NE Explorer Information

This appendix provides information on the various NE Explorer windows supported in Cisco Prime Optical. This appendix contains the following sections:

- ONS 15216 NE Explorer, page B-2
- ONS 15305, page B-25
- ONS 15305 CTC NE Explorer, page B-26
- ONS 15310 CL NE Explorer, page B-32
- ONS 15310 MA SONET NE Explorer, page B-60
- ONS 15310 MA SDH NE Explorer, page B-90
- ONS 15327 NE Explorer, page B-121
- ONS 15454 MSTP NE Explorer, page B-149
- ONS 15454 SONET NE Explorer, page B-189
- ONS 15454 SDH NE Explorer, page B-234
- ONS 15454-M6 NE Explorer, page B-282
- ONS 15454-M2 NE Explorer, page B-321
- ONS 15600 SONET NE Explorer, page B-359
- ONS 15600 SDH NE Explorer, page B-387
- CPT 200 NE Explorer, page B-414
- CPT 600 NE Explorer, page B-443
- CPT 600 NE Explorer, page B-443
- CRS-1/3 NE Explorer, page B-473
- Unmanaged NE/Other Vendor Node Properties Pane, page B-476

Note In the Prime Optical GUI, display-only fields have a gray background.

ONS 15216 NE Explorer

The NE Explorer for the ONS 15216 displays information about the selected ONS 15216 NE. ONS 15216 NEs are grouped as active NEs or passive NEs. Passive NEs do not have a management interface, so there is no communication between Prime Optical and passive ONS 15216 NEs. For passive ONS 15216 NEs, the NE Explorer summarizes NE information that has been entered manually through the Domain Explorer and also allows you to specify the serial number. For active ONS 15216 NEs, the NE Explorer allows you to view the actual values of settings and parameters on the NE and modify configurable parameters.

Table B-1 ONS 15216 NEs

Active ONS 15216 NEs	Passive ONS 15216 NEs
ONS 15216 100-GHz OADM	ONS 15216 EDFA1
ONS 15216 EDFA2	ONS 15216 200-GHz OADM
ONS 15216 EDFA3	ONS 15216 100-GHz DWDM Filters
	ONS 15216 200-GHz DWDM Filters
	ONS 15216 OSC
	ONS 15216 DCU
	ONS 15216 FlexLayer

Active ONS 15216 NEs

The Network Element Properties pane for active ONS 15216 NEs displays information specific to the active ONS 15216 erbium-doped fiber amplifier (EDFA) and optical add/drop multiplexer (OADM) NEs. The properties pane contains the following slot properties:

- Status, page B-2
- Identification, page B-3
- Address, page B-3
- NE Authentication, page B-4

The following table lists the different types of active ONS 15216 NEs.

Table B-2 List of Active ONS 15216 NE Types and Descriptions

Active ONS 15216 Types	Description
EDFA	Active EDFA with an IP address.
OADM	Active 100-GHz OADM with an IP address. The OADM can be a 1-, 2-, or 4-channel OADM.

Status

The Status Properties pane displays status information for the active NE.

Table B-3 Field Descriptions for the Status Properties Pane

Field	Description
NE ID	Displays the user-defined name of the selected NE.
Description	Displays information that a user has entered (if any) to describe the NE.
NE Model	Identifies the model of the selected ONS 15216 NE.
Alarm Status	Displays the total number of critical, major, minor, and warning alarms currently existing on the selected NE.
Communication State	Displays the current connectivity state between Prime Optical and the selected NE. Values are Available or Unavailable.
Operational State	Displays the current operational state of the selected NE and allows you to change the state. Values are In Service, Out of Service, and Under Maintenance.

Identification

The Identification Properties pane displays NE identification information.

Table B-4 Field Descriptions for the Identification Properties Pane

Field	Description
NE ID	Displays the user-defined name of the selected NE.
Description	Displays information that user has entered (if any) to describe the NE.
NE Model	Identifies the model of the selected ONS 15216 NE.
NE Type	Displays the ONS 15216 NE type.
Vendor Name	Displays the vendor name. The default vendor name is Cisco Systems.
Software Version	Displays the NE software version.
Version Name	Displays the name of the software version.
Location Name	Displays the geographic location of the selected NE.

Address

The Address Properties pane provides address information for the NE. If you change an address, the NE is reset automatically to make the new address selection valid.

Table B-5 Field Descriptions for the Address Properties Pane

Field	Description
NE ID	Displays the user-defined name of the selected NE.
Description	Displays information that a user has entered (if any) to describe the NE.
NE Model	Identifies the model of the selected ONS 15216 NE.
Active IP Address	Displays the IP address of the selected NE.
SNMP Community String	Displays the configured community string name used in Simple Network Management Protocol (SNMP) messages. The community name is used to determine whether a user has access to the device.

Table B-5 Field Descriptions for the Address Properties Pane (continued)

Field	Description
GNE ID	Displays the ID for the gateway NE (GNE) on the selected NE ring.
Subnetwork ID	Displays the name of the subnetwork associated with the selected NE.
Network Partition ID	Displays the name of the network partition associated with the selected NE.

NE Authentication

The NE Authentication Properties pane allows you to specify usernames and passwords for Prime Optical server connections to ONS 15216 NEs. Fields shown depend on the type of NE selected.

Table B-6 Field Descriptions for the NE Authentication Properties Pane

Field	Description
NE Connection	
Username	Specify the username that the Prime Optical server uses to connect to ONS 15216 NEs.
Password	Specify the password to use for Prime Optical server-to-NE connections.
Confirm Password	Retype the password to confirm it.

Note Regardless of the actual length of the password, the Password and Confirm Password fields display only a fixed-length string of 15 asterisks (*).

Note See Table 1-22 on page 1-47 for descriptions of actions that you can perform using the buttons at the bottom of the window.

Passive ONS 15216 NEs

The Network Element Properties pane for passive ONS 15216 NEs displays information specific to the passive EDFA, the passive OADM, the DCU, the OSC, and the DWDM ONS 15216 NEs. The passive ONS 15216 properties pane contains an Identification.

The following table lists the different types of passive ONS 15216 NEs.

Table B-7 List of Passive ONS 15216 NE Types and Descriptions

Passive ONS 15216 Types	Description
EDFA	Passive EDFA with no IP address or connectivity.
OADM	Passive 200-GHz OADM with no IP address or connectivity. The OADM can be either a 1- or 2-channel OADM.
DCU	Passive DCU with no IP address or connectivity.

Table B-7 List of Passive ONS 15216 NE Types and Descriptions (continued)

Passive ONS 15216 Types	Description
OSC	Passive OSC with no IP address or connectivity.
DWDM	Passive DWDM filter with no IP address or connectivity. The DWDM filter can be a red, 200-GHz, DWDM filter; a blue, 200-GHz, DWDM filter; a red, 100-GHz, DWDM filter; or a blue, 100-GHz, DWDM filter.

Identification

The Identification Properties pane displays the NE identification information.

Table B-8 Field Descriptions for the Identification Properties Pane

Field	Description
NE ID	Displays the user-defined name of the selected NE.
Description	Displays information that a user has entered (if any) to describe the NE.
NE Model	Identifies the model of the selected NE (ONS 15216).
NE Type	Displays the ONS 15216 NE type.
Vendor Name	Displays the vendor name. The default vendor name is Cisco Systems.
Version Name	Displays the name of the software version.
Location Name	Displays the geographic location of the selected NE.
Operational State	Displays the current operational state of the system: In Service, Under Maintenance, or Out of Service.
Subnetwork ID	Displays the name of the subnetwork associated with the selected NE.

Note See Table 1-22 on page 1-47 for descriptions of actions that you can perform using the buttons at the bottom of the window.

ONS 15216 Passive DCU NE Explorer

The ONS 15216 Passive DCU NE Explorer displays information about the ONS 15216 Passive DCU NE. It contains Identification, Slot 1, and Slot 2 Properties panes. (See Figure B-1.)

Each slot can accommodate any one of the following modules:

- DCU-100 (100 ps/nm)
- DCU-350 (350 ps/nm)
- DCU-450 (450 ps/nm)
- DCU-550 (550 ps/nm)
- DCU-750 (750 ps/nm)
- DCU-950 (950 ps/nm)

- DCU-1150 (1150 ps/nm)
- DCU-E-200 (200 ps/nm, ELEAF type)
- DCU-E-350 (350 ps/nm, ELEAF type)
- DCU-L-300 (300 ps/nm)
- DCU-L-600 (600 ps/nm)
- DCU-L-700 (700 ps/nm)
- DCU-L-800 (800 ps/nm)
- DCU-L-1000 (1000 ps/nm)
- DCU-L-1100 (1100 ps/nm)
- DCU-DS-L-100 (100 ps/nm)
- DCU-DS-L-200 (200 ps/nm)
- DCU-DS-L-300 (300 ps/nm)
- 15216-FBGDCU-165 (165 ps/nm)
- 15216-FBGDCU-331 (331 ps/nm)
- 15216-FBGDCU-496 (496 ps/nm)
- 15216-FBGDCU-661 (661 ps/nm)
- 15216-FBGDCU-826 (826 ps/nm)
- 15216-FBGDCU-992 (992 ps/nm)
- 15216-FBGDCU-1157 (1157 ps/nm)
- 15216-FBGDCU-1322 (1322 ps/nm)
- 15216-FBGDCU-1653 (1653 ps/nm)
- 15216-FBGDCU-1983 (1983 ps/nm)

Identification

The Identification Properties pane displays identification information for the ONS 15216 DCU NE.

Table B-9 Field Descriptions for the Identification Properties Pane

Field	Description
NE ID	Displays the ID of the NE from the Domain Explorer.
Description	Displays the description of the NE from the Domain Explorer.
NE Model	Displays the NE model type.
NE Type	Displays the type of NE.
NE Version	Displays the software version of the NE.
Product Name	Displays the name of the product.
CLEI Code	Displays the CLEI code.
Serial Number	Displays the serial number of the NE.
Location Name	Displays the name of the location where the NE is installed.

Table B-9 Field Descriptions for the Identification Properties Pane (continued)

Field	Description
Subnetwork ID	Displays the ID of the subnetwork to which the NE belongs.
Network Partition ID	Displays the ID of the network partition.

Slot 1 and Slot 2

The Slot 1 and Slot 2 Properties panes display information about the first and second slots. The fields in both Properties panes are identical, except that they pertain to different slots.

Table B-10 Field Descriptions for the Slot 1 and Slot 2 Properties

Field	Description
Module Type	Displays the NE model type. Select one of the following module types: • DCU-100 (100 ps/nm) • DCU-350 (350 ps/nm) • DCU-450 (450 ps/nm) • DCU-550 (550 ps/nm) • DCU-750 (750 ps/nm) • DCU-950 (950 ps/nm) • DCU-1150 (1150 ps/nm) • DCU-E-200 (200 ps/nm, ELEAF type) • DCU-E-350 (350 ps/nm, ELEAF type) • DCU-L-300 (300 ps/nm) • DCU-L-600 (600 ps/nm) • DCU-L-700 (700 ps/nm) • DCU-L-800 (800 ps/nm) • DCU-L-1000 (1000 ps/nm) • DCU-L-1100 (1100 ps/nm) • DCU-DS-L-100 (100 ps/nm) • DCU-DS-L-200 (200 ps/nm) • DCU-DS-L-300 (300 ps/nm)
Product Name	Displays the name of the product.
CLEI Code	Displays the CLEI code.
Serial Number	Displays the serial number of the NE.

ONS 15216 DWDM NE Explorer

The NE Explorer for the ONS 15216 DWDM displays information about the passive ONS 15216 DWDM NE. It contains an Identification Properties pane.

The Cisco ONS 15216 48-channel muxponder/demuxponder unit is a new ONS 15216 FlexLayer unit that allows 48 channels of ITU wavelengths to be placed onto a single fiber, and removes 48 channels of ITU wavelengths from a single fiber.

R9.6 supports the ONS 15216 48-channel muxponder/demuxponder odd/even unit:

- 15216-MD-48-ODD=: 48 channels spaced at 100 GHz on the Odd ITU grid
- 15216-MD-48-EVEN=: 48 channels spaced at 100 GHz on the Even ITU grid

Identification

The Identification Properties pane displays identification information about the ONS 15216 DWDM NE. See the following table for field descriptions.

Table B-11 Field Descriptions for the Identification Properties Pane

Field	Description
NE ID	Displays the ID of the NE from the Domain Explorer.
Description	Displays the description of the NE from the Domain Explorer.
NE Model	Displays the NE model type.
NE Type	Displays the type of NE.
NE Version	Displays the software version of the NE.
Product Name	Displays the name of the product.
CLEI Code	Displays the Common Language Equipment Identification (CLEI) code.
Serial Number	Displays the serial number of the NE.
Location Name	Displays the name of the location where the NE is installed.
Subnetwork ID	Displays the ID of the subnetwork to which the NE belongs.
Network Partition ID	Displays the ID of the network partition.

ONS 15216 FlexLayer NE Explorer

The ONS 15216 FlexLayer NE Explorer displays information about the ONS 15216 FlexLayer NE. It contains the following Properties panes:

- Identification, page B-6
- Slot 1 and Slot 2, page B-7

Identification

The Identification Properties pane displays identification information about the ONS 15216 FlexLayer NE.

Table B-12 Field Descriptions for the Identification Properties Pane

Field	Description
NE ID	Displays the ID of the NE from the Domain Explorer.
Description	Displays the description of the NE from the Domain Explorer.
NE Model	Displays the NE model type.
NE Type	Displays the type of NE.
NE Version	Displays the software version of the NE.
Product Name	Displays the name of the product.
CLEI Code	Displays the CLEI code.
Serial Number	Displays the serial number of the NE.
Location Name	Displays the name of the location where the NE is installed.
Subnetwork ID	Displays the ID of the subnetwork to which the NE belongs.
Network Partition ID	Displays the ID of the network partition.

Slot 1 Through Slot 4

The Slot Properties panes show module information pertaining to the selected ONS 15216 FlexLayer NE slot. The fields in both Properties panes are identical, except that they pertain to different slots.

Table B-13 Field Descriptions for the Slot 1 through Slot 4 Properties

Field	Description
Module Type	Displays the type of module in the slot.
Product Name	Displays the name of the product.
CLEI Code	Displays the CLEI code.
Serial Number	Displays the serial number of the NE.

ONS 15216 Passive EDFA NE Explorer

The ONS 15216 Passive EDFA NE Explorer displays information about the ONS 15216 Passive EDFA NE. It contains an Identification Properties pane.

Identification

The Identification Properties pane displays identification information for the ONS 15216 Passive EDFA NE.

Table B-14 Field Descriptions for the Identification Properties Pane

Field	Description
NE ID	Displays the ID of the NE from the Domain Explorer.
Description	Displays the description of the NE from the Domain Explorer.
NE Model	Displays the NE model type.
NE Type	Displays the type of NE.
NE Version	Displays the software version of the NE.
Product Name	Displays the name of the product.
CLEI Code	Displays the CLEI code.
Serial Number	Displays the serial number of the NE.
Location Name	Displays the name of the location where the NE is installed.
Subnetwork ID	Displays the ID of the subnetwork to which the NE belongs.
Network Partition ID	Displays the ID of the network partition.

ONS 15216 Active EDFA2 NE Explorer

The ONS 15216 EDFA2 NE Explorer contains the following Properties panes, some of which apply only to a specific NE version:

- Identification, page B-8
- Address, page B-11
- Config/Status, page B-11
- Diagnostics, page B-13
- Thresholds, page B-13
- Alarm Behavior, page B-14
- SNMP, page B-15

Identification

The Identification Properties pane displays identification information about the ONS 15216 EDFA2 NEs.

Table B-15 Field Descriptions for the Identification Properties Pane

Field	Description
NE ID	Displays the ID of the NE from the Domain Explorer.
Alias	Displays the alias name of the NE.
Description	Displays the description of the NE from the Domain Explorer.
NE Model	Displays the NE model type.

Table B-15 Field Descriptions for the Identification Properties Pane (continued)

Field	Description
NE Type	Displays the type of NE.
NE Version	Displays the software version of the NE.
Wavelength(s)	Displays the number of wavelengths for the NE. This field is not applicable to the active EDFA NE type.
Product Name	Displays the name of the product.
CLEI Code	Displays the CLEI code.
Serial Number	Displays the serial number of the NE.
Location Name	Displays the name of the location where the NE is installed.
Location	
Latitude	Allows you to set the latitude in the database. Select **North** or **South** from the drop-down list; then, enter the degrees and minutes (or click the up and down arrows to increase or decrease each by 1 unit).
Longitude	Allows you to set the longitude in the database. Select **East** or **West** from the drop-down list; then, enter the degrees and minutes (or click the up and down arrows to increase or decrease each by 1 unit).
Date and Time	
Time	Displays the NE date and time.
Time Zone	Displays the time zone where the NE is located.
Use Daylight Savings Time	If checked, Daylight Savings Time is observed.

Address

The Address Properties pane displays information about the NE network address.

Table B-16 Field Descriptions for the Address Properties Pane

Field	Description
IP Address	Displays the IP address of the NE.
Subnet Mask	Displays the subnetwork mask ID of the NE.
Gateway Address	Displays the gateway address of the NE.
SNMP Community String	Displays the SNMP community string of the NE. You can edit this field.
GNE ID	Displays the GNE ID.
Subnetwork ID	Displays the ID of the subnetwork to which the NE belongs.
Network Partition ID	Displays the ID of the network partition.

Config/Status

The Config/Status Properties pane displays the configuration settings and status of the EDFA2.

Table B-17 Field Descriptions for the Config/Status Properties Pane

Field	Description
Overall	
Overall Gain	Displays the value of the gain set point in dB when the mode is GAINTEMP (gets cerent15216EdfaConstGainOverallGainMeasured). Must be an integer from 13.0 to 22.0.
Measured Gain	Displays the measured overall gain in dB. The range is from 0.0 to 23.0. **Note** If there is no input power, this field reports a negative (invalid) value.
Pre-Attenuation	Displays the gain preattenuation value in dB (gets cerent15216EdfaVariableGainPreAttenuationMeasured). Must be an integer from 0.0 to 11.0.
Input Power	Displays the EDFA2 input power. Must be an integer from –9999.99 to 9999.99.
Output Power	Displays the EDFA2 output power. Must be an integer from –999.99 to 999.99.
DC Power Bus Mode	Displays the power bus mode setting (Simplex or Duplex) and allows you to change the mode.
Auto Laser Shutdown	Allows you to enable (On) or disable (Off) auto laser shutdown for the EDFA2. **Note** The auto laser shutdown feature is available for the ONS 15216 EDFA2 R2.4 and later.
Pump	
Control Mode Setting	Displays the control mode of the laser pumps. Constant gain is achieved by using an automatic control circuit that adjusts pump power when changes in input power are detected. The ONS 15216 EDFA2 operates in Constant Gain Temperature Compensated mode by default, but since there might be applications where other operating modes are required, the ONS 15216 EDFA2 can be set to operate in any one the following pump control modes: • Constant Gain Temperature Compensated mode (ConstGainTempComp; Cisco default). • Constant Output Power mode (ConstOutputPower). **Note** Pump 1 cannot be set to ConstOutputPower mode. • Constant Pump Current mode (ConstCurrent). • Constant Pump Power mode (ConstPower). • Idle—Laser pumps can be shut down using the Idle control mode. **Caution** Use the pump control modes Constant Output Power, Constant Pump Current, and Constant Pump Power with extreme caution. These modes are service affecting and can reduce the lifecycle of the lasers if used in extreme conditions. The factory default setting and the recommended mode of operation is Constant Gain Temperature Compensated mode. It is recommended that you contact the Cisco TAC before changing from this mode of operation.
Actual Control Mode	Displays the actual control mode of the laser pumps.
Constant Pump Current	Displays the laser pump constant pump current in milliamperes (mA). This is the current used when the control mode is changed to constCurrent. When changing Pump 1, Pump 2 is changed automatically when the Apply button is clicked.
Constant Pump Power	Displays the constant pump power in milliwatts (mW). The range is from 0 to 100 mW; the Cisco default is 0. You must set the constant power of pump 1 and pump 2 at the same time.
Constant Output Power	Displays the constant output power in mW. Only Pump2 is writeable. When ConstOutputPower is selected as the control mode, this field is enabled and editable for Pump2 and not for Pump1. The Const Power field is enabled with the Cisco default value (0). The range is from 0.0 to 65.0 mW.

Diagnostics

The Diagnostics Properties pane allows you to view NE laser pump attributes.

Table B-18 Field Descriptions for the Diagnostics Properties Pane

Field	Description
Gain Module Temp	Displays the gain module temperature in degrees Celsius. Must be an integer from –99.99 to 99.99.
Gain Module Volt	Displays the gain module voltage in volts. Must be an integer from 0 to 999.
Input Power	Displays the laser input power in dBm. Must be an integer from –9999.99 to 9999.99.
Output Power	Displays the laser output power in dBm. Must be an integer from –999.99 to 999.99.
Gain	Displays the laser gain in dB. Must be an integer from –999.9 to 999.9.
Pump	
Chip Temp	Displays the chip temperature in degrees Celsius. Must be an integer from –999.9 to 999.9.
Chip Temp Set Pt.	Displays the chip temperature set point in degrees Celsius. Must be an integer from 0.0 to 99.9.
TEC Current	Displays the TEC current in mA. Must be an integer from 0 to 99999.
Current	Displays the laser current in mA. Must be an integer from 0 to 999.
Power	Displays the pump power in mW. Must be an integer from 0.0 to 999.99.

Thresholds

The Thresholds Properties pane displays the threshold settings of the EDFA2.

Table B-19 Field Descriptions for the Thresholds Properties Pane

Field	Description
Input Power	
Threshold	Displays the input power threshold value in dBm. Must be an integer from –31 to –15.
Hysteresis	Displays the input power hysteresis value in dB. Must be an integer from 0 to 10.
Input Power	Displays the input power threshold value. Must be an integer from –9999.99 to 9999.99.
Output Power	
Alm Deviation	Displays the output power alarm deviation value in dB. Must be an integer from 0 to 10.
Alm Hysteresis	Displays the output power alarm hysteresis value in dB. Must be an integer from 0 to 10.
Output Power Setpt	Displays the output power setpoint threshold value.
Gain	
Min Gain	Displays the minimum gain setting. Must be an integer from –999.99 to 999.99.
Max Gain	Displays the maximum gain setting. Must be an integer from –999.99 to 999.99.
Measured Gain	Displays the value of the gain in dB when the mode is GAINTEMP (gets cerent15216EdfaConstGainOverallGainMeasured). Must be an integer from 0 to 23.
Gain Module Temperature	
Min Temperature	Displays the minimum case temperature in degrees Celsius. Must be an integer from –10 to 10.
Max Temperature	Displays the maximum case temperature in degrees Celsius. Must be an integer from 20 to 70.

Table B-19 Field Descriptions for the Thresholds Properties Pane (continued)

Field	Description
Min Hysteresis	Displays the minimum case temperature hysteresis in degrees Celsius. Must be an integer from 0 to 10.
Max Hysteresis	Displays the maximum case temperature hysteresis in degrees Celsius. Must be an integer from 0 to 10.
Power Bus	
Power Bus Min	Displays the minimum allowable power bus DC voltage. Must be an integer from –70 to –35.
Power Bus Max	Displays the maximum allowable power bus DC voltage. Must be an integer from –70 to –35.
Laser 1 Current	
Out-of-Range	Displays the Laser 1 pump temperature that is out of range.
Current	Displays the current of the Laser 1 pump in mA.
Laser 2 Current	
Out-of-Range	Displays the Laser 2 pump temperature that is out of range.
Current	Displays the current of the Laser 2 pump in mA.
Laser 1 Temperature	
Temp Min	Displays the minimum temperature of Laser 1.
Temp Max	Displays the maximum temperature of Laser 1.
Chip Temp	Displays the Laser 1 chip temperature in degrees Celsius. Must be an integer from –999.99 to 999.99.
Laser 2 Temperature	
Temp Min	Displays the minimum temperature of Laser 2.
Temp Max	Displays the maximum temperature of Laser 2.
Chip Temp	Displays the Laser 2 chip temperature in degrees Celsius. Must be an integer from –999.99 to 999.99.

Alarm Behavior

The Alarm Behavior Properties pane allows you to enter, save, view, and update NE fault management attributes.

Table B-20 Field Descriptions for the Alarm Behavior Properties Pane

Field	Description
Probable Cause	Displays the probable cause of the alarm.
Severity	Displays the alarm severity (Critical, Major, Minor, Informational, or Not Alarmed). **Note** If two minor power bus alarms are generated, the second alarm is escalated to critical in the Alarm Browser window. If the alarm severity is changed to another value, the alarm remains critical due to the power bus escalation feature, which overrides the alarm severity provisioning for power bus alarms.

SNMP

The SNMP Properties pane displays the settings for the SNMP Community table, the Trap Destination table, and SNMP views. The SNMP Properties pane contains the following tabs: SNMP Community Table, Trap Destination Table, and SNMP Views.

Table B-21 Field Descriptions for the SNMP Properties Pane

Field	Description
SNMP Community Table	
Community Name	Displays the SNMP community name.
View Index	Displays the view index that specifies which MIBs that the community string can access.
Privileges	Displays the bitmap of access privilege that govern what management operations a particular community can perform. These privileges are expressed as a sum of values, where each value represents a particular operation. The decimal values and their respective SNMP operation are: • 1—Get • 2—GetNext • 4—Response (enabled for all community strings) • 8—Set • 16—SNMPv1-Trap • 32—GetBulk • 64—Inform (enabled for all community strings) • 128—SNMPv2-Trap (enabled for all community strings) For example, 255 is the sum of all decimal values and specifies access to all SNMP operations. This sum is the default private community. 247 is the sum for all SNMP operations with the exception of the Set operation. This sum is the default public community. Use the buttons in the Privileges column to set privilege values. In the Privilege Editor dialog box, check the check boxes that correspond to the privileges that you want to set. After making your selections, click **OK**. Prime Optical computes the bit value automatically.
IP Address	Displays the source IP address.
Subnet Mask	Displays the subnet mask for the source IP address.
Status	Displays the community string status. Values are: • Active • Not in Service • Not Ready • Create and Go • Create and Wait • Destroy
Trap Destination Table	
IP Address	Displays the trap destination IP address.
UDP Port	Displays the trap destination UDP port.
Community Name	Displays the trap destination community string.

Table B-21 Field Descriptions for the SNMP Properties Pane (continued)

Field	Description
Version	Displays the trap version number.
View Index	Displays the trap destination MIB view index.
Status	Displays the community string status. Values are: • Active • Not in Service • Not ready • Create and Go • Create and Wait • Destroy
SNMP Trap Enable check box	If checked, allows you to enable SNMP traps on the NE. **Note** This is a global setting, meaning all users are affected by a change to this setting.
SNMP Views	
View Index	Displays the view index number, which is a unique value for each MIB view.
Subtree	Displays an object identifier that designates a subtree element in the MIB hierarchy.
Mask	Displays a bit mask that identifies objects in the subtree.
Type	Displays a flag that specifies the status of the view. Valid entries are included and excluded.
Status	Indicates the status of the SNMP view entry. If the entry currently exists, the status is active.

Note See Table 1-22 on page 1-47 for descriptions of actions that you can perform using the buttons at the bottom of the window.

ONS 15216 Active EDFA3 NE Explorer

The ONS 15216 EDFA3 NE Explorer contains the following Properties panes:

- Identification, page B-16
- Address, page B-17
- Config/Status, page B-18
- Diagnostics, page B-19
- Thresholds, page B-19
- Alarm Behavior, page B-20
- SNMP, page B-20

Identification

The Identification Properties pane displays identification information for the ONS 15216 EDFA3 NE.

Table B-22 Field Descriptions for the Identification Properties Pane

Field	Description
NE ID	Displays the ID of the NE from the Domain Explorer.
Description	Displays the description of the NE from the Domain Explorer.
NE Model	Displays the NE model type.
NE Type	Displays the type of NE.
NE Version	Displays the software version of the NE.
Wavelength(s)	Displays the number of wavelengths for the NE. This field is not applicable to the active EDFA NE type.
Product Name	Displays the name of the product.
CLEI Code	Displays the CLEI code.
Serial Number	Displays the serial number of the NE.
Location Name	Displays the name of the location where the NE is installed.
NE Date and Time	Displays the date and time configured on the NE.
Location	
Latitude	Allows you to set the latitude of the NE. Select **North** or **South** from the drop-down list; then, enter the degrees and minutes (or click the up and down arrows to increase or decrease each by 1 unit).
Longitude	Allows you to set the longitude of the NE. Select **East** or **West** from the drop-down list; then, enter the degrees and minutes (or click the up and down arrows to increase or decrease each by 1 unit).

Address

The Address Properties pane displays information about the NE network address.

Table B-23 Field Descriptions for the Address Properties Pane

Field	Description
IP Address	Displays the IP address of the NE.
Subnet Mask	Displays the subnetwork mask ID of the NE.
Gateway Address	Displays the gateway address of the NE.
SNMP Community String	Displays the SNMP community string of the NE. You can edit this field.
MAC Address	Displays the ONS 15216 EDFA3 address as it is identified on the IEEE 802 MAC layer.
GNE ID	Displays the GNE ID.
Subnetwork ID	Displays the ID of the subnetwork to which the NE belongs.
Network Partition ID	Displays the ID of the network partition.

Config/Status

The Config/Status Properties pane displays the configuration settings and status of the EDFA3 and lasers.

Table B-24 Field Descriptions for the Config/Status Properties Pane

Field	Description
Control Mode	
Control Mode	Displays the amplifier control mode. Values are: • Constant Output Power • Constant Gain (Cisco default)
Gain	
Gain	Displays the gain value. Values are integers from 0 to 40 dB.
Gain Setpoint	Displays the gain setpoint. The range is from 5.0 to 38.5 dB; the Cisco default is 21 dB.
Power	
Laser 1 Output Power	Displays the amplifier output power related to laser 1. The range is from –60 to 25 dBm.
Power Setpoint	Displays the amplifier output power setpoint value. The range is from –7 to 17 dBm; the Cisco default is 10 dBm.
Amplifier Input Power	Displays the amplifier input power. The range is from –60 to 25 dBm.
Laser 2 Input Power	Displays the mid-stage access input power value related to laser 2. The range is from –60 to 25 dBm.
Amplifier Output Power	Displays the mid-stage access output power value. The range is from –60 to 25 dBm.
Power Offset	Displays the output power offset. The range is from –20 to 20 dBm; the Cisco default is 0.
Tilt	
Tilt	Displays the tilt value. The range is from –15 to 15 dB.
Tilt Setpoint	Displays the tilt setpoint. The range is from –15 to 15 dB; the Cisco default is 0 dB.
Tilt Offset	Displays the tilt offset. The range is from –20 to 20 dB; the Cisco default is 0 dB.
Laser	
Laser Status	Displays the automatic laser shutdown (ALS) status. Values are: • On—Lasers are on • APR—Lasers are in the automatic power reduction state • Off—Lasers are off
OSRI	Displays the OSRI. Values are: • On—Laser switch is locked on • Off—(Cisco default) There is no lock on the lasers
DC Power Bus Mode	
DC Power Bus Mode	Displays the power bus mode: Simplex or Duplex.

Diagnostics

The Diagnostics Properties pane displays diagnostics information for the EDFA3 and lasers.

Table B-25 Field Descriptions for the Diagnostics Properties Pane

Field	Description
DCU Insertion Loss	Displays the insertion loss of the DCU inserted in mid-stage. The range is from 0 to 20 dB.
VOA Value	Displays the variable optical attenuator (VOA) value. The range is from –100 to 100 dB.
Laser Bias	
Laser 1 Bias	Displays the laser 1 bias. The range is from 0 to 150 mA.
Laser 2 Bias	Displays the laser 2 bias. The range is from 0 to 150 mA.
Temperatures	
Case Temperature	Displays the case temperature. The range is from –100 to 150 degrees Celsius.
Fiber Temperature	Displays the fiber temperature. The range is from –100 to 150 degrees Celsius.
Pump 1 Temperature	Displays the pump 1 temperature. The range is from –100 to 150 degrees Celsius.
Pump 2 Temperature	Displays the pump 2 temperature. The range is from –100 to 150 degrees Celsius.
Bus Voltages	
Bus A Voltage	Displays the power bus A voltage. The range is from 0 to 999 V.
Bus B Voltage	Displays the power bus B voltage. The range is from 0 to 999 V.

Thresholds

The Thresholds Properties pane displays the threshold settings of the EDFA3.

Table B-26 Field Descriptions for the Thresholds Properties Pane

Field	Description
Gain	
Degrade High	Displays the degrade high threshold associated with the amplifier gain. The range is from 0 to 40 dB.
Degrade Low	Displays the degrade low threshold associated with the amplifier gain. The range is from 0 to 40 dB.
Gain	Displays the gain value. The range is from 0 to 40 dB.
Line 1 Tx Power	
Degrade High	Displays the degrade high threshold associated with the amplifier output power related to the Line 1 Tx port. The range is from 0 to 40 dB.
Degrade Low	Displays the degrade low threshold associated with the amplifier output power related to the Line 1 Tx port. The range is from 0 to 40 dB.
Line 1 Output Power	Displays the amplifier output power related to the Line 1 Tx port. The range is from –60 to 25 dBm.
Fail Low	Displays the fail low threshold associated with the output power value related to the Line 1 Tx port. The range is from –10 to 14 dBm; the Cisco default is –6 dBm.
Line 1 Rx Power	
Amplifier Input Power	Displays the amplifier input power value related to the Line 1 Rx port. The range is from –60 to 25 dBm.

Table B-26 Field Descriptions for the Thresholds Properties Pane (continued)

Field	Description
Fail Low	Displays the fail low threshold associated with the input power value related to the Line 1 Rx port. The range is from –49 to 13 dBm; the Cisco default is 10 dBm.
Line 2 Rx Power	
Laser 2 Input Power	Displays the mid-stage access input power value related to the Line 1 Rx port. The range is from –60 to 25 dBm.
Fail Low	Displays the fail low threshold associated with the mid-stage access input power related to the Line 2 Rx port. The range is from –49 to 15 dBm; the Cisco default is –33 dBm.
Gain Module Temperature	
Temperature Max	Displays the maximum allowable case temperature threshold. The range is from 60 to 100 degrees Celsius; the Cisco default is 65 degrees Celsius.
Temperature Min	Displays the minimum allowable case temperature threshold. The range is from –10 to 30 degrees Celsius; the Cisco default is –5 degrees Celsius.
Case Temperature	Displays the case temperature. The range is from –100 to 150.
Bus Voltage	
Bus Voltage Max	Displays the power bus A and B maximum voltage. The range is from 49 to 70 V; the Cisco default is 57 V.
Bus Voltage Min	Displays the power bus A and B minimum voltage. The range is from 0 to 47 V; the Cisco default is 40 V.
Bus A Voltage	Displays the power bus A voltage. The range is from 0.0 to 999.9 V.
Bus B Voltage	Displays the power bus B voltage. The range is from 0.0 to 999.9 V.

Alarm Behavior

The Alarm Behavior Properties pane allows you to enter, save, view, and update NE fault management attributes.

Table B-27 Field Descriptions for the Alarm Behavior Properties Pane

Field	Description
Probable Cause	Displays the possible causes of the alarm.
Severity	Displays the alarm severity (Critical, Major, Minor, or Not Alarmed) and whether the alarm is service affecting (SA) or nonservice affecting (NSA).

SNMP

The SNMP Properties pane displays information about the SNMP Trap Destination table. Click **Add Row** to create a new trap destination; click **Delete Row** to delete an existing trap destination.

Table B-28 Field Descriptions for the SNMP Properties Pane

Field	Description
IP Address	Displays the SNMP IP address.
UDP Port Number	Displays the trap destination UDP port.

Table B-28 Field Descriptions for the SNMP Properties Pane (continued)

Field	Description
Community Name	Displays the trap destination community name.
Version	Displays the SNMP version number.

Note See Table 1-22 on page 1-47 for descriptions of actions that you can perform using the buttons at the bottom of the window.

ONS 15216 Active OADM NE Explorer

The ONS 15216 OADM NE Explorer displays information about the ONS 15216 100-GHz OADM NE.

The ONS 15216 100-GHz OADM NE Explorer contains the following Properties panes:

- Identification, page B-21
- Address, page B-22
- DWDM, page B-22
- Alarms, page B-23
- Thresholds, page B-23

Identification

The Identification Properties pane displays identification information for the ONS 15216 100-GHz OADM NE.

Table B-29 Field Descriptions for the Identification Properties Pane

Field	Description
NE ID	Displays the ID of the NE from the Domain Explorer.
Description	Displays the description of the NE from the Domain Explorer.
NE Model	Displays the NE model type.
NE Type	Displays the type of NE.
NE Version	Displays the software version of the NE.
Wavelength(s)	Displays the number of wavelengths for this NE.
Product Name	Displays the name of the product.
CLEI Code	Displays the CLEI code.
Serial Number	Displays the serial number of the NE.
Location Name	Displays the name of the location where the NE is installed.
NE Date and Time	Displays the date and time when the NE was installed.

Address

The Address Properties pane displays information about the NE network address.

Table B-30 Field Descriptions for the Address Properties Pane

Field	Description
IP Address	Displays the IP address of the NE.
Subnet Mask	Displays the subnetwork mask ID of the NE. If the field does not apply to the NE, the label is grayed out and the value reads *Not Applicable*.
Gateway Address	Displays the gateway address of the NE. If the field does not apply to the NE, the label is grayed out and the value reads *Not Applicable*.
SNMP Community String	Displays the SNMP community string of the NE. If the field does not apply to the NE, the label is grayed out and the value reads *Not Applicable*.
GNE ID	Displays the GNE ID.
Subnetwork ID	Displays the ID of the subnetwork to which the NE belongs.
Network Partition ID	Displays the ID of the network partition associated with the selected NE.

DWDM

The DWDM Properties pane allows you to view, enter, update, and save the NE DWDM attributes.

Table B-31 Field Descriptions for the DWDM Properties Pane

Field	Description
Channel Number	Displays the channels that can be added or dropped. Values are: • 1-channel—West 1, East 1 • 2-channel—West 1, East 1, West 2, East 2 • 4-channel—West 1, East 1, West 2, East 2, West 3, East 3, West 4, East 4
Mode	Allows you to configure the NE DWDM mode. Values are: • Setpoint (Cisco default)—The add channel power is set to the value of the Default Add Channel Power. Although the Default Add Channel Power can be set in any configuration, the add channel power is only equal to the Default Add Channel Power value in this mode. • Off—To turn off an add channel, set the channel power to a very low value (for example, –35 dBm). No alarm will be triggered. • Disable—When an add/drop channel is not in use, the channel should be configured in DISBABLE mode where no alarms will be triggered.
Default Add Channel Power	Displays the default power of the added channel in dBm. It is available only if you select Setpoint as the mode. Values must be from –29.0 to 3.0 in increments of 0.1.
InsLossAdd	Shows the calculated insertion loss for the add channel.
InsLossDrop	Shows the calculated insertion loss for the drop channel.
InsLossXpress	Shows the calculated insertion loss for the express/through channels.

Table B-31 Field Descriptions for the DWDM Properties Pane (continued)

Field	Description
Calculated Setpoint (CALCSETP)	The CALCSETP feature of the ONS 15216 OADM is a calculated value, and represents the OADMs recommended optical power level setting for a particular add channel. Following this recommendation when selecting the setpoint value for a particular add channel will allow the composite outgoing signal (composed of express channels and newly added channels) to be as flat as possible. The formula used for this calculation is CALCSETP = PWRDROP + ILDROP - ILTHRU.
Passive Cards	Provides information about passive units provisioned in CTC. **Note** Passive units can be provisioned in CTC only.

Alarms

The Alarms Properties pane allows you to enter, save, view, and update NE dropped-channel, signal-loss alarm attributes.

Table B-32 Field Descriptions for the Alarms Properties Pane

Field	Description
Channel Number	Displays the channels that can be added or dropped. Values are: • 1-channel—West 1, East 1 • 2-channel—West 1, East 1, West 2, East 2 • 4-channel—West 1, East 1, West 2, East 2, West 3, East 3, West 4, East 4
Drop Channel Signal Loss Alarm	Displays the current condition of the drop channel signal loss alarm. Values are: • On—Enables the loss signal alarm of the drop channel. • Off—Disables the loss signal alarm of the drop channel.

Thresholds

The Thresholds Properties pane allows you to enter, save, view, and update NE loss-of-signal and add/drop channel-signal mismatch threshold attributes.

Table B-33 Field Descriptions for the Thresholds Properties Pane

Field	Description
Channel Number	Displays the channels that can be added or dropped. Values are: • 1-channel—West 1, East 1 • 2-channel—West 1, East 1, West 2, East 2 • 4-channel—West 1, East 1, West 2, East 2, West 3, East 3, West 4, East 4
Loss of Signal	Displays the signal loss threshold value. Valid values are –30.0 to 3.5 dBm in increments of 0.1 dBm.
Drop and Add Signal Mismatch	Displays the threshold value for the drop channel signal loss alarm. Valid values are 0.2 to 2.0 dB in increments of 0.1 dB. The Cisco default is 1.0 dB.

Note See Table 1-22 on page 1-47 for descriptions of actions that you can perform using the buttons at the bottom of the window.

ONS 15216 Passive OADM NE Explorer

The ONS 15216 Passive OADM NE Explorer displays information about the ONS 15216 passive OADM NE. It contains an Identification Properties pane.

Identification

The Identification Properties pane displays identification information for the ONS 15216 passive OADM NE.

Table B-34 Field Descriptions for the Identification Properties Pane

Field	Description
NE ID	Displays the ID of the NE from the Domain Explorer.
Description	Displays the description of the NE from the Domain Explorer.
NE Model	Displays the NE model type.
NE Type	Displays the type of NE.
NE Version	Displays the software version of the NE.
Wavelength(s)	Displays the number of wavelengths for this NE.
Product Name	Displays the name of the product. Displays *15216-MD16-2-BLUE* for the blue version and *15216-MD16-2-RED* for the red version. Displays *Unknown* if the product name is not known. **Note** The information displayed in the Product Name field depends on the wavelength selected.
CLEI Code	Displays the CLEI code. Displays *WMMFD00BRA* for the blue version and *WMMFE00BRA* for the red version. Displays *Unknown* if the CLEI code is not known. **Note** The information displayed in the CLEI Code field depends on the wavelength selected.
Serial Number	Displays the serial number of the NE. You can edit this field.
Location Name	Displays the name of the location where the NE is installed. You can edit this field.
Subnetwork ID	Displays the ID of the subnetwork to which the NE belongs.
Network Partition ID	Displays the ID of the network partition to which the NE belongs.

Note See Table 1-22 on page 1-47 for descriptions of actions that you can perform using the buttons at the bottom of the window.

ONS 15216 OSC Passive NE Explorer

The ONS 15216 Passive OSC NE Explorer displays information about the ONS 15216 passive OSC NE. It contains an Identification Properties pane.

