipment or Facility PM Query Results table or the Generic OM or Ethernet OM Query Results table.

#### Requirements

You must be logged into the System Manager to perform this procedure. To log into the network, follow [Procedure 1-1, “Logging into the network”](#) on page 1-7.

You must have completed [Procedure 7-1, “Making a PM query”](#) or [Procedure 7-11, “Making an OM query”](#) before performing this procedure.

For help, refer to [Table 3-40 on page 3-64](#) in the “[Performance monitoring description](#)” chapter of *Software and User Interface*, 323-1701-101.

#### Action

---

| Step | Action                                                                                                                                                                                                                                                                        |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | In the Optical Metro Performance Monitor window, select the Performance Monitoring information that you would like to refresh. Select the Equipment tab, the Facility tab, the Generic OMs tab, or the Ethernet OMs tab at the bottom left of the Performance Monitor window. |

---

—continued—

---

Procedure 7-13 (continued)  
**Refreshing PM information**

---

| Step | Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2    | <p>To update the results in the PM or OM Query Results list, do one of the following:</p> <ul style="list-style-type: none"><li>• to update all of the results, click <b>Refresh All</b> or move the cursor over the results area, right-click on one result line, and select Refresh all rows from the pop-up menu.</li><li>• to update just one result, select one row, right-click, and select Refresh selected row from the pop-up menu.</li></ul> <p><i>If you choose to refresh all of the results, the entire list in the selected window is updated. If you choose to refresh a selected row, only this row is updated.</i></p> <p><b>Note:</b> When refreshing PM information, a confirmation dialog box may appear. If the dialog box appears, click <b>Yes</b> to refresh all performance parameters. To refresh an individual result line, click <b>No</b> in the confirmation dialog box, select the row that you would like to refresh, right-click, and select Refresh selected row from the pop-up menu.</p> |
| 3    | <p>To exit, click on the <b>Cancel</b> button at the bottom right of the Performance Monitor window.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

—end—



---

## Enhanced Trunk Switch OAM&P

---

Follow the procedures in this chapter to use the Enhanced Trunk Switch (ETS). For a description of the ETS, its components and features, see the [“Enhanced Trunk Switch”](#) chapter in *Hardware Description*, 323-1701-102.

You can perform some ETS operations procedures using the buttons on the front panel of the ETS Switch module. You can also use the ETS Comms module to perform the commands through TL1. The ETS Comms module is accessible by connecting:

- locally to a commissioned ETS using the RS-232 port on the front panel of the ETS Comms module (see [Procedure 8-4, “Communicating locally with the ETS Comms module”](#))
- remotely to a commissioned ETS through Ethernet (see [Procedure 8-5, “Communicating remotely with the ETS Comms module”](#))

For TL1 commands, parameter descriptions, and possible values, refer to the Enhanced Trunk Switch commands chapter in *TL1 Interface, Part 4 of 4*, 323-1701-190.

### Before you begin

Before you begin the procedures in this chapter, make sure you have

- completed the procedures for installing and connecting power to the ETS assembly in the *Installing Optical Metro 5200 Shelves and Components*, 323-1701-201
- completed the procedures for commissioning the ETS, according to the procedures in the [“Commissioning the Enhanced Trunk Switch”](#) chapter in *Commissioning Procedures*, 323-1701-220

## Procedure list

[Table 8-1](#) lists the procedures in this chapter.

**Table 8-1**  
**ETS operations procedures**

| Procedure                                                                        | Page                 |
|----------------------------------------------------------------------------------|----------------------|
| <a href="#">8-1 Setting the ETS Switch module operating mode to manual</a>       | <a href="#">8-3</a>  |
| <a href="#">8-2 Manually setting the active path</a>                             | <a href="#">8-4</a>  |
| <a href="#">8-3 Manually setting the reference power level</a>                   | <a href="#">8-5</a>  |
| <a href="#">8-4 Communicating locally with the ETS Comms module</a>              | <a href="#">8-6</a>  |
| <a href="#">8-5 Communicating remotely with the ETS Comms module</a>             | <a href="#">8-8</a>  |
| <a href="#">8-6 Changing the password</a>                                        | <a href="#">8-10</a> |
| <a href="#">8-7 Changing the Ethernet port parameters</a>                        | <a href="#">8-12</a> |
| <a href="#">8-8 Changing the TID</a>                                             | <a href="#">8-13</a> |
| <a href="#">8-9 Changing the date and time</a>                                   | <a href="#">8-14</a> |
| <a href="#">8-10 Logging out of the ETS Comms module</a>                         | <a href="#">8-15</a> |
| <a href="#">8-11 Taking the ETS Switch module out-of-service</a>                 | <a href="#">8-16</a> |
| <a href="#">8-12 Putting the ETS Switch module in-service</a>                    | <a href="#">8-17</a> |
| <a href="#">8-13 Setting the ETS Switch module operating and switching modes</a> | <a href="#">8-18</a> |
| <a href="#">8-14 Operating a protection switch</a>                               | <a href="#">8-20</a> |
| <a href="#">8-15 Releasing a protection switch</a>                               | <a href="#">8-21</a> |