Identification

The Identification Properties pane displays the identification information for the ONS 15216 passive OSC NE.

Table B-35 Field Descriptions for the Identification Properties Pane

Field	Description
NE ID	Displays the ID of the NE from the Domain Explorer.
Description	Displays the description of the NE from the Domain Explorer.
NE Model	Displays the NE model type.
NE Type	Displays the type of NE.
NE Version	Displays the software version of the NE.
Wavelength(s)	Displays the number of wavelengths for this NE.
Product Name	Displays the name of the product.
CLEI Code	Displays the CLEI code.
Serial Number	Displays the serial number of the NE. You can edit this field.
Location Name	Displays the name of the location where the NE is installed. You can edit this field.
Subnetwork ID	Displays the ID of the subnetwork to which the NE belongs.
Network Partition ID	Displays the ID of the network partition.

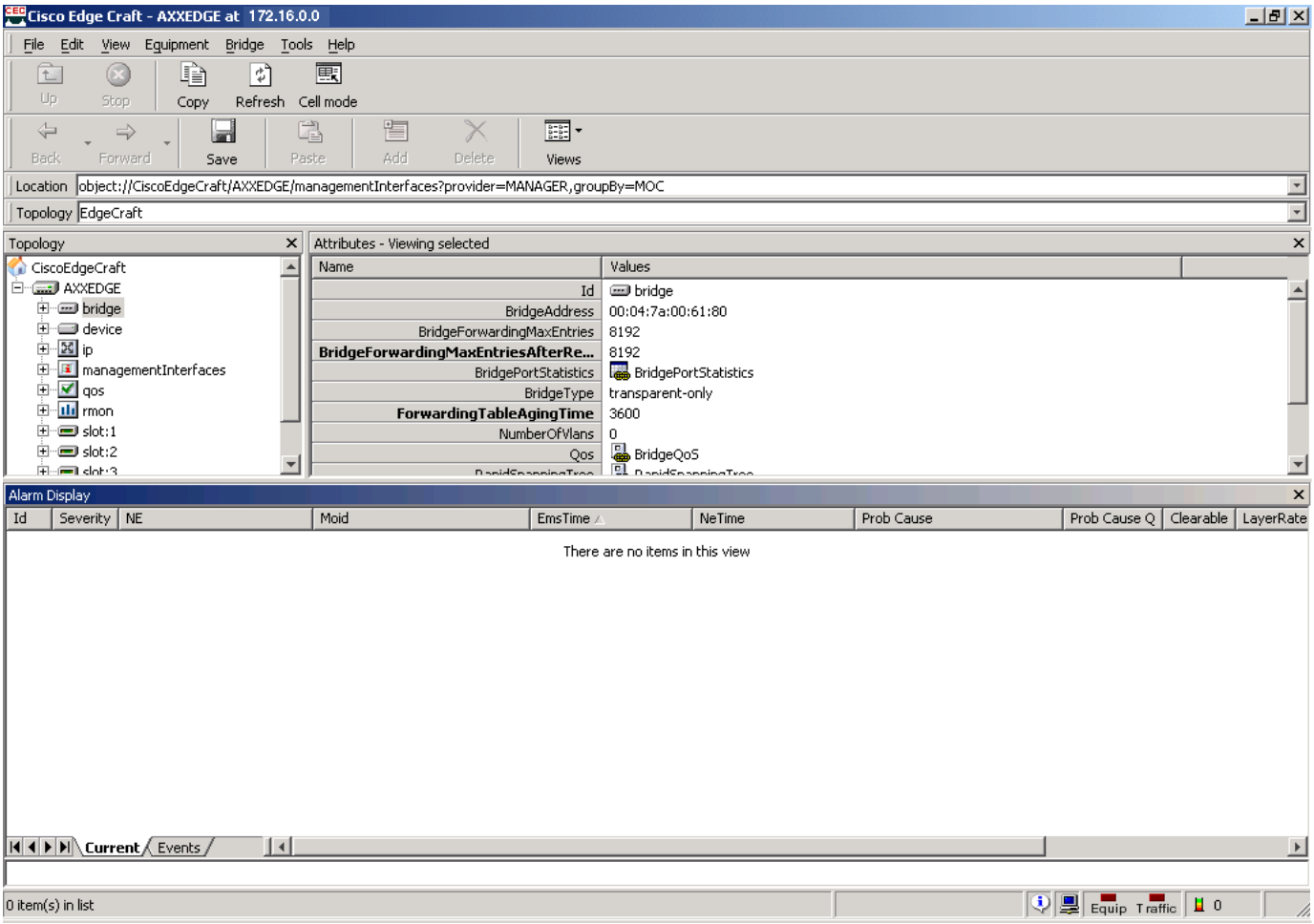
Note See Table 1-22 on page 1-47 for descriptions of actions that you can perform using the buttons at the bottom of the window.

ONS 15305

The NE Explorer is not available for the ONS 15305. You can get equivalent functionality by launching Cisco Edge Craft from Prime Optical; choose **Configuration > ONS 15305 > Launch Cisco Edge Craft**.

Note Cisco Edge Craft is not supported on Windows 7 client machine.

Figure B-1 Cisco Edge Craft for the ONS 15305



ONS 15305 CTC NE Explorer

When you choose **Configuration > NE Explorer** for the ONS 15305, the window that Prime Optical displays consists of a tree on the left side and a Properties pane on the right. The tree provides a hierarchical view and alarm status of the NE's physical shelves and slots. The Properties pane shows information about the selected entity. See Node Properties Pane—ONS 15305 CTC, page B-27 for more information.

Note If CTC is launched from the web browser for an ONS 15305 node, the CTC GUI might look different from when it is launched from Prime Optical. This discrepancy occurs because the latest version of CTC (for NE releases supported by Prime Optical) is packaged with Prime Optical. If launched from a browser, the CTC software is retrieved from the NE itself, which might be a version different from that packaged with Prime Optical.

When an NE Explorer is in autorefresh mode, all values of an entity that is being edited by the user are automatically refreshed. You will lose all of your changes unless you click the Apply button. To enable autorefresh, click the Refresh Data button in the NE Explorer.

Node Properties Pane—ONS 15305 CTC

The node properties pane displays information about the ONS 15305 CTC slot that is selected in the NE Explorer tree. The properties pane contains the following properties, some of which apply only to a specific NE version:

- Shelf View, page B-27
- Identification, page B-27
- Network, page B-28
- Protection, page B-30
- DCC, page B-31
- Alarm, page B-31

Shelf View

The Shelf View Properties pane displays a graphic of the ONS 15305 CTC that is selected in the NE Explorer tree. Moving the mouse pointer over the graphic of the NE, its shelves, slots, or cards displays the current alarms for the highlighted item. Double-clicking a slot or card displays the slot or card in the properties pane. The right-click menu allows you to reset or delete the card. For unprovisioned slots, the right-click menu allows you to add a card.

Identification

The Identification Properties pane displays information about the NE.

Table B-36 Field Descriptions for the Identification Properties Pane

Field	Description
NE ID	Displays the ID of the NE from the Domain Explorer.
Description	Displays the description of the NE from the Domain Explorer.
NE Model	Displays the NE model type.
Software Version	Displays the current running version of the system software.
Contact	Displays the name of the node contact person and the phone number.
System Description	Displays a description of the NE.
TP Settings	
Use TP Server	If checked, CTC uses a Simple Network Time Protocol (SNTP) server to set the date and time of the node. Using an SNTP server ensures that all ONS 15305 network nodes use the same date and time reference. The server synchronizes the node's time after power outages or software upgrades. If you check the **Use TP Server** check box, enter the server's IP address in the next field. If you do not use an SNTP server, complete the Time and Time Zone fields. The ONS 15305 CTC will use these fields for alarm dates and times.

Table B-36 Field Descriptions for the Identification Properties Pane (continued)

Field	Description
TP Server	Displays the SNTP server IP address.
Location	
Latitude	Allows you to set the latitude of the NE. Select **North** or **South** from the drop-down list; then, enter the degrees and minutes (or click the up and down arrows to increase or decrease each by 1 unit).
Longitude	Allows you to set the longitude of the NE. Select **East** or **West** from the drop-down list; then, enter the degrees and minutes (or click the up and down arrows to increase or decrease each by 1 unit).
Date and Time	
Time	Displays the NE date and time.
Time Zone	Displays the time zone where the NE is located.

Network

The Network Properties pane displays information about the NE network address. The Network Properties pane contains the following tabs:

- Address Tab, page B-28
- Static Routes Tab, page B-28
- OSPF Tab, page B-29
- SNMP Tab, page B-29

Address Tab

The Address tab allows you to view and change information about the NE network address.

Table B-37 Field Descriptions for the Address Tab

Field	Description
IP Address	Displays the IP address of the NE.
Default Router	Displays the IP address of the default router.
Subnet Mask	Displays the subnetwork mask ID of the NE.
MAC Address	Displays the ONS 15305 address as it is identified on the IEEE 802 MAC layer.

Static Routes Tab

The Static Routes tab allows you to view information about Prime Optical and ONS 15305 CTC connectivity and create or delete static routes.

Table B-38 Field Descriptions for the Static Routes Tab

Field	Description
Destination IP	Displays the IP address of the computer running Prime Optical.
Subnet Mask	Displays the subnetwork mask.

Table B-38 Field Descriptions for the Static Routes Tab (continued)

Field	Description
Next Hop	Displays the IP address of the router port or the node IP address if the Prime Optical computer is connected to the node directly.
Cost	Displays the number of hops between the ONS 15305 CTC and the computer.
Route Type	Displays the type of route (Other, Reject, Local, or Remote).
Protocol	Displays the protocol (OSPF or RIP).

OSPF Tab

The OSPF tab displays Open Shortest Path First (OSPF) information. OSPF is a link-state Internet routing protocol.

Table B-39 Field Descriptions for the OSPF Tab

Field	Description
Slot	Displays the slot number.
Port	Displays the port number.
DCC OSPF Area ID	Displays the number that identifies the ONS 15305 CTCs as a unique OSPF area. The OSPF area number can be from 0.0.0.0 to 255.255.255.255. The number must be unique to the LAN OSPF area.
LAN Port Area ID	Displays the OSPF area ID for the router port where the ONS 15305 CTC is connected. (This number is different from the DCC OSPF area ID.)
Router Priority	Displays the designated router for a subnet.
Hello Interval	Displays the number of seconds between OSPF hello packet advertisements sent by OSPF routers. Ten seconds is the Cisco default.
Dead Interval	Displays the number of seconds that will pass while an OSPF router's packets are not visible before its neighbors declare the router down. Forty seconds is the Cisco default.
Transit Delay	Displays the service speed. One second is the Cisco default.
Retransmit Interval	Displays the time that will elapse before a packet is resent. Five seconds is the Cisco default.
LAN Metric	Displays a cost for sending packets across the LAN. This value should always be lower than the DCC metric. Ten is the Cisco default.

SNMP Tab

The SNMP tab allows you to view SNMP information and create or delete SNMP trap destinations.

Table B-40 Field Descriptions for the SNMP Tab

Field	Description
Allow SNMP Set	If checked, allows you to use SNMP management software with the ONS 15305 CTC.
IP Address	The IP address of the NMS.
Community Name	The SNMP community name. **Note** The SNMP community string cannot be blank in Prime Optical.

Table B-40 Field Descriptions for the SNMP Tab (continued)

Field	Description
UDP Port	The UDP port for SNMP. The Cisco default UDP port is 162.
Trap Version	The trap version, either SNMP version 1 or version 2. See your NMS documentation to determine whether to use SNMP version 1 or version 2.
Relay A IP Address	The first ONS 15305 CTC to relay traps through. The IP address is appended to the base community string to tell the first NE the IP address and the port to forward the trap to. The second NE recognizes the IP address and strips it from the community string before forwarding the trap.
Relay A Community Name	The community name for the relay A node to use in the trap when forwarding it.
Relay B IP Address	The second ONS 15305 CTC to relay traps through.
Relay B Community Name	The community name for the relay B node to use in the trap when forwarding it.
Relay C IP Address	The third ONS 15305 CTC to relay traps through.
Relay C Community Name	The community name for the relay C node to use in the trap when forwarding it.

Protection

The Protection Properties pane contains the following tabs:

- Protection Groups Tab, page B-30
- Operations Tab, page B-31

Protection Groups Tab

The Protection Groups tab displays a list of available protection groups and allows you to create, delete, and view protection groups.

Table B-41 Field Descriptions for the Protection Groups Tab

Field	Description
Protection Groups	
Displays a list of available protection groups. Click the **Create** or **Delete** button to create a new protection group or delete an existing one.	
Selected Protection Group	
Name	Modify the name of the selected protection group. The name can have up to 32 alphanumeric characters.
Type	View the protection type (1:1 [card], 1:N [card], Y Cable [port], or 1+1 [port]) of the selected protection group.
Protect Module	View the protect module if using 1+1 protection.
Available Entities	Displays a list of available entities. You can toggle between available and working entities.
Working Entities	Displays a list of working entities. You can toggle between working and available entities.
Bidirectional Switching	Click if you want both the transmit and the receive channels to switch if a failure occurs on one. This option is available only if you select the 1+1 (port) type.

Table B-41 Field Descriptions for the Protection Groups Tab (continued)

Field	Description
Revertive	If checked, the node reverts traffic to the working card or port after failure conditions for the amount of time entered in Reversion Time. This option is not available if you select the 1:N (card) type.
Reversion Time	If Revertive is checked, choose the amount of time following failure condition correction after which the node should switch back to the working card or port. Use half-minute increments. This option is available only if you select the 1:1 (card) type.

Operations Tab

The Operations tab displays the protection group operation information.

Table B-42 Field Descriptions for the Operations Tab

Field	Description
Protection Groups	Displays a list of available protection groups.
Protection Group Details	Displays details about the selected protection groups and allows you to execute switch commands.
Switch Commands	Allows you to perform a manual switch, perform a forced switch, or clear the existing command switching.
Inhibit Switching	Allows you to inhibit unlock switching, lock out switching, or lock on switching.

DCC

The DCC Properties pane allows you to configure the Data Communication Channel on the regeneration and multiplex sections.

Table B-43 Field Descriptions for the DCC Properties Pane

Field	Description
DccR	
DCC-R Terminations	Displays the DCC termination on the regeneration section configured. The slot and port on which this type of termination is configured are displayed.
Admin State	Allows you to check and set the administrative state of the DCC termination. Values are In Service (IS) or Out of Service (OOS).
DccM	
DCC-M Terminations	Displays the DCC termination on the multiplex section configured. The slot and port on which this type of termination is configured are displayed.
Admin State	Allows you to check and set the administrative state of the DCC termination. Values are IS or OOS.

Alarm

The Alarm Properties pane allows you to change default alarm severities by creating unique alarm profiles for individual nodes. The Alarm Properties pane contains the Alarm Behavior tab.

Note The Alarm Properties pane might contain default alarm profile entries for cards that are not supported by the ONS 15305 CTC. Therefore, you might see some alarms that do not apply to the NE type that you are provisioning.

Alarm Behavior Tab

The Alarm Behavior tab allows you to change default alarm severities by creating unique alarm profiles.

Table B-44 Field Descriptions for the Alarm Behavior Tab

Field	Description
Alarm Profile	Choose a global alarm profile for the NE from the drop-down list.
Suppress Alarms	If checked, all alarms are suppressed.
Slot Number	Displays the location of the module.
Equipment Type	Displays the type of module in the slot.
Profile	Choose an alarm profile for the slot from the drop-down list.
Suppress Alarms	Indicates whether or not the alarms for a particular card are suppressed. If checked, all alarms are suppressed for the port.

ONS 15310 CL NE Explorer

When you choose **Configuration > NE Explorer** for the ONS 15310 CL, the window that Prime Optical displays consists of a tree on the left side and a properties pane on the right. The tree provides a hierarchical view and alarm status of the NE's physical shelves and slots. The properties pane shows information about the selected entity. See Node Properties Pane—ONS 15310 CL, page B-32 for more information.

Note If CTC is launched from the web browser for an ONS 15310 CL node, the CTC GUI might look different from when it is launched from Prime Optical. This discrepancy occurs because the latest version of CTC (for NE releases supported by Prime Optical) is packaged with Prime Optical. If launched from a browser, the CTC software is retrieved from the NE itself, which might be a version different from that packaged with Prime Optical.

When an NE Explorer is in autorefresh mode, all values of an entity that is being edited by the user are automatically refreshed. You will lose all of your changes unless you click the Apply button. To enable autorefresh, click the Refresh Data button in the NE Explorer.

Node Properties Pane—ONS 15310 CL

The node properties pane displays information about the ONS 15310 CL slot that is selected in the NE Explorer tree. The properties pane contains the following tabs, some of which apply only to a specific NE version:

- Shelf View, page B-33

- General, page B-33
- Identification, page B-33
- Network, page B-34
- DCC, page B-41
- Timing, page B-43
- Protection, page B-47
- NE Defaults, page B-48
- Security, page B-48
- Alarm, page B-53
- XC Utilization, page B-54
- OSI, page B-54

Shelf View

The Shelf View Properties pane displays a graphic of the ONS 15310 CL that is selected in the NE Explorer tree. Moving the mouse pointer over the graphic of the NE, its shelves, slots, or cards displays the current alarms for the highlighted item. Double-clicking a slot or card displays the slot or card in the properties pane. The right-click menu allows you to reset or delete the card. For unprovisioned slots, the right-click menu allows you to add a card.

General

The General Properties pane displays identification information, voltage thresholds, and multishelf configurations for the ONS 15310 CL NE.

Table B-45 Field Descriptions for the General Properties Pane

Field	Description
Identification Tab	
NE ID	Displays the ID of the NE from the Domain Explorer.
NE Model	Displays the NE model type.
Software Version	Displays the current running version of the system software.
Contact	Displays the name and phone number of the node contact person.
Description	Enter a description of the NE.
System Description	Displays the NE type and the version of the system software.
Voltage/Temperature Tab	
Voltage	Displays the voltage (in millivolts) of the shelf that corresponds to the power supply.
Temperature	Displays the temperature (in degrees Celsius) of the shelf.

Identification

The Identification Properties pane displays information about the ONS 15310 CL NE.

Table B-46 Field Descriptions for the Identification Properties Pane

Field	Description
NE ID	Displays the ID of the NE from the Domain Explorer.
Description	Displays the description of the NE from the Domain Explorer.
NE Model	Displays the NE model type.
Software Version	Displays the current running version of the system software.
Contact	Displays the name of the node contact person and the phone number.
System Description	Displays a description of the NE.
SNTP Settings	
Use NTP/SNTP Server	If checked, CTC uses a Simple Network Time Protocol (SNTP) server to set the date and time of the node. Using an SNTP server ensures that all ONS 15310 CL network nodes use the same date and time reference. The server synchronizes the node's time after power outages or software upgrades. If you check the **Use NTP/SNTP Server** check box, enter the server's IP address in the next field. If you do not use an SNTP server, complete the Time and Time Zone fields. The ONS 15310 CL will use these fields for alarm dates and times.
SNTP Server	Displays the SNTP server IP address.
Location	
Latitude	Allows you to set the latitude of the NE. Select **North** or **South** from the drop-down list; then, enter the degrees and minutes (or click the up and down arrows to increase or decrease each by 1 unit).
Longitude	Allows you to set the longitude of the NE. Select **East** or **West** from the drop-down list; then, enter the degrees and minutes (or click the up and down arrows to increase or decrease each by 1 unit).
Date and Time	
Time	Displays the NE date and time.
Time Zone	Displays the time zone where the NE is located.
Use Daylight Savings Time	If checked, Daylight Savings Time is observed.
AIS-V Insertion on STS-1 Signal Degrade - Path	
Insert AIS-V on STS-1 SD-P	If checked, the NE inserts an AIS-V signal when it detects an STS-1 signal degrade.
SD-P BER	Select the signal degrade path bit error rate for AIS-V insertion.

Network

The Network Properties pane displays information about the NE network address. The Network Properties pane contains the following tabs:

- Address Tab, page B-35
- Static Routes Tab, page B-35
- OSPF Tab, page B-36
- OSPF Area Range Tab, page B-36
- OSPF Virtual Links Tab, page B-37
- SNMP Tab, page B-37

- Firewall/Proxy Tab, page B-38
- RIP Routing Table Tab, page B-38
- RIP Tab, page B-39
- Routing Table Tab, page B-39
- Proxy Tunnels Tab, page B-40
- Firewall Tunnels Tab, page B-40
- FTP Hosts Tab, page B-41

Address Tab

The Address tab allows you to view and change information about the NE network address.

Table B-47 Field Descriptions for the Address Tab

Field	Description
IP Address	Displays the IP address of the NE.
Default Router	Displays the IP address of the default router.
Subnet Mask	Displays the subnetwork mask ID of the NE.
MAC Address	Displays the ONS 15310 CL address as it is identified on the IEEE 802 MAC layer.
Forward DHCP Requests	If checked, forwards Dynamic Host Configuration Protocol (DHCP) requests to the IP address entered in the DHCP Server field. When the Forward DHCP Requests check box is unchecked, the DHCP Server field is display-only.
DHCP Server	Displays the IP address of the DHCP server.
IPv6 Config	
Enable IPv6	If checked, allows you to configure the node to use the IPv6 protocol and to assign an IPv6 address to the node.
IPv6 Address	Enter the IPv6 address of the node.
Default IPv6 Router	Enter the IPv6 default router of the node.
IPv6 Subnet Mask	Enter the IPv6 subnetwork mask length.

Static Routes Tab

The Static Routes tab allows you to view information about Prime Optical and ONS 15310 CL connectivity and create or delete static routes.

Table B-48 Field Descriptions for the Static Routes Tab

Field	Description
Destination IP	Displays the IP address of the computer running Prime Optical.
Subnet Mask	Displays the subnetwork mask.
Next Hop	Displays the IP address of the router port or the node IP address if the Prime Optical computer is connected to the node directly.
Cost	Displays the number of hops between the ONS 15310 CL and the computer.

OSPF Tab

The OSPF tab displays Open Shortest Path First (OSPF) information. OSPF is a link-state Internet routing protocol.

Table B-49 Field Descriptions for the OSPF Tab

Field	Description
Slot	Displays the slot number.
Port	Displays the port number.
DCC OSPF Area ID	Displays the number that identifies the ONS 15310 CL NE as a unique OSPF area. The OSPF area number can be from 0.0.0.0 to 255.255.255.255. The number must be unique to the LAN OSPF area.
SDCC Metric	Sets a cost for sending packets across the Section Data Communications Channel (SDCC), which is used by OSPF routers to calculate the shortest path. This value should always be higher than the LAN metric. The Cisco default metric is 100. This value is normally unchanged.
LDCC Metric	Sets a cost for sending packets across the Line Data Communications Channel (LDCC), which is used by OSPF routers to calculate the shortest path. This value should always be higher than the LAN metric. This value is normally unchanged.
OSPF on LAN	
OSPF Active on LAN	If checked, enables ONS 15310 CL OSPF topology to be advertised to OSPF routers on the LAN. Enable this field on ONS 15310 CL NEs that directly connect to OSPF routers.
LAN Port Area ID	Displays the OSPF area ID for the router port where the ONS 15310 CL is connected. (This number is different from the DCC OSPF area ID.)
Router Priority	Displays the designated router for a subnet.
Dead Interval	Displays the number of seconds that will pass while an OSPF router's packets are not visible before its neighbors declare the router down. Forty seconds is the Cisco default.
Retransmit Interval	Displays the time that will elapse before a packet is resent. Five seconds is the Cisco default.
Hello Interval	Displays the number of seconds between OSPF hello packet advertisements sent by OSPF routers. Ten seconds is the Cisco default.
Transit Delay	Displays the service speed. One second is the Cisco default.
LAN Metric	Displays a cost for sending packets across the LAN. This value should always be lower than the DCC metric. Ten is the Cisco default.
OSPF Authentication	
Authentication Type	Displays Simple Password if the router where the ONS 15310 CL is connected uses authentication. Otherwise, it displays No Authentication.
Authentication Key	Displays the OSPF key (password) if authentication is enabled.
Confirm Authentication Key	Retype the authentication key to confirm it.

OSPF Area Range Tab

The OSPF Area Range tab allows you to view information about OSPF area ranges and create or delete area ranges.

Table B-50 Field Descriptions for the OSPF Area Range Tab

Field	Description
Range Address	Displays the area IP address for the ONS 15310 CL NE that resides within the OSPF area. For example, if the ONS 15310 CL OSPF area includes nodes with IP addresses 10.10.20.100, 10.10.30.150, 10.10.40.200, and 10.10.50.250, the range address would be 10.10.0.0.
Range Area ID	Displays the OSPF area ID for the ONS 15310 CL NEs. This is either the ID in the DCC OSPF Area ID field or the ID in the LAN Port Area ID field.
Mask Length	Displays the subnet mask length.
Mask	Displays the subnet mask IP address.
Advertise	Indicates whether the OSPF range table is advertised.

OSPF Virtual Links Tab

The OSPF Virtual Links tab allows you to view information about OSPF virtual links and create or delete virtual links.

Note You cannot create a new virtual link unless OSPF is active on the LAN.

Table B-51 Field Descriptions for the OSPF Virtual Links Tab

Field	Description
Neighbor	Displays the router ID of the Area 0 router.
Transit Delay (sec)	Displays the service speed. One second is the Cisco default.
Retransmit Interval (sec)	Displays the time that will elapse before a packet is resent. Five seconds is the Cisco default.
Hello Interval (sec)	Displays the number of seconds between OSPF hello packet advertisements sent by OSPF routers. Ten seconds is the Cisco default.
Dead Interval (sec)	Displays the number of seconds that will pass while the packets of an OSPF router are not visible before its neighbors declare the router down. Forty seconds is the Cisco default.
Authentication Type	Displays the authentication type.
Authentication Key	Displays the authentication key.

SNMP Tab

The SNMP tab allows you to view SNMP information and create or delete SNMP trap destinations.

Table B-52 Field Descriptions for the SNMP Tab

Field	Description
Allow SNMP Set	If checked, allows you to use SNMP management software with the ONS 15310 CL.
Allow SNMP Proxy	If checked, allows you to configure the ONS 15310 CL to proxy SNMP calls.
IP Address	The IP address of the NMS.

Table B-52 Field Descriptions for the SNMP Tab (continued)

Field	Description
Community Name	The SNMP community name. **Note** The SNMP community string cannot be blank in Prime Optical.
UDP Port	The UDP port for SNMP. The Cisco default UDP port is 162.
Trap Version	The trap version, either SNMP version 1 or version 2. See your NMS documentation to determine whether to use SNMP version 1 or version 2.
Relay A IP Address	The first ONS 15310 CL to relay traps through. The IP address is appended to the base community string to tell the first NE the IP address and the port to forward the trap to. The second NE recognizes the IP address and strips it from the community string before forwarding the trap.
Relay A Community Name	The community name for the relay A node to use in the trap when forwarding it.
Relay B IP Address	The second ONS 15310 CL to relay traps through.
Relay B Community Name	The community name for the relay B node to use in the trap when forwarding it.
Relay C IP Address	The third ONS 15310 CL to relay traps through.
Relay C Community Name	The community name for the relay C node to use in the trap when forwarding it.

Firewall/Proxy Tab

The Firewall/Proxy tab allows you to use an NE as a proxy server or as a firewall.

Table B-53 Field Descriptions for the Firewall/Proxy Tab

Field	Description
Gateway Settings	
Enable Proxy Server on Port	If checked, the ONS 15310 CL serves as a proxy for connections between the Prime Optical server and ONS 15310s that are DCC-connected to the proxy ONS 15310 CL. The Prime Optical server establishes connections to DCC-connected nodes through the proxy node. The Prime Optical server can connect to nodes that it cannot directly reach from the host on which it runs. The proxy server port number (display-only) is shown following the Enable Proxy Server on Port field. The proxy server uses port 1080. If checked, the following radio buttons are enabled: • End Network Element (ENE)—Enables the ONS 15310 CL to proxy as an ENE. Note that an alternate expansion for ENE is *external network element*. • Gateway Network Element (GNE)—Enables the ONS 15310 CL to proxy as a GNE. • Proxy-only—Enables proxy only. If unchecked, the node does not proxy.

RIP Routing Table Tab

The RIP Routing Table tab allows you to view the Routing Information Protocol (RIP) routing table.

Table B-54 Field Descriptions for the RIP Routing Table Tab

Field	Description
Destination	Displays the IP address of the destination network or host.
Mask	Displays the subnet mask used to reach the destination network or host.
Gateway	Displays the IP address of the gateway used to reach the destination network or host.
Cost	Displays the hop count metric. The valid range is from 1 to 15.

RIP Tab

The RIP tab allows you to view and configure RIP parameters.

Note

- When you enable RIP, you must wait for approximately one minute for the default RIP address summary to become visible.
- When you disable RIP on the NE, all summary address entries in the Summary Address table are deleted.

Table B-55 Field Descriptions for the RIP Tab

Field	Description
RIP Active	Check this check box to enable RIP. Uncheck it to disable RIP. **Note** Checking the RIP Active check box and clicking the **Apply** button does not enable RIP. Instead, you must check the RIP Active check box, click the **Create** button, and use the Create RIP Address Summary dialog box to create a new RIP address. For details, see Using RIP, page 5-8.
RIP Type	Select RIP version 1.0 or RIP version 2.0.
Metric	Enter the hop count metric. The valid range is from 1 to 15.
Authentication Type	Select the authentication type.
Authentication Key	Enter the authentication key (password) if the authentication type is Simple Password.
Confirm Authentication Key	Retype the authentication key to confirm it.
RIP Address Summary	• Summary Address—Displays the summary address. • Mask Length—Displays the subnet mask length. • Cost—Displays the hop count metric. The valid range is from 1 to 15.
Create button	Click **Create** to create a new RIP address. See Using RIP, page 5-8.
Delete button	Click **Delete** to delete an existing RIP address.

Routing Table Tab

The Routing Table tab allows you to view the OSPF routing table.

Table B-56 Field Descriptions for the Routing Table Tab

Field	Description
Destination	Displays the IP address of the destination network or host.
Mask	Displays the subnet mask used to reach the destination network or host.
Gateway	Displays the IP address of the gateway used to reach the destination network or host.
Usage	Shows the number of times the listed route has been used.
Interface	Shows the ONS 15310 CL interface used to access the destination. Values are: • cpm0—The ONS 15310 CL Ethernet interface (that is, the RJ-45 jack on the TCC+/TCC2 and the LAN 1 pins on the backplane). • pdcc0—An SDCC interface (that is, an OC-N trunk card identified as the SDCC termination). • lo0—A loopback interface.

Proxy Tunnels Tab

The Proxy Tunnels tab allows you to configure source and destination information and create or delete proxy tunnels.

Table B-57 Field Descriptions for the Proxy Tunnels Tab

Field	Description
Source Address	Specify the source IP address in the source-destination pair for the tunnel that will be routed through the proxy server.
Source Mask	Specify the source subnetwork mask in the source-destination pair for the tunnel that will be routed through the proxy server.
Destination Address	Specify the destination IP address in the source-destination pair for the tunnel that will be routed through the proxy server.
Destination Mask	Specify the destination subnetwork mask in the source-destination pair for the tunnel that will be routed through the proxy server.

Firewall Tunnels Tab

The Firewall Tunnels tab allows you to configure source and destination information and create and delete firewall tunnels.

Table B-58 Field Descriptions for the Firewall Tunnels Tab

Field	Description
Source Address	Specify the source IP address in the source-destination pair for the tunnel that will be routed through the firewall.
Source Mask	Specify the source subnetwork mask in the source-destination pair for the tunnel that will be routed through the firewall.
Destination Address	Specify the destination IP address in the source-destination pair for the tunnel that will be routed through the firewall.
Destination Mask	Specify the destination subnetwork mask in the source-destination pair for the tunnel that will be routed through the firewall.

FTP Hosts Tab

The FTP Hosts tab allows you to configure database backup or restore and software download to an ENE when the firewall is enabled. You can provision a list of legal FTP hosts for which the firewall opens for all FTP commands. You can configure the FTP hosts to expire after a certain amount of time, after which the FTP relay resumes blocking all FTP access for the ENEs.

Table B-59 Field Descriptions for the FTP Hosts Tab

Field	Description
Create button	Opens the Create New FTP Host dialog box, which allows you to create up to 12 new FTP hosts in a GNE/ENE firewall environment. See Creating an FTP Host, page 5-22. **Note** You cannot create more than 12 FTP hosts.
Delete button	Deletes the selected FTP host.
FTP Host Address	Displays the FTP host IP address.
Prefix Length	Displays the FTP host subnet mask length.
Enable FTP Relay	Indicates whether FTP relay is enabled or disabled. If FTP relay is disabled, the FTP Relay Timer field is dimmed.
FTP Relay Timer	Displays the number of minutes that the FTP relay is configured to run, after which the FTP relay resumes blocking all FTP access for the ENEs.

DCC

The DCC Properties pane allows you to create, delete, and view SONET or SDH DCCs.

Table B-60 Field Descriptions for the DCC Properties Pane

Field	Description
SDCC	
SDCC Terminations	Displays the slot, port, and card type of an SDCC termination.
OSPF Disabled on Link	Check to prevent the advertisement of the OSPF routing table.
Foreign	A check mark indicates that the far-end node is a non-ONS node.
Foreign IP	Displays the foreign node IP address.
LAPD Config	If the SDCC is provisioned as OSI only, the following SDCC LAP-D parameters are displayed: • AITS/UITS—Indicates the LAP-D acknowledgement type, either Acknowledged Information Transfer Service (AITS) or Unacknowledged Transfer Service (UITS). • Network/User—Indicates the LAP-D frame command/response role, either Network or User. • MTU—Shows the size of the maximum transfer unit (MTU). The range is from 512 to 1500 octets. • T2000—Shows the time between Set Asynchronous Balanced Mode (SABME) frame transmission. The range is from 0.2 to 20 seconds. • T203—Shows the maximum time between LAP-D frame exchanges. The range is from 4 to 120 seconds.

Table B-60 Field Descriptions for the DCC Properties Pane (continued)

Field	Description
OSI SNPA	If the SDCC is provisioned for OSI, the following subnetwork point-of-attachment (SNPA) information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.
Service State	Select the state of the termination: • IS-NR—In Service–Normal. • OOS-AU—Out of Service–Autonomous. • OOS-MA—Out of Service–Management. • OOS-AUMA—Out of Service–Autonomous and Management. In addition, a secondary state provides additional information about the status of the entity. Values for secondary state are: • MEA—Mismatch of equipment due to invalid equipment insertion. • UEQ—Unequipped; there is nothing in the slot. • UAS—Unassigned; the entity does not exist, has not been created, or has been deleted. • SWDL—Software download in progress. • MT—Maintenance, as per the Admin State change. • AINS—Automatic in service. • DSBLD—Traffic is disabled on the entity. • LPBK—Port or connection has a loopback on it. • FLT—Fault secondary state. When an entity is faulted, an FLT state is raised. Equipment and ports in FLT state should be cleared as they transition. Transition states are listed in Table 11-11 on page 11-15. See Table 11-11 on page 11-15 for the Service state-Secondary state possible values. **Note** If the NE release does not support the Service state, this field shows N/A.
LDCC	
LDCC Terminations	Displays the slot, port, and card type of an LDCC termination. Click **Create** to create a new LDCC termination; click **Delete** to delete the selected LDCC termination.
OSPF Disabled on Link	Check to prevent the advertisement of the OSPF routing table.
Foreign	A check mark indicates that the far-end node is a non-ONS node.
Foreign IP	Displays the foreign node IP address.

Table B-60 Field Descriptions for the DCC Properties Pane (continued)

Field	Description
LAPD Config	If the SDCC is provisioned as OSI only, the following SDCC LAP-D parameters are displayed: • AITS/UITS—Indicates the LAP-D acknowledgement type, either Acknowledged Information Transfer Service (AITS) or Unacknowledged Transfer Service (UITS). • Network/User—Indicates the LAP-D frame command/response role, either Network or User. • MTU—Shows the size of the maximum transfer unit (MTU). The range is from 512 to 1500 octets. • T2000—Shows the time between Set Asynchronous Balanced Mode (SABME) frame transmission. The range is from 0.2 to 20 seconds. • T203—Shows the maximum time between LAP-D frame exchanges. The range is from 4 to 120 seconds.
OSI SNPA	If the SDCC is provisioned for OSI, the following subnetwork point-of-attachment (SNPA) information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.
Service State	Select the state of the LDCC termination: • IS-NR—In Service–Normal • OOS-AU—Out of Service–Autonomous • OOS-MA—Out of Service–Management • OOS-AUMA—Out of Service–Autonomous and Management In addition, a secondary state provides additional information about the status of the entity. Values for secondary state are: • MEA—Mismatch of equipment due to invalid equipment insertion • UEQ—Unequipped; there is nothing in the slot • UAS—Unassigned; the entity does not exist, has not been created, or has been deleted • SWDL—Software download in progress • MT—Maintenance, as per the Admin State change • AINS—Automatic in service • DSBLD—Traffic is disabled on the entity • LPBK—Port or connection has a loopback on it
Create button	Allows you to create new terminations on SONET or SDH cards.
Edit button	Allows you to modify existing terminations on SONET or SDH cards.
Delete button	Allows you to delete the selected SDCC or LDCC.

Timing

The Timing Properties pane contains the following tabs:

- General Tab, page B-44
- Facility Tab, page B-44

- Reference List Tab, page B-45
- Status Tab, page B-46
- Timing Report Tab, page B-47

General Tab

The General tab displays general timing information.

Table B-61 Field Descriptions for the General Tab

Field	Description
General Timing	
Timing Mode	Set the node timing mode: • External—The ONS 15310 CL derives its timing from a BITS source wired to the backplane pins. • Line—Timing is derived from an OC-N card (non-DWDM nodes) or OSC card (DWDM nodes) that is optically connected to the timing node. • Mixed—Timing is set to external and line timing references. **Caution** Mixed timing might cause timing loops. Use this mode with care.
SSM Message Set	Choose the synchronization status message (SSM) set level supported by your network. SSM is an SONET protocol that communicates information about the quality of the timing source. SSM messages are carried on the S1 byte of the SONET Line layer. They enable SONET devices to automatically select the highest quality timing reference and to avoid timing loops. If a Generation 1 node receives a Generation 2 message, the message is mapped down to the next available Generation 1 node. For example, an ST3E message becomes an ST3.
Revertive	If checked, the ONS 15310 CL reverts to a primary reference source after the conditions that caused it to switch to a secondary timing reference are corrected.
Reversion Time	Use the Reversion Time field to specify the time in half-minute increments.
Quality of RES	If your timing source supports the reserved S1 byte, you set the timing quality here. (Most timing sources do not use RES.) Qualities are displayed in descending quality order as ranges. For example, ST3 < RES < ST2 means the timing reference is higher than a Stratum 3 and lower than a Stratum 2.

Facility Tab

The Facility tab displays the facility type, and BITS IN and OUT information.

Note BITS IN Facilities and BITS OUT Facilities values apply to both BITS-1 and BITS-2.

Table B-62 Field Descriptions for the Facility Tab

Field	Description
BITS-IN-OUT Facility Type	
In Facility Type	Provisions the BITS In facility type.
Out Facility Type	Provisions the BITS Out facility type.

Table B-62 Field Descriptions for the Facility Tab (continued)

Field	Description
BITS IN Facilities	
In State	Set the BITS In state to In Service (IS) or Out of Service (OOS). If Timing Mode is set to External or Mixed, set the BITS In State for BITS-1 or BITS-2 to IS (In Service) depending on whether one or both BITS input pin pairs on the backplane are connected to the external timing source. If Timing Mode is set to Line, set the BITS In State to OOS.
Coding	Set to the coding used by your BITS reference, either B8ZS or AMI.
Framing	Set to the framing used by your BITS reference, either Extended Super Frame (ESF), or Super Frame (SF). SSM is not available with Super Frame.
Sync Messaging	If checked, enables the Synchronization Status Message (SSM) for BITS In. (SSM is not available if Framing is set to Super Frame.)
Admin SSM	If the Sync Messaging check box is not checked, you can choose the SSM Generation 2 type from the drop-down list.
BITS OUT Facilities	
Out State	Set the BITS reference to IS (In Service) or OOS (Out of Service). For nodes set to Line timing with no equipment timed through BITS Out, set the state to OOS. For nodes using External timing or Line timing with equipment timed through BITS Out, set the state to IS.
Coding	Set to the coding used by your BITS reference, either B8ZS or AMI.
Framing	Set to the framing used by your BITS reference, either ESF or SF (D4). SSM is not available with Super Frame.
AIS Threshold	If SSM is disabled or Super Frame is used, set the quality level where a node sends an alarm indication signal (AIS) from the BITS-1 Out and BITS-2 Out backplane pins. An AIS is raised when the optical source for the BITS reference falls to or below the SSM quality level defined in this field.
LBO	If you are timing an external device connected to the BITS Out pins, set the distance between it and the ONS 15310 CL. Options are 0-133 ft (Cisco default), 134-266 ft, 267-399 ft, 400-533 ft, and 534-655 ft.

Reference List Tab

The Reference List tab provides timing reference information.

Table B-63 Field Descriptions for the Reference List Tab

Field	Description
NE References	Allows you to define three timing references (Ref-1, Ref-2, and Ref-3). The node uses Reference 1 unless a failure occurs on that reference, in which case, the node uses Reference 2. If that fails, the node uses Reference 3, which is typically set to the internal clock. This is the Stratum 3 clock provided on the TCC+. The options displayed depend on the Timing Mode setting: • Timing Mode set to External—Options are BITS-1, BITS-2, and Internal. • Timing Mode set to Line—Options are the node's working optical cards and Internal. **Note** For Timing Mode set to External and Timing Mode set to Line, select the cards/ports that are directly or indirectly connected to the node wired to the BITS source; that is, the node's trunk cards. Set Reference 1 to the trunk card that is closest to the BITS source. For example, if Slot 5 is connected to the node wired to the BITS source, select Slot 5 as Reference 1. • Timing Mode set to Mixed—Both BITS and optical cards are available, allowing you to set a mixture of external BITS and optical trunk cards as timing references.
BITS-1 Out References	Allows you to define three timing references (Ref-1, Ref-2, and Ref-3) for equipment wired to the BITS Out backplane pins. Normally, BITS Out is used with line nodes, so the options displayed are the working optical cards. BITS-1 Out is enabled as soon as BITS-1 facilities are placed in service.

Status Tab

The Status tab provides timing status information.

Note If you change any values in the Status tab and click Apply at the bottom of the screen, the values are not set. Instead, use the following buttons to apply changes:

- Clear—Releases any existing switch request. For example, if you issue a Force Switch and then issue a Clear, the Force Switch request is released.
- Manual Switch—Switches the timing reference from one source to another.
- Force Switch—Switches the timing reference from one source to another. This request has a higher priority than the Manual Switch request.