---

## Procedure 8-1

# Setting the ETS Switch module operating mode to manual

---

Use this procedure to set the operating mode on the ETS Switch module to manual.

If the AUTO LED is off, the module is already in manual mode.

If the AUTO LED is green, follow this procedure to change the operating mode to manual.

### Precautions

**CAUTION****Risk of loss of traffic**

When the ETS Switch module is in manual mode, automatic switching and automatic switch-back are disabled. A failure on the selected path results in a loss of traffic.

### Action

---

| Step | Action |
|------|--------|
|------|--------|

---

- |   |                                                                                                                                                                                                                   |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | <p>Press the AUTO/MAN button once.</p> <p><i>The AUTO LED turns off and the operating mode changes to manual.</i></p> <p><b>Note:</b> Pressing the AUTO/MAN button again resets the module to automatic mode.</p> |
|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

—end—

## Procedure 8-2

### Manually setting the active path

---

Use this procedure to select the active path when the ETS Switch module is in manual mode.

#### Requirements

A valid signal must be present on both the primary and secondary paths.

#### Action

---

| Step | Action                                                                                                                                   |
|------|------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | Press the THR/PRI/SEC button once.<br><i>Traffic switches to the other path. The LED that is associated with the active path lights.</i> |

---

—end—

---

## Procedure 8-3

### Manually setting the reference power level

---

Use this procedure to manually set the existing power level as the reference power level (RPL).

**Note:** To set the RPL, the ETS Switch module reads the incoming power level on both paths simultaneously. If you want the same RPL applied to both paths, balance the signals on the paths before you set the RPL.

#### Requirements

A valid signal must be present on both the primary and secondary paths.

The ETS Switch module must be in automatic mode.

#### Action

| Step | Action                                                                              |
|------|-------------------------------------------------------------------------------------|
| 1    | Press THR/PRI/SEC button once.<br><i>The reference power level is set.</i><br>—end— |

## Procedure 8-4

### Communicating locally with the ETS Comms module

---

Use this procedure to establish a local connection to a commissioned ETS Comms module by connecting a serial cable from the craft terminal to the RS-232 port on the front panel of the ETS Comms module. When the connection is established and the craft terminal emulation software is configured, you can log in to the commissioned ETS Comms module.

If the ETS Comms module is not commissioned, see the [“Commissioning the Enhanced Trunk Switch”](#) chapter in *Commissioning Procedures*, 323-1701-220.

#### Requirements

Before you start this procedure, you must have an RS-232 serial cable to connect the craft terminal to the ETS Comms module.

#### Action

---

| Step | Action |
|------|--------|
|------|--------|

---

##### *Establishing a local connection*

- 1 Connect the RS-232 serial cable from the craft terminal to the DB-9 RS-232 connector port on the front panel of the ETS Comms module. [Table 8-2](#) lists the DB-9 RS-232 pin assignment.

**Table 8-2**  
**DB-9 RS-232 pin assignment**

| Pin | Function           |
|-----|--------------------|
| 2   | RD (Receive data)  |
| 3   | TD (Transmit data) |
| 5   | Ground             |

- 2 Configure the terminal emulation software (hyperterminal) as follows:
  - Terminal emulation = vt100
  - Bits per second = 9600
  - Parity = None
  - Stop BITS = 1
  - Flow control = None
- 3 Press ; (semi colon).