Table B-64 Field Descriptions for the Status Tab

Field	Description
NE Clock	
NE Reference	Set the NE timing reference to internal, BITS-1, or BITS-2.
Status	Displays the status of the NE clock.
Operations	Execute a switch on the NE timing reference. Allows you to perform a manual switch, perform a forced switch, or clear the existing command switching.
BITS-1 Out	
BITS-1 Out	Set the BITS-1 out timing reference.

Table B-64 Field Descriptions for the Status Tab (continued)

Field	Description
Status	Displays the status of the BITS-1 out timing reference.
Operations	Execute a switch on the BITS-1 out timing reference. Allows you to perform a manual switch, perform a forced switch, or clear the existing command switching.

Timing Report Tab

The Timing Report tab summarizes the NE's current timing settings.

Protection

The Protection Properties pane contains the following tabs:

- Protection Groups Tab, page B-47
- Operations Tab, page B-48

Protection Groups Tab

The Protection Groups tab displays a list of available protection groups and allows you to create, delete, and view protection groups.

Table B-65 Field Descriptions for the Protection Groups Tab

Field	Description
Protection Groups	
Displays a list of available protection groups. Click the **Create** or **Delete** button to create a new protection group or delete an existing one.	
Selected Protection Group	
Name	Modify the name of the selected protection group. The name can have up to 32 alphanumeric characters.
Type	View the protection type (1:1 [card], 1:N [card], Y Cable [port], or 1+1 [port]) of the selected protection group.
Protect Module	View the protect module if using 1+1 protection.
Available Entities	Displays a list of available entities. You can toggle between available and working entities.
Working Entities	Displays a list of working entities. You can toggle between working and available entities.
Bidirectional Switching	Click if you want both the transmit and the receive channels to switch if a failure occurs on one. This option is available only if you select the 1+1 (port) type.
Revertive	If checked, the node reverts traffic to the working card or port after failure conditions for the amount of time entered in Reversion Time. This option is not available if you select the 1:N (card) type.
Reversion Time	If Revertive is checked, choose the amount of time following failure condition correction after which the node should switch back to the working card or port. Use half-minute increments. This option is available only if you select the 1:1 (card) type.

Operations Tab

The Operations tab displays the protection group operation information.

Table B-66 Field Descriptions for the Operations Tab

Field	Description
Protection Groups	Displays a list of available protection groups.
Protection Group Details	Displays details about the selected protection groups and allows you to execute switch commands.

NE Defaults

The NE Defaults Properties pane displays a list of default thresholds for the ONS 15310 CL NE. You can edit NE defaults for the ONS 15310 CL R5.0 and later.

Table B-67 Field Descriptions for the NE Defaults Properties Pane

Field	Description
Parameter	Lists the default NE parameter.
Value	Shows the default parameter value, and allows you to change the default.
Units	Lists the unit of measure that corresponds to the default NE parameter.
Range	Lists the possible range of values for the default NE parameter. **Note** This field applies to the ONS 15310 CL R6.0 and later.
Side Effects	Lists any side effects that could occur as a result of changing the default NE parameter. **Note** This field applies to the ONS 15310 CL R6.0 and later.

You can load different NE defaults using the NE Defaults Management window. See Restoring NE Defaults, page 4-78.

Security

The Security Properties pane allows you to view and edit security features for the ONS 15310 CL NE. The Security Properties pane contains the following tabs:

- Policy Tab, page B-48
- Password Tab, page B-49
- Access Tab, page B-50
- RADIUS Server Tab, page B-51
- Legal Disclaimer Tab, page B-53

Policy Tab

The Policy tab allows you to specify user security parameters.

Note If the user is already logged in, any changes to the NE user type settings take effect only when the user next logs in.

Table B-68 Field Descriptions for the Policy Tab

Field	Description
Idle User Timeout	
Each CTC or TL1 user can be idle during his or her login session for a specified amount of time before the CTC window is locked. The lockouts prevent unauthorized users from making changes. Higher-level users have shorter default idle periods and lower-level users have longer or unlimited default idle periods. The user idle period can be modified by a SuperUser. **Note** A user already logged into the node is not affected by a change to the Idle User Timeout policy.	
Retrieve	Set the idle user timeout for a CTC Retrieve user.
Maintenance	Set the idle user timeout for a CTC Maintenance user.
Provisioner	Set the idle user timeout for a CTC Provisioner user.
SuperUser	Set the idle user timeout for a CTC SuperUser user.
User Lockout	
Manual Unlock by SuperUser	If checked, the CTC SuperUser user must manually unlock locked out CTC users. If unchecked, locked out CTC users are automatically unlocked after the lockout duration period elapses.
Lockout Duration	Set the lockout duration period for locked out CTC users. This field is enabled only if the Manual Unlock by SuperUser check box is unchecked.
Failed Logins Allowed	Set the number of failed logins before the CTC user is automatically locked out.
Other	
Single Sessions per User	If checked, each CTC user can launch only one session at a time.
Prevent Disabling the SuperUser	If checked, inactive CTC SuperUsers are never disabled.
Disable Inactive User	If checked, inactive users are disabled automatically for the amount of time in the Inactive Duration field.
Inactive Duration	Specify the inactive duration in days. The range is from 1 to 90 days; the Cisco default is 45 days. A value of 0 implies the inactive duration is disabled and invalid.

Password Tab

The Password tab allows you to specify user password security parameters.

Table B-69 Field Descriptions for the Password Tab

Field	Description
Password Change	
Prevent Reusing Last	Prevents setting a CTC user's current password to one of the most recent passwords. You can set the number of most recent passwords that cannot be reused. The range is from 1 to 10.

Table B-69 Field Descriptions for the Password Tab (continued)

Field	Description
Disable Password Flipping	If checked, users are not allowed to change passwords for the number of days specified in the Can Change Password After field.
Can Change Password After	Enter the number of days that must elapse before the user can change the password.
Force Password Change After Assigned	If checked, during the first successful login, the user is forced to change the password.
Password Difference	Allows SuperUsers to specify the number of characters by which the new password of a user must differ from the old password, while performing a password change. The default value is 1; the range is from 1 to 5 characters.
Password Aging	
Enable Password Aging	Check this check box to enable password aging.
Aging Period	Enter the aging period, in days, for Retrieve, Maintenance, Provisioner, and SuperUser CTC users. After the aging period expires, CTC users are forced to change their passwords.
Warning Period	Enter the warning period, in days, for Retrieve, Maintenance, Provisioner, and SuperUser CTC users. After the warning period expires, CTC users are warned that their passwords will soon expire.

Access Tab

The Access tab allows you to configure LAN and shell access to the NE.

Table B-70 Field Descriptions for the Access Tab

Field	Description
LAN Access	
LAN Access	Specify the type of LAN access allowed. Values allowed for the ONS 15310 CL are Front Only or No LAN Access. **Note** After the LAN access to the backplane is set, the Prime Optical client is unusable for 4 to 5 minutes.
Restore Timeout	This time period begins if *No LAN Access* is selected and all DCC connections are lost. If the time expires before a DCC is restored, LAN access is restored so that the node is not isolated. When the DCC comes back, LAN access returns to its specified settings. The range is from 0 (never) to 60 minutes; the Cisco default is 5 minutes.
Serial Craft Access (available for ONS 15310 CL NEs R6.0 and later)	
Enable Craft Port	Check this check box to enable the craft port.
Shell Access	
Shell Access on	Specify shell access on Telnet or SSH.
SSH Port	Indicates the SSH port number that will be used if the SSH radio button is selected.
Telnet Port	This is enabled if you selected the Telnet radio button. Enter the Telnet port number.
Use Standard Telnet Port	If checked, the standard Telnet port is used for Telnet access.
Shell Access (available for ONS 15310 CL NEs R6.0 and later)	

Table B-70 Field Descriptions for the Access Tab (continued)

Field	Description
Access State	Select the Shell access state from the drop-down list. You can select Disable, Non-secure, or Secure.
SSH Port	Indicates the SSH port number that will be used.
SFTP Port	Indicates the SFTP port number.
Telnet Port	This is enabled if you selected the Non-secure access state. Enter the Telnet port number that will be used.
Use Standard Telnet Port	Check this check box to indicate that the standard Telnet port will be used.
Enable Shell Password	Indicates whether or not the Shell password is enabled. **Note** You cannot enable the Shell password in Prime Optical. Enabling and providing a Shell password is currently done in CTC.
TL1 Access (available for ONS 15310 CL NEs R6.0 and later)	
Access State	Select the TL1 access state from the drop-down list. You can select Disable, Non-secure, or Secure.
SNMP Access (available for ONS 15310 CL NEs R6.0 and later)	
Access State	Select the SNMP access state from the drop-down list. You can select either Disable or Non-secure.
Other	
PM Clearing Privilege	Select the users privilege that allows clearing PM statistics for the NE.
EMS Access (available for ONS 15310 CL NEs R6.0 and later)	
Access State	Select the EMS access state from the drop-down list. You can select either Non-secure or Secure.
CORBA Listener Port	Select the port numbers for the CTX CORBA (IIOP) listener port and the CTX CORBA (SSLIOP) listener port. Select one of the following radio buttons: • Default-Fixed—Assigns a default port number. • Standard Constant—The port number for the CTX CORBA (IIOP) listener port is 683. The port number for the CTX CORBA (SSLIOP) listener port is 684. • Other Constant—When selected, enter the port number that will be used.

RADIUS Server Tab

The RADIUS Server tab allows you to configure, create, modify, and delete RADIUS servers for the ONS 15310 CL R6.0 and later.

Table B-71 Field Descriptions for the RADIUS Server Tab

Field	Description
Enable RADIUS Authentication	Check this check box to enable RADIUS authentication.
Enable RADIUS Accounting	Check this check box to enable RADIUS accounting. This is enabled if the Enable RADIUS Authentication check box is checked.

Table B-71 Field Descriptions for the RADIUS Server Tab (continued)

Field	Description
Enable the Node as the Final Authenticator When no RADIUS Server is Reachable	Select a row from the RADIUS Servers in Order of Authentication table; then, check this check box. This indicates that the RADIUS server that you selected will be the final authenticator when there are no more RADIUS servers that can be reached.
Create button	Click **Create** to create a RADIUS server. See Creating a RADIUS Server, page 8-46.
Edit button	Click **Edit** to modify an existing RADIUS server's information. See Modifying a RADIUS Server, page 8-46.
Delete button	Click **Delete** to delete an existing RADIUS server. See Deleting a RADIUS Server, page 8-46.
Move Up/Move Down buttons	Click **Move Up** or **Move Down** to reorder the list of RADIUS servers in the RADIUS Servers in Order of Authentication table.
RADIUS Servers in Order of Authentication	
IP Address	Displays the IP address of the RADIUS server.
Shared Secret	Displays a text string that serves as a password between a RADIUS client and RADIUS server.
Authentication Port	Displays the authentication port number of the RADIUS server. Default access is through port number 1812.
Accounting Port	Displays the accounting port number of the RADIUS server. Default access is through port number 1813.

Legal Disclaimer Tab

The Legal Disclaimer tab allows you to edit the NE's advisory message and preview the disclaimer.

Table B-72 Field Descriptions for the Legal Disclaimer Tab

Tab	Description
Advisory Message	The existing message is a default, noncustomer-specific disclaimer. If you want to edit this statement with specifics for your company, you can change the text. You can also use the following HTML commands to format the text: • ****—Begins boldface font • ****—Ends boldface font • ** **—Aligns type in the center of the window • ** **—Ends the center alignment • **<font=*n*, where *n* = point size>**—Changes the font to the new size • ****—Ends the font size command • **<p>**—Creates a line break • **_{**—Begins subscript • **}**—Ends subscript • **^{**—Begins superscript • **}**—Ends superscript • **<u>**—Starts underline • **</u>**—Ends underline
Preview	Allows you to view the advisory message before saving it.

Alarm

The Alarm Properties pane allows you to change default alarm severities by creating unique alarm profiles for individual ONS 15310 CL nodes. The Alarm Properties pane contains the following tabs:

- Profile Tab, page B-53
- Alarm Behavior Tab, page B-54

Note The Alarm Properties pane might contain default alarm profile entries for cards that are not supported by the Cisco ONS 15310. Therefore, you might see some alarms that do not apply to the NE type that you are provisioning.

Profile Tab

The Profile tab allows you to select, create, or delete alarm profiles.

Table B-73 Field Descriptions for the Profile Tab

Field	Description
Alarm Profile Name	Choose an alarm profile for the NE from the drop-down list. Click **Create** to create a new alarm profile for the NE. Click **Delete** to delete an alarm profile from the NE.
Condition	Displays the alarm condition.
Severity	Displays the alarm severity.

Alarm Behavior Tab

The Alarm Behavior tab allows you to change default alarm severities by creating unique alarm profiles.

Table B-74 Field Descriptions for the Alarm Behavior Tab

Field	Description
Alarm Profile	Choose a global alarm profile for the NE from the drop-down list.
Suppress Alarms	If checked, all alarms are suppressed.
Slot Number	Displays the location of the module.
Equipment Type	Displays the type of module in the slot.
Profile	Choose an alarm profile for the slot from the drop-down list.
Suppress Alarms	Indicates whether or not the alarms for a particular card are suppressed. If checked, all alarms are suppressed for the port.

XC Utilization

The XC Utilization Properties pane allows you to view a summary of the percentage of XTC cross-connect resources used by circuits that traverse or terminate at an ONS 15310 CL.

Table B-75 Field Descriptions for the XC Utilization Properties Pane

Field	Description
STS-1 Matrix	Provides the percentage of the XC cross-connect STS-1 paths resources that are used.
VT1.5 Matrix Ports	Provides the percentage of the XTC cross-connect VT matrix ports that are used. Each port is one STS in size, and each can transport 28 VT1.5s. 24 VT matrix ports are available.
VT1.5 Matrix	Provides the percentage of the VT matrix resources that are used. 672 are available, which is the number of VT matrix ports (24) multiplied by the number of VT1.5s in an STS (28).

OSI

Note The OSI Properties pane is supported only for the ONS 15310 CL R6.0 and later.

The OSI Properties pane allows you to provision ONS 15310 CL Open System Interconnection (OSI) parameters. The Properties pane contains the following tabs:

- Main Setup Tab, page B-55

- TARP-Config Tab, page B-55
- TARP-TDC Tab, page B-57
- TARP-MAT Tab, page B-57
- Routers-Setup Tab, page B-58
- Subnets Tab, page B-58
- Tunnels Tab, page B-59
- IS-IS RIB Tab, page B-60
- ES-IS RIB Tab, page B-60

Main Setup Tab

The Main Setup tab allows you to provision the OSI Network Entity Title (NET) address and the OSI routing mode.

Table B-76 Field Descriptions for the Main Setup Tab

Field	Description
Main Network Entity Title	Displays the node NET. The NET is used in OSI networks to identify the node to the end system (ES) or intermediate system (IS).
End System	Provisions the node as an OSI end system (ES). ESs send end system hello (ESH) messages regularly to announce their presence to neighboring ISs and ESs. For the ONS 15310 CL, End System is the Cisco default.
Intermediate System Level 1	Provisions the node as an OSI intermediate system (IS). ISs send intermediate system hello (ISH) messages regularly to announce their presence to neighboring ISs and ESs.
Intermediate System Level 1/Level 2	The ONS 15310 CL performs all IS functions. It communicates with other IS and ES nodes within an OSI area and broadcasts ISHs to IS nodes in other areas to which it is connected.
Node Routing Mode	
L1 LSP Buffer Size	Sets the Level 1 Link State Protocol (LSP) data unit buffer size. The Cisco default is 512.
L2 LSP Buffer Size	Sets the Level 2 LSP data unit buffer size. The Cisco default is 512.

TARP-Config Tab

The TARP-Config tab allows you to provision the TID Address Resolution Protocol (TARP). TARP is used when TL1 TIDs must be translated to an NSAP address. During the TID-to-NSAP translation, the TID is mapped to a NET; then, the NSAP is derived from the NET based on the NSAP selector value.

Table B-77 Field Descriptions for the TARP-Config Tab

Field	Description
TARP PDUs L1 Propagation	If checked (default), TARP Type 1 PDUs received by the node that are not excluded by the loop detection buffer are propagated to other NEs within the OSI Level 1 area. Type 1 PDUs request a protocol address that matches a target TID within a Level 1 routing area. The propagation does not occur if the NE is the target of the Type 1 PDU and the PDUs are not propagated to the NE from which the PDU was received. **Note** This parameter is not used when the node is set to End System.
TARP PDUs Origination	If checked (default), the node performs all TARP configuration functions, including: • TID-to-NSAP resolution requests • NSAP-to-TID requests • TARP address changes **Note** TARP Echo and NSAP to TID are not supported.
L2 TARP Data Cache	If checked (default), the TIDs and NSAPs are added to the TDC before the node propagates the requests to other NEs. **Note** This parameter is designed for IS Level 1/Level 2 nodes that are connected to other IS Level 1/Level 2 nodes. Enabling the parameter for IS Level 1 nodes is not recommended.
LAN TARP Storm Suppression	If checked (default), enables the TARP storm suppression to prevent redundant TARP PDUs from being propagated across the network.
Type 4 PDU Delay	Sets the amount of time that will pass before the Type 4 PDU is generated. The Cisco default value is 60 seconds; the range is from 0 to 255 seconds.
TARP PDUs L2 Propagation	If checked (default), TARP Type 2 PDUs received by the node that are not excluded by the loop detection buffer are propagated to other NEs within the OSI Level 2 area. Type 2 PDUs request a protocol address that matches a target TID within a Level 2 routing area. The propagation occurs if the NE is the target of the Type 2 PDU and the PDUs are not propagated to the NE from which the PDU was received.
L1 TARP Data Cache	If checked, the node maintains a TARP data cache (TDC). The TDC is a database of TID-to-NSAP pairs created from TARP Type 3 PDUs received by the node. TARP Type 3 PDUs are responses to Type 1 and Type 2 PDUs and modified by TARP Type 4 PDUs (TID-to-NSAP updates or corrections).
LDB	If checked, enables the TARP loop detection buffer (LDB). The LDB prevents TARP PDUs from being sent more than once on the same subnet.
Send Type 4 PDU on Startup	If checked, a TARP Type 4 PDU is originated during the initial ONS 15310 CL startup. Type 4 PDUs indicate that a TID or NSAP change has occurred at the NE. This option is disabled by default.
Timers	
LDB Entry	Sets the TARP LDB timer. The LDB buffer time is assigned to each LDB entry for which the TARP sequence number is zero. The Cisco default is 5 minutes; the range is from 1 to 10 minutes.
T1 Timer	Sets the amount of time to wait for response to a Type 1 Request PDU. Type 1 requests seek a specific NE TID within an OSI Level 1 area. The Cisco default is 15 seconds; the range is from 0 to 3600 seconds.

Table B-77 Field Descriptions for the TARP-Config Tab (continued)

Field	Description
T3 Timer	Sets the amount of time to wait for an address resolution request. The Cisco default is 40 seconds; the range is from 0 to 3600 seconds.
LDB Flush	Sets the frequency period for flushing the LDB. The Cisco default is 5 minutes; the range is from 0 to 1440 minutes.
T2 Timer	Sets the amount of time to wait for a Type 2 Request PDU. TARP Type 2 requests seek a specific NE TID within an OSI Level 1 area. The Cisco default is 25 seconds; the range is from 0 to 3600 seconds.
T4 Timer	Sets the amount of time to wait for an error recovery. The timer begins after the T2 timer expires without successfully finding the NE TID. The Cisco default is 20 seconds; the range is from 0 to 3600 seconds.

TARP-TDC Tab

Table B-78 Field Descriptions for the TARP-TDC Tab

Field	Description
Add Static Entry button	Click **Add Static Entry** to statically link a TID to an NSAP or NET.
Delete Selected Entry button	Click **Delete Selected Entry** to delete the selected TID-to-NSAP/NET static entry.
TID to NSAP button	Click **TID to NSAP** to query the network for an NSAP that matches a TID.
Flush Dynamic Entries button	Click **Flush Dynamic Entries** to delete all dynamically generated TDC entries.
TID	Target ID that is statistically linked to an NSAP or NET. For ONS nodes, the TID is the node name.
NSAP/NET	The NSAP that is statistically linked to the TID.
Type	Indicates how the TARP data cache entry was created. It can be either: • Dynamic—The entry was created through the TARP propagation process. • Static—The entry was manually created and is a static entry.

TARP-MAT Tab

The TARP-MAT tab allows you to manually provision a TARP adjacency.

Table B-79 Field Descriptions for the TARP-MAT Tab

Field	Description
Level	Sets the TARP Type Code that will be sent. • Level 1—Indicates that the manual area adjacency is within the same area as the node. The entry generates Type 1 PDUs. • Level 2—Indicates that the manual area adjacency is in an area different from that of the node. The entry generates Type 2 PDUs.
NSAP	The NSAP address of the node at the other end of the TARP manual adjacency.

Table B-79 Field Descriptions for the TARP-MAT Tab (continued)

Field	Description
Add button	Click **Add** to create a TARP manual area adjacency.
Remove button	Click **Remove** to delete the selected TID-to-NSAP/NET static entry.

Routers-Setup Tab

The Routers-Setup tab allows you to view and manage OSI virtual routers.

Table B-80 Field Descriptions for the Routers-Setup Tab

Field	Description
Router Number	Displays the virtual router number. Only one router is available on the ONS 15310 CL.
System ID	Displays the NSAP system ID of the virtual router. For the primary router (Router 1), $n = 0$.
Status	Indicates the virtual router status. Select Enabled or Disabled from the drop-down list. **Note** Router 1 must be enabled before additional routers can be enabled.
Primary Area Address	Indicates the primary manual area address. For Router 1, this is the main NET for the node; that is, the NSAP without the system ID and selector (set to 00) fields.
Manual Area Address 1	Indicates the address of any additional manual areas that are created. **Note** An OSI area allows up to two additional manual areas in addition to the primary manual area.
Manual Area Address 2	Indicates the address of any additional manual areas that are created. **Note** An OSI area allows up to two additional manual areas in addition to the primary manual area.
Edit button	Click **Edit** to modify the address parameters.

Subnets Tab

The Subnets tab allows you to view and manage OSI subnetwork point-of-attachment parameters. The parameters are initially provisioned when you enable a subnet on an SDCC, LDCC, GCC, OSC, or LAN interface.

Table B-81 Field Descriptions for the Subnets Tab

Field	Description
Enable LAN Subnet button	*Router 1 only.* Enables OSI over the LAN; that is, it activates the IS-IS protocol on the LAN so OSI traffic is enabled on the LAN.
Edit button	Click **Edit** to modify the subnet parameters.
Disable LAN Subnet button	*Router 1 only.* Disables OSI over the LAN if it has been enabled.
Slot/Port	The subnet slot and port.
Router Number	The OSI virtual router where the subnet (SDCC, LDCC, GCC, or OSC) is provisioned.
Type	The interface where the subnet is provisioned: SDCC, LDCC, GCC, OSC, or LAN.

Table B-81 Field Descriptions for the Subnets Tab (continued)

Field	Description
Protocol	The data link protocol that is provisioned for the subnet. It can be: • Point to Point Protocol (PPP) • Link Access Protocol on the D channel (LAP-D) • 802.3 for LAN subnets
ISH	The intermediate system hello (ISH) PDU propagation frequency. Intermediate system NEs send ISHs to other ESs and ISs to inform them about the NETs they serve. The Cisco default is 10 seconds; the range is from 10 to 1000 seconds.
ESH	The end system hello (ESH) PDU propagation frequency. End system NEs transmit ESHs to inform other ESs and ISs about the NSAPs they serve. The Cisco default is 10 seconds; the range is from 10 to 1000 seconds.
IIH	The intermediate system-to-intermediate system hello (IIH) PDU propagation frequency. The IS-IS hello PDUs establish and maintain adjacencies between ISs. The Cisco default is 3 seconds; the range is from 1 to 600 seconds.
DIS Priority	The designated intermediate system (DIS) priority. In IS-IS networks, one router is elected as the DIS. For Cisco routers, the DIS priority is 64.
IS-IS Cost	The cost for sending packets on the subnet. This is used by OSPF routers to calculate the shortest path. The Cisco default value is 20.

Tunnels Tab

The Tunnels tab allows you to view, create, edit, and delete Generic Routing Encapsulation (GRE) and Cisco tunnels. GRE tunnels encapsulate one network protocol for transfer across another network layer. Within a mixed TCP/IP and OSI network, GRE tunnels tunnel IP traffic over an OSI NE and OSI traffic over an IP NE.

Table B-82 Field Descriptions for the Tunnels Tab

Field	Description
IP Address	Displays the IP address of the GRE destination Prime Optical or CTC computer.
Netmask Address	Displays the IP address subnet mask of the destination Prime Optical or CTC computer.
NSAP Address	The destination NE NSAP address. The NSAP selector (last two NSAP characters) must be 2f (GRE tunnel) or cc (proprietary Cisco tunnel), depending on which tunnel type you want to create. The Cisco proprietary tunnel is slightly more efficient than the GRE tunnel because it does not add an encapsulation header for each IP packet, while the GRE tunnel adds a small header to the packets. The two tunnel types are incompatible. **Note** Most Cisco routers support the Cisco tunnel, while only a few support both GRE and Cisco IP tunnels.
OSPF Metric	Displays the cost for sending packets across the GRE tunnel. Cost is used by OSPF routers to calculate the shortest path.
Create button	Click **Create** to create a new GRE tunnel route.
Edit button	Click **Edit** to edit an existing GRE tunnel.
Delete button	Click **Delete** to delete an existing GRE tunnel.

IS-IS RIB Tab

The IS-IS RIB tab allows you to view the intermediate system-to-intermediate system (IS-IS) protocol routing information base (RIB). IS-IS is an OSI link-state hierarchical routing protocol that floods the network with link-state information that enables the NEs to build a complete and consistent picture of a network topology.

Table B-83 Field Descriptions for the IS-IS RIB Tab

Field	Description
Router Number	Displays the virtual router number. Only one router is available on the ONS 15310 CL.
Subnet Type	Indicates the OSI subnetwork point-of-attachment type used to access the destination address. It includes SDCC, LDCC, GCC, OSC, and LAN.
Destination Address	Displays the Network Service Access Point (NSAP).
MAC Address	Displays the NE's MAC address for destinations that are accessed by the LAN subnets.

ES-IS RIB Tab

The ES-IS RIB tab allows you to view the end system-to-intermediate system (ES-IS) protocol RIB. ES-IS is an OSI protocol that defines how end systems (hosts) and intermediate systems (routers) learn about each other.

Table B-84 Field Descriptions for the ES-IS RIB Tab

Field	Description
Router Number	Displays the virtual router number. Only one router is available on the ONS 15310 CL.
Subnet Type	Indicates the OSI subnetwork point-of-attachment type used to access the destination address. It includes SDCC, LDCC, GCC, OSC, and LAN.
Destination Address	Displays the NSAP of the destination ES.
MAC Address	Displays the NE's MAC address for destinations that are accessed by the LAN subnets.

Note See Table 1-22 on page 1-47 for descriptions of actions that you can perform using the buttons at the bottom of the window.

ONS 15310 MA SONET NE Explorer

When you choose **Configuration > NE Explorer** for the ONS 15310 MA SONET, the window that Prime Optical displays consists of a tree on the left side and a properties pane on the right. The tree provides a hierarchical view and alarm status of the NE's physical shelves and slots. The properties pane shows information about the selected entity. See Node Properties Pane—ONS 15310 MA SONET, page B-61 for more information.

Note If CTC is launched from the web browser for an ONS 15310 MA SONET node, the CTC GUI might look different from when it is launched from Prime Optical. This discrepancy occurs because the latest version of CTC (for NE releases supported by Prime Optical) is packaged with Prime Optical. If launched from a browser, the CTC software is retrieved from the NE itself, which might be a version different from that packaged with Prime Optical.

When an NE Explorer is in autorefresh mode, all values of an entity that is being edited by the user are automatically refreshed. You will lose all of your changes unless you click the Apply button. To enable autorefresh, click the Refresh Data button in the NE Explorer.

Node Properties Pane—ONS 15310 MA SONET

The node properties pane displays information about the ONS 15310 MA SONET slot that is selected in the NE Explorer tree. The properties pane contains the following tabs, some of which apply only to a specific NE version:

- Shelf View, page B-61
- General, page B-62
- Identification, page B-62
- Network, page B-63
- DCC, page B-70
- Timing, page B-73
- Protection, page B-76
- NE Defaults, page B-77
- Security, page B-77
- Alarm, page B-82
- XC Utilization, page B-82
- OSI, page B-83
- Alarm Extenders, page B-88
- Orderwire, page B-90

Shelf View

The Shelf View Properties pane displays a graphic of the ONS 15310 MA SONET that is selected in the NE Explorer tree. Moving the mouse pointer over the graphic of the NE, its shelves, slots, or cards displays the current alarms for the highlighted item. Double-clicking a slot or card displays the slot or card in the properties pane. The right-click menu allows you to reset, delete, or change the card. For unprovisioned slots, the right-click menu allows you to add a card.

General

The General Properties pane displays identification information, voltage thresholds, and multishelf configurations for the ONS 15310 MA SONET NE.

Table B-85 Field Descriptions for the General Properties Pane

Field	Description
Identification Tab	
NE ID	Displays the ID of the NE from the Domain Explorer.
NE Model	Displays the NE model type.
Software Version	Displays the current running version of the system software.
Contact	Displays the name and phone number of the node contact person.
Description	Enter a description of the NE.
System Description	Displays the NE type and the version of the system software.
Voltage/Temperature Tab	
Voltage	Displays the voltage (in millivolts) of the shelf that corresponds to the power supply.
Temperature	Displays the temperature (in degrees Celsius) of the shelf.

Identification

The Identification Properties pane displays information about the NE.

Table B-86 Field Descriptions for the Identification Properties Pane

Field	Description
NE ID	Displays the ID of the NE from the Domain Explorer.
Description	Displays the description of the NE from the Domain Explorer.
NE Model	Displays the NE model type.
Software Version	Displays the current running version of the system software.
Contact	Displays the name of the node contact person and the phone number.
System Description	Displays a description of the NE.
SNTP Settings	
Use NTP/SNTP Server	If checked, CTC uses a Simple Network Time Protocol (SNTP) server to set the date and time of the node. Using an SNTP server ensures that all ONS 15310 MA SONET network nodes use the same date and time reference. The server synchronizes the node's time after power outages or software upgrades. If you check the **Use NTP/SNTP Server** check box, enter the server's IP address in the next field. If you do not use an SNTP server, complete the Time and Time Zone fields. The ONS 15310 MA SONET will use these fields for alarm dates and times.
SNTP Server	Displays the SNTP server IP address.

Table B-86 Field Descriptions for the Identification Properties Pane (continued)

Field	Description
Location	
Latitude	Allows you to set the latitude of the NE. Select **North** or **South** from the drop-down list; then, enter the degrees and minutes (or click the up and down arrows to increase or decrease each by 1 unit).
Longitude	Allows you to set the longitude of the NE. Select **East** or **West** from the drop-down list; then, enter the degrees and minutes (or click the up and down arrows to increase or decrease each by 1 unit).
Date and Time	
Time	Displays the NE date and time.
Time Zone	Displays the time zone where the NE is located.
Use Daylight Savings Time	If checked, Daylight Savings Time is observed.
AIS-V Insertion on STS-1 Signal Degrade - Path	
Insert AIS-V on STS-1 SD-P	If checked, the NE inserts an AIS-V signal when it detects an STS-1 signal degrade.
SD-P BER	Select the signal degrade path bit error rate for AIS-V insertion.

Network

The Network Properties pane displays information about the NE network address. The Network Properties pane contains the following tabs:

- Address Tab, page B-64
- Static Routes Tab, page B-64
- OSPF Tab, page B-64
- OSPF Area Range Tab, page B-65
- OSPF Virtual Links Tab, page B-66
- SNMP Tab, page B-66
- Firewall/Proxy Tab, page B-67
- RIP Routing Table Tab, page B-67
- RIP Tab, page B-68
- Routing Table Tab, page B-68
- Proxy Tunnels Tab, page B-69
- Firewall Tunnels Tab, page B-69
- FTP Hosts Tab, page B-70

Address Tab

The Address tab allows you to view and change information about the NE network address.

Table B-87 Field Descriptions for the Address Tab

Field	Description
IP Address	Displays the IP address of the NE.
Default Router	Displays the IP address of the default router.
Subnet Mask	Displays the subnetwork mask ID of the NE.
MAC Address	Displays the ONS 15310 MA SONET address as it is identified on the IEEE 802 MAC layer.
Forward DHCP Requests	If checked, forwards Dynamic Host Configuration Protocol (DHCP) requests to the IP address entered in the DHCP Server field. When the Forward DHCP Requests check box is unchecked, the DHCP Server field is display-only.
DHCP Server	Displays the IP address of the DHCP server.
IPv6 Config	
Enable IPv6	If checked, allows you to configure the node to use the IPv6 protocol and to assign an IPv6 address to the node.
IPv6 Address	Enter the IPv6 address of the node.
Default IPv6 Router	Enter the IPv6 default router of the node.
IPv6 Subnet Mask	Enter the IPv6 subnetwork mask length.

Static Routes Tab

The Static Routes tab allows you to view information about Prime Optical and ONS 15310 MA SONET connectivity and create or delete static routes.

Table B-88 Field Descriptions for the Static Routes Tab

Field	Description
Destination IP	Displays the IP address of the computer running Prime Optical.
Subnet Mask	Displays the subnetwork mask.
Next Hop	Displays the IP address of the router port or the node IP address if the Prime Optical computer is connected to the node directly.
Cost	Displays the number of hops between the ONS 15310 MA SONET and the computer.

OSPF Tab

The OSPF tab displays Open Shortest Path First (OSPF) information. OSPF is a link-state Internet routing protocol.

Table B-89 Field Descriptions for the OSPF Tab

Field	Description
Slot	Displays the slot number.
Port	Displays the port number.

Table B-89 Field Descriptions for the OSPF Tab (continued)

Field	Description
DCC OSPF Area ID	Displays the number that identifies the ONS 15310 MA SONET as a unique OSPF area. The OSPF area number can be from 0.0.0.0 to 255.255.255.255. The number must be unique to the LAN OSPF area.
SDCC Metric	Sets a cost for sending packets across the Section Data Communications Channel (SDCC), which is used by OSPF routers to calculate the shortest path. This value should always be higher than the LAN metric. The Cisco default metric is 100. This value is normally unchanged.
LDCC Metric	Sets a cost for sending packets across the Line Data Communications Channel (LDCC), which is used by OSPF routers to calculate the shortest path. This value should always be higher than the LAN metric. This value is normally unchanged.
OSPF on LAN	
OSPF Active on LAN	If checked, enables ONS 15310 MA SONET OSPF topology to be advertised to OSPF routers on the LAN. Enable this field on ONS 15310 MA SONET NEs that directly connect to OSPF routers.
LAN Port Area ID	Displays the OSPF area ID for the router port where the ONS 15310 MA SONET is connected. (This number is different from the DCC OSPF area ID.)
Router Priority	Displays the designated router for a subnet.
Dead Interval	Displays the number of seconds that will pass while an OSPF router's packets are not visible before its neighbors declare the router down. Forty seconds is the Cisco default.
Retransmit Interval	Displays the time that will elapse before a packet is resent. Five seconds is the Cisco default.
Hello Interval	Displays the number of seconds between OSPF hello packet advertisements sent by OSPF routers. Ten seconds is the Cisco default.
Transit Delay	Displays the service speed. One second is the Cisco default.
LAN Metric	Displays a cost for sending packets across the LAN. This value should always be lower than the DCC metric. Ten is the Cisco default.
OSPF Authentication	
Authentication Type	Displays Simple Password if the router where the ONS 15310 MA SONET is connected uses authentication. Otherwise, it displays No Authentication.
Authentication Key	Displays the OSPF key (password) if authentication is enabled.
Confirm Authentication Key	Retype the authentication key to confirm it.

OSPF Area Range Tab

The OSPF Area Range tab allows you to view information about OSPF area ranges and create or delete area ranges.

Table B-90 Field Descriptions for the OSPF Area Range Tab

Field	Description
Range Address	Displays the area IP address for the ONS 15310 MA SONET NEs that reside within the OSPF area. For example, if the ONS 15310 MA SONET OSPF area includes nodes with IP addresses 10.10.20.100, 10.10.30.150, 10.10.40.200, and 10.10.50.250, the range address would be 10.10.0.0.
Range Area ID	Displays the OSPF area ID for the ONS 15310 MA SONET NEs. This is either the ID in the DCC OSPF Area ID field or the ID in the LAN Port Area ID field.

Table B-90 Field Descriptions for the OSPF Area Range Tab (continued)

Field	Description
Mask Length	Displays the subnet mask length.
Mask	Displays the subnet mask IP address.
Advertise	Indicates whether the OSPF range table is advertised.

OSPF Virtual Links Tab

The OSPF Virtual Links tab allows you to view information about OSPF virtual links and create or delete virtual links.

Note You cannot create a new virtual link unless OSPF is active on the LAN.

Table B-91 Field Descriptions for the OSPF Virtual Links Tab

Field	Description
Neighbor	Displays the router ID of the Area 0 router.
Transit Delay	Displays the service speed, in seconds. One second is the Cisco default.
Retransmit Interval	Displays the time that will elapse before a packet is resent. Five seconds is the Cisco default.
Hello Interval	Displays the number of seconds between OSPF hello packet advertisements sent by OSPF routers. Ten seconds is the Cisco default.
Dead Interval	Displays the number of seconds that will pass while the packets of an OSPF router are not visible before its neighbors declare the router down. Forty seconds is the Cisco default.
Authentication Type	Displays the authentication type.
Authentication Key	Displays the authentication key.

SNMP Tab

The SNMP tab allows you to view SNMP information and create or delete SNMP trap destinations.

Table B-92 Field Descriptions for the SNMP Tab

Field	Description
Allow SNMP Set	If checked, allows you to use SNMP management software with the ONS 15310 MA SONET.
Allow SNMP Proxy	If checked, allows you to configure the ONS 15310 MA SONET to proxy SNMP calls.
IP Address	The IP address of the NMS.
Community Name	The SNMP community name.
UDP Port	The UDP port for SNMP. The Cisco default UDP port is 162.
Trap Version	The trap version, either SNMP version 1 or version 2. See your NMS documentation to determine whether to use SNMP version 1 or version 2.

Table B-92 Field Descriptions for the SNMP Tab (continued)

Field	Description
Relay A IP Address	The first ONS 15310 MA SONET to relay traps through. The IP address is appended to the base community string to tell the first NE the IP address and the port to forward the trap to. The second NE recognizes the IP address and strips it from the community string before forwarding the trap.
Relay A Community Name	The community name for the relay A node to use in the trap when forwarding it.
Relay B IP Address	The second ONS 15310 MA SONET to relay traps through.
Relay B Community Name	The community name for the relay B node to use in the trap when forwarding it.
Relay C IP Address	The third ONS 15310 MA SONET to relay traps through.
Relay C Community Name	The community name for the relay C node to use in the trap when forwarding it.

Firewall/Proxy Tab

The Firewall/Proxy tab allows you to use an NE as a proxy server or as a firewall.

Table B-93 Field Descriptions for the Firewall/Proxy Tab

Field	Description
Gateway Settings	
Enable Proxy Server on Port	If checked, the ONS 15310 MA SONET serves as a proxy for connections between the Prime Optical server and ONS 15310s that are DCC-connected to the proxy ONS 15310 MA SONET. The Prime Optical server establishes connections to DCC-connected nodes through the proxy node. The Prime Optical server can connect to nodes that it cannot directly reach from the host on which it runs. The proxy server port number (display-only) is shown following the Enable Proxy Server on Port field. The proxy server uses port 1080. If checked, the following radio buttons are enabled: • End Network Element (ENE)—Enables the ONS 15310 MA SONET to proxy as an ENE. Note that an alternate expansion for ENE is *external network element*. • Gateway Network Element (GNE)—Enables the ONS 15310 MA SONET to proxy as a GNE. • Proxy-only—Enables proxy only. If unchecked, the node does not proxy.

RIP Routing Table Tab

The RIP Routing Table tab allows you to view the Routing Information Protocol (RIP) routing table.

Table B-94 Field Descriptions for the RIP Routing Table Tab

Field	Description
Destination	Displays the IP address of the destination network or host.
Mask	Displays the subnet mask used to reach the destination network or host.
Gateway	Displays the IP address of the gateway used to reach the destination network or host.
Cost	Displays the hop count metric. The valid range is from 1 to 15.

RIP Tab

The RIP tab allows you to view and configure RIP parameters.

Note

- When you enable RIP, you must wait for approximately one minute for the default RIP address summary to become visible.
- When you disable RIP on the NE, all summary address entries in the Summary Address table are deleted.

Table B-95 Field Descriptions for the RIP Tab

Field	Description
RIP Active	Check this check box to enable RIP. Uncheck it to disable RIP. **Note** Checking the RIP Active check box and clicking the **Apply** button does not enable RIP. Instead, you must check the RIP Active check box, click the **Create** button, and use the Create RIP Address Summary dialog box to create a new RIP address. For details, see Using RIP, page 5-8.
RIP Type	Select RIP version 1.0 or RIP version 2.0.
Metric	Enter the hop count metric. The valid range is from 1 to 15.
Authentication Type	Select the authentication type.
Authentication Key	Enter the authentication key (password) if the authentication type is Simple Password.
Confirm Authentication Key	Retype the authentication key to confirm it.
RIP Address Summary	• Summary Address—Displays the summary address. • Mask Length—Displays the subnet mask length. • Cost—Displays the hop count metric. The valid range is from 1 to 15.
Create button	Click **Create** to create a new RIP address. See Using RIP, page 5-8.
Delete button	Click **Delete** to delete an existing RIP address.

Routing Table Tab

The Routing Table tab allows you to view the OSPF routing table.

Table B-96 Field Descriptions for the Routing Table Tab

Field	Description
Destination	Displays the IP address of the destination network or host.
Mask	Displays the subnet mask used to reach the destination network or host.
Gateway	Displays the IP address of the gateway used to reach the destination network or host.

Table B-96 Field Descriptions for the Routing Table Tab (continued)

Field	Description
Usage	Shows the number of times the listed route has been used.
Interface	Shows the ONS 15310 MA SONET interface used to access the destination. Values are: • cpm0—The ONS 15310 MA SONET Ethernet interface (that is, the RJ-45 jack on the TCC+/TCC2 and the LAN 1 pins on the backplane). • pdcc0—An SDCC interface (that is, an OC-N trunk card identified as the SDCC termination). • lo0—A loopback interface.

Proxy Tunnels Tab

The Proxy Tunnels tab allows you to configure source and destination information and create or delete proxy tunnels.

Table B-97 Field Descriptions for the Proxy Tunnels Tab

Field	Description
Source Address	Specify the source IP address in the source-destination pair for the tunnel that will be routed through the proxy server.
Source Mask	Specify the source subnetwork mask in the source-destination pair for the tunnel that will be routed through the proxy server.
Destination Address	Specify the destination IP address in the source-destination pair for the tunnel that will be routed through the proxy server.
Destination Mask	Specify the destination subnetwork mask in the source-destination pair for the tunnel that will be routed through the proxy server.

Firewall Tunnels Tab

The Firewall Tunnels tab allows you to configure source and destination information and create and delete firewall tunnels.

Table B-98 Field Descriptions for the Firewall Tunnels Tab

Field	Description
Source Address	Specify the source IP address in the source-destination pair for the tunnel that will be routed through the firewall.
Source Mask	Specify the source subnetwork mask in the source-destination pair for the tunnel that will be routed through the firewall.
Destination Address	Specify the destination IP address in the source-destination pair for the tunnel that will be routed through the firewall.
Destination Mask	Specify the destination subnetwork mask in the source-destination pair for the tunnel that will be routed through the firewall.

FTP Hosts Tab

The FTP Hosts tab allows you to configure database backup or restore and software download to an ENE when the firewall is enabled. You can provision a list of legal FTP hosts for which the firewall opens for all FTP commands. You can configure the FTP hosts to expire after a certain amount of time, after which the FTP relay resumes blocking all FTP access for the ENEs.

Table B-99 Field Descriptions for the FTP Hosts Tab

Field	Description
Create button	Opens the Create New FTP Host dialog box, which allows you to create up to 12 new FTP hosts in a GNE/ENE firewall environment. See Creating an FTP Host, page 5-22. **Note** You cannot create more than 12 FTP hosts.
Delete button	Deletes the selected FTP host.
FTP Host Address	Displays the FTP host IP address.
Prefix Length	Displays the FTP host subnet mask length.
Enable FTP Relay	Indicates whether FTP relay is enabled or disabled. If FTP relay is disabled, the FTP Relay Timer field is dimmed.
FTP Relay Timer	Displays the number of minutes that the FTP relay is configured to run, after which the FTP relay resumes blocking all FTP access for the ENEs.

DCC

The DCC Properties pane allows you to create, delete, and view SONET or SDH DCCs.

Table B-100 Field Descriptions for the DCC Properties Pane

Field	Description
SDCC	
SDCC Terminations	Displays the slot, port, and card type of an SDCC termination.
OSPF Disabled on Link	Check to prevent the advertisement of the OSPF routing table.
Foreign	A check mark indicates that the far-end node is a non-ONS node.
Foreign IP	Displays the foreign node IP address.
LAPD Config	If the SDCC is provisioned as OSI only, the following SDCC LAP-D parameters are displayed: • AITS/UITS—Indicates the LAP-D acknowledgement type, either Acknowledged Information Transfer Service (AITS) or Unacknowledged Transfer Service (UITS). • Network/User—Indicates the LAP-D frame command/response role, either Network or User. • MTU—Shows the size of the maximum transfer unit (MTU). The range is from 512 to 1500 octets. • T2000—Shows the time between Set Asynchronous Balanced Mode (SABME) frame transmission. The range is from 0.2 to 20 seconds. • T203—Shows the maximum time between LAP-D frame exchanges. The range is from 4 to 120 seconds.

Table B-100 Field Descriptions for the DCC Properties Pane (continued)

Field	Description
OSI SNPA	If the SDCC is provisioned for OSI, the following subnetwork point-of-attachment (SNPA) information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.
Service State	Select the state of the termination: • IS-NR—In Service–Normal. • OOS-AU—Out of Service–Autonomous. • OOS-MA—Out of Service–Management. • OOS-AUMA—Out of Service–Autonomous and Management. In addition, a secondary state provides additional information about the status of the entity. Values for secondary state are: • MEA—Mismatch of equipment due to invalid equipment insertion. • UEQ—Unequipped; there is nothing in the slot. • UAS—Unassigned; the entity does not exist, has not been created, or has been deleted. • SWDL—Software download in progress. • MT—Maintenance, as per the Admin State change. • AINS—Automatic in service. • DSBLD—Traffic is disabled on the entity. • LPBK—Port or connection has a loopback on it. • FLT—Fault secondary state. When an entity is faulted, an FLT state is raised. Equipment and ports in FLT state should be cleared as they transition. Transition states are listed in Table 11-11 on page 11-15. See Table 11-11 on page 11-15 for the Service state-Secondary state possible values. **Note** If the NE release does not support the Service state, this field shows N/A.
LDCC	
LDCC Terminations	Displays the slot, port, and card type of an LDCC termination. Click **Create** to create a new LDCC termination; click **Delete** to delete the selected LDCC termination.
OSPF Disabled on Link	Check to prevent the advertisement of the OSPF routing table.
Foreign	A check mark indicates that the far-end node is a non-ONS node.
Foreign IP	Displays the foreign node IP address.

Table B-100 Field Descriptions for the DCC Properties Pane (continued)

Field	Description
LAPD Config	If the SDCC is provisioned as OSI only, the following SDCC LAP-D parameters are displayed: • AITS/UITS—Indicates the LAP-D acknowledgement type, either Acknowledged Information Transfer Service (AITS) or Unacknowledged Transfer Service (UITS). • Network/User—Indicates the LAP-D frame command/response role, either Network or User. • MTU—Shows the size of the maximum transfer unit (MTU). The range is from 512 to 1500 octets. • T2000—Shows the time between Set Asynchronous Balanced Mode (SABME) frame transmission. The range is from 0.2 to 20 seconds. • T203—Shows the maximum time between LAP-D frame exchanges. The range is from 4 to 120 seconds.
OSI SNPA	If the SDCC is provisioned for OSI, the following subnetwork point-of-attachment (SNPA) information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.
Service State	Select the state of the termination: • IS-NR—In Service–Normal. • OOS-AU—Out of Service–Autonomous. • OOS-MA—Out of Service–Management. • OOS-AUMA—Out of Service–Autonomous and Management. In addition, a secondary state provides additional information about the status of the entity. Values for secondary state are: • MEA—Mismatch of equipment due to invalid equipment insertion. • UEQ—Unequipped; there is nothing in the slot. • UAS—Unassigned; the entity does not exist, has not been created, or has been deleted. • SWDL—Software download in progress. • MT—Maintenance, as per the Admin State change. • AINS—Automatic in service. • DSBLD—Traffic is disabled on the entity. • LPBK—Port or connection has a loopback on it. • FLT—Fault secondary state. When an entity is faulted, an FLT state is raised. Equipment and ports in FLT state should be cleared as they transition. Transition states are listed in Table 11-11 on page 11-15. See Table 11-11 on page 11-15 for the Service state-Secondary state possible values. **Note** If the NE release does not support the Service state, this field shows N/A.
Create button	Allows you to create new terminations on SONET or SDH cards.
Edit button	Allows you to modify existing terminations on SONET or SDH cards.
Delete button	Allows you to delete the selected SDCC or LDCC.

Timing

The Timing Properties pane contains the following tabs:

- General Tab, page B-73
- Facility Tab, page B-73
- Reference List Tab, page B-74
- Status Tab, page B-75
- Timing Report Tab, page B-76

General Tab

The General tab displays general timing information.

Table B-101 Field Descriptions for the General Tab

Field	Description
General Timing	
Timing Mode	Set the node timing mode: • External—The ONS 15310 MA SONET derives its timing from a BITS source wired to the backplane pins. • Line—Timing is derived from an OC-N card (non-DWDM nodes) or OSC card (DWDM nodes) that is optically connected to the timing node. • Mixed—Timing is set to external and line timing references. **Caution** Mixed timing might cause timing loops. Use this mode with care.
SSM Message Set	Choose the synchronization status message (SSM) set level supported by your network. SSM is an SONET protocol that communicates information about the quality of the timing source. SSM messages are carried on the S1 byte of the SONET Line layer. They enable SONET devices to automatically select the highest quality timing reference and to avoid timing loops. If a Generation 1 node receives a Generation 2 message, the message is mapped down to the next available Generation 1 node. For example, an ST3E message becomes an ST3.
Revertive	If checked, the ONS 15310 MA SONET reverts to a primary reference source after the conditions that caused it to switch to a secondary timing reference are corrected.
Reversion Time	Use the Reversion Time field to specify the time in half-minute increments.
Quality of RES	If your timing source supports the reserved S1 byte, you set the timing quality here. (Most timing sources do not use RES.) Qualities are displayed in descending quality order as ranges. For example, ST3 < RES < ST2 means the timing reference is higher than a Stratum 3 and lower than a Stratum 2.

Facility Tab

The Facility tab displays the facility type, and BITS IN and OUT information.

Note BITS IN Facilities and BITS OUT Facilities values apply to both BITS-1 and BITS-2.

Table B-102 Field Descriptions for the Facility Tab

Field	Description
BITS-IN-OUT Facility Type	
In Facility Type	Provisions the BITS In facility type.
Out Facility Type	Provisions the BITS Out facility type.
BITS IN Facilities	
In State	Set the BITS In state to In Service (IS) or Out of Service (OOS). If Timing Mode is set to External or Mixed, set the BITS In State for BITS-1 or BITS-2 to IS (In Service) depending on whether one or both BITS input pin pairs on the backplane are connected to the external timing source. If Timing Mode is set to Line, set the BITS In State to OOS.
Coding	Set to the coding used by your BITS reference, either B8ZS or AMI.
Framing	Set to the framing used by your BITS reference, either Extended Super Frame (ESF), or Super Frame (SF). SSM is not available with Super Frame.
Sync Messaging	If checked, enables the Synchronization Status Message (SSM) for BITS In. (SSM is not available if Framing is set to Super Frame.)
Admin SSM	If the Sync Messaging check box is not checked, you can choose the SSM Generation 2 type from the drop-down list.
BITS OUT Facilities	
Out State	Set the BITS reference to IS (In Service) or OOS (Out of Service). For nodes set to Line timing with no equipment timed through BITS Out, set the state to OOS. For nodes using External timing or Line timing with equipment timed through BITS Out, set the state to IS.
Coding	Set to the coding used by your BITS reference, either B8ZS or AMI.
Framing	Set to the framing used by your BITS reference, either ESF or SF (D4). SSM is not available with Super Frame.
AIS Threshold	If SSM is disabled or Super Frame is used, set the quality level where a node sends an alarm indication signal (AIS) from the BITS-1 Out and BITS-2 Out backplane pins. An AIS is raised when the optical source for the BITS reference falls to or below the SSM quality level defined in this field.
LBO	If you are timing an external device connected to the BITS Out pins, set the distance between it and the ONS 15310 CL. Options are 0-133 ft (Cisco default), 134-266 ft, 267-399 ft, 400-533 ft, and 534-655 ft.

Reference List Tab

The Reference List tab provides timing reference information.

Table B-103 Field Descriptions for the Reference List Tab

Field	Description
NE References	Allows you to define three timing references (Ref-1, Ref-2, and Ref-3). The node uses Reference 1 unless a failure occurs on that reference, in which case, the node uses Reference 2. If that fails, the node uses Reference 3, which is typically set to the internal clock. This is the Stratum 3 clock provided on the TCC+. The options displayed depend on the Timing Mode setting: • Timing Mode set to External—Options are BITS-1, BITS-2, and Internal. • Timing Mode set to Line—Options are the node's working optical cards and Internal. **Note** For Timing Mode set to External and Timing Mode set to Line, select the cards/ports that are directly or indirectly connected to the node wired to the BITS source; that is, the node's trunk cards. Set Reference 1 to the trunk card that is closest to the BITS source. For example, if Slot 5 is connected to the node wired to the BITS source, select Slot 5 as Reference 1. • Timing Mode set to Mixed—Both BITS and optical cards are available, allowing you to set a mixture of external BITS and optical trunk cards as timing references.
BITS-1 Out References	Allows you to define three timing references (Ref-1, Ref-2, and Ref-3) for equipment wired to the BITS Out backplane pins. Normally, BITS Out is used with line nodes, so the options displayed are the working optical cards. BITS-1 Out is enabled as soon as BITS-1 facilities are placed in service.
BITS-2 Out References	Allows you to define three timing references (Ref-1, Ref-2, and Ref-3) for equipment wired to the BITS Out backplane pins. Normally, BITS Out is used with line nodes, so the options displayed are the working optical cards. BITS-1 and BITS-2 Out are enabled as soon as BITS-1 and BITS-2 facilities are placed in service.

Status Tab

The Status tab provides timing status information.

Note If you change any values in the Status tab and click Apply at the bottom of the screen, the values are not set. Instead, use the following buttons to apply changes:

- Clear—Releases any existing switch request. For example, if you issue a Force Switch and then issue a Clear, the Force Switch request is released.
- Manual Switch—Switches the timing reference from one source to another.
- Force Switch—Switches the timing reference from one source to another. This request has a higher priority than the Manual Switch request.

Table B-104 Field Descriptions for the Status Tab

Field	Description
NE Clock	
NE Reference	Set the NE timing reference to internal, BITS-1, or BITS-2.
Status	Displays the status of the NE clock.
Operations	Execute a switch on the NE timing reference. Allows you to perform a manual switch, perform a forced switch, or clear the existing command switching.

Table B-104 Field Descriptions for the Status Tab (continued)

Field	Description
BITS-1 Out	
BITS-1 Out	Set the BITS-1 out timing reference.
Status	Displays the status of the BITS-1 Out timing reference.
Operations	Execute a switch on the BITS-1 Out timing reference. Allows you to perform a manual switch, perform a forced switch, or clear the existing command switching.
BITS-2 Out	
BITS-2 Out	Set the BITS-2 out timing reference.
Status	Displays the status of the BITS-2 Out timing reference.
Operations	Executes a switch on the BITS-2 Out timing reference. Allows you to perform a manual switch, perform a forced switch, or clear the existing command switching.

Timing Report Tab

The Timing Report tab summarizes the NE's current timing settings.

Protection

The Protection Properties pane contains the following tabs:

- Protection Groups Tab, page B-76
- Operations Tab, page B-77

Protection Groups Tab

The Protection Groups tab displays a list of available protection groups and allows you to create, delete, and view protection groups.

Table B-105 Field Descriptions for the Protection Groups Tab

Field	Description
Protection Groups	
Displays a list of available protection groups. Click the **Create** or **Delete** button to create a new protection group or delete an existing one.	
Selected Protection Group	
Name	Modify the name of the selected protection group. The name can have up to 32 alphanumeric characters.
Type	View the protection type (1:1 [card], 1:N [card], Y Cable [port], or 1+1 [port]) of the selected protection group.
Protect Card	View the protect card if using 1+1 protection.
Available Entities	Displays a list of available entities. You can toggle between available and working entities.
Working Entities	Displays a list of working entities. You can toggle between working and available entities.

Table B-105 Field Descriptions for the Protection Groups Tab (continued)

Field	Description
Bidirectional Switching	Click if you want both the transmit and the receive channels to switch if a failure occurs on one. This option is available only if you select the 1+1 (port) type.
Revertive	If checked, the node reverts traffic to the working card or port after failure conditions for the amount of time entered in Reversion Time. This option is not available if you select the 1:N (card) type.

Operations Tab

The Operations tab displays the protection group operation information.

Table B-106 Field Descriptions for the Operations Tab

Field	Description
Protection Groups	Displays a list of available protection groups.
Protection Group Details	Displays details about the selected protection groups and allows you to execute switch commands.
Switch Commands	Allows you to perform a manual switch, perform a forced switch, or clear the existing command switching.
Inhibit Switching	Allows you to inhibit unlock switching, lock out switching, or lock on switching.

NE Defaults

The NE Defaults Properties pane displays a list of default thresholds for the ONS 15310 MA SONET NE.

Table B-107 Field Descriptions for the NE Defaults Properties Pane

Field	Description
Parameter	Lists the default NE parameter.
Value	Shows the default parameter value, and allows you to change the default.
Units	Lists the unit of measure that corresponds to the default NE parameter.
Range	Lists the possible range of values for the default NE parameter.
Side Effects	Lists any side effects that could occur as a result of changing the default NE parameter.

You can load different NE defaults using the NE Defaults Management window. See Restoring NE Defaults, page 4-78.

Security

The Security Properties pane allows you to view and edit security features for the ONS 15310 MA SONET NE. The Security Properties pane contains the following tabs:

- Policy Tab, page B-78
- Password Tab, page B-78

- Access Tab, page B-79
- RADIUS Server Tab, page B-80
- Legal Disclaimer Tab, page B-81

Policy Tab

The Policy tab allows you to specify user security parameters.

Note If the user is already logged in, any changes to the NE user type settings take effect only when the user next logs in.

Table B-108 Field Descriptions for the Policy Tab

Field	Description
Idle User Timeout	
Each CTC or TL1 user can be idle during his or her login session for a specified amount of time before the CTC window is locked. The lockouts prevent unauthorized users from making changes. Higher-level users have shorter default idle periods and lower-level users have longer or unlimited default idle periods. The user idle period can be modified by a SuperUser. **Note** A user already logged into the node is not affected by a change to the Idle User Timeout policy.	
Retrieve	Set the idle user timeout for a CTC Retrieve user.
Maintenance	Set the idle user timeout for a CTC Maintenance user.
Provisioner	Set the idle user timeout for a CTC Provisioner user.
SuperUser	Set the idle user timeout for a CTC SuperUser user.
User Lockout	
Manual Unlock by SuperUser	If checked, the CTC SuperUser user must manually unlock locked out CTC users. If unchecked, locked out CTC users are automatically unlocked after the lockout duration period elapses.
Lockout Duration	Set the lockout duration period for locked out CTC users. This field is enabled only if the Manual Unlock by SuperUser check box is unchecked.
Failed Logins Allowed	Set the number of failed logins before the CTC user is automatically locked out.
Other	
Single Sessions per User	If checked, each CTC user can launch only one session at a time.
Prevent Disabling the SuperUser	If checked, inactive CTC SuperUsers are never disabled.
Disable Inactive User	If checked, inactive users are disabled automatically for the amount of time in the Inactive Duration field.
Inactive Duration	Specify the inactive duration in days. The range is from 1 to 90 days; the Cisco default is 45 days. A value of 0 implies the inactive duration is disabled and invalid.

Password Tab

The Password tab allows you to specify user password security parameters.

Table B-109 Field Descriptions for the Password Tab

Field	Description
Password Change	
Prevent Reusing Last	Prevents setting a CTC user's current password to one of the most recent passwords. You can set the number of most recent passwords that cannot be reused. The range is from 1 to 10.
Disable Password Flipping	If checked, users are not allowed to change passwords for the number of days specified in the Can Change Password After field.
Can Change Password After	Enter the number of days that must elapse before the user can change the password.
Force Password Change After Assigned	If checked, during the first successful login, the user is forced to change the password.
Password Difference	Allows SuperUsers to specify the number of characters by which the new password of a user must differ from the old password, while performing a password change. The default value is 1; the range is from 1 to 5 characters.
Password Aging	
Enable Password Aging	Check this check box to enable password aging.
Aging Period	Enter the aging period, in days, for Retrieve, Maintenance, Provisioner, and SuperUser CTC users. After the aging period expires, CTC users are forced to change their passwords.
Warning Period	Enter the warning period, in days, for Retrieve, Maintenance, Provisioner, and SuperUser CTC users. After the warning period expires, CTC users are warned that their passwords will soon expire.

Access Tab

The Access tab allows you to configure LAN and shell access to the NE.

Table B-110 Field Descriptions for the Access Tab

Field	Description
Access	
LAN Access	Specify the type of LAN access allowed. Values allowed for the ONS 15310 MA SONET are Front Only, Backplane Only, Front and Backplane, or No LAN Access. **Note** After the LAN access to the backplane is set, the Prime Optical client is unusable for 4 to 5 minutes.
Restore Timeout	This time period begins if *No LAN Access* is selected and all DCC connections are lost. If the time expires before a DCC is restored, LAN access is restored so that the node is not isolated. When the DCC comes back, LAN access returns to its specified settings. The range is from 0 (never) to 60 minutes; the Cisco default is 5 minutes.
Serial Craft Access	
Enable Craft Port A	Check this check box to enable craft port A.
Enable Craft Port B	Check this check box to enable craft port B.
Shell Access	
Access State	Select the Shell access state from the drop-down list. You can select Disable, Non-secure, or Secure.

Table B-110 Field Descriptions for the Access Tab (continued)

Field	Description
SSH Port	Indicates the SSH port number that will be used.
SFTP Port	Indicates the SFTP port number.
Telnet Port	This is enabled if you selected the Non-secure access state. Enter the Telnet port number that will be used.
Use Standard Telnet Port	Check this check box to indicate that the standard Telnet port will be used.
Enable Shell Password	Indicates whether or not the Shell password is enabled. **Note** You cannot enable the Shell password in Prime Optical. Enabling and providing a Shell password is currently done in CTC.
TL1 Access	
Access State	Select the TL1 access state from the drop-down list. You can select Disable, Non-secure, or Secure.
SNMP Access	
Access State	Select the SNMP access state from the drop-down list. You can select either Disable or Non-secure.
Other	
PM Clearing Privilege	Select the users privilege that allows clearing PM statistics for the NE.
EMS Access	
Access State	Select the EMS access state from the drop-down list. You can select either Non-secure or Secure.
CORBA Listener Port	Select the port numbers for the CTX CORBA (IIOP) listener port and the CTX CORBA (SSLIOP) listener port. Select one of the following radio buttons: • Default-Fixed—Assigns a default port number. • Standard Constant—The port number for the CTX CORBA (IIOP) listener port is 683. The port number for the CTX CORBA (SSLIOP) listener port is 684. • Other Constant—When selected, enter the port number that will be used.

RADIUS Server Tab

The RADIUS Server tab allows you to configure, create, modify, and delete RADIUS servers for the ONS 15310 MA SONET.

Table B-111 Field Descriptions for the RADIUS Server Tab

Field	Description
Enable RADIUS Authentication	Check this check box to enable RADIUS authentication.
Enable RADIUS Accounting	Check this check box to enable RADIUS accounting. This is enabled if the Enable RADIUS Authentication check box is checked.
Enable the Node as the Final Authenticator When no RADIUS Server is Reachable	Select a row from the RADIUS Servers in Order of Authentication table; then, check this check box. This indicates that the RADIUS server that you selected will be the final authenticator when there are no more RADIUS servers that can be reached.

Table B-111 Field Descriptions for the RADIUS Server Tab (continued)

Field	Description
Create button	Click **Create** to create a RADIUS server. See Creating a RADIUS Server, page 8-46.
Edit button	Click **Edit** to modify an existing RADIUS server's information. See Modifying a RADIUS Server, page 8-46.
Delete button	Click **Delete** to delete an existing RADIUS server. See Deleting a RADIUS Server, page 8-46.
Move Up/Move Down buttons	Click **Move Up** or **Move Down** to reorder the list of RADIUS servers in the RADIUS Servers in Order of Authentication table.
RADIUS Servers in Order of Authentication	
IP Address	Displays the IP address of the RADIUS server.
Shared Secret	Displays a text string that serves as a password between a RADIUS client and RADIUS server.
Authentication Port	Displays the authentication port number of the RADIUS server. Default access is through port number 1812.
Accounting Port	Displays the accounting port number of the RADIUS server. Default access is through port number 1813.

Legal Disclaimer Tab

The Legal Disclaimer tab allows you to edit the NE's advisory message and preview the disclaimer.

Table B-112 Field Descriptions for the Legal Disclaimer Tab

Tab	Description
Advisory Message	The existing message is a default, noncustomer-specific disclaimer. If you want to edit this statement with specifics for your company, you can change the text. You can also use the following HTML commands to format the text: • ****—Begins boldface font • ****—Ends boldface font • ** **—Aligns type in the center of the window • ** **—Ends the center alignment • **<font=*n*, where *n* = point size>**—Changes the font to the new size • ****—Ends the font size command • **<p>**—Creates a line break • **_{**—Begins subscript • **}**—Ends subscript • **^{**—Begins superscript • **}**—Ends superscript • **<u>**—Starts underline • **</u>**—Ends underline
Preview	Allows you to view the advisory message before saving it.

Alarm

The Alarm Properties pane allows you to change default alarm severities by creating unique alarm profiles for individual ONS 15310 MA SONET nodes. The Alarm Properties pane contains the following tabs:

- Profile Tab, page B-82
- Alarm Behavior Tab, page B-82

Note The Alarm Properties pane might contain default alarm profile entries for cards that are not supported by the ONS 15310 MA SONET. Therefore, you might see some alarms that do not apply to the NE type that you are provisioning.

Profile Tab

The Profile tab allows you to select, create, or delete alarm profiles.

Table B-113 Field Descriptions for the Profile Tab

Field	Description
Alarm Profile Name	Choose an alarm profile for the NE from the drop-down list. Click **Create** to create a new alarm profile for the NE. Click **Delete** to delete an alarm profile from the NE.
Condition	Displays the alarm condition.
Severity	Displays the alarm severity.

Alarm Behavior Tab

The Alarm Behavior tab allows you to change default alarm severities by creating unique alarm profiles.

Table B-114 Field Descriptions for the Alarm Behavior Tab

Field	Description
Alarm Profile	Choose a global alarm profile for the NE from the drop-down list.
Suppress Alarms	If checked, all alarms are suppressed.
Slot Number	Displays the location of the module.
Equipment Type	Displays the type of module in the slot.
Profile	Choose an alarm profile for the slot from the drop-down list.
Suppress Alarms	Indicates whether or not the alarms for a particular card are suppressed. If checked, all alarms are suppressed for the port.

XC Utilization

The XC Utilization Properties pane allows you to view a summary of the percentage of XTC cross-connect resources used by circuits that traverse or terminate at an ONS 15310 MA SONET.

Table B-115 Field Descriptions for the XC Utilization Properties Pane

Field	Description
STS-1 Matrix	Provides the percentage of the XC cross-connect STS-1 paths resources that are used.
VT1.5 Matrix Ports	Provides the percentage of the XTC cross-connect VT matrix ports that are used. Each port is one STS in size, and each can transport 28 VT1.5s. 24 VT matrix ports are available.
VT1.5 Matrix	Provides the percentage of the VT matrix resources that are used. 672 are available, which is the number of VT matrix ports (24) multiplied by the number of VT1.5s in an STS (28).

OSI

The OSI Properties pane allows you to provision ONS 15310 MA SONET Open System Interconnection (OSI) parameters. The Properties pane contains the following tabs:

- Main Setup Tab, page B-83
- TARP-Config Tab, page B-84
- TARP-TDC Tab, page B-85
- TARP-MAT Tab, page B-85
- Routers-Setup Tab, page B-86
- Subnets Tab, page B-86
- Tunnels Tab, page B-87
- IS-IS RIB Tab, page B-88
- ES-IS RIB Tab, page B-88

Main Setup Tab

The Main Setup tab allows you to provision the OSI Network Entity Title (NET) address and the OSI routing mode.

Table B-116 Field Descriptions for the Main Setup Tab

Field	Description
Main Network Entity Title	Displays the node NET. The NET is used in OSI networks to identify the node to the end system (ES) or intermediate system (IS).
End System	Provisions the node as an OSI end system (ES). ESs send end system hello (ESH) messages regularly to announce their presence to neighboring ISs and ESs. For the ONS 15310 MA SONET, End System is the Cisco default.
Intermediate System Level 1	Provisions the node as an OSI intermediate system (IS). ISs send intermediate system hello (ISH) messages regularly to announce their presence to neighboring ISs and ESs.
Intermediate System Level 1/Level 2	The ONS 15310 MA SONET performs all IS functions. It communicates with other IS and ES nodes within an OSI area and broadcasts ISHs to IS nodes in other areas to which it is connected.
Node Routing Mode	
L1 LSP Buffer Size	Sets the Level 1 Link State Protocol (LSP) data unit buffer size. The Cisco default is 512.
L2 LSP Buffer Size	Sets the Level 2 LSP data unit buffer size. The Cisco default is 512.

TARP-Config Tab

The TARP-Config tab allows you to provision the TID Address Resolution Protocol (TARP). TARP is used when TL1 TIDs must be translated to an NSAP address. During the TID-to-NSAP translation, the TID is mapped to a NET; then, the NSAP is derived from the NET based on the NSAP selector value.

Table B-117 Field Descriptions for the TARP-Config Tab

Field	Description
TARP PDUs L1 Propagation	If checked (default), TARP Type 1 PDUs received by the node that are not excluded by the loop detection buffer are propagated to other NEs within the OSI Level 1 area. Type 1 PDUs request a protocol address that matches a target TID within a Level 1 routing area. The propagation does not occur if the NE is the target of the Type 1 PDU and the PDUs are not propagated to the NE from which the PDU was received. **Note** This parameter is not used when the node is set to End System.
TARP PDUs Origination	If checked (default), the node performs all TARP configuration functions, including: • TID-to-NSAP resolution requests • NSAP-to-TID requests • TARP address changes **Note** TARP Echo and NSAP to TID are not supported.
L2 TARP Data Cache	If checked (default), the TIDs and NSAPs are added to the TDC before the node propagates the requests to other NEs. **Note** This parameter is designed for IS Level 1/Level 2 nodes that are connected to other IS Level 1/Level 2 nodes. Enabling the parameter for IS Level 1 nodes is not recommended.
LAN TARP Storm Suppression	If checked (default), enables the TARP storm suppression to prevent redundant TARP PDUs from being propagated across the network.
Type 4 PDU Delay	Sets the amount of time that will pass before the Type 4 PDU is generated. The Cisco default value is 60 seconds; the range is from 0 to 255 seconds.
TARP PDUs L2 Propagation	If checked (default), TARP Type 2 PDUs received by the node that are not excluded by the loop detection buffer are propagated to other NEs within the OSI Level 2 area. Type 2 PDUs request a protocol address that matches a target TID within a Level 2 routing area. The propagation occurs if the NE is the target of the Type 2 PDU and the PDUs are not propagated to the NE from which the PDU was received.
L1 TARP Data Cache	If checked, the node maintains a TARP data cache (TDC). The TDC is a database of TID-to-NSAP pairs created from TARP Type 3 PDUs received by the node. TARP Type 3 PDUs are responses to Type 1 and Type 2 PDUs and modified by TARP Type 4 PDUs (TID-to-NSAP updates or corrections).
LDB	If checked, enables the TARP loop detection buffer (LDB). The LDB prevents TARP PDUs from being sent more than once on the same subnet.
Send Type 4 PDU on Startup	If checked, a TARP Type 4 PDU is originated during the initial ONS 15310 MA SONET startup. Type 4 PDUs indicate that a TID or NSAP change has occurred at the NE. This option is disabled by default.

Table B-117 Field Descriptions for the TARP-Config Tab (continued)

Field	Description
Timers	
LDB Entry	Sets the TARP LDB timer. The LDB buffer time is assigned to each LDB entry for which the TARP sequence number is zero. The Cisco default is 5 minutes; the range is from 1 to 10 minutes.
T1 Timer	Sets the amount of time to wait for response to a Type 1 Request PDU. Type 1 requests seek a specific NE TID within an OSI Level 1 area. The Cisco default is 15 seconds; the range is from 0 to 3600 seconds.
T3 Timer	Sets the amount of time to wait for an address resolution request. The Cisco default is 40 seconds; the range is from 0 to 3600 seconds.
LDB Flush	Sets the frequency period for flushing the LDB. The Cisco default is 5 minutes; the range is from 0 to 1440 minutes.
T2 Timer	Sets the amount of time to wait for a Type 2 Request PDU. TARP Type 2 requests seek a specific NE TID within an OSI Level 1 area. The Cisco default is 25 seconds; the range is from 0 to 3600 seconds.
T4 Timer	Sets the amount of time to wait for an error recovery. The timer begins after the T2 timer expires without successfully finding the NE TID. The Cisco default is 20 seconds; the range is from 0 to 3600 seconds.

TARP-TDC Tab

Table B-118 Field Descriptions for the TARP-TDC Tab

Field	Description
Add Static Entry button	Click **Add Static Entry** to statically link a TID to an NSAP or NET.
Delete Selected Entry button	Click **Delete Selected Entry** to delete the selected TID-to-NSAP/NET static entry.
TID to NSAP button	Click **TID to NSAP** to query the network for an NSAP that matches a TID.
Flush Dynamic Entries button	Click **Flush Dynamic Entries** to delete all dynamically generated TDC entries.
TID	Target ID that is statistically linked to an NSAP or NET. For ONS nodes, the TID is the node name.
NSAP/NET	The NSAP that is statistically linked to the TID.
Type	Indicates how the TARP data cache entry was created. It can be either: • Dynamic—The entry was created through the TARP propagation process. • Static—The entry was manually created and is a static entry.

TARP-MAT Tab

The TARP-MAT tab allows you to manually provision a TARP adjacency.

Table B-119 Field Descriptions for the TARP-MAT Tab

Field	Description
Level	Sets the TARP Type Code that will be sent. • Level 1—Indicates that the manual area adjacency is within the same area as the node. The entry generates Type 1 PDUs. • Level 2—Indicates that the manual area adjacency is in an area different from that of the node. The entry generates Type 2 PDUs.
NSAP	The NSAP address of the node at the other end of the TARP manual adjacency.
Add button	Click **Add** to create a TARP manual area adjacency.
Remove button	Click **Remove** to delete the selected TID-to-NSAP/NET static entry.

Routers-Setup Tab

The Routers-Setup tab allows you to view and manage OSI virtual routers.

Table B-120 Field Descriptions for the Routers-Setup Tab

Field	Description
Router Number	Displays the virtual router number. Only one router is available on the ONS 15310 MA SONET.
System ID	Displays the NSAP system ID of the virtual router. For the primary router (Router 1), $n = 0$.
Status	Indicates the virtual router status. Select Enabled or Disabled from the drop-down list. **Note** Router 1 must be enabled before additional routers can be enabled.
Primary Area Address	Indicates the primary manual area address. For Router 1, this is the main NET for the node; that is, the NSAP without the system ID and selector (set to 00) fields.
Manual Area Address 1	Indicates the address of any additional manual areas that are created. **Note** An OSI area allows up to two additional manual areas in addition to the primary manual area.
Manual Area Address 2	Indicates the address of any additional manual areas that are created. **Note** An OSI area allows up to two additional manual areas in addition to the primary manual area.
Edit button	Click **Edit** to modify the address parameters.

Subnets Tab

The Subnets tab allows you to view and manage OSI subnetwork point-of-attachment parameters. The parameters are initially provisioned when you enable a subnet on an SDCC, LDCC, GCC, OSC, or LAN interface.

Table B-121 Field Descriptions for the Subnets Tab

Field	Description
Enable LAN Subnet button	*Router 1 only.* Enables OSI over the LAN; that is, it activates the IS-IS protocol on the LAN so OSI traffic is enabled on the LAN.
Edit button	Click **Edit** to modify the subnet parameters.

Table B-121 Field Descriptions for the Subnets Tab (continued)

Field	Description
Disable LAN Subnet button	*Router 1 only.* Disables OSI over the LAN if it has been enabled.
Slot/Port	The subnet slot and port.
Router Number	The OSI virtual router where the subnet (SDCC, LDCC, GCC, or OSC) is provisioned.
Type	The interface where the subnet is provisioned: SDCC, LDCC, GCC, OSC, or LAN.
Protocol	The data link protocol that is provisioned for the subnet. It can be: • Point to Point Protocol (PPP) • Link Access Protocol on the D channel (LAP-D) • 802.3 for LAN subnets
ISH	The intermediate system hello (ISH) PDU propagation frequency. Intermediate system NEs send ISHs to other ESs and ISs to inform them about the NETs they serve. The Cisco default is 10 seconds; the range is from 10 to 1000 seconds.
ESH	The end system hello (ESH) PDU propagation frequency. End system NEs transmit ESHs to inform other ESs and ISs about the NSAPs they serve. The Cisco default is 10 seconds; the range is from 10 to 1000 seconds.
IIH	The intermediate system-to-intermediate system hello (IIH) PDU propagation frequency. The IS-IS hello PDUs establish and maintain adjacencies between ISs. The Cisco default is 3 seconds; the range is from 1 to 600 seconds.
DIS Priority	The designated intermediate system (DIS) priority. In IS-IS networks, one router is elected as the DIS. For Cisco routers, the DIS priority is 64.
IS-IS Cost	The cost for sending packets on the subnet. This is used by OSPF routers to calculate the shortest path. The Cisco default value is 20.

Tunnels Tab

The Tunnels tab allows you to view, create, edit, and delete Generic Routing Encapsulation (GRE) and Cisco tunnels. GRE tunnels encapsulate one network protocol for transfer across another network layer. Within a mixed TCP/IP and OSI network, GRE tunnels tunnel IP traffic over an OSI NE and OSI traffic over an IP NE.

Table B-122 Field Descriptions for the Tunnels Tab

Field	Description
IP Address	Displays the IP address of the GRE destination Prime Optical or CTC computer.
Netmask Address	Displays the IP address subnet mask of the destination Prime Optical or CTC computer.
NSAP Address	The destination NE NSAP address. The NSAP selector (last two NSAP characters) must be 2f (GRE tunnel) or cc (proprietary Cisco tunnel), depending on which tunnel type you want to create. The Cisco proprietary tunnel is slightly more efficient than the GRE tunnel because it does not add an encapsulation header for each IP packet, while the GRE tunnel adds a small header to the packets. The two tunnel types are incompatible. **Note** Most Cisco routers support the Cisco tunnel, while only a few support both GRE and Cisco IP tunnels.

Table B-122 Field Descriptions for the Tunnels Tab (continued)

Field	Description
OSPF Metric	Displays the cost for sending packets across the GRE tunnel. Cost is used by OSPF routers to calculate the shortest path.
Create button	Click **Create** to create a new GRE tunnel route.
Edit button	Click **Edit** to edit an existing GRE tunnel.
Delete button	Click **Delete** to delete an existing GRE tunnel.

IS-IS RIB Tab

The IS-IS RIB tab allows you to view the intermediate system-to-intermediate system (IS-IS) protocol routing information base (RIB). IS-IS is an OSI link-state hierarchical routing protocol that floods the network with link-state information that enables the NEs to build a complete and consistent picture of a network topology.

Table B-123 Field Descriptions for the IS-IS RIB Tab

Field	Description
Router Number	Displays the virtual router number. Only one router is available on the ONS 15310 MA SONET.
Subnet Type	Indicates the OSI subnetwork point-of-attachment type used to access the destination address. It includes SDCC, LDCC, GCC, OSC, and LAN.
Destination Address	Displays the Network Service Access Point (NSAP).
MAC Address	Displays the NE's MAC address for destinations that are accessed by the LAN subnets.

ES-IS RIB Tab

The ES-IS RIB tab allows you to view the end system-to-intermediate system (ES-IS) protocol RIB. ES-IS is an OSI protocol that defines how end systems (hosts) and intermediate systems (routers) learn about each other.

Table B-124 Field Descriptions for the ES-IS RIB Tab

Field	Description
Router Number	Displays the virtual router number. Only one router is available on the ONS 15310 MA SONET.
Subnet Type	Indicates the OSI subnetwork point-of-attachment type used to access the destination address. It includes SDCC, LDCC, GCC, OSC, and LAN.
Destination Address	Displays the NSAP of the destination ES.
MAC Address	Displays the NE's MAC address for destinations that are accessed by the LAN subnets.

Alarm Extenders

The Alarm Extenders Properties pane allows you to view external alarm information and create custom alarm types. The Alarm Extenders Properties pane contains the following tabs:

- External Alarms Tab, page B-89
- External Controls Tab, page B-89

- User-Defined Alarms Tab, page B-89

External Alarms Tab

The External Alarms tab allows you to view and update external alarm information.

Table B-125 Field Descriptions for the External Alarms Tab

Field	Description
Input Number	The alarm input number.
Enabled	Check to activate the fields for the alarm input number.
Alarm Type	Choose an alarm type from the provided list.
Severity	Choose a severity from the list.
Raised When	Choose the contact condition that will trigger the alarm in CTC.
Virtual Wire	To assign the external device to a virtual wire, choose a virtual wire from the list, or choose None if no assignment is required.
Description	Displays a default description for every external alarm that is enabled.
Raised	Indicates whether an alarm has been raised.
Contact Status	Indicates the current status of the contact.

External Controls Tab

The External Controls tab allows you to view and update external controls.

Table B-126 Field Descriptions for the External Controls Tab

Field	Description
Control Number	The control number.
Enabled	Check to activate the fields for the control number.
Control Type	Choose a control type from the provided list.
Trigger Type	Choose a trigger type: a local minor, major, or critical alarm; a remote minor, major, or critical alarm; or a virtual wire activation.
Description	Enter a description.
Current State	The current state of the control.
Auto State	The auto state of the control.
Contact Setting	The current contact setting.

User-Defined Alarms Tab

The User-Defined Alarms tab allows you to view, add, and delete custom alarm types on the ONS 15310 MA SONET.

Table B-127 Field Descriptions for the User-Defined Alarms Tab

Field	Descriptions
Alarm Types	Lists the user-defined alarm types that have been created on the ONS 15310 MA SONET. You can create up to 50 custom environmental alarms, which are reported in the Condition column in the Alarm Log and Alarm Browser windows.
Add	Click the **Add** button to add a new custom alarm type. Enter a unique alarm type name that contains 20 characters or fewer. Only the following characters are valid: 0-9, A-Z, a-z, and hyphen (-).
Delete	Click the **Delete** button to delete an existing alarm type.

Orderwire

Orderwire allows you to plug a phoneset into a node and communicate with others working at other nodes or other facility equipment. The orderwire is a pulse code modulation (PCM) encoded voice channel that uses E1 or E2 bytes in section/line overhead. The AIC allows simultaneous use of both local (section overhead signal) and express (line overhead channel) orderwire channels on a SONET ring or particular optics facility. Local orderwire also allows communication at regeneration sites when the regenerator is not a Cisco device.

Table B-128 Field Descriptions for the Orderwire Properties Pane

Field	Description
Buzzer	
Buzzer	The Alarm Interface Controller (AIC) supports a call button on the module front panel which, when pressed, causes all AICs on the orderwire subnetwork to ring. The ringer/buzzer resides on the AIC. The AIC also has a ring LED that mimics the AIC ringer. It flashes when any call button is pressed on the orderwire subnetwork. The call button and ringer LED allow a remote craftsperson to get the attention of craftspeople across the network. To enable the audible alert (buzzer) for the orderwire, check the **Buzzer** check box.
2-Wire Level	
RX (dBm)	If needed, adjust the RX dBm by moving the slider to the right or left for the two-wire headset that you will use. In general, you should not need to adjust the dBm.
TX (dBm)	If needed, adjust the TX dBm by moving the slider to the right or left for the two-wire headset that you will use. In general, you should not need to adjust the dBm.

Note See Table 1-22 on page 1-47 for descriptions of actions that you can perform using the buttons at the bottom of the window.

ONS 15310 MA SDH NE Explorer

When you choose **Configuration > NE Explorer** for the ONS 15310 MA SDH, the window that Prime Optical displays consists of a tree on the left side and a properties pane on the right. The tree provides a hierarchical view and alarm status of the NE's physical shelves and slots. The properties pane shows information about the selected entity. See Node Properties Pane—ONS 15310 MA SDH, page B-91 for more information.