*An angle bracket prompt (>) appears.*

—continued—

---

Procedure 8-4 (continued)**Communicating locally with the ETS Comms module**

---

| Step | Action |
|------|--------|
|------|--------|

---

***Logging in to the ETS Comms module***

- |   |                                                                                                                              |
|---|------------------------------------------------------------------------------------------------------------------------------|
| 4 | Activate a user session and log in to the ETS Comms module by typing<br>ACT-USER: [<tid>]:<uid>:<ctag>::<password>;<br>—end— |
|---|------------------------------------------------------------------------------------------------------------------------------|

## Procedure 8-5

# Communicating remotely with the ETS Comms module

---

Use this procedure to establish a remote connection to a commissioned ETS Comms module through Ethernet.

The ETS Comms module must be commissioned, with an IP address and a target identifier (TID) before you can access it through the Ethernet network.

If the ETS Comms module is not commissioned, see the [“Commissioning the Enhanced Trunk Switch”](#) chapter in *Commissioning Procedures*, 323-1701-220.

### Requirements

Before you start this procedure, you must have completed [Procedure 4-3 “Configuring the Ethernet port on the ETS Comms module”](#) in *Commissioning Procedures*, 323-1701-220.

This procedure is for use on craft terminals running a Windows operating system. You must know the following:

- the <node ip address> or <node name> of the ETS Comms module with which you want to communicate
- the <port number>, that is 3082 or 23

**Note:** Port 3082 indicates local echo and a maximum of four users. Port 23 indicates no local echo and only one user.

For TL1 parameter descriptions and possible values, refer to the Enhanced Trunk Switch commands in *TL1 Interface, Part 4 of 4*, 323-1701-190.

### Action

---

| Step | Action |
|------|--------|
|------|--------|

---

#### *Establishing a remote connection*

- |   |                                                                                               |
|---|-----------------------------------------------------------------------------------------------|
| 1 | Open a DOS session on your PC. Make sure you have communication with the ETS Comms module.    |
| 2 | At the DOS prompt, enter<br>TELNET <node ip address or node name> <port number>               |
| 3 | Press ; (semi colon).<br><i>An angled bracket (&gt;) appears to prompt you for a command.</i> |

—continued—

---

Procedure 8-5 (continued)**Communicating remotely with the ETS Comms module**

---

| Step | Action |
|------|--------|
|------|--------|

---

***Logging in to the ETS Comms module***

- |   |                                                                                                                              |
|---|------------------------------------------------------------------------------------------------------------------------------|
| 4 | Activate a user session and log in to the ETS Comms module by typing<br>ACT-USER: [<tid>]:<uid>:<ctag>::<password>;<br>—end— |
|---|------------------------------------------------------------------------------------------------------------------------------|

## Procedure 8-6

### Changing the password

---

Use this procedure to change the password on the ETS Comms module.

**Note:** All users can change their own passwords.

#### Requirements

You must be aware of the following rules when you define the new password.

##### PID naming rules

Password identifiers are between 6 and 10 characters in length, and are composed of a combination of alphanumeric (letters A through Z; numbers 0 through 9) and special characters.

The password must contain at least one alphabetic character, one numeric, and one special character.

The following special characters **are supported** for the password: . # % + \_ -

The following characters **are not supported** for the password:

- semicolon (;)
- colon (:)
- ampersand (&)
- comma (,)
- question mark (?)
- and all control characters

**Note:** Blank passwords (no characters) are not acceptable.

For TL1 parameter descriptions and possible values, refer to the Enhanced Trunk Switch commands in *TL1 Interface, Part 4 of 4*, 323-1701-190.

—continued—



---

Procedure 8-6 (continued)  
**Changing the password**

---

## Action

| Step | Action                                                                                                                                                                                                                          |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | Establish a TL1 session with the ETS Comms module.<br>See <a href="#">Procedure 8-4 “Communicating locally with the ETS Comms module”</a> or <a href="#">Procedure 8-5 “Communicating remotely with the ETS Comms module”</a> . |
| 2    | Change the password by typing<br>ED-PID: [<tid>]:<uid>:<ctag>::<old pid>,<new pid>;                                                                                                                                             |
| 3    | Reinitialize the ETS Comms module by typing<br>INIT-SYS: [<tid>]:<aid>:<ctag>::<ph>;<br>—end—                                                                                                                                   |

## Procedure 8-7

### Changing the Ethernet port parameters

---

Use this procedure to change the configured Ethernet port parameters on an ETS Comms module.

For TL1 parameter descriptions and possible values, refer to the Enhanced Trunk Switch commands in *TL1 Interface, Part 4 of 4*, 323-1701-190.