Note If CTC is launched from the web browser for an ONS 15310 MA SDH node, the CTC GUI might look different from when it is launched from Prime Optical. This discrepancy occurs because the latest version of CTC (for NE releases supported by Prime Optical) is packaged with Prime Optical. If launched from a browser, the CTC software is retrieved from the NE itself, which might be a version different from that packaged with Prime Optical.

When an NE Explorer is in autorefresh mode, all entity values that you are editing are automatically refreshed. To enable autorefresh, click the Refresh Data button in the NE Explorer.

Caution You will lose all of your changes unless you click the Apply button.

Node Properties Pane—ONS 15310 MA SDH

The node properties pane displays information about the ONS 15310 MA SDH slot that is selected in the NE Explorer tree. The properties pane contains the following tabs, some of which apply only to a specific NE version:

- Shelf View, page B-91
- General, page B-92
- Identification, page B-92
- Network, page B-93
- DCC, page B-100
- Timing, page B-104
- Protection, page B-107
- NE Defaults, page B-108
- Security, page B-108
- Alarm, page B-113
- XC Utilization, page B-113
- OSI, page B-114
- Alarm Extenders, page B-119
- Orderwire, page B-121

Shelf View

The Shelf View Properties pane displays a graphic of the ONS 15310 MA SDH that is selected in the NE Explorer tree. Moving the mouse pointer over the graphic of the NE, its shelves, slots, or cards displays the current alarms for the highlighted item. Double-clicking a slot or card displays the slot or card in the properties pane. The right-click menu allows you to reset, delete, or change the card. For unprovisioned slots, the right-click menu allows you to add a card.

General

The General Properties pane displays identification information, voltage thresholds, and multishelf configurations for the ONS 15310 MA SDH NE.

Table B-129 Field Descriptions for the General Properties Pane

Field	Description
Identification Tab	
NE ID	Displays the ID of the NE from the Domain Explorer.
NE Model	Displays the NE model type.
Software Version	Displays the current running version of the system software.
Contact	Displays the name and phone number of the node contact person.
Description	Enter a description of the NE.
System Description	Displays the NE type and the version of the system software.
Voltage/Temperature Tab	
Voltage	Displays the voltage (in millivolts) of the shelf that corresponds to the power supply.
Temperature	Displays the temperature (in degrees Celsius) of the shelf.

Identification

The Identification Properties pane displays information about the NE.

Table B-130 Field Descriptions for the Identification Properties Pane

Field	Description
NE ID	Displays the ID of the NE from the Domain Explorer.
Description	Displays the description of the NE from the Domain Explorer.
NE Model	Displays the NE model type.
Software Version	Displays the current running version of the system software.
Contact	Displays the name of the node contact person and the phone number.
System Description	Displays a description of the NE.
SNTP Settings	
Use NTP/SNTP Server	If checked, CTC uses a Simple Network Time Protocol (SNTP) server to set the date and time of the node. Using an SNTP server ensures that all ONS 15310 MA SDH network nodes use the same date and time reference. The server synchronizes the node's time after power outages or software upgrades. If you check the **Use NTP/SNTP Server** check box, enter the server's IP address in the next field. If you do not use an SNTP server, complete the Time and Time Zone fields. The ONS 15310 MA SDH will use these fields for alarm dates and times.
SNTP Server	Displays the SNTP server IP address.
Location	
Latitude	Allows you to set the latitude of the NE. Select **North** or **South** from the drop-down list; then, enter the degrees and minutes (or click the up and down arrows to increase or decrease each by 1 unit).

Table B-130 Field Descriptions for the Identification Properties Pane (continued)

Field	Description
Longitude	Allows you to set the longitude of the NE. Select **East** or **West** from the drop-down list; then, enter the degrees and minutes (or click the up and down arrows to increase or decrease each by 1 unit).
Date and Time	
Time	Displays the NE date and time.
Time Zone	Displays the time zone where the NE is located.
Use Daylight Savings Time	If checked, Daylight Savings Time is observed.
AIS-V Insertion on STS-1 Signal Degrade - Path	
Insert AIS-V on STS-1 SD-P	If checked, the NE inserts an AIS-V signal when it detects an STS-1 signal degrade.
SD-P BER	Select the signal degrade path bit error rate for AIS-V insertion.

Network

The Network Properties pane displays information about the NE network address. The Network Properties pane contains the following tabs:

- Address Tab, page B-93
- Static Routes Tab, page B-94
- OSPF Tab, page B-94
- OSPF Area Range Tab, page B-95
- OSPF Virtual Links Tab, page B-96
- SNMP Tab, page B-96
- Firewall/Proxy Tab, page B-97
- RIP Routing Table Tab, page B-97
- RIP Tab, page B-97
- Routing Table Tab, page B-98
- Proxy Tunnels Tab, page B-98
- Firewall Tunnels Tab, page B-99
- FTP Hosts Tab, page B-99

Address Tab

The Address tab allows you to view and change information about the NE network address.

Table B-131 Field Descriptions for the Address Tab

Field	Description
IP Address	Displays the IP address of the NE.
Default Router	Displays the IP address of the default router.
Subnet Mask	Displays the subnetwork mask ID of the NE.

Table B-131 Field Descriptions for the Address Tab (continued)

Field	Description
MAC Address	Displays the ONS 15310 MA SDH address as it is identified on the IEEE 802 MAC layer.
Forward DHCP Requests	If checked, forwards Dynamic Host Configuration Protocol (DHCP) requests to the IP address entered in the DHCP Server field. When the Forward DHCP Requests check box is unchecked, the DHCP Server field is display-only.
DHCP Server	Displays the IP address of the DHCP server.
IPv6 Config	
Enable IPv6	If checked, allows you to configure the node to use the IPv6 protocol and to assign an IPv6 address to the node.
IPv6 Address	Enter the IPv6 address of the node.
Default IPv6 Router	Enter the IPv6 default router of the node.
IPv6 Subnet Mask	Enter the IPv6 subnetwork mask length.

Static Routes Tab

The Static Routes tab allows you to view information about Prime Optical and ONS 15310 MA SDH connectivity and create or delete static routes.

Table B-132 Field Descriptions for the Static Routes Tab

Field	Description
Destination IP	Displays the IP address of the computer running Prime Optical.
Subnet Mask	Displays the subnetwork mask.
Next Hop	Displays the IP address of the router port or the node IP address if the Prime Optical computer is connected to the node directly.
Cost	Displays the number of hops between the ONS 15310 MA SDH and the computer.

OSPF Tab

The OSPF tab displays OSPF information. OSPF is a link-state Internet routing protocol.

Table B-133 Field Descriptions for the OSPF Tab

Field	Description
Slot	Displays the slot number.
Port	Displays the port number.
DCC OSPF Area ID	Displays the number that identifies the ONS 15310 MA SDH as a unique OSPF area. The OSPF area number can be from 0.0.0.0 to 255.255.255.255. The number must be unique to the LAN OSPF area.
RS-DCC Metric	Sets a cost for sending packets across the Regenerator Section Data Communications Channel (RS-DCC), which is used by OSPF routers to calculate the shortest path. This value should always be higher than the LAN metric. This value is normally unchanged.

Table B-133 Field Descriptions for the OSPF Tab (continued)

Field	Description
MS-DCC Metric	Sets a cost for sending packets across the Multiplex Section Data Communications Channel (MS-DCC), which is used by OSPF routers to calculate the shortest path. This value should always be higher than the LAN metric. This value is normally unchanged.
OSPF on LAN	
OSPF Active on LAN	If checked, enables ONS 15310 MA SDH OSPF topology to be advertised to OSPF routers on the LAN. Enable this field on ONS 15310 MA SDH NEs that directly connect to OSPF routers.
LAN Port Area ID	Displays the OSPF area ID for the router port where the ONS 15310 MA SDH is connected. (This number is different from the DCC OSPF area ID.)
Router Priority	Displays the designated router for a subnet.
Dead Interval	Displays the number of seconds that will pass while an OSPF router's packets are not visible before its neighbors declare the router down. Forty seconds is the Cisco default.
Retransmit Interval	Displays the time that will elapse before a packet is resent. Five seconds is the Cisco default.
Hello Interval	Displays the number of seconds between OSPF hello packet advertisements sent by OSPF routers. Ten seconds is the Cisco default.
Transit Delay	Displays the service speed. One second is the Cisco default.
LAN Metric	Displays a cost for sending packets across the LAN. This value should always be lower than the DCC metric. Ten is the Cisco default.
OSPF Authentication	
Authentication Type	Displays Simple Password if the router where the ONS 15310 MA SDH is connected uses authentication. Otherwise, it displays No Authentication.
Authentication Key	Displays the OSPF key (password) if authentication is enabled.
Confirm Authentication Key	Retype the authentication key to confirm it.

OSPF Area Range Tab

The OSPF Area Range tab allows you to view information about OSPF area ranges and create or delete area ranges.

Table B-134 Field Descriptions for the OSPF Area Range Tab

Field	Description
Range Address	Displays the area IP address for the ONS 15310 MA SDH NEs that reside within the OSPF area. For example, if the ONS 15310 MA SDH OSPF area includes nodes with IP addresses 10.10.20.100, 10.10.30.150, 10.10.40.200, and 10.10.50.250, the range address would be 10.10.0.0.
Range Area ID	Displays the OSPF area ID for the ONS 15310 MA SDH NEs. This is either the ID in the DCC OSPF Area ID field or the ID in the LAN Port Area ID field.
Mask Length	Displays the subnet mask length.
Mask	Displays the subnet mask IP address.
Advertise	Indicates whether the OSPF range table is advertised.

OSPF Virtual Links Tab

The OSPF Virtual Links tab allows you to view information about OSPF virtual links and create or delete virtual links.

Note You cannot create a new virtual link unless OSPF is active on the LAN.

Table B-135 Field Descriptions for the OSPF Virtual Links Tab

Field	Description
Neighbor	Displays the router ID of the Area 0 router.
Transit Delay	Displays the service speed, in seconds. One second is the Cisco default.
Retransmit Interval	Displays the time that will elapse before a packet is resent. Five seconds is the Cisco default.
Hello Interval	Displays the number of seconds between OSPF hello packet advertisements sent by OSPF routers. Ten seconds is the Cisco default.
Dead Interval	Displays the number of seconds that will pass while the packets of an OSPF router are not visible before its neighbors declare the router down. Forty seconds is the Cisco default.
Authentication Type	Displays the authentication type.
Authentication Key	Displays the authentication key.

SNMP Tab

The SNMP tab allows you to view SNMP information and create or delete SNMP trap destinations.

Table B-136 Field Descriptions for the SNMP Tab

Field	Description
Allow SNMP Set	If checked, allows you to use SNMP management software with the ONS 15310 MA SDH.
Allow SNMP Proxy	If checked, allows you to configure the ONS 15310 MA SDH to proxy SNMP calls.
IP Address	The IP address of the NMS.
Community Name	The SNMP community name.
UDP Port	The UDP port for SNMP. The Cisco default UDP port is 162.
Trap Version	The trap version, either SNMP version 1 or version 2. See your NMS documentation to determine whether to use SNMP version 1 or version 2.
Relay A IP Address	The first ONS 15310 MA SDH to relay traps through. The IP address is appended to the base community string to tell the first NE the IP address and the port to forward the trap to. The second NE recognizes the IP address and strips it from the community string before forwarding the trap.
Relay A Community Name	The community name for the relay A node to use in the trap when forwarding it.
Relay B IP Address	The second ONS 15310 MA SDH to relay traps through.
Relay B Community Name	The community name for the relay B node to use in the trap when forwarding it.
Relay C IP Address	The third ONS 15310 MA SDH to relay traps through.
Relay C Community Name	The community name for the relay C node to use in the trap when forwarding it.

Firewall/Proxy Tab

The Firewall/Proxy tab allows you to use an NE as a proxy server or as a firewall.

Table B-137 Field Descriptions for the Firewall/Proxy Tab

Field	Description
Gateway Settings	
Enable Proxy Server on Port	If checked, the ONS 15310 MA SDH serves as a proxy for connections between the Prime Optical server and ONS 15310s that are DCC-connected to the proxy ONS 15310 MA SDH. The Prime Optical server establishes connections to DCC-connected nodes through the proxy node. The Prime Optical server can connect to nodes that it cannot directly reach from the host on which it runs. The proxy server port number (display-only) is shown following the Enable Proxy Server on Port field. The proxy server uses port 1080. If checked, the following radio buttons are enabled: • End Network Element (ENE)—Enables the ONS 15310 MA SDH to proxy as an ENE. Note that an alternate expansion for ENE is *external network element*. • Gateway Network Element (GNE)—Enables the ONS 15310 MA SDH to proxy as a GNE. • Proxy-only—Enables proxy only. If unchecked, the node does not proxy.

RIP Routing Table Tab

The RIP Routing Table tab allows you to view the Routing Information Protocol (RIP) routing table.

Table B-138 Field Descriptions for the RIP Routing Table Tab

Field	Description
Destination	Displays the IP address of the destination network or host.
Mask	Displays the subnet mask used to reach the destination network or host.
Gateway	Displays the IP address of the gateway used to reach the destination network or host.
Cost	Displays the hop count metric. The valid range is from 1 to 15.

RIP Tab

The RIP tab allows you to view and configure RIP parameters.

Note
- When you enable RIP, you must wait for approximately one minute for the default RIP address summary to become visible.
- When you disable RIP on the NE, all summary address entries in the Summary Address table are deleted.

Table B-139 Field Descriptions for the RIP Tab

Field	Description
RIP Active	Check this check box to enable RIP. Uncheck it to disable RIP. **Note** Checking the RIP Active check box and clicking the **Apply** button does not enable RIP. Instead, you must check the RIP Active check box, click the **Create** button, and use the Create RIP Address Summary dialog box to create a new RIP address. For details, see Using RIP, page 5-8.
RIP Type	Select RIP version 1.0 or RIP version 2.0.
Metric	Enter the hop count metric. The valid range is from 1 to 15.
Authentication Type	Select the authentication type.
Authentication Key	Enter the authentication key (password) if the authentication type is Simple Password.
Confirm Authentication Key	Retype the authentication key to confirm it.
RIP Address Summary	• Summary Address—Displays the summary address. • Mask Length—Displays the subnet mask length. • Cost—Displays the hop count metric. The valid range is from 1 to 15.
Create button	Click **Create** to create a new RIP address. See Using RIP, page 5-8.
Delete button	Click **Delete** to delete an existing RIP address.

Routing Table Tab

The Routing Table tab allows you to view the OSPF routing table.

Table B-140 Field Descriptions for the Routing Table Tab

Field	Description
Destination	Displays the IP address of the destination network or host.
Mask	Displays the subnet mask used to reach the destination network or host.
Gateway	Displays the IP address of the gateway used to reach the destination network or host.
Usage	Shows the number of times the listed route has been used.
Interface	Shows the ONS 15310 MA SDH interface used to access the destination. Values are: • cpm0—The ONS 15310 MA SDH Ethernet interface (that is, the RJ-45 jack on the TCC+/TCC2 and the LAN 1 pins on the backplane). • pdcc0—An SDCC interface (that is, an OC-N trunk card identified as the SDCC termination). • lo0—A loopback interface. • motfcc0—An Ethernet interface (that is, the RJ-45 jack on the TCC2/TCC2P and the LAN 1 pins on the backplane).

Proxy Tunnels Tab

The Proxy Tunnels tab allows you to configure source and destination information and create or delete proxy tunnels.

Table B-141 Field Descriptions for the Proxy Tunnels Tab

Field	Description
Source Address	Specify the source IP address in the source-destination pair for the tunnel that will be routed through the proxy server.
Source Mask	Specify the source subnetwork mask in the source-destination pair for the tunnel that will be routed through the proxy server.
Destination Address	Specify the destination IP address in the source-destination pair for the tunnel that will be routed through the proxy server.
Destination Mask	Specify the destination subnetwork mask in the source-destination pair for the tunnel that will be routed through the proxy server.

Firewall Tunnels Tab

The Firewall Tunnels tab allows you to configure source and destination information and create and delete firewall tunnels.

Table B-142 Field Descriptions for the Firewall Tunnels Tab

Field	Description
Source Address	Specify the source IP address in the source-destination pair for the tunnel that will be routed through the firewall.
Source Mask	Specify the source subnetwork mask in the source-destination pair for the tunnel that will be routed through the firewall.
Destination Address	Specify the destination IP address in the source-destination pair for the tunnel that will be routed through the firewall.
Destination Mask	Specify the destination subnetwork mask in the source-destination pair for the tunnel that will be routed through the firewall.

FTP Hosts Tab

The FTP Hosts tab allows you to configure database backup or restore and software download to an ENE when the firewall is enabled. You can provision a list of legal FTP hosts for which the firewall opens for all FTP commands. You can configure the FTP hosts to expire after a certain amount of time, after which the FTP relay resumes blocking all FTP access for the ENEs.

Table B-143 Field Descriptions for the FTP Hosts Tab

Field	Description
Create button	Opens the Create New FTP Host dialog box, which allows you to create up to 12 new FTP hosts in a GNE/ENE firewall environment. See Creating an FTP Host, page 5-22. **Note** You cannot create more than 12 FTP hosts.
Delete button	Deletes the selected FTP host.
FTP Host Address	Displays the FTP host IP address.
Prefix Length	Displays the FTP host subnet mask length.

Table B-143 Field Descriptions for the FTP Hosts Tab (continued)

Field	Description
Enable FTP Relay	Indicates whether FTP relay is enabled or disabled. If FTP relay is disabled, the FTP Relay Timer field is dimmed.
FTP Relay Timer	Displays the number of minutes that the FTP relay is configured to run, after which the FTP relay resumes blocking all FTP access for the ENEs.

DCC

The DCC Properties pane allows you to create, delete, and view SONET or SDH DCCs.

Table B-144 Field Descriptions for the DCC Properties Pane

Field	Description
SDCC	
SDCC Terminations	Displays the slot, port, and card type of an SDCC termination.
OSPF Disabled on Link	Check to prevent the advertisement of the OSPF routing table.
Foreign	A check mark indicates that the far-end node is a non-ONS node.
Foreign IP	Displays the foreign node IP address.
LAPD Config	If the SDCC is provisioned as OSI only, the following SDCC LAP-D parameters are displayed: • AITS/UITS—Indicates the LAP-D acknowledgement type, either Acknowledged Information Transfer Service (AITS) or Unacknowledged Transfer Service (UITS). • Network/User—Indicates the LAP-D frame command/response role, either Network or User. • MTU—Shows the size of the maximum transfer unit (MTU). The range is from 512 to 1500 octets. • T2000—Shows the time between Set Asynchronous Balanced Mode (SABME) frame transmission. The range is from 0.2 to 20 seconds. • T203—Shows the maximum time between LAP-D frame exchanges. The range is from 4 to 120 seconds.
OSI SNPA	If the SDCC is provisioned for OSI, the following subnetwork point-of-attachment (SNPA) information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.

Table B-144 Field Descriptions for the DCC Properties Pane (continued)

Field	Description
Service State	Includes an administrative-operational state and secondary state. Administrative-operational states are used to manage service states and use a status attribute to specify the change in service state. The following are valid administrative-operational states: • Unlocked-enabled—The NE is fully operational and performs as provisioned. • Unlocked-disabled—The NE is not operational because of an autonomous event. • Locked-disabled—The NE is not operational because of an autonomous event; it has also been manually removed from service. • Locked-enabled—The NE has been manually removed from service. The following are valid secondary states: • AutomaticInService—Transitioning to the Unlocked-enabled service state is delayed. The transition to Unlocked-enabled state depends on correction of conditions, or on a soak timer. Alarm reporting is suppressed, but traffic is carried. Raised fault conditions, whether or not their alarms are reported, can be retrieved by using the TL1 **RTRV-COND** command. • Disabled—The NE has been manually removed from service and does not provide its provisioned functions. All services are disrupted; the entity is unable to carry traffic. • Failed—The NE has a raised alarm or condition. • Loopback—The NE is in loopback mode. • MismatchOfEquipment—An improper card is installed, a cross-connect card does not support an installed card, or an incompatible backplane is installed. For example, an installed card is not compatible with the card preprovisioning or the slot. This secondary state applies only to cards. • Maintenance—The NE has been manually removed from service for a maintenance activity but still performs its provisioned functions. Alarm reporting is suppressed, but traffic is carried. You can use the TL1 **RTRV-COND** command to retrieve raised fault conditions even if alarms have not been reported. • OutOfGroup—The virtual concatenation (VCAT) member cross-connect is not used to carry VCAT group traffic. This state is used to put a member circuit out of the group and to stop sending traffic. Locked-enabled,outOfGroup applies only to the cross-connects on an end node where VCAT resides. The cross-connects on intermediate nodes are in the Locked-enabled,maintenance service state. • SoftwareDownload—A card is involved in a software download. This secondary state applies only to cards. • Unassigned—A card is not provisioned in the database. This secondary state applies only to cards. • NotInstalled—A card is not physically present (that is, the slot is empty). This secondary state applies only to cards. **Note** If the NE release does not support the Service state, this field shows N/A.
LDCC	
LDCC Terminations	Displays the slot, port, and card type of an LDCC termination. Click **Create** to create a new LDCC termination; click **Delete** to delete the selected LDCC termination.
OSPF Disabled on Link	Check to prevent the advertisement of the OSPF routing table.

Table B-144 Field Descriptions for the DCC Properties Pane (continued)

Field	Description
Foreign	A check mark indicates that the far-end node is a non-ONS node.
Foreign IP	Displays the foreign node IP address.
LAPD Config	If the SDCC is provisioned as OSI only, the following SDCC LAP-D parameters are displayed: • AITS/UITS—Indicates the LAP-D acknowledgement type, either Acknowledged Information Transfer Service (AITS) or Unacknowledged Transfer Service (UITS). • Network/User—Indicates the LAP-D frame command/response role, either Network or User. • MTU—Shows the size of the maximum transfer unit (MTU). The range is from 512 to 1500 octets. • T2000—Shows the time between Set Asynchronous Balanced Mode (SABME) frame transmission. The range is from 0.2 to 20 seconds. • T203—Shows the maximum time between LAP-D frame exchanges. The range is from 4 to 120 seconds.
OSI SNPA	If the SDCC is provisioned for OSI, the following subnetwork point-of-attachment (SNPA) information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.

Table B-144 Field Descriptions for the DCC Properties Pane (continued)

Field	Description
Service State	Includes an administrative-operational state and secondary state. Administrative-operational states are used to manage service states and use a status attribute to specify the change in service state. The following are valid administrative-operational states: • Unlocked-enabled—The NE is fully operational and performs as provisioned. • Unlocked-disabled—The NE is not operational because of an autonomous event. • Locked-disabled—The NE is not operational because of an autonomous event; it has also been manually removed from service. • Locked-enabled—The NE has been manually removed from service. The following are valid secondary states: • AutomaticInService—Transitioning to the Unlocked-enabled service state is delayed. The transition to Unlocked-enabled state depends on correction of conditions, or on a soak timer. Alarm reporting is suppressed, but traffic is carried. Raised fault conditions, whether or not their alarms are reported, can be retrieved by using the TL1 **RTRV-COND** command. • Disabled—The NE has been manually removed from service and does not provide its provisioned functions. All services are disrupted; the entity is unable to carry traffic. • Failed—The NE has a raised alarm or condition. • Loopback—The NE is in loopback mode. • MismatchOfEquipment—An improper card is installed, a cross-connect card does not support an installed card, or an incompatible backplane is installed. For example, an installed card is not compatible with the card preprovisioning or the slot. This secondary state applies only to cards. • Maintenance—The NE has been manually removed from service for a maintenance activity but still performs its provisioned functions. Alarm reporting is suppressed, but traffic is carried. You can use the TL1 **RTRV-COND** command to retrieve raised fault conditions even if alarms have not been reported. • OutOfGroup—The virtual concatenation (VCAT) member cross-connect is not used to carry VCAT group traffic. This state is used to put a member circuit out of the group and to stop sending traffic. Locked-enabled,outOfGroup applies only to the cross-connects on an end node where VCAT resides. The cross-connects on intermediate nodes are in the Locked-enabled,maintenance service state. • SoftwareDownload—A card is involved in a software download. This secondary state applies only to cards. • Unassigned—A card is not provisioned in the database. This secondary state applies only to cards. • NotInstalled—A card is not physically present (that is, the slot is empty). This secondary state applies only to cards. **Note** If the NE release does not support the Service state, this field shows N/A.
Create button	Allows you to create new terminations on SONET or SDH cards.
Edit button	Allows you to modify existing terminations on SONET or SDH cards.
Delete button	Allows you to delete the selected SDCC or LDCC.

Timing

The Timing Properties pane contains the following tabs:

- General Tab, page B-104
- Facility Tab, page B-104
- Reference List Tab, page B-106
- Status Tab, page B-106
- Timing Report Tab, page B-107

General Tab

The General tab displays general timing information.

Table B-145 Field Descriptions for the General Tab

Field	Description
General Timing	
Timing Mode	Set to External if the ONS 15310 MA SDH derives its timing from a BITS source wired to the backplane pins; set to Line if timing is derived from an OC-N card that is optically connected to the timing node. A third option, Mixed, allows you to set external and line timing references. **Caution** Mixed timing might cause timing loops. Use this mode with care.
Revertive	If checked, the ONS 15310 MA SDH reverts to a primary reference source after the conditions that caused it to switch to a secondary timing reference are corrected.
Reversion Time	Specify the reversion time in half-minute increments.

Facility Tab

The Facility tab displays the facility type, and BITS IN and OUT information.

Note BITS IN Facilities and BITS OUT Facilities values apply to both BITS-1 and BITS-2.

Table B-146 Field Descriptions for the Facility Tab

Field	Description
BITS-IN-OUT Facility Type	
In Facility Type	Provisions the BITS In facility type.
Out Facility Type	Provisions the BITS Out facility type.
BITS IN Facilities	
In State	Set the BITS reference to Locked or Unlocked. For nodes set to Line timing with no equipment timed through BITS Out, set the state to Locked. For nodes using External timing or Line timing with equipment timed through BITS Out, set the state to Unlocked.
Coding	Set to the coding used by your BITS reference, either AMI or HDB3.
Framing	Set to the framing used by your BITS reference.

Table B-146 Field Descriptions for the Facility Tab

Field	Description
Sync Messaging	If checked, enables the SSM for BITS In. (SSM is not available if Framing is set to Super Frame.)
Admin SSM	If the Sync Messaging check box is not checked, you can choose the SSM Generation 2 type from the drop-down list.
Sa Bit	The Sa Bit field is used to transmit the SSM message. The five available Sa bits are Sa4, Sa5, Sa6, Sa7, and Sa8.
Cable Type	Type of cable. Values are 75 ohm or 120 ohm.
BITS OUT Facilities	
Out State	Set the BITS reference to Locked or Unlocked. For nodes set to Line timing with no equipment timed through BITS Out, set the state to Locked. For nodes using External timing or Line timing with equipment timed through BITS Out, set the state to Unlocked.
Coding	Set to the coding used by your BITS reference, either AMI or HDB3.
Framing	Set to the framing used by your BITS reference. Valid values are: • Unframed • FAS • FAS+CRC • FAS+CAS • FAS+CAS+CRC
AIS Threshold	If SSM is disabled or Super Frame is used, sets the quality level where a node sends an AIS from the BITS-1 Out and BITS-2 Out backplane pins. An AIS is raised when the optical source for the BITS reference falls to or below the SSM quality level defined in this field.
Sa Bit	The Sa Bit field is used to transmit the SSM message. The five available Sa bits are Sa4, Sa5, Sa6, Sa7, and Sa8.
Cable Type	Type of cable. Values are 75 ohm or 120 ohm.

Reference List Tab

The Reference List tab provides timing reference information.

Table B-147 Field Descriptions for the Reference List Tab

Field	Description
NE References	Allows you to define three timing references (Ref-1, Ref-2, and Ref-3). The node uses Reference 1 unless a failure occurs on that reference, in which case, the node uses Reference 2. If that fails, the node uses Reference 3, which is typically set to Internal Clock. This is the Stratum 3 clock provided on the TCC+. The options displayed depend on the Timing Mode setting: • Timing Mode set to External—Options are BITS-1, BITS-2, and Internal Clock. • Timing Mode set to Line—Options are the node's working optical cards and Internal Clock. **Note** For Timing Mode set to External and Timing Mode set to Line, select the cards/ports that are directly or indirectly connected to the node wired to the BITS source; that is, the node's trunk cards. Set Reference 1 to the trunk card that is closest to the BITS source. For example, if Slot 5 is connected to the node wired to the BITS source, select Slot 5 as Reference 1. • Timing Mode set to Mixed—Both BITS and optical cards are available, allowing you to set a mixture of external BITS and optical trunk cards as timing references.
BITS-1 Out References	Allows you to define three timing references (Ref-1, Ref-2, and Ref-3) for the equipment wired to the BITS Out backplane pins. Normally, BITS Out is used with line nodes, so the options displayed are the working optical cards. BITS-1 and BITS-2 Out are enabled as soon as BITS-1 and BITS-2 facilities are placed in service.
BITS-2 Out References	Allows you to define three timing references (Ref-1, Ref-2, and Ref-3) for the equipment wired to the BITS Out backplane pins. Normally, BITS Out is used with line nodes, so the options displayed are the working optical cards. BITS-1 and BITS-2 Out are enabled as soon as BITS-1 and BITS-2 facilities are placed in service.

Status Tab

The Status tab displays timing status information.

Note If you change any values in the Status tab and click Apply at the bottom of the screen, the values are not set. Instead, use the following buttons to apply changes:

- Clear—Releases any existing switch request. For example, if you issue a Force Switch and then issue a Clear, the Force Switch request is released.
- Manual Switch—Switches the timing reference from one source to another.
- Force Switch—Switches the timing reference from one source to another. This request has a higher priority than the Manual Switch request.

Table B-148 Field Descriptions for the Status Tab

Field	Description
NE Clock	
NE Reference	Set the NE timing reference to internal, BITS-1, or BITS-2.

Table B-148 Field Descriptions for the Status Tab (continued)

Field	Description
Status	Displays the status of the NE clock.
Operations	Execute a switch on the NE timing reference.
BITS-1 Out	
BITS-1 Out	Set the BITS-1 out timing reference.
Status	Displays the status of the BITS-1 out timing reference.
Operations	Execute a switch on the BITS-1 out timing reference.
BITS-2 Out	
BITS-2 Out	Set the BITS-2 out timing reference.
Status	Displays the status of the BITS-2 out timing reference.
Operations	Execute a switch on the BITS-2 out timing reference.

Timing Report Tab

The Timing Report tab summarizes the NE's current timing settings.

Protection

The Protection Properties pane contains the following tabs:

- Protection Groups Tab, page B-107
- Operations Tab, page B-108

Protection Groups Tab

The Protection Groups tab displays a list of available protection groups and allows you to create, delete, and view protection groups.

Table B-149 Field Descriptions for the Protection Groups Tab

Field	Description
Protection Groups	
Displays a list of available protection groups. Click the **Create** or **Delete** button to create a new protection group or delete an existing one.	
Selected Protection Group	
Name	Modify the name of the selected protection group. The name can have up to 32 alphanumeric characters.
Type	View the protection type (1:1 [card], 1:N [card], Y Cable [port], or 1+1 [port]) of the selected protection group.
Protect Card	View the protect card if using 1+1 protection.
Available Entities	Displays a list of available entities. You can toggle between available and working entities.
Working Entities	Displays a list of working entities. You can toggle between working and available entities.

Table B-149 Field Descriptions for the Protection Groups Tab (continued)

Field	Description
Bidirectional Switching	Click if you want both the transmit and the receive channels to switch if a failure occurs on one. This option is available only if you select the 1+1 (port) type.
Revertive	If checked, the node reverts traffic to the working card or port after failure conditions for the amount of time entered in Reversion Time. This option is not available if you select the 1:N (card) type.

Operations Tab

The Operations tab displays the protection group operation information.

Table B-150 Field Descriptions for the Operations Tab

Field	Description
Protection Groups	Displays a list of available protection groups.
Protection Group Details	Displays details about the selected protection groups and allows you to execute switch commands.
Switch Commands	Allows you to perform a manual switch, perform a forced switch, or clear the existing command switching.
Inhibit Switching	Allows you to inhibit unlock switching, lock out switching, or lock on switching.

NE Defaults

The NE Defaults Properties pane displays a list of default thresholds for the ONS 15310 MA SDH NE.

Table B-151 Field Descriptions for the NE Defaults Properties Pane

Field	Description
Parameter	Lists the default NE parameter.
Value	Shows the default parameter value, and allows you to change the default.
Units	Lists the unit of measure that corresponds to the default NE parameter.
Range	Lists the possible range of values for the default NE parameter.
Side Effects	Lists any side effects that could occur as a result of changing the default NE parameter.

You can load different NE defaults using the NE Defaults Management window. See Restoring NE Defaults, page 4-78.

Security

The Security Properties pane allows you to view and edit security features for the ONS 15310 MA SDH NE. The Security Properties pane contains the following tabs:

- Policy Tab, page B-109
- Password Tab, page B-109
- Access Tab, page B-110

- RADIUS Server Tab, page B-111
- Legal Disclaimer Tab, page B-112

Policy Tab

The Policy tab allows you to specify user security parameters.

Note If the user is already logged in, any changes to the NE user type settings take effect only when the user next logs in.

Table B-152 Field Descriptions for the Policy Tab

Field	Description
Idle User Timeout	
Each CTC or TL1 user can be idle during his or her login session for a specified amount of time before the CTC window is locked. The lockouts prevent unauthorized users from making changes. Higher-level users have shorter default idle periods and lower-level users have longer or unlimited default idle periods. The user idle period can be modified by a SuperUser. **Note** A user already logged into the node is not affected by a change to the Idle User Timeout policy.	
Retrieve	Set the idle user timeout for a CTC Retrieve user.
Maintenance	Set the idle user timeout for a CTC Maintenance user.
Provisioner	Set the idle user timeout for a CTC Provisioner user.
SuperUser	Set the idle user timeout for a CTC SuperUser user.
User Lockout	
Manual Unlock by SuperUser	If checked, the CTC SuperUser user must manually unlock locked out CTC users. If unchecked, locked out CTC users are automatically unlocked after the lockout duration period elapses.
Lockout Duration	Set the lockout duration period for locked out CTC users. This field is enabled only if the Manual Unlock by SuperUser check box is unchecked.
Failed Logins Allowed	Set the number of failed logins before the CTC user is automatically locked out.
Other	
Single Session per User	If checked, each CTC user can launch only one session at a time.
Prevent Disabling the SuperUser	If checked, inactive CTC SuperUsers are never disabled.
Disable Inactive User	If checked, inactive users are disabled automatically for the amount of time in the Inactive Duration field.
Inactive Duration	Specify the inactive duration in days. The range is from 1 to 90 days; the Cisco default is 45 days. A value of 0 implies the inactive duration is disabled and invalid.

Password Tab

The Password tab allows you to specify user password security parameters.

Table B-153 Field Descriptions for the Password Tab

Field	Description
Password Change	
Prevent Reusing Last	Prevents setting a CTC user's current password to one of the most recent passwords. You can set the number of most recent passwords that cannot be reused. The range is from 1 to 10.
Disable Password Flipping	If checked, users are not allowed to change passwords for the number of days specified in the Can Change Password After field.
Can Change Password After	Enter the number of days that must elapse before the user can change the password.
Force Password Change After Assigned	If checked, during the first successful login, the user is forced to change the password.
Password Difference	Allows SuperUsers to specify the number of characters by which the new password of a user must differ from the old password, while performing a password change. The default value is 1; the range is from 1 to 5 characters.
Password Aging	
Enable Password Aging	Check this check box to enable password aging.
Aging Period	Enter the aging period, in days, for Retrieve, Maintenance, Provisioner, and SuperUser CTC users. After the aging period expires, CTC users are forced to change their passwords.
Warning Period	Enter the warning period, in days, for Retrieve, Maintenance, Provisioner, and SuperUser CTC users. After the warning period expires, CTC users are warned that their passwords will soon expire.

Access Tab

The Access tab allows you to configure LAN and shell access to the NE.

Table B-154 Field Descriptions for the Access Tab

Field	Description
Access	
LAN Access	Specify the type of LAN access allowed. Values allowed for the ONS 15310 MA SDH are Front Only, Backplane Only, Front and Backplane, or No LAN Access. **Note** After the LAN access to the backplane is set, the Prime Optical client is unusable for 4 to 5 minutes.
Restore Timeout	This time period begins if *No LAN Access* is selected and all DCC connections are lost. If the time expires before a DCC is restored, LAN access is restored so that the node is not isolated. When the DCC comes back, LAN access returns to its specified settings. The range is from 0 (never) to 60 minutes; the Cisco default is 5 minutes.
Serial Craft Access	
Enable Craft Port A	Check this check box to enable craft port A.
Enable Craft Port B	Check this check box to enable craft port B.
Shell Access	
Access State	Select the Shell access state from the drop-down list. You can select Disable, Non-secure, or Secure.

Table B-154 Field Descriptions for the Access Tab (continued)

Field	Description
SSH Port	Indicates the SSH port number that will be used.
SFTP Port	Indicates the SFTP port number.
Telnet Port	This is enabled if you selected the Non-secure access state. Enter the Telnet port number that will be used.
Use Standard Telnet Port	Check this check box to indicate that the standard Telnet port will be used.
Enable Shell Password	Indicates whether or not the Shell password is enabled. **Note** You cannot enable the Shell password in Prime Optical. Enabling and providing a Shell password is currently done in CTC.
TL1 Access	
Access State	Select the TL1 access state from the drop-down list. You can select Disable, Non-secure, or Secure.
SNMP Access	
Access State	Select the SNMP access state from the drop-down list. You can select either Disable or Non-secure.
Other	
PM Clearing Privilege	Select the users privilege that allows clearing PM statistics for the NE.
EMS Access	
Access State	Select the EMS access state from the drop-down list. You can select either Non-secure or Secure.
CORBA Listener Port	Select the port numbers for the TSC CORBA (IIOP) listener port and the TSC CORBA (SSLIOP) listener port. Select one of the following radio buttons: • Default-Fixed—Assigns a default port number. • Standard Constant—The port number for the TSC CORBA (IIOP) listener port is 683. The port number for the TSC CORBA (SSLIOP) listener port is 684. • Other Constant—When selected, enter the port number that will be used.

RADIUS Server Tab

The RADIUS Server tab allows you to configure, create, modify, and delete RADIUS servers for the ONS 15310 MA SDH.

Table B-155 Field Descriptions for the RADIUS Server Tab

Field	Description
Enable RADIUS Authentication	Check this check box to enable RADIUS authentication.
Enable RADIUS Accounting	Check this check box to enable RADIUS accounting. This is enabled if the Enable RADIUS Authentication check box is checked.
Enable the Node as the Final Authenticator When no RADIUS Server is Reachable	Select a row from the RADIUS Servers in Order of Authentication table; then, check this check box. This indicates that the RADIUS server that you selected will be the final authenticator when there are no more RADIUS servers that can be reached.

Table B-155 Field Descriptions for the RADIUS Server Tab (continued)

Field	Description
Create button	Click **Create** to create a RADIUS server. See Creating a RADIUS Server, page 8-46.
Edit button	Click **Edit** to modify an existing RADIUS server's information. See Modifying a RADIUS Server, page 8-46.
Delete button	Click **Delete** to delete an existing RADIUS server. See Deleting a RADIUS Server, page 8-46.
Move Up/Move Down buttons	Click **Move Up** or **Move Down** to reorder the list of RADIUS servers in the RADIUS Servers in Order of Authentication table.
RADIUS Servers in Order of Authentication	
IP Address	Displays the IP address of the RADIUS server.
Shared Secret	Displays a text string that serves as a password between a RADIUS client and RADIUS server.
Authentication Port	Displays the authentication port number of the RADIUS server. Default access is through port number 1812.
Accounting Port	Displays the accounting port number of the RADIUS server. Default access is through port number 1813.

Legal Disclaimer Tab

The Legal Disclaimer tab allows you to edit the NE's advisory message and preview the disclaimer.

Table B-156 Field Descriptions for the Legal Disclaimer Tab

Tab	Description
Advisory Message	The existing message is a default, noncustomer-specific disclaimer. If you want to edit this statement with specifics for your company, you can change the text. You can also use the following HTML commands to format the text: • ****—Begins boldface font • ****—Ends boldface font • ** **—Aligns type in the center of the window • ** **—Ends the center alignment • **<font=*n*, where *n* = point size>**—Changes the font to the new size • ****—Ends the font size command • **<p>**—Creates a line break • **_{**—Begins subscript • **}**—Ends subscript • **^{**—Begins superscript • **}**—Ends superscript • **<u>**—Starts underline • **</u>**—Ends underline
Preview	Allows you to view the advisory message before saving it.

Alarm

The Alarm Properties pane allows you to change default alarm severities by creating unique alarm profiles for individual ONS 15310 MA SDH nodes. The Alarm Properties pane contains the following tabs:

- Profile Tab, page B-113
- Alarm Behavior Tab, page B-113

Note The Alarm Properties pane might contain default alarm profile entries for cards that are not supported by the ONS 15310 MA SDH. Therefore, you might see some alarms that do not apply to the NE type that you are provisioning.

Profile Tab

The Profile tab allows you to select, create, or delete alarm profiles.

Table B-157 Field Descriptions for the Profile Tab

Field	Description
Alarm Profile Name	Choose an alarm profile for the NE from the drop-down list. Click **Create** to create a new alarm profile for the NE. Click **Delete** to delete an alarm profile from the NE.
Condition	Displays the alarm condition.
Severity	Displays the alarm severity.

Alarm Behavior Tab

The Alarm Behavior tab allows you to change default alarm severities by creating unique alarm profiles.

Table B-158 Field Descriptions for the Alarm Behavior Tab

Field	Description
Alarm Profile	Choose a global alarm profile for the NE from the drop-down list.
Suppress Alarms	If checked, all alarms are suppressed.
Slot Number	Displays the location of the module.
Equipment Type	Displays the type of module in the slot.
Profile	Choose an alarm profile for the slot from the drop-down list.
Suppress Alarms	Indicates whether or not the alarms for a particular card are suppressed. If checked, all alarms are suppressed for the port.

XC Utilization

The XC Utilization Properties pane allows you to view a summary of the percentage of XTC cross-connect resources used by circuits that traverse or terminate at an ONS 15310 MA SDH.

Table B-159 Field Descriptions for the XC Utilization Properties Pane

Field	Description
VC4 Matrix	Provides the percentage of the XTC cross-connect VC-4 path resources that are used.
TUG3 Matrix Ports	Provides the percentage of the XTC cross-connect TUG3 matrix ports that are used.
TUG3 Matrix	Provides the percentage of the TUG3 matrix resources that are used.
VC12 Matrix Ports	Provides the percentage of the XTC cross-connect VC12 matrix ports that are used.
VC12 Matrix	Provides the percentage of the VC12 matrix resources that are used.

OSI

The OSI Properties pane allows you to provision ONS 15310 MA SDH OSI parameters. The Properties pane contains the following tabs:

- Main Setup Tab, page B-114
- TARP-Config Tab, page B-115
- TARP-TDC Tab, page B-116
- TARP-MAT Tab, page B-116
- Routers-Setup Tab, page B-117
- Subnets Tab, page B-117
- Tunnels Tab, page B-118
- IS-IS RIB Tab, page B-119
- ES-IS RIB Tab, page B-119

Main Setup Tab

The Main Setup tab allows you to provision the OSI Network Entity Title (NET) address and the OSI routing mode.

Table B-160 Field Descriptions for the Main Setup Tab

Field	Description
Main Network Entity Title	Displays the node NET. The NET is used in OSI networks to identify the node to the end system (ES) or intermediate system (IS).
End System	Provisions the node as an OSI end system (ES). ESs send end system hello (ESH) messages regularly to announce their presence to neighboring ISs and ESs. For the ONS 15310 MA SDH, End System is the Cisco default.
Intermediate System Level 1	Provisions the node as an OSI intermediate system (IS). ISs send intermediate system hello (ISH) messages regularly to announce their presence to neighboring ISs and ESs.
Node Routing Mode	
L1 LSP Buffer Size	Sets the Level 1 Link State Protocol (LSP) data unit buffer size. The Cisco default is 512.
L2 LSP Buffer Size	Sets the Level 2 LSP data unit buffer size. The Cisco default is 512.

TARP-Config Tab

The TARP-Config tab allows you to provision the TID Address Resolution Protocol (TARP). TARP is used when TL1 TIDs must be translated to an NSAP address. During the TID-to-NSAP translation, the TID is mapped to a NET; then, the NSAP is derived from the NET based on the NSAP selector value.

Table B-161 Field Descriptions for the TARP-Config Tab

Field	Description
TARP PDUs L1 Propagation	If checked (default), TARP Type 1 PDUs received by the node that are not excluded by the loop detection buffer are propagated to other NEs within the OSI Level 1 area. Type 1 PDUs request a protocol address that matches a target TID within a Level 1 routing area. The propagation does not occur if the NE is the target of the Type 1 PDU and the PDUs are not propagated to the NE from which the PDU was received. **Note** This parameter is not used when the node is set to End System.
TARP PDUs Origination	If checked (default), the node performs all TARP configuration functions, including: • TID-to-NSAP resolution requests • NSAP-to-TID requests • TARP address changes **Note** TARP Echo and NSAP to TID are not supported.
L2 TARP Data Cache	If checked (default), the TIDs and NSAPs are added to the TDC before the node propagates the requests to other NEs. **Note** This parameter is designed for IS Level 1/Level 2 nodes that are connected to other IS Level 1/Level 2 nodes. Enabling the parameter for IS Level 1 nodes is not recommended.
LAN TARP Storm Suppression	If checked (default), enables the TARP storm suppression to prevent redundant TARP PDUs from being propagated across the network.
Type 4 PDU Delay	Sets the amount of time that will pass before the Type 4 PDU is generated. The Cisco default value is 60 seconds; the range is from 0 to 255 seconds.
TARP PDUs L2 Propagation	If checked (default), TARP Type 2 PDUs received by the node that are not excluded by the loop detection buffer are propagated to other NEs within the OSI Level 2 area. Type 2 PDUs request a protocol address that matches a target TID within a Level 2 routing area. The propagation occurs if the NE is the target of the Type 2 PDU and the PDUs are not propagated to the NE from which the PDU was received.
L1 TARP Data Cache	If checked, the node maintains a TARP data cache (TDC). The TDC is a database of TID-to-NSAP pairs created from TARP Type 3 PDUs received by the node. TARP Type 3 PDUs are responses to Type 1 and Type 2 PDUs and modified by TARP Type 4 PDUs (TID-to-NSAP updates or corrections).
LDB	If checked, enables the TARP loop detection buffer (LDB). The LDB prevents TARP PDUs from being sent more than once on the same subnet.
Send Type 4 PDU on Startup	If checked, a TARP Type 4 PDU is originated during the initial ONS 15310 MA SDH startup. Type 4 PDUs indicate that a TID or NSAP change has occurred at the NE. This option is disabled by default.

Table B-161 Field Descriptions for the TARP-Config Tab (continued)

Field	Description
Timers	
LDB Entry	Sets the TARP LDB timer. The LDB buffer time is assigned to each LDB entry for which the TARP sequence number is zero. The Cisco default is 5 minutes; the range is from 1 to 10 minutes.
T1 Timer	Sets the amount of time to wait for response to a Type 1 Request PDU. Type 1 requests seek a specific NE TID within an OSI Level 1 area. The Cisco default is 15 seconds; the range is from 0 to 3600 seconds.
T3 Timer	Sets the amount of time to wait for an address resolution request. The Cisco default is 40 seconds; the range is from 0 to 3600 seconds.
LDB Flush	Sets the frequency period for flushing the LDB. The Cisco default is 5 minutes; the range is from 0 to 1440 minutes.
T2 Timer	Sets the amount of time to wait for a Type 2 Request PDU. TARP Type 2 requests seek a specific NE TID within an OSI Level 1 area. The Cisco default is 25 seconds; the range is from 0 to 3600 seconds.
T4 Timer	Sets the amount of time to wait for an error recovery. The timer begins after the T2 timer expires without successfully finding the NE TID. The Cisco default is 20 seconds; the range is from 0 to 3600 seconds.

TARP-TDC Tab

Table B-162 Field Descriptions for the TARP-TDC Tab

Field	Description
Add Static Entry button	Click **Add Static Entry** to statically link a TID to an NSAP or NET.
Delete Selected Entry button	Click **Delete Selected Entry** to delete the selected TID-to-NSAP/NET static entry.
TID to NSAP button	Click **TID to NSAP** to query the network for an NSAP that matches a TID.
Flush Dynamic Entries button	Click **Flush Dynamic Entries** to delete all dynamically generated TDC entries.
TID	Target ID that is statistically linked to an NSAP or NET. For ONS nodes, the TID is the node name.
NSAP/NET	The NSAP that is statistically linked to the TID.
Type	Indicates how the TARP data cache entry was created. It can be either: • Dynamic—The entry was created through the TARP propagation process. • Static—The entry was manually created and is a static entry.

TARP-MAT Tab

The TARP-MAT tab allows you to manually provision a TARP adjacency.

Table B-163 Field Descriptions for the TARP-MAT Tab

Field	Description
Level	Sets the TARP Type Code that will be sent. • Level 1—Indicates that the manual area adjacency is within the same area as the node. The entry generates Type 1 PDUs. • Level 2—Indicates that the manual area adjacency is in an area different from that of the node. The entry generates Type 2 PDUs.
NSAP	The NSAP address of the node at the other end of the TARP manual adjacency.
Add button	Click **Add** to create a TARP manual area adjacency.
Remove button	Click **Remove** to delete the selected TID-to-NSAP/NET static entry.

Routers-Setup Tab

The Routers-Setup tab allows you to view and manage OSI virtual routers.

Table B-164 Field Descriptions for the Routers-Setup Tab

Field	Description
Router Number	Displays the virtual router number. Only one router is available on the ONS 15310 MA SDH.
System ID	Displays the NSAP system ID of the virtual router. For the primary router (Router 1), $n = 0$.
Status	Indicates the virtual router status. Select Enabled or Disabled from the drop-down list. **Note** Router 1 must be enabled before additional routers can be enabled.
Primary Area Address	Indicates the primary manual area address. For Router 1, this is the main NET for the node; that is, the NSAP without the system ID and selector (set to 00) fields.
Manual Area Address 1	Indicates the address of any additional manual areas that are created. **Note** An OSI area allows up to two additional manual areas in addition to the primary manual area.
Manual Area Address 2	Indicates the address of any additional manual areas that are created. **Note** An OSI area allows up to two additional manual areas in addition to the primary manual area.
Edit button	Click **Edit** to modify the address parameters.

Subnets Tab

The Subnets tab allows you to view and manage OSI subnetwork point-of-attachment parameters. The parameters are initially provisioned when you enable a subnet on an SDCC, LDCC, GCC, OSC, or LAN interface.

Table B-165 Field Descriptions for the Subnets Tab

Field	Description
Enable LAN Subnet button	*Router 1 only.* Enables OSI over the LAN; that is, it activates the IS-IS protocol on the LAN so OSI traffic is enabled on the LAN.
Edit button	Click **Edit** to modify the subnet parameters.

Table B-165 Field Descriptions for the Subnets Tab (continued)

Field	Description
Disable LAN Subnet button	*Router 1 only.* Disables OSI over the LAN if it has been enabled.
Slot/Port	The subnet slot and port.
Router Number	The OSI virtual router where the subnet (SDCC, LDCC, GCC, or OSC) is provisioned.
Type	The interface where the subnet is provisioned: SDCC, LDCC, GCC, OSC, or LAN.
Protocol	The data link protocol that is provisioned for the subnet. It can be: • Point to Point Protocol (PPP) • Link Access Protocol on the D channel (LAP-D) • 802.3 for LAN subnets
ISH	The intermediate system hello (ISH) PDU propagation frequency. Intermediate system NEs send ISHs to other ESs and ISs to inform them about the NETs they serve. The Cisco default is 10 seconds; the range is from 10 to 1000 seconds.
ESH	The end system hello (ESH) PDU propagation frequency. End system NEs transmit ESHs to inform other ESs and ISs about the NSAPs they serve. The Cisco default is 10 seconds; the range is from 10 to 1000 seconds.
IIH	The intermediate system-to-intermediate system hello (IIH) PDU propagation frequency. The IS-IS hello PDUs establish and maintain adjacencies between ISs. The Cisco default is 3 seconds; the range is from 1 to 600 seconds.
DIS Priority	The designated intermediate system (DIS) priority. In IS-IS networks, one router is elected as the DIS. For Cisco routers, the DIS priority is 64.
IS-IS Cost	The cost for sending packets on the subnet. This is used by OSPF routers to calculate the shortest path. The Cisco default value is 20.

Tunnels Tab

The Tunnels tab allows you to view, create, edit, and delete Generic Routing Encapsulation (GRE) and Cisco tunnels. GRE tunnels encapsulate one network protocol for transfer across another network layer. Within a mixed TCP/IP and OSI network, GRE tunnels tunnel IP traffic over an OSI NE and OSI traffic over an IP NE.

Table B-166 Field Descriptions for the Tunnels Tab

Field	Description
IP Address	Displays the IP address of the GRE destination Prime Optical or CTC computer.
Netmask Address	Displays the IP address subnet mask of the destination Prime Optical or CTC computer.
NSAP Address	The destination NE NSAP address. The NSAP selector (last two NSAP characters) must be 2f (GRE tunnel) or cc (proprietary Cisco tunnel), depending on which tunnel type you want to create. The Cisco proprietary tunnel is slightly more efficient than the GRE tunnel because it does not add an encapsulation header for each IP packet, while the GRE tunnel adds a small header to the packets. The two tunnel types are incompatible. **Note** Most Cisco routers support the Cisco tunnel, while only a few support both GRE and Cisco IP tunnels.

Table B-166 Field Descriptions for the Tunnels Tab (continued)

Field	Description
OSPF Metric	Displays the cost for sending packets across the GRE tunnel. Cost is used by OSPF routers to calculate the shortest path.
Create button	Click **Create** to create a new GRE tunnel route.
Edit button	Click **Edit** to edit an existing GRE tunnel.
Delete button	Click **Delete** to delete an existing GRE tunnel.

IS-IS RIB Tab

The IS-IS RIB tab allows you to view the intermediate system-to-intermediate system (IS-IS) protocol routing information base (RIB). IS-IS is an OSI link-state hierarchical routing protocol that floods the network with link-state information that enables the NEs to build a complete and consistent picture of a network topology.

Table B-167 Field Descriptions for the IS-IS RIB Tab

Field	Description
Router Number	Displays the virtual router number. Only one router is available on the ONS 15310 MA SDH.
Subnet Type	Indicates the OSI subnetwork point-of-attachment type used to access the destination address. It includes SDCC, LDCC, GCC, OSC, and LAN.
Destination Address	Displays the Network Service Access Point (NSAP).
MAC Address	Displays the NE's MAC address for destinations that are accessed by the LAN subnets.

ES-IS RIB Tab

The ES-IS RIB tab allows you to view the end system-to-intermediate system (ES-IS) protocol RIB. ES-IS is an OSI protocol that defines how end systems (hosts) and intermediate systems (routers) learn about each other.

Table B-168 Field Descriptions for the ES-IS RIB Tab

Field	Description
Router Number	Displays the virtual router number. Only one router is available on the ONS 15310 MA SDH.
Subnet Type	Indicates the OSI subnetwork point-of-attachment type used to access the destination address. It includes SDCC, LDCC, GCC, OSC, and LAN.
Destination Address	Displays the NSAP of the destination ES.
MAC Address	Displays the NE's MAC address for destinations that are accessed by the LAN subnets.

Alarm Extenders

The Alarm Extenders Properties pane allows you to view external alarm information. The Alarm Extenders Properties pane contains the following tabs:

- External Alarms Tab, page B-120
- External Controls Tab, page B-120

- User-Defined Alarms Tab, page B-120

External Alarms Tab

The External Alarms tab allows you to view and update external alarm information.

Table B-169 Field Descriptions for the External Alarms Tab

Field	Description
Input Number	The alarm input number.
Enabled	Check to activate the fields for the alarm input number.
Alarm Type	Choose an alarm type from the provided list.
Severity	Choose a severity from the list.
Raised When	Choose the contact condition that will trigger the alarm in CTC.
Virtual Wire	To assign the external device to a virtual wire, choose a virtual wire from the list, or choose None if no assignment is required.
Description	Displays a default description for every external alarm that is enabled.
Raised	Indicates whether an alarm has been raised.
Contact Status	Indicates the current status of the contact.

External Controls Tab

The External Controls tab allows you to view and update external controls.

Table B-170 Field Descriptions for the External Controls Tab

Field	Description
Control Number	The control number.
Enabled	Check to activate the fields for the control number.
Control Type	Choose a control type from the provided list.
Trigger Type	Choose a trigger type: a local minor, major, or critical alarm; a remote minor, major, or critical alarm; or a virtual wire activation.
Description	Enter a description.
Current State	The current state of the control.
Auto State	The auto state of the control.
Contact Setting	The current contact setting.

User-Defined Alarms Tab

The User-Defined Alarms tab allows you to view, add, and delete custom alarm types on the ONS 15310 MA SDH.

Table B-171 Field Descriptions for the User-Defined Alarms Tab

Field	Descriptions
Alarm Types	Lists the user-defined alarm types that have been created on the ONS 15310 MA SDH. You can create up to 50 custom environmental alarms, which are reported in the Condition column in the Alarm Log and Alarm Browser windows.
Add	Click the **Add** button to add a new custom alarm type. Enter a unique alarm type name that contains 20 characters or fewer. Only the following characters are valid: 0-9, A-Z, a-z, and hyphen (-).
Delete	Click the **Delete** button to delete an existing alarm type.

Orderwire

Orderwire allows you to plug a phoneset into a node and communicate with others working at other nodes or other facility equipment. The orderwire is a pulse code modulation (PCM) encoded voice channel that uses E1 or E2 bytes in section/line overhead. The AIC allows simultaneous use of both local (section overhead signal) and express (line overhead channel) orderwire channels on a SONET ring or particular optics facility. Local orderwire also allows communication at regeneration sites when the regenerator is not a Cisco device.

Table B-172 Field Descriptions for the Orderwire Properties Pane

Field	Description
Buzzer	
Buzzer	The AIC supports a call button on the module front panel which, when pressed, causes all AICs on the orderwire subnetwork to ring. The ringer/buzzer resides on the AIC. The AIC also has a ring LED that mimics the AIC ringer. It flashes when any call button is pressed on the orderwire subnetwork. The call button and ringer LED allow a remote craftsperson to get the attention of craftspeople across the network. To turn on the audible alert (buzzer) for the orderwire, check the **Buzzer** check box.
2-Wire Level	
RX (dBm)	If needed, adjust the RX dBm by moving the slider to the right or left for the two-wire headset that you will use. In general, you should not need to adjust the dBm.
TX (dBm)	If needed, adjust the TX dBm by moving the slider to the right or left for the two-wire headset that you will use. In general, you should not need to adjust the dBm.

Note See Table 1-22 on page 1-47 for descriptions of actions that you can perform using the buttons at the bottom of the window.

ONS 15327 NE Explorer

When you choose **Configuration > NE Explorer** for the ONS 15327, the window that Prime Optical displays consists of a tree on the left side and a properties pane on the right. The tree provides a hierarchical view and alarm status of the NE's physical shelves and slots. The properties pane shows information about the selected entity. See Node Properties Pane—ONS 15327, page B-122 for more information.

Note If CTC is launched from the web browser for an ONS 15327 node, the CTC GUI might look different from when it is launched from Prime Optical. This discrepancy occurs because the latest version of CTC (for NE releases supported by Prime Optical) is packaged with Prime Optical. If launched from a browser, the CTC software is retrieved from the NE itself, which might be a version different from that packaged with Prime Optical.

When an NE Explorer is in autorefresh mode, all values of an entity that is being edited by the user are automatically refreshed. You will lose all of your changes unless you click the Apply button. To enable autorefresh, click the Refresh Data button in the NE Explorer.

Node Properties Pane—ONS 15327

The node properties pane displays information about the ONS 15327 NE. The properties pane contains the following tabs, some of which apply only to a specific NE version:

- Shelf View, page B-122
- Identification, page B-122
- Network, page B-123
- DCC, page B-130
- Timing, page B-131
- Protection, page B-134
- Ether Bridge, page B-135
- NE Defaults, page B-136
- Security, page B-137
- Alarm, page B-141
- XC Utilization, page B-142
- BLSR, page B-142
- OSI, page B-143

Shelf View

The Shelf View Properties pane displays a graphic of the ONS 15327 that is selected in the NE Explorer tree. Moving the mouse pointer over the graphic of the NE, its shelves, slots, or cards displays the current alarms for the highlighted item. Double-clicking a slot or card displays the slot or card in the properties pane. The right-click menu allows you to reset, delete, or change the card. For unprovisioned slots, the right-click menu allows you to add a card.

Identification

The Identification Properties pane displays identification information about the ONS 15327 NE.

Table B-173 Field Descriptions for the Identification Properties Pane

Field	Description
NE ID	Displays the ID of the NE from the Domain Explorer.
Description	Displays the description of the NE from the Domain Explorer.
NE Model	Displays the NE model type.
Software Version	Displays the current running version of the system software.
Contact	Displays the name of the node contact person and the phone number.
System Description	Displays a description of the NE.
SNTP Settings	
Use NTP/SNTP Server	If checked, CTC uses an SNTP server to set the date and time of the node. Using an SNTP server ensures that all ONS 15327 network nodes use the same date and time reference. The server synchronizes the node's time after power outages or software upgrades. If you check the **Use NTP/SNTP Server** check box, enter the server's IP address in the next field. If you do not use an SNTP server, complete the Time and Time Zone fields. The ONS 15327 will use these fields for alarm dates and times.
SNTP Server	Displays the SNTP server IP address.
Location	
Latitude	Allows you to set the latitude of the NE. Select **North** or **South** from the drop-down list; then, enter the degrees and minutes (or click the up and down arrows to increase or decrease each by 1 unit).
Longitude	Allows you to set the longitude of the NE. Select **East** or **West** from the drop-down list; then, enter the degrees and minutes (or click the up and down arrows to increase or decrease each by 1 unit).
Date and Time	
Time	Displays the NE date and time.
Time Zone	Displays the time zone where the NE is located.
Use Daylight Savings Time	If checked, Daylight Savings Time is observed.
AIS-V Insertion on STS-1 Signal Degrade - Path	
Insert AIS-V on STS-1 SD-P	If checked, the NE inserts an AIS-V signal when it detects an STS-1 signal degrade.
SD-P BER	Select the signal degrade path bit error rate for AIS-V insertion.

Network

The Network Properties pane displays information about the NE network address. The Network Properties pane contains the following tabs:

- Address Tab, page B-124
- Static Routes Tab, page B-124
- OSPF Tab, page B-124
- OSPF Area Range Tab, page B-125
- OSPF Virtual Links Tab, page B-126
- SNMP Tab, page B-126

- Firewall/Proxy Tab, page B-127
- RIP Routing Table Tab, page B-127
- RIP Tab, page B-128
- Routing Table Tab, page B-128
- Proxy Tunnels Tab, page B-129
- Firewall Tunnels Tab, page B-129

Address Tab

The Address tab allows you to view and change information about the NE network address.

Table B-174 Field Descriptions for the Address Tab

Field	Description
IP Address	Displays the IP address of the NE.
Default Router	Displays the IP address of the default router.
Subnet Mask	Displays the subnetwork mask ID of the NE.
MAC Address	Displays the ONS 15327 address as it is identified on the IEEE 802 MAC layer.
Forward DHCP Requests	If checked, forwards Dynamic Host Configuration Protocol (DHCP) requests to the IP address entered in the DHCP Server field. When the Forward DHCP Requests check box is unchecked, the DHCP Server field is display-only.
DHCP Server	Displays the IP address of the DHCP server.

Static Routes Tab

The Static Routes tab allows you to view information about Prime Optical and ONS 15327 connectivity and create or delete static routes.

Table B-175 Field Descriptions for the Static Routes Tab

Field	Description
Destination IP	Displays the IP address of the computer running Prime Optical.
Subnet Mask	Displays the subnetwork mask.
Next Hop	Displays the IP address of the router port or the node IP address if the Prime Optical computer is connected to the node directly.
Cost	Displays the number of hops between the ONS 15327 and the computer.

OSPF Tab

The OSPF tab displays OSPF information. OSPF is a link-state Internet routing protocol.

Table B-176 Field Descriptions for the OSPF Tab

Field	Description
Slot	Displays the slot number.
Port	Displays the port number.

Table B-176 Field Descriptions for the OSPF Tab (continued)

Field	Description
DCC OSPF Area ID	Displays the number that identifies the ONS 15327 as a unique OSPF area. The OSPF area number can be from 0.0.0.0 to 255.255.255.255. The number must be unique to the LAN OSPF area.
SDCC Metric	Sets a cost for sending packets across the Section Data Communications Channel (SDCC), which is used by OSPF routers to calculate the shortest path. This value should always be higher than the LAN metric. The Cisco default DCC metric is 100. This value is normally unchanged.
OSPF Active on LAN	If checked, enables the ONS 15327 OSPF topology to be advertised to OSPF routers on the LAN. Enable this field on ONS 15327s that connect directly to OSPF routers.
LAN Port Area ID	Displays the OSPF area ID for the router port where the ONS 15327 is connected. (This number is different from the DCC OSPF area ID.)
Router Priority	Displays the designated router for a subnet.
Dead Interval	Displays the number of seconds that will pass while an OSPF router's packets are not visible before its neighbors declare the router down. Forty seconds is the Cisco default.
Retransmit Interval	Displays the time that will elapse before a packet is resent. Five seconds is the Cisco default.
Hello Interval	Displays the number of seconds between OSPF hello packet advertisements sent by OSPF routers. Ten seconds is the Cisco default.
Transit Delay	Displays the service speed. One second is the Cisco default.
LAN Metric	Displays a cost for sending packets across the LAN. This value should always be lower than the DCC metric. Ten is the Cisco default.
Authentication Type	Displays Simple Password if the router where the ONS 15327 is connected uses authentication. Otherwise, it displays No Authentication.
Authentication Key	Displays the OSPF key (password) if authentication is enabled.
Confirm Authentication Key	Retype the authentication key to confirm it.

OSPF Area Range Tab

The OSPF Area Range tab allows you to view information about OSPF area ranges and create or delete area ranges.

Table B-177 Field Descriptions for the OSPF Area Range Tab

Field	Description
Range Address	Displays the area IP address for the ONS 15327s that reside within the OSPF area. For example, if the ONS 15327 OSPF area includes nodes with IP addresses 10.10.20.100, 10.10.30.150, 10.10.40.200, and 10.10.50.250, the range address would be 10.10.0.0.
Range Area ID	Displays the OSPF area ID for the ONS 15327 NEs. This is either the ID in the DCC OSPF Area ID field or the ID in the LAN Port Area ID field.
Mask Length	Displays the subnet mask length.
Mask	Displays the subnet mask IP address.
Advertise	Indicates whether the OSPF range table is advertised.

OSPF Virtual Links Tab

The OSPF Virtual Links tab allows you to view information about OSPF virtual links and create or delete virtual links.

Note You cannot create a new virtual link unless OSPF is active on the LAN.

Table B-178 Field Descriptions for the OSPF Virtual Links Tab

Field	Description
Neighbor	Displays the router ID of the Area 0 router.
Transit Delay	Displays the service speed. One second is the Cisco default.
Retransmit Interval	Displays the time that will elapse before a packet is resent. Five seconds is the Cisco default.
Hello Interval	Displays the number of seconds between OSPF hello packet advertisements sent by OSPF routers. Ten seconds is the Cisco default.
Dead Interval	Displays the number of seconds that will pass while the packets of an OSPF router are not visible before its neighbors declare the router down. Forty seconds is the Cisco default.
Authentication Type	Displays the authentication type.
Authentication Key	Displays the authentication key.

SNMP Tab

The SNMP tab allows you to view SNMP information and create or delete SNMP trap destinations.

Table B-179 Field Descriptions for the SNMP Tab

Field	Description
Allow SNMP Set	If checked, allows you to use SNMP management software with the ONS 15327.
Allow SNMP Proxy	If checked, allows you to configure the ONS 15327 to proxy SNMP calls.
IP Address	The IP address of the NMS.
Community Name	The SNMP community name. **Note** The SNMP community string cannot be blank in Prime Optical. If a blank community string is required in CTC builds earlier than R4.6, you must set the blank community string in CTC.
UDP Port	The UDP port for SNMP. The Cisco default UDP port is 162.
Trap Version	The trap version, either SNMP version 1 or version 2. See your NMS documentation to determine whether to use SNMP version 1 or version 2.
Relay A IP Address	The first ONS 15327 to relay traps through. The IP address is appended to the base community string to tell the first NE the IP address and the port to forward the trap to. The second NE recognizes the IP address and strips it from the community string before forwarding the trap.
Relay A Community Name	The community name for the relay A node to use in the trap when forwarding it.
Relay B IP Address	The second ONS 15327 to relay traps through.
Relay B Community Name	The community name for the relay B node to use in the trap when forwarding it.

Table B-179 Field Descriptions for the SNMP Tab (continued)

Field	Description
Relay C IP Address	The third ONS 15327 to relay traps through.
Relay C Community Name	The community name for the relay C node to use in the trap when forwarding it.

Firewall/Proxy Tab

The Firewall/Proxy tab allows you to use an NE as a proxy server or as a firewall.

Table B-180 Field Descriptions for the Firewall/Proxy Tab

Field	Description
Craft Access Only	If checked, only allows CTC to access the firewall and proxy settings of the NE. Check this item only if the LAN port is used for direct workstation-to-network element connections, and not connected to a LAN. Disabling craft-only access allows the installation of a route to the LAN. Disable this only if the LAN port is actually connected to the LAN. **Note** This field applies only to ONS 15327 releases earlier than R4.6.
Enable Firewall	If checked, blocks packets routed between the local area and DCC networks. This causes a loss of connectivity to DCC-only connected NEs. Prime Optical cannot reestablish the connection unless the proxy is enabled. Additionally, all NEs connected to the LAN must also have their firewall enabled, or connectivity problems will result. **Note** This field applies only to ONS 15327 releases earlier than R4.6.
Gateway Settings	
Enable Proxy Server on Port	If checked, the ONS 15327 serves as a proxy for connections between the Prime Optical server and ONS 15310s that are DCC-connected to the proxy ONS 15327. The Prime Optical server establishes connections to DCC-connected nodes through the proxy node. The Prime Optical server can connect to nodes that it cannot directly reach from the host on which it runs. The proxy server port number (display-only) is shown following the Enable Proxy Server on Port field. The proxy server uses port 1080. If checked, the following radio buttons are enabled: • End Network Element (ENE)—Enables the ONS 15327 to proxy as an ENE. Note that an alternate expansion for ENE is *external network element*. • Gateway Network Element (GNE)—Enables the ONS 15327 to proxy as a GNE. • Proxy-only—Enables proxy only. If unchecked, the node does not proxy.

RIP Routing Table Tab

The RIP Routing Table tab allows you to view the RIP routing table.

Table B-181 Field Descriptions for the RIP Routing Table Tab

Field	Description
Destination	Displays the IP address of the destination network or host.
Mask	Displays the subnet mask used to reach the destination network or host.

Table B-181 Field Descriptions for the RIP Routing Table Tab (continued)

Field	Description
Gateway	Displays the IP address of the gateway used to reach the destination network or host.
Cost	Displays the hop count metric. The valid range is from 1 to 15.

RIP Tab

The RIP tab allows you to view and configure RIP parameters.

Note

- When you enable RIP, you must wait for approximately one minute for the default RIP address summary to become visible.
- When you disable RIP on the NE, all summary address entries in the Summary Address table are deleted.

Table B-182 Field Descriptions for the RIP Tab

Field	Description
RIP Active	Check this check box to enable RIP. Uncheck it to disable RIP. **Note** Checking the RIP Active check box and clicking the **Apply** button does not enable RIP. Instead, you must check the RIP Active check box, click the **Create** button, and use the Create RIP Address Summary dialog box to create a new RIP address. For details, see Using RIP, page 5-8.
RIP Type	Select RIP version 1.0 or RIP version 2.0.
Metric	Enter the hop count metric. The valid range is from 1 to 15.
Authentication Type	Select the authentication type.
Authentication Key	Enter the authentication key (password) if the authentication type is Simple Password.
Confirm Authentication Key	Retype the authentication key to confirm it.
RIP Address Summary	• Summary Address—Displays the summary address. • Mask Length—Displays the subnet mask length. • Cost—Displays the hop count metric. The valid range is from 1 to 15.
Create button	Click **Create** to create a new RIP address. See Using RIP, page 5-8.
Delete button	Click **Delete** to delete an existing RIP address.

Routing Table Tab

The Routing Table tab allows you to view the OSPF routing table.

Table B-183 Field Descriptions for the Routing Table Tab

Field	Description
Destination	Displays the IP address of the destination network or host.
Mask	Displays the subnet mask used to reach the destination network or host.

Table B-183 Field Descriptions for the Routing Table Tab (continued)

Field	Description
Gateway	Displays the IP address of the gateway used to reach the destination network or host.
Usage	Shows the number of times the listed route has been used.
Interface	Shows the ONS 15327 interface used to access the destination. Values are: • cpm0—The ONS 15327 Ethernet interface (that is, the RJ-45 jack on the TCC+/TCC2 and the LAN 1 pins on the backplane). • pdcc0—An SDCC interface (that is, an OC-N trunk card identified as the SDCC termination). • lo0—A loopback interface.

Proxy Tunnels Tab

The Proxy Tunnels tab allows you to configure source and destination information and create or delete proxy tunnels.

Table B-184 Field Descriptions for the Proxy Tunnels Tab

Field	Description
Source Address	Specify the source IP address in the source-destination pair for the tunnel that will be routed through the proxy server.
Source Mask	Specify the source subnetwork mask in the source-destination pair for the tunnel that will be routed through the proxy server.
Destination Address	Specify the destination IP address in the source-destination pair for the tunnel that will be routed through the proxy server.
Destination Mask	Specify the destination subnetwork mask in the source-destination pair for the tunnel that will be routed through the proxy server.

Firewall Tunnels Tab

The Firewall Tunnels tab allows you to configure source and destination information and create and delete firewall tunnels.

Table B-185 Field Descriptions for the Firewall Tunnels Tab

Field	Description
Source Address	Specify the source IP address in the source-destination pair for the tunnel that will be routed through the firewall.
Source Mask	Specify the source subnetwork mask in the source-destination pair for the tunnel that will be routed through the firewall.
Destination Address	Specify the destination IP address in the source-destination pair for the tunnel that will be routed through the firewall.
Destination Mask	Specify the destination subnetwork mask in the source-destination pair for the tunnel that will be routed through the firewall.

DCC

The DCC Properties pane allows you to create, delete, and view SONET or SDH DCCs.

Table B-186 Field Descriptions for the DCC Properties Pane

Field	Description
SDCC Terminations	Displays the slot, port, and card type of an SDCC termination.
OSPF Disabled on Link	Check to prevent the advertisement of the OSPF routing table.
Foreign	A check mark indicates that the far-end node is a non-ONS node.
Foreign IP	Displays the foreign node IP address.
LAPD Config	If the SDCC is provisioned as OSI only, the following SDCC LAP-D parameters are displayed: • AITS/UITS—Indicates the LAP-D acknowledgement type, either Acknowledged Information Transfer Service (AITS) or Unacknowledged Transfer Service (UITS). • Network/User—Indicates the LAP-D frame command/response role, either Network or User. • MTU—Shows the size of the maximum transfer unit (MTU). The range is from 512 to 1500 octets. • T2000—Shows the time between Set Asynchronous Balanced Mode (SABME) frame transmission. The range is from 0.2 to 20 seconds. • T203—Shows the maximum time between LAP-D frame exchanges. The range is from 4 to 120 seconds.
OSI SNPA	If the SDCC is provisioned for OSI, the following subnetwork point-of-attachment (SNPA) information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.

Table B-186 Field Descriptions for the DCC Properties Pane (continued)

Field	Description
Service State	Select the state of the termination: • IS-NR—In Service–Normal. • OOS-AU—Out of Service–Autonomous. • OOS-MA—Out of Service–Management. • OOS-AUMA—Out of Service–Autonomous and Management. In addition, a secondary state provides additional information about the status of the entity. Values for secondary state are: • MEA—Mismatch of equipment due to invalid equipment insertion. • UEQ—Unequipped; there is nothing in the slot. • UAS—Unassigned; the entity does not exist, has not been created, or has been deleted. • SWDL—Software download in progress. • MT—Maintenance, as per the Admin State change. • AINS—Automatic in service. • DSBLD—Traffic is disabled on the entity. • LPBK—Port or connection has a loopback on it. • FLT—Fault secondary state. When an entity is faulted, an FLT state is raised. Equipment and ports in FLT state should be cleared as they transition. Transition states are listed in Table 11-11 on page 11-15. See Table 11-11 on page 11-15 for the Service state-Secondary state possible values. **Note** If the NE release does not support the Service state, this field shows N/A.
Create button	Allows you to create new terminations on SONET or SDH cards.
Delete button	Allows you to delete the selected termination.

Timing

The Timing Properties pane contains the following tabs:

- General Tab, page B-131
- Facility Tab, page B-132
- Reference List Tab, page B-133
- Status Tab, page B-134
- Timing Report Tab, page B-134

General Tab

The General tab displays general timing information.

Table B-187 Field Descriptions for the General Tab

Field	Description
General	
Timing Mode	Set to External if the ONS 15327 derives its timing from a BITS source wired to the backplane pins; set to Line if timing is derived from an OC-N card that is optically connected to the timing node. A third option, Mixed, allows you to set external and line timing references. **Caution** Mixed timing may cause timing loops. Use this mode with care.
SSM Message Set	Choose the SSM set level supported by your network. SSM is an SONET protocol that communicates information about the quality of the timing source. SSM messages are carried on the S1 byte of the SONET Line layer. They enable SONET devices to automatically select the highest quality timing reference and to avoid timing loops. If a Generation 1 node receives a Generation 2 message, the message is mapped down to the next available Generation 1 node. For example, an ST3E message becomes an ST3.
Revertive	If checked, the ONS 15327 reverts to a primary reference source after the conditions that caused it to switch to a secondary timing reference are corrected.
Reversion Time	Specify the reversion time in half-minute increments.
Quality of RES	If your timing source supports the reserved S1 byte, you set the timing quality here. (Most timing sources do not use RES.) Qualities are displayed in descending quality order as ranges. For example, ST3 < RES < ST2 means the timing reference is higher than a Stratum 3 and lower than a Stratum 2.

Facility Tab

The Facility tab displays the facility type, and BITS IN and OUT information.

Note BITS IN Facilities and BITS OUT Facilities values apply to both BITS-1 and BITS-2.

Table B-188 Field Descriptions for the Facility Tab

Field	Description
BITS-IN-OUT Facility Type	
In Facility Type	Provisions the BITS In facility type.
Out Facility Type	Provisions the BITS Out facility type.
BITS IN Facilities	
In State	Set the BITS reference to IS (In Service) or OOS (Out of Service). For nodes set to Line timing with no equipment timed through BITS Out, set the state to OOS. For nodes using External timing or Line timing with equipment timed through BITS Out, set the state to IS.
Coding	Set to the coding used by your BITS reference, either B8ZS or AMI.
Framing	Set to the framing used by your BITS reference, either ESF or SF (D4). SSM is not available with Super Frame.
Sync Messaging	If checked, enables the SSM for BITS In. (SSM is not available if Framing is set to Super Frame.)
Admin SSM	If the Sync Messaging check box is not checked, you can choose the SSM Generation 2 type from the drop-down list.

Table B-188 Field Descriptions for the Facility Tab (continued)

Field	Description
BITS OUT Facilities	
Out State	Set the BITS reference to IS (In Service) or OOS (Out of Service). For nodes set to Line timing with no equipment timed through BITS Out, set the state to OOS. For nodes using External timing or Line timing with equipment timed through BITS Out, set the state to IS.
Coding	Set to the coding used by your BITS reference, either B8ZS or AMI.
Framing	Set to the framing used by your BITS reference, either ESF or SF (D4). SSM is not available with Super Frame.
AIS Threshold	If SSM is disabled or Super Frame is used, sets the quality level where a node sends an AIS from the BITS-1 Out and BITS-2 Out backplane pins. An AIS is raised when the optical source for the BITS reference falls to or below the SSM quality level defined in this field.
LBO	If you are timing an external device connected to the BITS Out pins, set the distance between it and the ONS 15327. Options are 0-133 ft (Cisco default), 134-266 ft, 267-399 ft, 400-533 ft, and 534-655 ft.

Reference List Tab

The Reference List tab provides timing reference information.

Table B-189 Field Descriptions for the Reference List Tab

Field	Description
NE References	Allows you to define three timing references (Ref-1, Ref-2, and Ref-3). The node uses Reference 1 unless a failure occurs on that reference, in which case, the node uses Reference 2. If that fails, the node uses Reference 3, which is typically set to Internal Clock. This is the Stratum 3 clock provided on the TCC+. The options displayed depend on the Timing Mode setting: • Timing Mode set to External—Options are BITS-1, BITS-2, and Internal Clock. • Timing Mode set to Line—Options are the node's working optical cards and Internal Clock. **Note** For Timing Mode set to External and Timing Mode set to Line, select the cards/ports that are directly or indirectly connected to the node wired to the BITS source; that is, the node's trunk cards. Set Reference 1 to the trunk card that is closest to the BITS source. For example, if Slot 5 is connected to the node wired to the BITS source, select Slot 5 as Reference 1. • Timing Mode set to Mixed—Both BITS and optical cards are available, allowing you to set a mixture of external BITS and optical trunk cards as timing references.
BITS-1 Out References	Allows you to define three timing references (Ref-1, Ref-2, and Ref-3) for equipment wired to the BITS Out backplane pins. Normally, BITS Out is used with line nodes, so the options displayed are the working optical cards. BITS-1 and BITS-2 Out are enabled as soon as BITS-1 and BITS-2 facilities are placed in service.
BITS-2 Out References	Allows you to define three timing references (Ref-1, Ref-2, and Ref-3) for equipment wired to the BITS Out backplane pins. Normally, BITS Out is used with line nodes, so the options displayed are the working optical cards. BITS-1 and BITS-2 Out are enabled as soon as BITS-1 and BITS-2 facilities are placed in service.

Status Tab

The Status tab displays timing status information.

Note If you change any values in the Status tab and click Apply at the bottom of the screen, the values are not set. Instead, use the following buttons to apply changes:

- Clear—Releases any existing switch request. For example, if you issue a Force Switch and then issue a Clear, the Force Switch request is released.
- Manual Switch—Switches the timing reference from one source to another.
- Force Switch—Switches the timing reference from one source to another. This request has a higher priority than the Manual Switch request.

Table B-190 Field Descriptions for the Status Tab

Field	Description
NE Clock	
NE Reference	Set the NE timing reference to internal, BITS-1, or BITS-2.
Status	Displays the status of the NE clock.
Operations	Execute a switch on the NE timing reference.
BITS-1 Out	
BITS-1 Out	Set the BITS-1 out timing reference.
Status	Displays the status of the BITS-1 out timing reference.
Operations	Execute a switch on the BITS-1 out timing reference.
BITS-2 Out	
BITS-2 Out	Set the BITS-2 out timing reference.
Status	Displays the status of the BITS-2 out timing reference.
Operations	Execute a switch on the BITS-2 out timing reference.

Timing Report Tab

The Timing Report tab summarizes the NE's current timing settings.

Protection

The Protection Properties pane contains the following tabs:

- Protection Groups Tab, page B-134
- Operations Tab, page B-135

Protection Groups Tab

The Protection Groups tab displays a list of available protection groups and allows you to create, delete, and view protection groups.

Table B-191 Field Descriptions for the Protection Groups Tab

Field	Description
Protection Groups	
Displays a list of available protection groups. Click the **Create** or **Delete** button to create a new protection group or delete an existing one.	
Selected Protection Group	
Name	Modify the name of the selected protection group. The name can have up to 32 alphanumeric characters.
Type	View the protection type (1:1 [card], 1:N [card], Y Cable [port], or 1+1 [port]) of the selected protection group.
Protect Card	View the protect module if using 1:1 or 1:N protection.
Available Entities	Displays a list of available entities. You can toggle between available and working entities.
Working Entities	Displays a list of working entities. You can toggle between working and available entities.
Bidirectional Switching	Click if you want both the transmit and the receive channels to switch if a failure occurs on one. This option is available only if you select the 1+1 (port) type.
Revertive	If checked, the node reverts traffic to the working card or port after failure conditions for the amount of time entered in Reversion Time. This option is not available if you select the 1:N (card) type.
Reversion Time	If Revertive is checked, choose the amount of time following failure condition correction after which the node should switch back to the working card or port. Use half-minute increments. This option is available only if you select the 1:1 (card) type.

Operations Tab

The Operations tab displays protection group operation information.

Table B-192 Field Descriptions for the Operations Tab

Field	Description
Protection Groups	Displays a list of available protection groups.
Protection Group Details	Displays details about the selected protection groups and allows you to execute switch commands.

Ether Bridge

The Ether Bridge Properties pane contains the following tabs:

- Spanning Tree Config Tab, page B-135
- Spanning Tree Status, page B-136

Spanning Tree Config Tab

The Spanning Tree Config tab displays spanning tree configuration information for the ONS 15327.

Table B-193 Field Descriptions for the Spanning Tree Config Tab

Field	Description
Index Number	Unique number that identifies the spanning tree.
Priority	Incoming traffic queue. Priority can be either high or low.
Bridge Max Age	Maximum amount of time that received-protocol information is retained before it is discarded.
Bridge Hello Time	Time interval, in seconds, between the transmission of configuration bridge protocol data units (BPDUs) by a bridge that is the spanning-tree root or is attempting to become the spanning-tree root.
Bridge Forward Delay	Time spent by a port in the listening state and the learning state.