#### Action

---

| Step | Action                                                                                                                                                                                                                          |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | Establish a TL1 session with the ETS Comms module.<br>See <a href="#">Procedure 8-4 “Communicating locally with the ETS Comms module”</a> or <a href="#">Procedure 8-5 “Communicating remotely with the ETS Comms module”</a> . |
| 2    | Edit the equipment parameters, as required, by typing<br>ED-EQPT::1-c:ctag:::<br>IPADDR=<ipaddr>, GTWYADDR=<gtwyaddr>,<br>SUBNETMASK=<subnetmask>;                                                                              |
| 3    | Reinitialize the ETS Comms module by typing<br>INIT-SYS: [<tid>]:<aid>:<ctag>::<ph>;<br><br>—end—                                                                                                                               |

---

---

## Procedure 8-8 Changing the TID

---

Use this procedure to change the target identifier (TID) of the ETS Comms module.

The TID is a non-confidential code that identifies the ETS Comms module being addressed. TIDs must be between 1 and 20 alphanumeric characters in length. Alphanumeric characters can be any combination of letters, numbers, and hyphens (-). The TID is case sensitive on the Enhanced Trunk Switch. Unsupported characters include backslash (\) and double quotes (“).

For TL1 parameter descriptions and possible values, refer to the Enhanced Trunk Switch commands in *TL1 Interface, Part 4 of 4*, 323-1701-190.

### Action

---

| Step | Action                                                                                                                                                                                                                          |
|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | Establish a TL1 session with the ETS Comms module.<br>See <a href="#">Procedure 8-4 “Communicating locally with the ETS Comms module”</a> or <a href="#">Procedure 8-5 “Communicating remotely with the ETS Comms module”</a> . |
| 2    | Set the source identifier (SID) to assign a target identifier (TID) to the ETS Comms module by typing<br><code>SET-SID: [&lt;tid&gt;]::&lt;ctag&gt;::&lt;new tid&gt;;</code>                                                    |
| 3    | Reinitialize the ETS Comms module by typing<br><code>INIT-SYS: [&lt;tid&gt;]:&lt;aid&gt;:&lt;ctag&gt;::&lt;ph&gt;;</code><br><br>—end—                                                                                          |

---

## Procedure 8-9

### Changing the date and time

---

Use this procedure to change the date and time on the ETS Comms module. The ETS Switch module mounted in the same shelf automatically updates its date and time from the ETS Comms module's date and time.

**Note:** The date and time settings are lost after the ETS Comms module resets. If the ETS Comms module resets, you must perform this procedure again to reset the date and time parameters.

For TL1 parameter descriptions and possible values, refer to the Enhanced Trunk Switch commands in *TL1 Interface, Part 4 of 4*, 323-1701-190.

### Action

---

| Step  | Action                                                                                                                                                                                                                                                    |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <hr/> |                                                                                                                                                                                                                                                           |
| 1     | Establish a TL1 session with the ETS Comms module.<br>See <a href="#">Procedure 8-4 "Communicating locally with the ETS Comms module"</a> or <a href="#">Procedure 8-5 "Communicating remotely with the ETS Comms module"</a> .                           |
| 2     | Edit the date and time stored in the ETS Comms module by typing<br>ED-DAT: [<tid>] :: <ctag> :: yy-mm-dd, hh-mm-ss;<br><i>All components installed in the same shelf automatically update their date and time from the ETS Comms module.</i><br><br>—end— |

---

## Procedure 8-10

# Logging out of the ETS Comms module

---

Use this procedure to log out of an ETS Comms module.

### Action

---

| Step | Action |
|------|--------|
|------|--------|

---

- |   |                                                                                            |
|---|--------------------------------------------------------------------------------------------|
| 1 | Cancel the user session and log out by typing<br>CANC-USER: [<tid>]:<uid>:<ctag>;<br>—end— |
|---|--------------------------------------------------------------------------------------------|

## Procedure 8-11

### Taking the ETS Switch module out-of-service

---

Use this procedure to take the ETS switch module out-of-service. To take the ETS Switch module out-of-service, you must do the following:

- 1 take both of the ports out-of-service
- 2 take the circuit pack out-of-service

For TL1 parameter descriptions and possible values, refer to the Enhanced Trunk Switch commands in *TL1 Interface, Part 4 of 4*, 323-1701-190.