Spanning Tree Status

The Spanning Tree Status Properties pane displays spanning tree status information for the ONS 15327.

Table B-194 Field Descriptions for the Spanning Tree Status

Field	Description
Index Number	Unique number that identifies the spanning tree.
Bridge ID	ONS 15327 unique identifier that transmits the BPDU; the bridge ID is a combination of the bridge priority and the ONS 15327 MAC address.
Topology Age	Amount of time, in seconds, since the last topology change.
Topology Changes	Number of times the spanning-tree topology has been changed since the node booted up.
Designated Root	Spanning tree's designated root for a particular spanning-tree instance.
Root Cost	Total path cost to the designated root.
Root Port	Port used to reach the root.
Max Age	Maximum amount of time that received-protocol information is retained before it is discarded.
Hello Time	Time interval, in seconds, between the transmission of configuration BPDUs by a bridge that is the spanning-tree root or is attempting to become the spanning-tree root.
Hold Time	Minimum time period, in seconds, that elapses during the transmission of configuration information on a given port.
Forward Delay	Time spent by a port in the listening state and the learning state.

NE Defaults

The NE Defaults Properties pane displays a list of default thresholds for the ONS 15327 NE. You can edit NE defaults for the ONS 15327 R5.0 and later.

Table B-195 Field Descriptions for the NE Defaults Properties Pane

Field	Description
Parameter	Lists the default NE parameter.
Value	Shows the default parameter value, and allows you to change the default.
Units	Lists the unit of measure that corresponds to the default NE parameter.

Table B-195 Field Descriptions for the NE Defaults Properties Pane (continued)

Field	Description
Range	Lists the possible range of values for the default NE parameter. **Note** This field applies to the ONS 15327 R6.0 and later.
Side Effects	Lists any side effects that could occur as a result of changing the default NE parameter. **Note** This field applies to the ONS 15327 R6.0 and later.

You can load different NE defaults using the NE Defaults Management window. See Restoring NE Defaults, page 4-78.

Security

The Security Properties pane allows you to view and edit security features for the ONS 15327 NE. The Security Properties pane contains the following tabs:

- Policy Tab, page B-137
- Password Tab, page B-138
- Access Tab, page B-139
- RADIUS Server Tab, page B-140
- Legal Disclaimer Tab, page B-140

Policy Tab

The Policy tab allows you to specify user security parameters.

Note If the user is already logged in, any changes to the NE user type settings take effect only when the user next logs in.

Table B-196 Field Descriptions for the Policy Tab

Field	Description
Idle User Timeout	
Each CTC or TL1 user can be idle during his or her login session for a specified amount of time before the CTC window is locked. The lockouts prevent unauthorized users from making changes. Higher-level users have shorter default idle periods and lower-level users have longer or unlimited default idle periods. The user idle period can be modified by a SuperUser. **Note** A user already logged into the node is not affected by a change to the Idle User Timeout policy.	
Retrieve	Set the idle user timeout for a CTC Retrieve user.
Maintenance	Set the idle user timeout for a CTC Maintenance user.
Provisioner	Set the idle user timeout for a CTC Provisioner user.
SuperUser	Set the idle user timeout for a CTC SuperUser user.
User Lockout	

Table B-196 Field Descriptions for the Policy Tab (continued)

Field	Description
Manual Unlock by SuperUser	If checked, the CTC SuperUser user must manually unlock locked out CTC users. If unchecked, locked out CTC users are automatically unlocked after the lockout duration period elapses.
Lockout Duration	Set the lockout duration period for locked out CTC users. This field is enabled only if the Manual Unlock by SuperUser check box is unchecked.
Failed Logins Allowed	Set the number of failed logins before the CTC user is automatically locked out.
Other	
Single Sessions per User	If checked, each CTC user can launch only one session at a time.
Prevent Disabling the SuperUser	If checked, inactive CTC SuperUsers are never disabled.
Disable Inactive User	If checked, inactive users are disabled automatically for the amount of time in the Inactive Duration field.
Inactive Duration	Specify the inactive duration in days. The range is from 1 to 90 days; the Cisco default is 45 days. A value of 0 implies the inactive duration is disabled and invalid.

Password Tab

The Password tab allows you to specify user password security parameters.

Table B-197 Field Descriptions for the Password Tab

Field	Description
Password Change	
Prevent Reusing Last	Prevents setting a CTC user's current password to one of the most recent passwords. You can set the number of most recent passwords that cannot be reused.
Disable Password Flipping	If checked, users are not allowed to change passwords for the number of days specified in the Can Change Password After field.
Can Change Password After	Enter the number of days that must elapse before the user can change the password.
Force Password Change After Assigned	If checked, during the first successful login, the user is forced to change the password.
Password Difference	Allows SuperUsers to specify the number of characters by which the new password of a user must differ from the old password, while performing a password change. The default value is 1; the range is from 1 to 5 characters.
Password Aging	
Enable Password Aging	Check this check box to enable password aging.
Aging Period	Enter the aging period, in days, for Retrieve, Maintenance, Provisioner, and SuperUser CTC users. After the aging period expires, CTC users are forced to change their passwords.
Warning Period	Enter the warning period, in days, for Retrieve, Maintenance, Provisioner, and SuperUser CTC users. After the warning period expires, CTC users are warned that their passwords will soon expire.

Access Tab

The Access tab allows you to configure LAN and shell access to the NE.

Table B-198 Field Descriptions for the Access Tab

Field	Description
Access	
LAN Access	Specify the type of LAN access allowed. Values are Backplane Only, No LAN Access, Front and Backplane, or Front Only (for ONS 15454 SONET NEs only). **Note** After the LAN access to the backplane is set, the Prime Optical client is unusable for 4 to 5 minutes.
Restore Timeout	This time period begins if LAN Access is NO and all DCC connections are lost. If the time expires before a DCC is restored, LAN Access is restored so that the node is not isolated. When the DCC comes back, LAN Access returns to its specified settings. The range is from 0 (never) to 60 minutes; the Cisco default is 5 minutes.
Shell Craft Access (available for ONS 15327 NEs R6.0 and later)	
Enable Craft Port	Check this check box to enable the craft port.
Shell Access	
Shell Access on	Specify shell access on Telnet or SSH.
SSH Port	Indicates the SSH port number that will be used if the SSH radio button is selected.
Telnet Port	This is enabled if you selected the Telnet radio button. Enter the Telnet port number.
Use Standard Telnet Port	If checked, the standard Telnet port is used for Telnet access.
Shell Access (available for ONS 15327 NEs R6.0 and later)	
Access State	Select the Shell access state from the drop-down list. You can select Disable, Non-secure, or Secure.
SSH Port	Indicates the SSH port number that will be used.
Telnet Port	This is enabled if you selected the Non-secure access state. Enter the Telnet port number that will be used.
Use Standard Telnet Port	Check this check box to indicate that the standard Telnet port will be used.
Enable Shell Password	Indicates whether or not the Shell password is enabled. **Note** You cannot enable the Shell password in Prime Optical. Enabling and providing a Shell password is currently done in CTC.
TL1 Access (available for ONS 15327 NEs R6.0 and later)	
Access State	Select the TL1 access state from the drop-down list. You can select Disable, Non-secure, or Secure.
SNMP Access (available for ONS 15327 NEs R6.0 and later)	
Access State	Select the SNMP access state from the drop-down list. You can select either Disable or Non-secure.
Other	
PM Clearing Privilege	Select the users privilege that allows clearing PM statistics for the NE.
EMS Access (available for ONS 15327 NEs R6.0 and later)	

Table B-198 Field Descriptions for the Access Tab (continued)

Field	Description
Access State	Select the EMS access state from the drop-down list. You can select either Non-secure or Secure.
CORBA Listener Port	Select the port numbers for the XTC CORBA (IIOP) listener port and the XTC CORBA (SSLIOP) listener port. Select one of the following radio buttons: • Default-Fixed—Assigns a default port number. • Standard Constant—The port number for the XTC CORBA (IIOP) listener port is 683. The port number for the XTC CORBA (SSLIOP) listener port is 684. • Other Constant—When selected, enter the port number that will be used.

RADIUS Server Tab

The RADIUS Server tab allows you to configure, create, modify, and delete RADIUS servers for the ONS 15327 R6.0 and later.

Table B-199 Field Descriptions for the RADIUS Server Tab

Field	Description
Enable RADIUS Authentication	Check this check box to enable RADIUS authentication.
Enable RADIUS Accounting	Check this check box to enable RADIUS accounting. This is enabled if the Enable RADIUS Authentication check box is checked.
Enable the Node as the Final Authenticator When no RADIUS Server is Reachable	Select a row from the RADIUS Servers in Order of Authentication table; then, check this check box. This indicates that the RADIUS server that you selected will be the final authenticator when there are no more RADIUS servers that can be reached.
Create button	Click **Create** to create a RADIUS server. See Creating a RADIUS Server, page 8-46.
Edit button	Click **Edit** to modify an existing RADIUS server's information. See Modifying a RADIUS Server, page 8-46.
Delete button	Click **Delete** to delete an existing RADIUS server. See Deleting a RADIUS Server, page 8-46.
Move Up/Move Down buttons	Click **Move Up** or **Move Down** to reorder the list of RADIUS servers in the RADIUS Servers in Order of Authentication table.
RADIUS Servers in Order of Authentication	
IP Address	Displays the IP address of the RADIUS server.
Shared Secret	Displays a text string that serves as a password between a RADIUS client and RADIUS server.
Authentication Port	Displays the authentication port number of the RADIUS server. Default access is through port number 1812.
Accounting Port	Displays the accounting port number of the RADIUS server. Default access is through port number 1813.

Legal Disclaimer Tab

The Legal Disclaimer tab allows you to edit the NE's advisory message and preview the disclaimer.

Table B-200 Field Descriptions for the Legal Disclaimer Tab

Tab	Description
Advisory Message	The existing message is a default, noncustomer-specific disclaimer. If you want to edit this statement with specifics for your company, you can change the text. You can also use the following HTML commands to format the text: • ****—Begins boldface font • ****—Ends boldface font • ** **—Aligns type in the center of the window • ** **—Ends the center alignment • **<font=*n*, where *n* = point size>**—Changes the font to the new size • ****—Ends the font size command • **<p>**—Creates a line break • **_{**—Begins subscript • **}**—Ends subscript • **^{**—Begins superscript • **}**—Ends superscript • **<u>**—Starts underline • **</u>**—Ends underline
Preview	Allows you to view the advisory message before saving it.

Alarm

The Alarm Properties pane allows you to change default alarm severities by creating unique alarm profiles for individual ONS 15327 nodes. The Alarm Properties pane contains the following tabs:

- Profile Tab, page B-141
- Alarm Behavior Tab, page B-142

Note The Alarm Properties pane might contain default alarm profile entries for cards that are not supported by the ONS 15327. Therefore, you might see some alarms that do not apply to the NE type that you are provisioning.

Profile Tab

The Profile tab allows you to select, create, or delete alarm profiles.

Table B-201 Field Descriptions for the Profile Tab

Field	Description
Alarm Profile Name	Choose an alarm profile for the NE from the drop-down list. Click **Create** to create a new alarm profile for the NE. Click **Delete** to delete an alarm profile from the NE.

Table B-201 Field Descriptions for the Profile Tab (continued)

Field	Description
Condition	Displays the alarm condition.
Severity	Displays the alarm severity.

Alarm Behavior Tab

The Alarm Behavior tab allows you to change default alarm severities by creating unique alarm profiles.

Table B-202 Field Descriptions for the Alarm Behavior Tab

Field	Description
Alarm Profile	Choose a global alarm profile for the NE from the drop-down list.
Suppress Alarms	If checked, all alarms are suppressed.
Slot Number	Displays the location of the module.
Equipment Type	Displays the type of module in the slot.
Profile	Choose an alarm profile for the slot from the drop-down list.
Suppress Alarms	Indicates whether or not the alarms for a particular card are suppressed. If checked, all alarms are suppressed for the port.

XC Utilization

The XC Utilization Properties pane allows you to view a summary of the percentage of XTC cross-connect resources used by circuits that traverse or terminate at an ONS 15327.

Table B-203 Field Descriptions for the XC Utilization Properties Pane

Field	Description
STS-1 Matrix	Provides the percentage of the XC cross-connect STS-1 paths resources that are used.
VT Matrix Ports	Provides the percentage of the XTC cross-connect VT matrix ports that are used. Each port is one STS in size, and each can transport 28 VT1.5s. 24 VT matrix ports are available.
VT Matrix	Provides the percentage of the VT matrix resources that are used. 672 are available, which is the number of VT matrix ports (24) multiplied by the number of VT1.5s in an STS (28).

BLSR

The BLSR Properties pane allows you to view BLSR information and create or delete BLSRs.

Table B-204 Field Descriptions for the BLSR Properties Pane

Field	Description
Fiber Type	Indicates whether the fiber type is 2-fiber or 4-fiber.
Rate	Select the BLSR rate.
Ring Name	Assign a six-digit alphanumeric ring name. Nodes in the same BLSR must have the same ring name.

Table B-204 Field Descriptions for the BLSR Properties Pane (continued)

Field	Description
Node ID	Assign a node ID. The node ID identifies the node to the BLSR. Nodes in the same BLSR must have unique node IDs.
Ring Reversion	Set the amount of time that will pass before the traffic reverts to the original working path. The Cisco default is 5 minutes. All nodes in a BLSR ring should have the same ring reversion setting, particularly if *never* (nonrevertive) is selected.
East Line	Assign the east BLSR port.
East Switch	Displays a list of switch commands for the east port.
West Line	Assign the west BLSR port.
West Switch	Displays a list of switch commands for the west port.

OSI

The OSI Properties pane allows you to provision ONS 15327 Open System Interconnection (OSI) parameters. The Properties pane contains the following tabs:

- Main Setup Tab, page B-143
- TARP-Config Tab, page B-144
- TARP-TDC Tab, page B-145
- TARP-MAT Tab, page B-145
- Routers-Setup Tab, page B-146
- Subnets Tab, page B-146
- Tunnels Tab, page B-147
- IS-IS RIB Tab, page B-148
- ES-IS RIB Tab, page B-148

Main Setup Tab

The Main Setup tab allows you to provision the OSI Network Entity Title (NET) address and the OSI routing mode.

Table B-205 Field Descriptions for the Main Setup Tab

Field	Description
Main Network Entity Title	Displays the node NET. The NET is used in OSI networks to identify the node to the end system (ES) or intermediate system (IS).
End System	Provisions the node as an OSI end system (ES). ESs send end system hello (ESH) messages regularly to announce their presence to neighboring ISs and ESs. For the ONS 15327, End System is the default.
Intermediate System Level 1	Provisions the node as an OSI intermediate system (IS). ISs send intermediate system hello (ISH) messages regularly to announce their presence to neighboring ISs and ESs.
Intermediate System Level 1/Level 2	The ONS 15327 performs all IS functions. It communicates with other IS and ES nodes within an OSI area and broadcasts ISHs to IS nodes in other areas to which it is connected.
Node Routing Mode	

Table B-205 Field Descriptions for the Main Setup Tab (continued)

Field	Description
L1 LSP Buffer Size	Sets the Level 1 Link State Protocol (LSP) data unit buffer size. The Cisco default is 512.
L2 LSP Buffer Size	Sets the Level 2 LSP data unit buffer size. The Cisco default is 512.

TARP-Config Tab

The TARP-Config tab allows you to provision the TID Address Resolution Protocol (TARP). TARP is used when TL1 TIDs must be translated to an NSAP address. During the TID-to-NSAP translation, the TID is mapped to a NET; then, the NSAP is derived from the NET based on the NSAP selector value.

Table B-206 Field Descriptions for the TARP-Config Tab

Field	Description
TARP PDUs L1 Propagation	If checked (default), TARP Type 1 PDUs received by the node that are not excluded by the loop detection buffer are propagated to other NEs within the OSI Level 1 area. Type 1 PDUs request a protocol address that matches a target TID within a Level 1 routing area. The propagation does not occur if the NE is the target of the Type 1 PDU and the PDUs are not propagated to the NE from which the PDU was received. **Note** This parameter is not used when the node is set to End System.
TARP PDUs Origination	If checked (default), the node performs all TARP configuration functions, including: • TID-to-NSAP resolution requests • NSAP-to-TID requests • TARP address changes **Note** TARP Echo and NSAP to TID are not supported.
L2 TARP Data Cache	If checked (default), the TIDs and NSAPs are added to the TDC before the node propagates the requests to other NEs. **Note** This parameter is designed for IS Level 1/Level 2 nodes that are connected to other IS Level 1/Level 2 nodes. Enabling the parameter for IS Level 1 nodes is not recommended.
MAT 2	Lists the static manual area table entries.
LAN TARP Storm Suppression	If checked (default), enables the TARP storm suppression to prevent redundant TARP PDUs from being propagated across the network.
Type 4 PDU Delay	Sets the amount of time that will pass before the Type 4 PDU is generated. The Cisco default value is 60 seconds; the range is from 0 to 255 seconds.
TARP PDUs L2 Propagation	If checked (default), TARP Type 2 PDUs received by the node that are not excluded by the loop detection buffer are propagated to other NEs within the OSI Level 2 area. Type 2 PDUs request a protocol address that matches a target TID within a Level 2 routing area. The propagation occurs if the NE is the target of the Type 2 PDU and the PDUs are not propagated to the NE from which the PDU was received.
L1 TARP Data Cache	If checked, the node maintains a TARP data cache (TDC). The TDC is a database of TID-to-NSAP pairs created from TARP Type 3 PDUs received by the node. TARP Type 3 PDUs are responses to Type 1 and Type 2 PDUs and modified by TARP Type 4 PDUs (TID-to-NSAP updates or corrections).
MAT 1	Lists the static manual area table entries.

Table B-206 Field Descriptions for the TARP-Config Tab (continued)

Field	Description
LDB	If checked, enables the TARP loop detection buffer (LDB). The LDB prevents TARP PDUs from being sent more than once on the same subnet.
Send Type 4 PDU on Startup	If checked, a TARP Type 4 PDU is originated during the initial ONS 15327 startup. Type 4 PDUs indicate that a TID or NSAP change has occurred at the NE. This option is disabled by default.
Timers	
LDB Entry	Sets the TARP LDB timer. The LDB buffer time is assigned to each LDB entry for which the TARP sequence number is zero. The Cisco default is 5 minutes; the range is from 1 to 10 minutes.
T1 Timer	Sets the amount of time to wait for response to a Type 1 Request PDU. Type 1 requests seek a specific NE TID within an OSI Level 1 area. The Cisco default is 15 seconds; the range is from 0 to 3600 seconds.
T3 Timer	Sets the amount of time to wait for an address resolution request. The Cisco default is 40 seconds; the range is from 0 to 3600 seconds.
LDB Flush	Sets the frequency period for flushing the LDB. The Cisco default is 5 minutes; the range is from 0 to 1440 minutes.
T2 Timer	Sets the amount of time to wait for a Type 2 Request PDU. TARP Type 2 requests seek a specific NE TID within an OSI Level 1 area. The Cisco default is 25 seconds; the range is from 0 to 3600 seconds.
T4 Timer	Sets the amount of time to wait for an error recovery. The timer begins after the T2 timer expires without successfully finding the NE TID. The Cisco default is 20 seconds; the range is from 0 to 3600 seconds.

TARP-TDC Tab

Table B-207 Field Descriptions for the TARP-TDC Tab

Field	Description
TID	Target ID that is statistically linked to an NSAP or NET. For ONS nodes, the TID is the node name.
NSAP/NET	The NSAP that is statistically linked to the TID.
Type	Indicates how the TARP data cache entry was created. It can be either: • Dynamic—The entry was created through the TARP propagation process. • Static—The entry was manually created and is a static entry.
Add Static Entry button	Click **Add Static Entry** to statically link a TID to an NSAP or NET.
Delete Selected Entry button	Click **Delete Static Entry** to delete the selected TID-to-NSAP/NET static entry.
TID to NSAP button	Click **TID to NSAP** to query the network for an NSAP that matches a TID.
Flush Dynamic Entries button	Click **Flush Dynamic Entries** to delete all dynamically generated TDC entries.

TARP-MAT Tab

The TARP-MAT tab allows you to manually provision a TARP adjacency.

Table B-208 Field Descriptions for the TARP-MAT Tab

Field	Description
Level	Sets the TARP Type Code that will be sent. • Level 1—Indicates that the manual area adjacency is within the same area as the node. The entry generates Type 1 PDUs. • Level 2—Indicates that the manual area adjacency is in an area different from that of the node. The entry generates Type 2 PDUs.
NSAP	The NSAP address of the node at the other end of the TARP manual adjacency.
Add button	Click **Add** to create a TARP manual area adjacency.
Remove button	Click **Remove** to delete the selected TID-to-NSAP/NET static entry.

Routers-Setup Tab

The Routers-Setup tab allows you to view and manage the OSI virtual routers.

Table B-209 Field Descriptions for the Routers-Setup Tab

Field	Description
Router Number	Displays the virtual router number. Only one router is available on the ONS 15327.
System ID	Displays the NSAP system ID of the virtual router. For the primary router (Router 1), $n = 0$.
Status	Indicates the virtual router status. Select Enabled or Disabled from the drop-down list. **Note** Router 1 must be enabled before additional routers can be enabled.
Primary Area Address	Indicates the primary manual area address. For Router 1, this is the main NET for the node; that is, the NSAP without the system ID and selector (set to 00) fields.
Manual Area Address 1	Indicates the address of any additional manual areas that are created. **Note** An OSI area allows up to two additional manual areas in addition to the primary manual area.
Manual Area Address 2	Indicates the address of any additional manual areas that are created. **Note** An OSI area allows up to two additional manual areas in addition to the primary manual area.
Edit button	Click **Edit** to modify the address parameters.

Subnets Tab

The Subnets tab allows you to view and manage OSI subnetwork point-of-attachment parameters. The parameters are initially provisioned when you enable a subnet on an SDCC, LDCC, GCC, OSC, or LAN interface.

Table B-210 Field Descriptions for the Subnets Tab

Field	Description
Router Number	The OSI virtual router where the subnet (SDCC, LDCC, GCC, or OSC) is provisioned.
Slot/Port	The subnet slot and port.
Type	The interface where the subnet is provisioned: SDCC, LDCC, GCC, OSC, or LAN.

Table B-210 Field Descriptions for the Subnets Tab (continued)

Field	Description
Protocol	The data link protocol that is provisioned for the subnet. It can be: • Point to Point Protocol (PPP) • Link Access Protocol on the D channel (LAP-D) • 802.3 for LAN subnets
ISH	The intermediate system hello (ISH) PDU propagation frequency. Intermediate system NEs send ISHs to other ESs and ISs to inform them about the NETs they serve. The Cisco default is 10 seconds; the range is from 10 to 1000 seconds.
ESH	The end system hello (ESH) PDU propagation frequency. End system NEs transmit ESHs to inform other ESs and ISs about the NSAPs they serve. The Cisco default is 10 seconds; the range is from 10 to 1000 seconds.
IIH	The intermediate system-to-intermediate system hello (IIH) PDU propagation frequency. The IS-IS hello PDUs establish and maintain adjacencies between ISs. The Cisco default is 3 seconds; the range is from 1 to 600 seconds.
DIS Priority	The designated intermediate system (DIS) priority. In IS-IS networks, one router is elected as the DIS. For Cisco routers, the DIS priority is 64.
IS-IS Cost	The cost for sending packets on the subnet. This is used by OSPF routers to calculate the shortest path. The Cisco default value is 20.
Enable LAN Subnet button	*Router 1 only.* Enables OSI over the LAN; that is, it activates the IS-IS protocol on the LAN so OSI traffic is enabled on the LAN.
Edit button	Click **Edit** to modify the subnet parameters.
Disable LAN Subnet button	*Router 1 only.* Disables OSI over the LAN if it has been enabled.

Tunnels Tab

The Tunnels tab allows you to view, create, edit, and delete Generic Routing Encapsulation (GRE) and Cisco tunnels. GRE tunnels encapsulate one network protocol for transfer across another network layer. Within a mixed TCP/IP and OSI network, GRE tunnels tunnel IP traffic over an OSI NE and OSI traffic over an IP NE.

Table B-211 Field Descriptions for the Tunnels Tab

Field	Description
IP Address	Displays the IP address of the GRE destination Prime Optical or CTC computer.
Netmask Address	Displays the IP address subnet mask of the destination Prime Optical or CTC computer.
NSAP Address	The destination NE NSAP address. The NSAP selector (last two NSAP characters) must be 2f (GRE tunnel) or cc (proprietary Cisco tunnel), depending on which tunnel type you want to create. The Cisco proprietary tunnel is slightly more efficient than the GRE tunnel because it does not add an encapsulation header for each IP packet, while the GRE tunnel adds a small header to the packets. The two tunnel types are incompatible. **Note** Most Cisco routers support the Cisco tunnel, while only a few support both GRE and Cisco IP tunnels.
OSPF Metric	Displays the cost for sending packets across the GRE tunnel. Cost is used by OSPF routers to calculate the shortest path.

Table B-211 Field Descriptions for the Tunnels Tab (continued)

Field	Description
Create button	Click **Create** to create a new GRE tunnel route.
Edit button	Click **Edit** to edit an existing GRE tunnel.
Delete button	Click **Delete** to delete an existing GRE tunnel.

IS-IS RIB Tab

The IS-IS RIB tab allows you to view the intermediate system-to-intermediate system (IS-IS) protocol routing information base (RIB). IS-IS is an OSI link-state hierarchical routing protocol that floods the network with link-state information that enables the NEs to build a complete and consistent picture of a network topology.

Table B-212 Field Descriptions for the IS-IS RIB Tab

Field	Description
Router Number	Displays the virtual router number. Only one router is available on the ONS 15327.
Subnet Type	Indicates the OSI subnetwork point-of-attachment type used to access the destination address. It includes SDCC, LDCC, GCC, OSC, and LAN.
Destination Address	Displays the Network Service Access Point (NSAP).
MAC Address	Displays the NE's MAC address for destinations that are accessed by the LAN subnets.

ES-IS RIB Tab

The ES-IS RIB tab allows you to view the end system-to-intermediate system (ES-IS) protocol RIB. ES-IS is an OSI protocol that defines how end systems (hosts) and intermediate systems (routers) learn about each other.

Table B-213 Field Descriptions for the ES-IS RIB Tab

Field	Description
Router Number	Displays the virtual router number. Only one router is available on the ONS 15327.
Subnet Type	Indicates the OSI subnetwork point-of-attachment type used to access the destination address. It includes SDCC, LDCC, GCC, OSC, and LAN.
Destination Address	Displays the NSAP of the destination ES.
MAC Address	Displays the NE's MAC address for destinations that are accessed by the LAN subnets.

Note See Table 1-22 on page 1-47 for descriptions of actions that you can perform using the buttons at the bottom of the window.

ONS 15454 MSTP NE Explorer

When you choose **Configuration > NE Explorer** for the ONS 15454 Multiservice Transport Platform (MSTP), the window that Prime Optical displays consists of a tree on the left side and a node properties pane on the right. The tree provides a hierarchical view and alarm status of the multishelf NE's physical racks, shelves, and slots. The properties pane shows information about the selected entity (multishelf NE, rack, shelf, or slot). See Node Properties Pane—ONS 15454 MSTP, page B-149 for more information.

Note Refer to the Cisco ONS 15454 SONET, SDH, and DWDM components' installation documents for precautions, guidelines, and procedures for converting single-shelf NEs to multishelf NEs. Incorrect procedures for converting single-shelf NEs to multishelf NEs can result in nodes not being properly discovered and managed by Prime Optical.

Caution If a shelf is added to a node that is managed by Prime Optical, force a Refresh from NE operation to correctly update the node inventory. Inconsistencies in the node inventory can occur if the operation is not performed. Those inconsistencies are reflected in all Prime Optical user interfaces, including the gateways.

Node Properties Pane—ONS 15454 MSTP

The node properties pane displays information about the ONS 15454 MSTP NE. The properties pane contains the following tabs, some of which apply only to a specific NE version:

- Node View, page B-149
- General, page B-150
- Network, page B-151
- DCC/GCC/OSC, page B-160
- NE Defaults, page B-162
- Security, page B-163
- Alarm, page B-167
- Alarm Conditions, page B-168
- DWDM, page B-169
- OSI, page B-176

Node View

The Node View Properties pane displays a graphic of the ONS 15454 MSTP that is selected in the NE Explorer tree. Moving the mouse pointer over the NE, its racks, shelves, slots, or cards displays the current alarms for the highlighted item.

General

The General Properties pane displays information about the ONS 15454 MSTP NE. The General Properties pane contains the following tabs:

- Identification Tab, page B-150
- Multishelf Config Tab, page B-151

Identification Tab

The Identification tab displays information about the ONS 15454 MSTP NE.

Table B-214 Field Descriptions for the Identification Tab

Field	Description
NE ID	Displays the ID of the NE from the Domain Explorer.
NE Model	Displays the NE model type.
Software Version	Displays the current running version of the system software.
Contact	Displays the name and phone number of the node contact person.
Description	Enter a description of the NE.
System Description	Displays the NE type and the version of the system software.
SNTP Settings	
Use NTP/SNTP Server	If checked, CTC uses an SNTP server to set the date and time of the node. Using an SNTP server ensures that all ONS 15454 network nodes use the same date and time reference. The server synchronizes the node's time after power outages or software upgrades. If you check the **Use NTP/SNTP Server** check box, enter the server's IP address in the next field. If you do not use an SNTP server, complete the Time and Time Zone fields. The ONS 15454 will use these fields for alarm dates and times.
SNTP Server	Displays the SNTP server IP address.
Location	
Latitude	Allows you to set the latitude of the NE. Select **North** or **South** from the drop-down list; then, enter the degrees and minutes (or click the up and down arrows to increase or decrease each by 1 unit).
Longitude	Allows you to set the longitude of the NE. Select **East** or **West** from the drop-down list; then, enter the degrees and minutes (or click the up and down arrows to increase or decrease each by 1 unit).
Date and Time	
Time	Displays the NE date and time.
Time Zone	Displays the time zone where the NE is located.
Use Daylight Savings Time	If checked, Daylight Savings Time is observed.
AIS-V Insertion on STS-1 Signal Degrade - Path	
Insert AIS-V on STS-1 SD-P	If checked, the NE inserts an AIS-V signal when it detects an STS-1 signal degrade.
SD-P BER	Select the signal degrade path bit error rate for AIS-V insertion.
APC State	

Table B-214 Field Descriptions for the Identification Tab (continued)

Field	Description
Side	Lists all the NEs and their sides that belong to the automatic power control (APC) domain.
APC State	Displays the actual state of the APC. Values are: • Enabled—APC is enabled. • Disabled—APC is disabled. • Force Disabled—APC is disabled by the user. • Not Applicable—APC domain is incomplete.

Multishelf Config Tab

The Multishelf Config tab displays information about the ONS 15454 MSTP NE's shelves and racks.

Table B-215 Field Descriptions for the Multishelf Config Tab

Field	Description
Shelf ID	Displays the Shelf ID number.
Rack Number	Select the rack number.
Position in Rack	Select the position number in the rack.

Network

The Network Properties pane displays information about the NE network address. The Network Properties pane contains the following tabs:

- Address Tab, page B-152
- Static Routes Tab, page B-152
- OSPF Tab, page B-152
- OSPF Area Range Tab, page B-153
- OSPF Virtual Links Tab, page B-154
- SNMP Tab, page B-155
- Firewall/Proxy Tab, page B-156
- Routing Table Tab, page B-156
- RIP Routing Table Tab, page B-157
- RIP Tab, page B-157
- Proxy Tunnels Tab, page B-157
- Firewall Tunnels Tab, page B-158
- Secure Config Mode Tab, page B-158
- FTP Hosts Tab, page B-159

Address Tab

The Address tab allows you to view and change information about the NE network address.

Table B-216 Field Descriptions for the Address Tab

Field	Description
IP Address	Displays the IP address of the NE.
Default Router	Displays the IP address of the default router.
Subnet Mask	Displays the subnetwork mask ID of the NE.
MAC Address	Displays the ONS 15454 address as it is identified on the IEEE 802 MAC layer.
LCD IP Setting	Allows you to configure the LCD screen. Select from the following values: • Allow Configuration—Enables shelf IP address changing from the LCD. • Display Only—Prevents users from changing the shelf IP address from the LCD screen. • Suppress Display—Makes the LCD screen blank.
Forward DHCP Requests	If checked, forwards DHCP requests to the IP address entered in the DHCP Server field. When the Forward DHCP Requests check box is unchecked, the DHCP Server field is display-only.
DHCP Server	Displays the IP address of the DHCP server.

Static Routes Tab

The Static Routes tab allows you to view information about Prime Optical and ONS 15454 MSTP connectivity and create or delete static routes.

Table B-217 Field Descriptions for the Static Routes Tab

Field	Description
Create	Click the **Create** button to create a new static route. See Creating Static Routes for CTC-Based NEs, page 5-3.
Delete	Click the **Delete** button to delete an existing static route.
Destination IP	Displays the IP address of the computer running Prime Optical.
Subnet Mask	Displays the subnetwork mask.
Next Hop	Displays the IP address of the router port or the node IP address if the Prime Optical computer is connected to the node directly.
Cost	Displays the number of hops between the ONS 15454 and the computer.

OSPF Tab

The OSPF tab displays OSPF information. OSPF is a link-state Internet routing protocol.

Table B-218 Field Descriptions for the OSPF Tab

Field	Description
Shelf	Displays the shelf number.
Slot	Displays the slot number.

Table B-218 Field Descriptions for the OSPF Tab (continued)

Field	Description
Port	Displays the port number.
DCC OSPF Area ID	Displays the number that identifies the ONS 15454 as a unique OSPF area. The OSPF area number can be from 0.0.0.0 to 255.255.255.255. The number must be unique to the LAN OSPF area.
SDCC Metric	Sets a cost for sending packets across the Section Data Communications Channel (SDCC), which is used by OSPF routers to calculate the shortest path. This value should always be higher than the LAN metric. This value is normally unchanged.
LDCC Metric	Sets a cost for sending packets across the Line Data Communications Channel (LDCC), which is used by OSPF routers to calculate the shortest path. This value should always be higher than the LAN metric. This value is normally unchanged.
OSPF Active on LAN	If checked, enables the ONS 15454 OSPF topology to be advertised to OSPF routers on the LAN. Enable this field on ONS 15454s that directly connect to OSPF routers.
LAN Port Area ID	Displays the OSPF area ID for the router port where the ONS 15454 is connected. (This number is different from the DCC OSPF area ID.)
Router Priority	Displays the value used for this NE in designated router election. The Cisco default value is zero (0). A router that has Router Priority set to 0 is ineligible to become a designated router on the attached network.
Dead Interval	Displays the number of seconds that will pass while an OSPF router's packets are not visible before its neighbors declare the router down. Forty seconds is the Cisco default.
Retransmit Interval	Displays the time that will elapse before a packet is resent. Five seconds is the Cisco default.
Hello Interval	Displays the number of seconds between OSPF hello packet advertisements sent by OSPF routers. Ten seconds is the Cisco default.
Transit Delay	Displays the service speed. One second is the Cisco default.
LAN Metric	Displays a cost for sending packets across the LAN. This value should always be lower than the DCC metric. Ten is the Cisco default.
Authentication Type	Displays Simple Password if the router where the ONS 15454 is connected uses authentication. Otherwise, it displays No Authentication.
Authentication Key	Displays the OSPF key (password) if authentication is enabled.
Confirm Authentication Key	Retype the authentication key to confirm it.

OSPF Area Range Tab

The OSPF Area Range tab allows you to view information about OSPF area ranges and create or delete area ranges.

Table B-219 Field Descriptions for the OSPF Area Range Tab

Field	Description
Create	Click the **Create** button to create a new OSPF area range. See Creating an OSPF Area Range, page 5-5.
Delete	Click the **Delete** button to delete an existing OSPF area range.

Table B-219 Field Descriptions for the OSPF Area Range Tab (continued)

Field	Description
Range Address	Displays the area IP address for the ONS 15454s that reside within the OSPF area. For example, if the ONS 15454 OSPF area includes nodes with IP addresses 10.10.20.100, 10.10.30.150, 10.10.40.200, and 10.10.50.250, the range address would be 10.10.0.0.
Range Area ID	Displays the OSPF area ID for the ONS 15454 NEs. This is either the ID in the DCC OSPF Area ID field or the ID in the LAN Port Area ID field.
Mask Length	Displays the subnet mask length.
Mask	Displays the subnet mask IP address.
Advertise	Indicates whether the OSPF routing table is advertised.

OSPF Virtual Links Tab

The OSPF Virtual Links tab allows you to view information about OSPF virtual links and create, edit, or delete virtual links.

Note You cannot create a new virtual link unless OSPF is active on the LAN.

Table B-220 Field Descriptions for the OSPF Virtual Links Tab

Field	Description
Create	Click the **Create** button to create a new OSPF virtual link. See Creating an OSPF Virtual Link, page 5-6.
Edit	Click the **Edit** button to modify an existing OSPF virtual link. See Modifying an OSPF Virtual Link, page 5-7.
Delete	Click the **Delete** button to delete the selected OSPF virtual link.
Neighbor	Displays the router ID of the Area 0 router.
Transit Delay	Displays the service speed. One second is the Cisco default.
Retransmit Interval	Displays the time that will elapse before a packet is resent. Five seconds is the Cisco default.
Hello Interval	Displays the number of seconds between OSPF hello packet advertisements sent by OSPF routers. Ten seconds is the Cisco default.
Dead Interval	Displays the number of seconds that will pass while the packets of an OSPF router are not visible before its neighbors declare the router down. Forty seconds is the Cisco default.
Authentication Type	Displays the authentication type.
Authentication Key	Displays the authentication key.

SNMP Tab

The SNMP tab allows you to view SNMP information and create or delete SNMP trap destinations.

Table B-221 Field Descriptions for the SNMP Tab

Field	Description
Allow SNMP Set	If checked, allows you to use SNMP management software with the ONS 15454.
Allow SNMP Proxy	If checked, allows you to configure the ONS 15454 to proxy SNMP calls.
Use Generic MIB	If checked, allows you to transfer traps to a local MIB browser or server.
Create	Click the **Create** button to create a new SNMP trap destination. See Configuring SNMP for CTC-Based NEs, page 5-15.
Delete	Click the **Delete** button to delete the selected SNMP trap destination.
IP Address	The IP address of the NMS.
Community Name	The SNMP community name. **Note** The SNMP community string cannot be blank in Prime Optical. If a blank community string is required in CTC builds earlier than R4.6, you must set the blank community string in CTC.
UDP Port	The UDP port for SNMP. The Cisco default UDP port is 162.
Trap Version	The trap version, either SNMP version 1 or version 2. See your NMS documentation to determine whether to use SNMP version 1 or version 2.
Relay A IP Address	The first ONS 15454 to relay traps through. The IP address is appended to the base community string to tell the first NE the IP address and the port to forward the trap to. The second NE recognizes the IP address and strips it from the community string before forwarding the trap.
Relay A Community Name	The community name for the relay A node to use in the trap when forwarding it.
Relay B IP Address	The second ONS 15454 to relay traps through.
Relay B Community Name	The community name for the relay B node to use in the trap when forwarding it.
Relay C IP Address	The third ONS 15454 to relay traps through.
Relay C Community Name	The community name for the relay C node to use in the trap when forwarding it.

Firewall/Proxy Tab

The Firewall/Proxy tab allows you to use an NE as a proxy server or as a firewall.

Table B-222 Field Descriptions for the Firewall/Proxy Tab

Field	Description
Gateway Settings	
Enable Proxy Server on Port	If checked, the ONS 15454 serves as a proxy for connections between the Prime Optical server and ONS 15454s that are DCC-connected to the proxy ONS 15454. The Prime Optical server establishes connections to DCC-connected nodes through the proxy node. The Prime Optical server can connect to nodes that it cannot directly reach from the host on which it runs. The proxy server port number (display-only) is shown following the Enable Proxy Server on Port field. The proxy server uses port 1080. If checked, the following radio buttons are enabled: • End Network Element (ENE)—Configures the ONS 15454 to proxy as an ENE, meaning the NE supports craft access only, supports firewall, and acts as a proxy. • Gateway Network Element (GNE)—Configures the ONS 15454 to proxy as a GNE, meaning the NE supports firewall and acts as a proxy. • Proxy-only—Configures the ONS 15454 to act as a proxy. If unchecked, the node does not proxy; instead, it acts as a LAN-connected NE (LNE).

Routing Table Tab

The Routing Table tab allows you to view the OSPF routing table.

Table B-223 Field Descriptions for the Routing Table Tab

Field	Description
Destination	Displays the IP address of the destination network or host.
Mask	Displays the subnet mask used to reach the destination network or host.
Gateway	Displays the IP address of the gateway used to reach the destination network or host.
Usage	Shows the number of times the listed route has been used.
Interface	Shows the ONS 15454 interface used to access the destination. Values are: • cpm0—The ONS 15454 Ethernet interface (that is, the RJ-45 jack on the TCC+/TCC2 and the LAN 1 pins on the backplane). • pdcc0—An SDCC interface (that is, an OC-N trunk card identified as the SDCC termination). • lo0—A loopback interface.

RIP Routing Table Tab

The RIP Routing Table tab allows you to view the RIP routing table.

Table B-224 Field Descriptions for the RIP Routing Table Tab

Field	Description
Destination	Displays the IP address of the destination network or host.
Mask	Displays the subnet mask used to reach the destination network or host.
Gateway	Displays the IP address of the gateway used to reach the destination network or host.
Cost	Displays the hop count metric. The valid range is from 1 to 15.

RIP Tab

The RIP tab allows you to view and configure RIP parameters.

Note

- When you enable RIP, you must wait for approximately one minute for the default RIP address summary to become visible.
- When you disable RIP on the NE, all summary address entries in the Summary Address table are deleted.

Table B-225 Field Descriptions for the RIP Tab

Field	Description
RIP Active	Check this check box to enable RIP. Uncheck it to disable RIP. **Note** Checking the RIP Active check box and clicking the **Apply** button does not enable RIP. Instead, you must check the RIP Active check box, click the **Create** button, and use the Create RIP Address Summary dialog box to create a new RIP address. For details, see Using RIP, page 5-8.
RIP Type	Select RIP version 1.0 or RIP version 2.0.
Metric	Enter the hop count metric. The valid range is from 1 to 15.
Authentication Type	Select the authentication type.
Authentication Key	Enter the authentication key (password) if the authentication type is Simple Password.
Confirm Authentication Key	Retype the authentication key to confirm it.
RIP Address Summary	• Summary Address—Displays the summary address. • Mask Length—Displays the subnet mask length. • Cost—Displays the hop count metric. The valid range is from 1 to 15.
Create button	Click **Create** to create a new RIP address. See Using RIP, page 5-8.
Delete button	Click **Delete** to delete an existing RIP address.