#### Action

---

| Step  | Action                                                                                                                                                                                                                                                                   |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <hr/> |                                                                                                                                                                                                                                                                          |
| 1     | Establish a TL1 session with the Comms module associated with the target ETS Switch module.<br>See <a href="#">Procedure 8-4 “Communicating locally with the ETS Comms module”</a> or <a href="#">Procedure 8-5 “Communicating remotely with the ETS Comms module”</a> . |
| 2     | Take the primary port out-of-service by typing<br>RMV-OCH: [<tid>]:<aid>:<ctag>::,;                                                                                                                                                                                      |
| 3     | Take the secondary port out-of-service by typing<br>RMV-OCH: [<tid>]:<aid>:<ctag>::,;                                                                                                                                                                                    |
| 4     | Take the circuit pack out-of-service by typing<br>RMV-EQPT: [<tid>]:<aid>:<ctag>::,;                                                                                                                                                                                     |
| —end— |                                                                                                                                                                                                                                                                          |

---

## Procedure 8-12

### Putting the ETS Switch module in-service

---

Use this procedure to put the ETS switch module in-service. To put the ETS Switch module in-service, you must do the following:

- 1 put the circuit pack in-service
- 2 put both of the ports in-service

For TL1 parameter descriptions and possible values, refer to the Enhanced Trunk Switch commands in *TL1 Interface, Part 4 of 4*, 323-1701-190.

#### Action

| Step  | Action                                                                                                                                                                                                                                                                   |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1     | Establish a TL1 session with the Comms module associated with the target ETS Switch module.<br>See <a href="#">Procedure 8-4 “Communicating locally with the ETS Comms module”</a> or <a href="#">Procedure 8-5 “Communicating remotely with the ETS Comms module”</a> . |
| 2     | Put the circuit pack in-service by typing<br>RST-EQPT: [<tid>]:<aid>:<ctag>::,;                                                                                                                                                                                          |
| 3     | Put the primary port in-service by typing<br>RST-OCH: [<tid>]:<aid>:<ctag>::,;                                                                                                                                                                                           |
| 4     | Put the secondary port in-service by typing<br>RST-OCH: [<tid>]:<aid>:<ctag>::,;                                                                                                                                                                                         |
| —end— |                                                                                                                                                                                                                                                                          |

## Procedure 8-13

# Setting the ETS Switch module operating and switching modes

---

Use this procedure to do the following:

- turn automatic switch protection (APS) on or off
- set the switching mode to window or absolute
- enable or disable automatic switch-back (reversion)
- change the reference power level
- change the upper and lower window switching ranges (UWSR and LWSR)

For TL1 parameter descriptions and possible values, refer to the Enhanced Trunk Switch commands in *TL1 Interface, Part 4 of 4*, 323-1701-190.

## Action

| Step                                                | Action                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |            |                    |                        |                                              |                        |                                                     |                        |                               |                        |                          |                        |
|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|------------|--------------------|------------------------|----------------------------------------------|------------------------|-----------------------------------------------------|------------------------|-------------------------------|------------------------|--------------------------|------------------------|
| 1                                                   | Establish a TL1 session with the Comms module associated with the target ETS Switch module.<br>See <a href="#">Procedure 8-4 “Communicating locally with the ETS Comms module”</a> or <a href="#">Procedure 8-5 “Communicating remotely with the ETS Comms module”</a> .                                                                                                                                                                                                                      |                |            |                    |                        |                                              |                        |                                                     |                        |                               |                        |                          |                        |
| 2                                                   | <table><tr><th>If you want to</th><th>Then go to</th></tr><tr><td>turn APS on or off</td><td><a href="#">step 3</a></td></tr><tr><td>set the switching mode to window or absolute</td><td><a href="#">step 4</a></td></tr><tr><td>enable or disable automatic switch-back (reversion)</td><td><a href="#">step 5</a></td></tr><tr><td>set the reference power level</td><td><a href="#">step 6</a></td></tr><tr><td>change the UWSR and LWSR</td><td><a href="#">step 7</a></td></tr></table> | If you want to | Then go to | turn APS on or off | <a href="#">step 3</a> | set the switching mode to window or absolute | <a href="#">step 4</a> | enable or disable automatic switch-back (reversion) | <a href="#">step 5</a> | set the reference power level | <a href="#">step 6</a> | change the UWSR and LWSR | <a href="#">step 7</a> |
| If you want to                                      | Then go to                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                |            |                    |                        |                                              |                        |                                                     |                        |                               |                        |                          |                        |
| turn APS on or off                                  | <a href="#">step 3</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |            |                    |                        |                                              |                        |                                                     |                        |                               |                        |                          |                        |
| set the switching mode to window or absolute        | <a href="#">step 4</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |            |                    |                        |                                              |                        |                                                     |                        |                               |                        |                          |                        |
| enable or disable automatic switch-back (reversion) | <a href="#">step 5</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |            |                    |                        |                                              |                        |                                                     |                        |                               |                        |                          |                        |
| set the reference power level                       | <a href="#">step 6</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |            |                    |                        |                                              |                        |                                                     |                        |                               |                        |                          |                        |
| change the UWSR and LWSR                            | <a href="#">step 7</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                |            |                    |                        |                                              |                        |                                                     |                        |                               |                        |                          |                        |
| 3                                                   | Turn APS on or off by typing<br>ED-EQPT: [<tid>] :<aid>:<ctag>::APS=aps;                                                                                                                                                                                                                                                                                                                                                                                                                      |                |            |                    |                        |                                              |                        |                                                     |                        |                               |                        |                          |                        |

—continued—



---

Procedure 8-13 (continued)**Setting the ETS Switch module operating and switching modes**

---

| Step | Action                                                                                                                                                                                                                                                                        |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4    | Set the switching mode by typing<br>ED-EQPT: [<tid>]:<aid>:<ctag>:::SWMODE=swmode;<br><b>Note:</b> If the Switch module is currently in manual mode, this command does not change the switching mode to automatic.                                                            |
| 5    | Enable or disable automatic switch-back by typing<br>ED-EQPT: [<tid>]:<aid>:<ctag>:::RVRTV=rvrtv;                                                                                                                                                                             |
| 6    | To set the RPL, the module reads the incoming power level on both paths simultaneously. If you want the same RPL applied to both paths, balance the signals on the paths before you perform this step.<br>Set the RPL by typing<br>ED-EQPT: [<tid>]:<aid>:<ctag>:::SRPL=srpl; |
| 7    | Change the UWSR and LWSR by typing<br>ED-EQPT: [<tid>]:<aid>:<ctag>:::UWSR=uwsr,LWSR=lwsr;<br>—end—                                                                                                                                                                           |

## Procedure 8-14

### Operating a protection switch

---

Use this procedure to switch traffic to the alternate path using TL1. You can operate the following protection switches:

- manual switch to the alternate line, if the alternate line is operational
- forced switch to the secondary line only if the secondary line is operational
- forced switch to the working line unless it is locked out
- enter lockout mode without switching paths (disables automatic protection switching)

For TL1 parameter descriptions and possible values, refer to the Enhanced Trunk Switch commands in *TL1 Interface, Part 4 of 4*, 323-1701-190.

### Action

---

| Step | Action |
|------|--------|
|------|--------|

---

- |   |                                                                                                                                                                                                                                                                              |
|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Establish a TL1 session with the Comms module associated with the target ETS Switch module.<br><br>See <a href="#">Procedure 8-4 “Communicating locally with the ETS Comms module”</a> or <a href="#">Procedure 8-5 “Communicating remotely with the ETS Comms module”</a> . |
| 2 | Operate a protection switch by typing<br><br>OPR-PROTNSW-OCH: [<tid>]:<aid>:<ctag>::<sc>;<br><br>—end—                                                                                                                                                                       |

---

## Procedure 8-15

### Releasing a protection switch

---

Use this procedure to return to automatic switching mode after an operate protection switch command was issued. The ETS switch module resumes the switching mode (window or absolute) that was in effect when the ETS switch module received the OPR PROTNSW OCH command.

For TL1 parameter descriptions and possible values, refer to the Enhanced Trunk Switch commands in *TL1 Interface, Part 4 of 4*, 323-1701-190.

### Action

| Step | Action                                                                                                                                                                                                                                                                       |
|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | Establish a TL1 session with the Comms module associated with the target ETS Switch module.<br><br>See <a href="#">Procedure 8-4 “Communicating locally with the ETS Comms module”</a> or <a href="#">Procedure 8-5 “Communicating remotely with the ETS Comms module”</a> . |
| 2    | Release the protection switch by typing<br><br>RLS-PROTNSW-OCH: [<tid>]:<aid>:<ctag>;;<br><br>—end—                                                                                                                                                                          |





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## **Optical Metro 5100/5200**

### **Provisioning and Operating Procedures, Part 2 of 2**

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323-1701-310

Standard Release 8.0 Issue 1

April 2005

Printed in Canada and the United Kingdom