Proxy Tunnels Tab

The Proxy Tunnels tab allows you to configure source and destination information and create or delete proxy tunnels.

Table B-226 Field Descriptions for the Proxy Tunnels Tab

Field	Description
Create	Click the **Create** button to create a new proxy tunnel. See Creating a New Proxy Tunnel, page 4-46.
Delete	Click the **Delete** button to delete the selected proxy tunnel.
Source Address	Specify the source IP address in the source-destination pair for the tunnel that will be routed through the proxy server.
Source Mask	Specify the source subnetwork mask in the source-destination pair for the tunnel that will be routed through the proxy server.
Destination Address	Specify the destination IP address in the source-destination pair for the tunnel that will be routed through the proxy server.
Destination Mask	Specify the destination subnetwork mask in the source-destination pair for the tunnel that will be routed through the proxy server.

Firewall Tunnels Tab

The Firewall Tunnels tab allows you to configure source and destination information and create and delete firewall tunnels.

Table B-227 Field Descriptions for the Firewall Tunnels Tab

Field	Description
Create	Click the **Create** button to create a new firewall tunnel. See Creating a New Firewall Tunnel, page 4-47.
Delete	Click the **Delete** button to delete an existing firewall tunnel.
Source Address	Specify the source IP address in the source-destination pair for the tunnel that will be routed through the firewall.
Source Mask	Specify the source subnetwork mask in the source-destination pair for the tunnel that will be routed through the firewall.
Destination Address	Specify the destination IP address in the source-destination pair for the tunnel that will be routed through the firewall.
Destination Mask	Specify the destination subnetwork mask in the source-destination pair for the tunnel that will be routed through the firewall.

Secure Config Mode Tab

The TCC2P card supports secure config mode. When the secure mode is on, the NE has two IP addresses, one for the backplane and one for the front port. The front port IP address is used by the DCC-connected NEs.

Note When there is no TCC2P card present, the fields in the following table cannot be configured.

The Secure Config Mode tab allows you to configure the secure config mode. The fields shown depend on whether the NE is in secure mode. For example, the backplane Ethernet port values are displayed only when the NE is in secure mode.

Table B-228 Field Descriptions for the Secure Config Mode Tab

Field	Description
TCP/IP Mode	
Normal	When this text is visible, the NE is not in secure mode. There is one IP address shared by TCC and backplane Ethernet ports, with full connectivity between ports.
Secure	When this text is visible, the NE is in secure mode. There are separate IP addresses for TCC and backplane Ethernet ports, with no connectivity between ports.
Mode not locked	When this text is visible, you can change the secure mode.
Mode permanently locked and cannot be unlocked	When this text is visible, the NE is in secure mode, and the secure mode is locked and cannot be changed.
Change Mode	
Change Mode button	Opens the Change Secure Mode dialog box, which allows you to change the mode of the NE from secure to unsecure, and vice versa. This button is enabled only if an active TCC2P card exists on the NE.
Lock	
Lock button	When the NE is in secure mode, the Lock button locks the secure mode on the NE/TCC so that it cannot be changed.

FTP Hosts Tab

The FTP Hosts tab allows you to configure database backup or restore and software download to an ENE when the firewall is enabled. You can provision a list of legal FTP hosts for which the firewall opens for all FTP commands. You can configure the FTP hosts to expire after a certain amount of time, after which the FTP relay resumes blocking all FTP access for the ENEs.

Table B-229 Field Descriptions for the FTP Hosts Tab

Field	Description
Create	Click the **Create** button to open the Create New FTP Host dialog box, which allows you to create up to 12 new FTP hosts in a GNE/ENE firewall environment. See Creating a New Proxy Tunnel, page 4-46. **Note** You cannot create more than 12 FTP hosts.
Delete	Click the **Delete** button to delete the selected FTP host.
FTP Host Address	Displays the FTP host IP address.
Prefix Length	Displays the FTP host subnet mask length.
Enable FTP Relay	Indicates whether FTP relay is enabled or disabled. If FTP relay is disabled, the FTP Relay Timer field is dimmed.
FTP Relay Timer	Displays the number of minutes that the FTP relay is configured to run, after which the FTP relay resumes blocking all FTP access for the ENEs.

DCC/GCC/OSC

The DCC/GCC/OSC Properties pane allows you to create, delete, and view SDCCs, LDCCs, Generic Communications Channels (GCCs), Optical Service Channels (OSCs), and DWDM ring IDs.

Table B-230 Field Descriptions for the DCC/GCC/OSC Properties Pane

Field	Description
Create	Click the **Create** button to create new terminations on SONET or SDH cards.
Edit	Click the **Edit** button to modify existing terminations on SONET or SDH cards.
Delete	Click the **Delete** button to delete the selected SDCC, LDCC, GCC, OSC, or DWDM ring ID.
RS-DCC/SDCC	
SDCC Terminations	Displays the slot, port, and card type of an SDCC termination.
OSPF Disabled on Link	Check to prevent the advertisement of the OSPF routing table.
Foreign	A check mark indicates that the far-end node is a non-ONS node.
Foreign IP	Displays the foreign node IP address.
LAPD Config	If the SDCC is provisioned as OSI only, the following SDCC LAP-D parameters are displayed: • AITS/UITS—Indicates the LAP-D acknowledgement type, either Acknowledged Information Transfer Service (AITS) or Unacknowledged Transfer Service (UITS). • Network/User—Indicates the LAP-D frame command/response role, either Network or User. • MTU—Shows the size of the maximum transfer unit (MTU). The range is from 512 to 1500 octets. • T2000—Shows the time between Set Asynchronous Balanced Mode (SABME) frame transmission. The range is from 0.2 to 20 seconds. • T203—Shows the maximum time between LAP-D frame exchanges. The range is from 4 to 120 seconds.
OSI SNPA	If the SDCC is provisioned for OSI, the following subnetwork point-of-attachment (SNPA) information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.

Table B-230 Field Descriptions for the DCC/GCC/OSC Properties Pane (continued)

Field	Description
Service State	Select the state of the termination: • IS-NR—In Service–Normal. • OOS-AU—Out of Service–Autonomous. • OOS-MA—Out of Service–Management. • OOS-AUMA—Out of Service–Autonomous and Management. In addition, a secondary state provides additional information about the status of the entity. Values for secondary state are: • MEA—Mismatch of equipment due to invalid equipment insertion. • UEQ—Unequipped; there is nothing in the slot. • UAS—Unassigned; the entity does not exist, has not been created, or has been deleted. • SWDL—Software download in progress. • MT—Maintenance, as per the Admin State change. • AINS—Automatic in service. • DSBLD—Traffic is disabled on the entity. • LPBK—Port or connection has a loopback on it. • FLT—Fault secondary state. When an entity is faulted, an FLT state is raised. Equipment and ports in FLT state should be cleared as they transition. Transition states are listed in Table 11-11 on page 11-15. See Table 11-11 on page 11-15 for the Service state-Secondary state possible values. **Note** If the NE release does not support the Service state, this field shows N/A.
MS-DCC/LDCC	
LDCC Terminations	Displays the slot, port, and card type of an LDCC termination.
OSPF Disabled on Link	Check to prevent the advertisement of the OSPF routing table.
Foreign	A check mark indicates that the far-end node is a non-ONS node.
Foreign IP	Displays the foreign node IP address.
LAPD Config	Displays the LAP-D parameters for the SDCCs that are provisioned as OSI only. For GCCs, this column is always N/A.
OSI SNPA	If the GCC is provisioned for OSI, the following SNPA information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.
Service State	Select the state of the LDCC termination (IS-NR, OOS-AU, OOS-MA, OOS-AUMA) plus the secondary state (MEA, UEQ, UAS, SWDL, MT, AINS, DSBLD, LPBK).
GCC	
GCC Terminations	Displays the slot, port, and card type of a GCC termination.
OSPF Disabled on Link	Check to prevent the advertisement of the OSPF routing table.
GCC Rate	Displays the GCC rate.
Foreign	A check mark indicates that the far-end node is a non-ONS node.

Table B-230 Field Descriptions for the DCC/GCC/OSC Properties Pane (continued)

Field	Description
Foreign IP	Displays the foreign node IP address.
LAPD Config	Displays the LAP-D parameters for the SDCCs that are provisioned as OSI only. For GCCs, this column is always N/A.
OSI SNPA	If the GCC is provisioned for OSI, the following SNPA information is displayed: • Router—Indicates the ONS router and SNPA address. • Router State—Indicates whether the router is enabled or disabled.
Service State	Select the state of the GCC termination (IS-NR, OOS-AU, OOS-MA, OOS-AUMA) plus the secondary state (MEA, UEQ, UAS, SWDL, MT, AINS, DSBLD, LPBK).
OSC	
OSC Terminations	Displays the slot, port, and card type of an OSC termination.
LAPD Config	Displays the LAP-D parameters for the SDCCs that are provisioned as OSI only.
OSI SNPA	If the OSC is provisioned for OSI, the following SNPA information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.
Service State	Displays the state of the OSC termination.
DWDM Ring ID	
Ring ID	Displays the ring ID.
West Direction	Lists the OSCM or OSC-CSM port that supports the ring in the west direction. The value is N/A if there are no ports in the west direction.
East Direction	Lists the OSCM or OSC-CSM port that supports the ring in the east direction. The value is N/A if there are no ports in the east direction.

NE Defaults

The NE Defaults Properties pane displays a list of default thresholds for the ONS 15454 MSTP NE.

Table B-231 Field Descriptions for the NE Defaults Properties Pane

Field	Description
Parameter	Lists the default NE parameter.
Value	Shows the default parameter value, and allows you to change the default.
Units	Lists the unit of measure that corresponds to the default NE parameter.
Range	Lists the possible range of values for the default NE parameter. **Note** This field applies to the ONS 15454 SONET R6.0 and later.
Side Effects	Lists any side effects that could occur as a result of changing the default NE parameter.

You can load different NE defaults using the NE Defaults Management window. See Restoring NE Defaults, page 4-78.

Security

The Security Properties pane allows you to view and edit security features for the ONS 15454 MSTP NE. The Security Properties pane contains the following tabs:

- Policy Tab, page B-163
- Password Tab, page B-164
- Access Tab, page B-164
- RADIUS Server Tab, page B-166
- Legal Disclaimer Tab, page B-167

Policy Tab

The Policy tab allows you to specify user security parameters.

Note If the user is already logged in, any changes to the NE user type settings take effect only when the user next logs in.

Table B-232 Field Descriptions for the Policy Tab

Field	Description
Idle User Timeout	
Each CTC or TL1 user can be idle during his or her login session for a specified amount of time before the CTC window is locked. The lockouts prevent unauthorized users from making changes. Higher-level users have shorter default idle periods and lower-level users have longer or unlimited default idle periods. The user idle period can be modified by a SuperUser. **Note** A user already logged into the node is not affected by a change to the Idle User Timeout policy.	
Retrieve	Set the idle user timeout for a CTC Retrieve user.
Maintenance	Set the idle user timeout for a CTC Maintenance user.
Provisioner	Set the idle user timeout for a CTC Provisioner user.
SuperUser	Set the idle user timeout for a CTC SuperUser user.
User Lockout	
Manual Unlock by SuperUser	If checked, the CTC SuperUser user must manually unlock locked out CTC users. If unchecked, locked out CTC users are automatically unlocked after the lockout duration period elapses.
Lockout Duration	Set the lockout duration period for locked out CTC users. This field is enabled only if the Manual Unlock by SuperUser check box is unchecked.
Failed Logins Allowed	Set the number of failed logins before the CTC user is automatically locked out.
Other	
Single Sessions per User	If checked, each CTC user can launch only one session at a time.
Prevent Disabling the SuperUser	If checked, inactive CTC SuperUsers are never disabled.

Table B-232 Field Descriptions for the Policy Tab (continued)

Field	Description
Disable Inactive User	If checked, inactive users are disabled automatically. Specify the duration in the Inactive Duration field.
Inactive Duration	Specify the inactive duration in days. The range is from 1 to 90 days; the Cisco default is 45 days. A value of 0 implies the inactive duration is disabled and invalid.

Password Tab

The Password tab allows you to specify user password security parameters.

Table B-233 Field Descriptions for the Password Tab

Field	Description
Password Change	
Prevent Reusing Last	Prevents setting a CTC user's current password to one of the most recent passwords. You can set the number of most recent passwords that cannot be reused.
Disable Password Flipping	If checked, users are not allowed to change passwords for the number of days specified in the Can Change Password After field.
Can Change Password After	Enter the number of days that must elapse before the user can change the password.
Force Password Change After Assigned	If checked, during the first successful login, the user is forced to change the password.
Password Difference	Allows SuperUsers to specify the number of characters by which a user's new password must differ from the old password, while performing a password change. The default value is 1; the range is from 1 to 5 characters.
Password Aging	
Enable Password Aging	Check this check box to enable password aging.
Aging Period	Enter the aging period, in days, for Retrieve, Maintenance, Provisioner, and SuperUser CTC users. After the aging period expires, CTC users are forced to change their passwords.
Warning Period	Enter the warning period, in days, for Retrieve, Maintenance, Provisioner, and SuperUser CTC users. After the warning period expires, CTC users are warned that their passwords will soon expire.

Access Tab

The Access tab allows you to configure LAN and shell access to the NE.

Table B-234 Field Descriptions for the Access Tab

Field	Description
Access	
LAN Access	Specify the type of LAN access allowed. Values are Backplane Only, No LAN Access, Front and Backplane, or Front Only (for ONS 15454 SONET NEs only). **Note** After the LAN access to the backplane is set, the Prime Optical client is unusable for 4 to 5 minutes.

Table B-234 Field Descriptions for the Access Tab (continued)

Field	Description
Restore Timeout	This time period begins if *No LAN Access* is selected and all DCC connections are lost. If the time expires before a DCC is restored, LAN access is restored so that the node is not isolated. When the DCC comes back, LAN access returns to its specified settings. The range is from 0 (never) to 60 minutes; the Cisco default is 5 minutes.
Serial Craft Access	
Enable Craft Port	Check this check box to enable the craft port.
Shell Access	
Access State	Select one of the following shell access states: • Disable • Non-secure • Secure
SSH Port	Indicates the SSH port number that will be used if the SSH radio button is selected.
SFTP Port	Indicates the SFTP port number.
Telnet Port	This is enabled if you selected the Telnet radio button. Enter the Telnet port number.
Use Standard Telnet Port	If checked, the standard Telnet port is used for Telnet access.
Enable Shell Password	Indicates whether or not the Shell password is enabled. You cannot enable the Shell password in Prime Optical. Enabling and providing a Shell password is currently done in CTC.
TL1 Access	
Access State	Select the TL1 access state from the drop-down list. You can select Disable, Non-secure, or Secure.
SNMP Access	
Access State	Select the SNMP access state from the drop-down list. You can select either Disable or Non-secure.
Pseudo-IOS Access (available for ONS 15454 MSTP R9.2)	
Access State	Pseudo CLI is a command-line interface on the NE that simulates a Cisco IOS connection. Select the pseudo-IOS access state from the drop-down list. You can select Disable, Non-secure, or Secure. If you choose Disable, the port is not configurable, which means that the node does not listen for pseudo-CLI connections. **Note** Pseudo-IOS functionality is available only if the node contains 10GE_XP or GE_XP cards in L2 mode.
Port	Enter the port number for pseudo-IOS access. If the Access State field is set to Disable, you cannot configure this field.
Other	
PM Clearing Privilege	Select the user privilege that allows clearing PM statistics for the NE.
EMS Access	

Table B-234 Field Descriptions for the Access Tab (continued)

Field	Description
Access State	Select the EMS access state from the drop-down list. You can select either Non-secure or Secure.
CORBA Listener Port	Select the port numbers for the TCC CORBA (IIOP) listener port and the TCC CORBA (SSLIOP) listener port. Select one of the following radio buttons: • Default-Fixed—Assigns a default port number. • Standard Constant—The port number for the TCC CORBA (IIOP) listener port is 683. The port number for the TCC CORBA (SSLIOP) listener port is 684. • Other Constant—When selected, enter the port number that will be used.

RADIUS Server Tab

The RADIUS Server tab allows you to configure, create, modify, and delete RADIUS servers for the ONS 15454 MSTP.

Table B-235 Field Descriptions for the RADIUS Server Tab

Field	Description
Enable RADIUS Authentication	Check this check box to enable RADIUS authentication.
Enable RADIUS Accounting	Check this check box to enable RADIUS accounting. This is enabled if the Enable RADIUS Authentication check box is checked.
Enable the Node as the Final Authenticator When no RADIUS Server is Reachable	Select a row from the RADIUS Servers in Order of Authentication table; then, check this check box. This indicates that the RADIUS server that you selected will be the final authenticator when there are no more RADIUS servers that can be reached.
Create button	Click **Create** to create a RADIUS server. See Creating a RADIUS Server, page 8-46.
Edit button	Click **Edit** to modify an existing RADIUS server's information. See Modifying a RADIUS Server, page 8-46.
Delete button	Click **Delete** to delete an existing RADIUS server. See Deleting a RADIUS Server, page 8-46.
Move Up/Move Down buttons	Click **Move Up** or **Move Down** to reorder the list of RADIUS servers in the RADIUS Servers in Order of Authentication table.
RADIUS Servers in Order of Authentication	
IP Address	Displays the IP address of the RADIUS server.
Shared Secret	Displays a text string that serves as a password between a RADIUS client and RADIUS server.
Authentication Port	Displays the authentication port number of the RADIUS server. Default access is through port number 1812.
Accounting Port	Displays the accounting port number of the RADIUS server. Default access is through port number 1813.

Legal Disclaimer Tab

The Legal Disclaimer tab allows you to edit the NE's advisory message and preview the disclaimer.

Table B-236 Field Descriptions for the Legal Disclaimer Tab

Tab	Description
Advisory Message	The existing message is a default, noncustomer-specific disclaimer. If you want to edit this statement with specifics for your company, you can change the text. You can also use the following HTML commands to format the text: • ****—Begins boldface font • ****—Ends boldface font • ** **—Aligns type in the center of the window • ** **—Ends the center alignment • **<font=*n*, where *n* = point size>**—Changes the font to the new size • ****—Ends the font size command • **<p>**—Creates a line break • **_{**—Begins subscript • **}**—Ends subscript • **^{**—Begins superscript • **}**—Ends superscript • **<u>**—Starts underline • **</u>**—Ends underline
Preview	Allows you to view the advisory message before saving it.

Alarm

The Alarm Properties pane allows you to change default alarm severities by creating unique alarm profiles for individual ONS 15454 MSTP nodes. The Alarm Properties pane contains Profile and Alarm Behavior tabs.

Profile Tab

The Profile tab allows you to view, create, or delete alarm profiles.

Table B-237 Field Descriptions for the Profile Tab

Field	Description
Alarm Profile Name	Choose an alarm profile for the NE from the drop-down list.
Create button	Click **Create** to create a new alarm profile for the NE.
Delete button	Click **Delete** to delete an alarm profile from the NE.
Condition	Displays the alarm condition.
Severity	Displays the alarm severity.

Alarm Behavior Tab

The Alarm Behavior tab allows you to change default alarm severities by creating unique alarm profiles.

Table B-238 Field Descriptions for the Alarm Behavior Tab

Field	Description
Alarm Profile	Choose a global alarm profile for the NE from the drop-down list.
Suppress Alarms	If checked, all alarms are suppressed.
Slot No.	Displays the location of the module.
Equipment Type	Displays the type of module in the slot.
Profile	Choose an alarm profile for the slot from the drop-down list.
Suppress Alarms	Indicates whether or not the alarms for a particular card are suppressed. If checked, all alarms are suppressed for the port.

Alarm Conditions

The Alarm Conditions Properties pane allows you to view all NE conditions (events with a Not Reported [NR] severity) at the node level. Alarm Conditions Properties pane gives a clear record of changes or events that do not result in alarms.

Note The Alarm Conditions tab is not updated when conditions change; therefore, you must click **Retrieve** to see any changes.

Table B-239 Field Descriptions for the Alarm Conditions Tab

Field	Description
Filter button	Click the **Filter** button to filter the data displayed in the table.
Retrieve button	Click the **Retrieve** button. The Retrieve button requests the current set of fault conditions from the node, card, or network. Conditions include all fault conditions raised on the node, whether or not they are reported. The time stamp of the condition request is also reported next to the **Retrieve** button.
Perceived Severity	Perceived severity of the selected alarm (critical, major, minor, or warning). The background color also indicates the severity, where: • Red = Critical • Orange = Major • Yellow = Minor • Blue = Warning • Green = Cleared
Probable Cause	Probable cause of the selected alarm. Some possible values include: • Not Applicable/Unknown—If no additional information is available • Mismatch of equipment and attributes (MEA) alarm—For misconfigured pluggable port modules (PPMs) • Link Layer Keep-Alive Failure—When the keepalive frame on the POS port is disabled and the port is shut down • Bad Packet Count Exceeds Threshold—When the packets through the front port have CRC errored frames • Auto-Negotiation Remote Failure Indication—When a remote Gigabit Ethernet port is shut down from a local port
Condition	Error message or condition name that is associated with the alarm or event.
Affected Object	Name of the object where the selected alarm occurred.
Module Name	Name of the module where the selected alarm occurred.
Physical Location	Physical location of the equipment where the selected alarm occurred, such as chassis, rack, subrack (shelf), slot, and port numbers.
NE Alarm Time	Date and time when the alarm occurred on the NE.
Service Affecting	Whether the alarm or event is service affecting (SA). Values are: • True—The alarm is service affecting • False—The alarm is not service affecting

DWDM

The DWDM Properties pane allows you to manage and provision DWDM connections. The DWDM Properties pane contains the following tabs:

- Provisioning Tab, page B-170
- Connections Tab, page B-171

- Span Check Tab, page B-172
- APC Tab, page B-172
- Node Setup Tab, page B-173
- Side Tab, page B-173
- All Facilities Tab, page B-173
- Passive Cards Tab, page B-174
- Alien Wavelength Tab, page B-174
- Fiber Attribute Tab, page B-175

Provisioning Tab

The Provisioning tab allows you to view and change the optical parameters for the ONS 15454 MSTP. The optical parameters might have already been provisioned manually or by automatic node setup (ANS).

Table B-240 Field Descriptions for the Provisioning Tab

Field	Description
Attribute Name	Displays the Properties pane name that is imported from or exported to the Cisco MetroPlanner configuration file.
Value	Displays the default value of the corresponding Properties pane name imported from or exported to the Cisco MetroPlanner configuration file.

Table B-240 Field Descriptions for the Provisioning Tab (continued)

Field	Description
Origin (*Available in ONS 15454 R8.0 and later*)	Shows how the parameter is set. Possible values are: • Default • Automatic • Provisioned • Imported
Note (*Available in ONS 15454 R8.0 and later*)	Displays error details if ANS fails to set the parameter. Possible errors are: • Error during NE board navigation; value is not calculated • Cannot send the parameter request to far-end node; value is not calculated • No response from far-end node; value is not calculated • Configuration is not supported; value is not calculated • Far-end node configuration is not supported; value is not calculated • OSC far-end launch power is not available; value is not calculated • Far-end launch power is not available; value is not calculated • Span loss value is not available; value is not calculated • Fiber stage insertion loss is not available; value is not calculated • Preamplifier tilt is not available; value is not calculated • Add/drop output power is not available; value is not calculated • NE node launch power is not available; value is not calculated • WXC degree is not available; value is not calculated • Value is out of range • Read-only attribute; value is not calculated

Connections Tab

The Connections tab allows you retrieve internal patchcords and calculate DWDM connections.

Table B-241 Field Descriptions for the Connections Tab

Field	Description
ONS 15454 MSTP R7.2 and Earlier	
Slot-From	The slot from which the DWDM connection originates.
Unit-From	The unit from which the DWDM connection originates.
Port-From	The port from which the DWDM connection originates.
Slot-To	The slot at which the DWDM connection terminates.
Unit-To	The unit at which the DWDM connection terminates.
Port-To	The port at which the DWDM connection terminates.
State	The state of the DWDM connection.
ONS 15454 MSTP R8.0 and Later	

Table B-241 Field Descriptions for the Connections Tab (continued)

Field	Description
From	The unit or port from which the internal patchcord originates.
To	The unit or port at which the internal patchcord terminates.
Wavelength	Shows the wavelength value if the internal patchcord is between two channel ports. Otherwise, it shows *N/A*.

Span Check Tab

The Span Check tab allows you to check the span loss between the selected node and the previous node in the chain. The span check is always in reception.

Note If the Measured Span Loss value crosses the Min or Max Expected Span Loss threshold, a condition is raised.

Table B-242 Field Descriptions for the Span Check Tab

Field	Description
Retrieve Span Loss Values button	Runs the span loss verification function and retrieves values for the Measure Span Loss column.
Side	Specifies the side for which span loss information is displayed (east-to-west or west-to-east).
Min Exp. Span Loss	Specifies the minimum expected span loss (in dBm) for the incoming span. This value is imported from MetroPlanner, but can be modified manually.
Max Exp. Span Loss	Specifies the maximum expected span loss (in dBm) for the incoming span.
Meas. Span Loss	The measured span loss value.
Resolution	The resolution or accuracy of the span loss measurement.

APC Tab

The APC tab allows you to view the automatic power control (APC) parameters.

Table B-243 Field Descriptions for the APC Tab

Field	Description
Port	Port number.
Last Modification	Date and time the power control setpoint was last modified.
Param	All the APC parameters associated with the port.
Last Check	Date and time the power control setpoint was last verified.

Table B-243 Field Descriptions for the APC Tab (continued)

Field	Description
Side	Lists all the NEs and their sides that belong to the APC domain.
APC State	Displays the actual state of the APC. Values are: • Enabled—APC is enabled. • Disabled—APC is disabled. • Force Disabled—APC is disabled by the user. • Not Applicable—APC domain is incomplete.

Node Setup Tab

The Node Setup tab allows you to automatically preprovision NEs from a selected XML configuration file.

Table B-244 Field Descriptions for the Node Setup Tab

Field	Description
XML Settings	
Select XML File	Click **Browse** to select an XML file (generated by the MetroPlanner application). Prime Optical parses the XML file selected by the operator and checks the accuracy of its content.
Log Settings	
Select Log File	Click **Browse** to select a log file to which the results of the operations you perform will be saved.
Launch ANS Wizard button	Click the **Launch ANS Wizard** button to launch the Automatic Node Setup wizard. See Configuring Automatic Node Setup, page 7-339 for more information.

Side Tab

The Side tab allows you to view, edit, and delete sides defined for an ONS 15454 MSTP NE.

Table B-245 Field Descriptions for the Side Tab

Field	Description
Create button	Allows you to create side objects for the NE.
Modify button	Allows you to modify the side ID of an existing side object.
Delete button	Allows you to delete side objects.
Side	Displays the NE's side ID.
Line In	Displays the index of the receive side of the OTS port.
Line Out	Displays the index of the transmit side of the OTS port.

All Facilities Tab

The All Facilities tab allows you to view the DWDM and optical ports for the ONS 15454 MSTP NE.

Table B-246 Field Descriptions for the All Facilities Tab

Field	Description
Port	Displays the card port number, shelf ID, and slot number.
Power	Displays the current power for the port.
State	Displays the administrative state of the port.
Service State	Displays the service state of the port.
Retain Selected	Displays only the ports that you selected.
Show All	Retrieves and displays all the optical and DWDM ports for the NE.

Passive Cards Tab

The Passive Cards tab allows you to view information about passive units provisioned in CTC.

Note Passive units can be provisioned in CTC only.

Table B-247 Field Descriptions for the Passive Cards Tab

Field	Description
Passive Cards	
ID	Displays the passive card shelf ID.
Equipment Name	Displays the general card type/name.
Location	Displays the location of the passive card.
Description	Displays the passive card description.
Optical Ports	
Port	Displays the port number.
Type	Displays the port type.
MPO	Displays any physical multifiber push connectors.
Wavelength	Displays the port wavelength.

Alien Wavelength Tab

The Alien Wavelength tab allows you to view and edit the port and wavelength parameters defined for an ONS 15454 MSTP NE. Click the **Refresh** button to refresh the Alien Wavelength table.

Note Alien Wavelength is applicable to ONS 15454 NEs that support WSON nodes.

Table B-248 Field Descriptions for the Alien Wavelength Tab

Field	Description
Filter button	Click the **Filter** button to filter the data displayed in the table.
Create button	Allows you to create alien wavelengths for the NE. See Creating Alien Wavelength for more information.
Edit button	Allows you to modify the existing alien wavelength value. See Editing Alien Wavelength for more information.
Position	Displays information about the shelf, slot, and port on which the alien wavelength is configured.
Alien Wavelength	Displays the alien wavelength class.
Lambda	Displays the alien wavelength value.
FEC	Displays the FEC mode.

Fiber Attribute Tab

The Fiber Attribute tab allows you to view the fiber parameters defined for an ONS 15454 MSTP NE.

Note Fiber Attribute is applicable to ONS 15454 NEs that support WSON node.

Table B-249 Field Descriptions for the Fiber Attribute Tab

Field	Description
Filter button	Click the **Filter** button to filter the data displayed in the table.
Toggle button	Click the **Toggle** button to select the unit of measure.
Optical Side	Displays the name of the optical side to which the fiber is connected.
Fiber Type	Choose the fiber type from the drop-down list.
Fiber Number	Displays the number of the fiber associated to the optical side. Useful when different types of fiber are present on the span.
Fiber Length	Allows you to edit the fiber length.

WSON Tab

The WSON tab allows you to view and acknowledge the unverified alarms at the circuit level.

Table B-250 Field Descriptions for the WSON Tab

Field	Description
Filter button	Click the **Filter** button to filter the data displayed in the table.
Acknowledge WSON Alarm button	Click the **Acknowledge WSON Alarm** button to acknowledge a WSON alarm.
Affected Circuits button	Click the **Affected Circuits** button to view the affected circuits. If there are circuits affected by the selected alarm, the new circuit report is displayed. See Working with Circuit Reports for more information. **Note** The Affected Circuits button is enabled only when an alarm condition is selected.

Table B-250 Field Descriptions for the WSON Tab (continued)

Field	Description
ID	Displays the ID of the NE from the Domain Explorer.
PS	Perceived severity of the selected alarm (critical, major, minor, or warning). The background color also indicates the severity, where: • Red = Critical • Orange = Major • Yellow = Minor • Blue = Warning • Green = Cleared
Probable Cause	Probable cause of the selected alarm. Some possible values include: • Not Applicable/Unknown—If no additional information is available • Mismatch of equipment and attributes (MEA) alarm—For misconfigured pluggable port modules (PPMs) • Link Layer Keep-Alive Failure—When the keepalive frame on the POS port is disabled and the port is shut down • Bad Packet Count Exceeds Threshold—When the packets through the front port have CRC errored frames • Auto-Negotiation Remote Failure Indication—When a remote Gigabit Ethernet port is shut down from a local port
Condition	Error message or condition name that is associated with the alarm or event.
Affected Object	Name of the object where the selected alarm occurred.
Module Name	Name of the module where the selected alarm occurred.
Physical Location	Physical location of the equipment where the selected alarm occurred, such as chassis, rack, subrack (shelf), slot, and port numbers.
NE Alarm Time	Date and time when the alarm occurred on the NE.
SA	Whether the alarm or event is service affecting (SA). Values are: • Yes—The alarm is service affecting • No—The alarm is not service affecting • N/A—No information is provided by the NE

OSI

The OSI Properties pane allows you to provision ONS 15454 MSTP Open System Interconnection (OSI) parameters. The Properties pane contains the following tabs:

- Main Setup Tab, page B-177
- TARP-Config Tab, page B-177
- TARP-TDC Tab, page B-179
- TARP-MAT Tab, page B-179
- Routers-Setup Tab, page B-180

- Subnets Tab, page B-180
- Tunnels Tab, page B-181
- IS-IS RIB Tab, page B-182
- ES-IS RIB Tab, page B-182

Main Setup Tab

The Main Setup tab allows you to view and provision the OSI Network Entity Title (NET) address and the OSI routing mode.

Table B-251 Field Descriptions for the Main Setup Tab

Field	Description
Main Network Entity Title	Displays the node NET. The NET is used in OSI networks to identify the node to the end system (ES) or intermediate system (IS).
End System	Provisions the node as an OSI ES. ESs send end system hello (ESH) messages regularly to announce their presence to neighboring ISs and ESs.
Intermediate System Level 1	Provisions the node as an OSI IS. The ONS 15454 SONET performs all IS functions, including routing data between ISs and ESs, between networks, and between parts of a network. ISs send intermediate system hello (ISH) messages regularly to announce their presence to neighboring ISs and ESs. For the ONS 15454 SONET, Intermediate System Level 1 is the Cisco default.
Intermediate System Level 1/Level 2	The ONS 15454 SONET performs all IS functions. It communicates with other IS and ES nodes within an OSI area and broadcasts ISHs to IS nodes in other areas to which it is connected.
Node Routing Mode	
L1 LSP Buffer Size	Sets the Level 1 Link State Protocol (LSP) data unit buffer size. The Cisco default is 512.
L2 LSP Buffer Size	Sets the Level 2 LSP data unit buffer size. The Cisco default is 512.

TARP-Config Tab

The TARP-Config tab allows you to provision the TID Address Resolution Protocol (TARP). TARP is used when TL1 TIDs must be translated to an NSAP address. During the TID-to-NSAP translation, the TID is mapped to a NET; then, the NSAP is derived from the NET based on the NSAP selector value.

Table B-252 Field Descriptions for the TARP-Config Tab

Field	Description
TARP PDUs L1 Propagation	If checked (default), TARP Type 1 PDUs received by the node that are not excluded by the loop detection buffer are propagated to other NEs within the OSI Level 1 area. Type 1 PDUs request a protocol address that matches a target TID within a Level 1 routing area. The propagation does not occur if the NE is the target of the Type 1 PDU and the PDUs are not propagated to the NE from which the PDU was received. **Note** This parameter is not used when the node is set to End System.
TARP PDUs L2 Propagation	If checked (default), TARP Type 2 PDUs received by the node that are not excluded by the loop detection buffer are propagated to other NEs within the OSI Level 2 area. Type 2 PDUs request a protocol address that matches a target TID within a Level 2 routing area. The propagation occurs if the NE is the target of the Type 2 PDU and the PDUs are not propagated to the NE from which the PDU was received.
TARP PDUs Origination	If checked (default), the node performs all TARP configuration functions, including: • TID-to-NSAP resolution requests • NSAP-to-TID requests • TARP address changes **Note** TARP Echo and NSAP to TID are not supported.
L1 TARP Data Cache	If checked, the node maintains a TARP data cache (TDC). The TDC is a database of TID-to-NSAP pairs created from TARP Type 3 PDUs received by the node. TARP Type 3 PDUs are responses to Type 1 and Type 2 PDUs and modified by TARP Type 4 PDUs (TID-to-NSAP updates or corrections).
L2 TARP Data Cache	If checked (default), the TIDs and NSAPs are added to the TDC before the node propagates the requests to other NEs. **Note** This parameter is designed for IS Level 1/Level 2 nodes that are connected to other IS Level 1/Level 2 nodes. Enabling the parameter for IS Level 1 nodes is not recommended.
LDB	If checked, enables the TARP loop detection buffer (LDB). The LDB prevents TARP PDUs from being sent more than once on the same subnet.
LAN TARP Storm Suppression	If checked (default), enables the TARP storm suppression to prevent redundant TARP PDUs from being propagated across the network.
Send Type 4 PDU on Startup	If checked, a TARP Type 4 PDU is originated during the initial ONS 15454 SONET startup. Type 4 PDUs indicate that a TID or NSAP change has occurred at the NE. This option is disabled by default.
Type 4 PDU Delay	Sets the amount of time that will pass before the Type 4 PDU is generated. The Cisco default value is 60 seconds; the range is from 0 to 255 seconds.
Timers	
LDB Entry	Sets the TARP loop detection buffer (LDB) timer. The LDB buffer time is assigned to each LDB entry for which the TARP sequence number is zero. The Cisco default is 5 minutes; the range is from 1 to 10 minutes.
LDB Flush	Sets the frequency period for flushing the LDB. The Cisco default is 5 minutes; the range is from 0 to 1440 minutes.

Table B-252 Field Descriptions for the TARP-Config Tab (continued)

Field	Description
T1 Timer	Sets the amount of time to wait for response to a Type 1 Request PDU. Type 1 requests seek a specific NE TID within an OSI Level 1 area. The Cisco default is 15 seconds; the range is from 0 to 3600 seconds.
T2 Timer	Sets the amount of time to wait for a Type 2 Request PDU. TARP Type 2 requests seek a specific NE TID within an OSI Level 1 area. The Cisco default is 25 seconds; the range is from 0 to 3600 seconds.
T3 Timer	Sets the amount of time to wait for an address resolution request. The Cisco default is 40 seconds; the range is from 0 to 3600 seconds.
T4 Timer	Sets the amount of time to wait for an error recovery. The timer begins after the T2 timer expires without successfully finding the NE TID. The Cisco default is 20 seconds; the range is from 0 to 3600 seconds.

TARP-TDC Tab

Table B-253 Field Descriptions for the TARP-TDC Tab

Field	Description
TID	Target ID that is statistically linked to an NSAP or NET. For ONS nodes, the TID is the node name.
NSAP/NET	The NSAP that is statistically linked to the TID.
Type	Indicates how the TARP data cache entry was created. It can be either of the following: • Dynamic—The entry was created through the TARP propagation process. • Static—The entry was manually created and is a static entry.
Add Static Entry button	Click **Add Static Entry** to statically link a TID to an NSAP or NET.
Delete Selected Entry button	Click **Delete Selected Entry** to delete the selected TID-to-NSAP/NET static entry.
TID to NSAP button	Click **TID to NSAP** to query the network for an NSAP that matches a TID.
Flush Dynamic Entries button	Click **Flush Dynamic Entries** to delete all dynamically generated TDC entries.

TARP-MAT Tab

The TARP-MAT tab allows you to manually provision a TARP adjacency.

Table B-254 Field Descriptions for the TARP-MAT Tab

Field	Description
Level	Sets the TARP Type Code that will be sent. • Level 1—Indicates that the manual area adjacency is within the same area as the node. The entry generates Type 1 PDUs. • Level 2—Indicates that the manual area adjacency is in an area different from that of the node. The entry generates Type 2 PDUs.
NSAP	The NSAP address of the node at the other end of the TARP manual adjacency.

Table B-254 Field Descriptions for the TARP-MAT Tab (continued)

Field	Description
Add button	Click **Add** to create a TARP manual area adjacency.
Remove button	Click **Remove** to delete the selected TID-to-NSAP/NET static entry.

Routers-Setup Tab

The Routers-Setup tab allows you to view and manage OSI virtual routers.

Table B-255 Field Descriptions for the Routers-Setup Tab

Field	Description
Router Number	Displays the virtual router number. The ONS 15454 SONET provides three virtual routers, numbered 1 through 3.
System ID	Displays the NSAP system ID of the virtual router. The NSAP system identifier is set to the node's first IEEE 802.3 MAC address + *n*, where *n* = 0 through 2. For the primary router (Router 1), *n* = 0.
Status	Indicates the virtual router status. Select Enabled or Disabled from the drop-down list. **Note** Router 1 must be enabled before additional routers can be enabled.
Primary Area Address	Indicates the primary manual area address. For Router 1, this is the main NET for the node; that is, the NSAP without the system ID and selector (set to 00) fields.
Manual Area Address 1	Indicates the address of any additional manual areas that are created. **Note** An OSI area allows up to two additional manual areas in addition to the primary manual area.
Manual Area Address 2	Indicates the address of any additional manual areas that are created. **Note** An OSI area allows up to two additional manual areas in addition to the primary manual area.
Edit button	Click **Edit** to modify the address parameters.

Subnets Tab

The Subnets tab allows you to view and manage OSI subnetwork point-of-attachment parameters. The parameters are initially provisioned when you enable a subnet on an SDCC, LDCC, GCC, OSC, or LAN interface.

Table B-256 Field Descriptions for the Subnets Tab

Field	Description
Slot/Port	The subnet slot and port.
Router Number	The OSI virtual router where the subnet (SDCC, LDCC, GCC, or OSC) is provisioned.
Type	The interface where the subnet is provisioned: SDCC, LDCC, GCC, OSC, or LAN.
Protocol	The data link protocol that is provisioned for the subnet. It can be: • Point to Point Protocol (PPP) • Link Access Protocol on the D channel (LAP-D) • 802.3 for LAN subnets

Table B-256 Field Descriptions for the Subnets Tab (continued)

Field	Description
ISH	The intermediate system hello (ISH) PDU propagation frequency. Intermediate system NEs send ISHs to other ESs and ISs to inform them about the NETs they serve. The Cisco default is 10 seconds; the range is from 10 to 1000 seconds.
ESH	The end system hello (ESH) PDU propagation frequency. End system NEs transmit ESHs to inform other ESs and ISs about the NSAPs they serve. The Cisco default is 10 seconds; the range is from 10 to 1000 seconds.
IIH	The intermediate system-to-intermediate system hello (IIH) PDU propagation frequency. The IS-IS hello PDUs establish and maintain adjacencies between ISs. The Cisco default is 3 seconds; the range is from 1 to 600 seconds.
DIS Priority	The designated intermediate system (DIS) priority. In IS-IS networks, one router is elected as the DIS. For Cisco routers, the DIS priority is 64. For the ONS 15454 LAN subnet, the default DIS priority is 63. This priority should not be changed.
IS-IS Cost	The cost for sending packets on the subnet. This is used by OSPF routers to calculate the shortest path. The Cisco default value is 20.
Enable LAN Subnet button	*Router 1 only.* Enables OSI over the LAN; that is, it activates the IS-IS protocol on the LAN so OSI traffic is enabled on the LAN.
Edit button	Click **Edit** to modify the subnet parameters.
Disable LAN Subnet button	*Router 1 only.* Disables OSI over the LAN if it has been enabled.

Tunnels Tab

The Tunnels tab allows you to view, create, edit, and delete Generic Routing Encapsulation (GRE) and Cisco tunnels. GRE tunnels encapsulate one network protocol for transfer across another network layer. Within a mixed TCP/IP and OSI network, GRE tunnels tunnel IP traffic over an OSI NE and OSI traffic over an IP NE.

Table B-257 Field Descriptions for the Tunnels Tab

Field	Description
IP Address	Displays the IP address of the GRE destination Prime Optical or CTC computer.
Netmask Address	Displays the IP address subnet mask of the destination Prime Optical or CTC computer.
NSAP Address	The destination NE NSAP address. The NSAP selector (last two NSAP characters) must be 2f (GRE tunnel) or cc (proprietary Cisco tunnel), depending on which tunnel type you want to create. The Cisco proprietary tunnel is slightly more efficient than the GRE tunnel because it does not add an encapsulation header for each IP packet, while the GRE tunnel adds a small header to the packets. The two tunnel types are incompatible. **Note** Most Cisco routers support the Cisco tunnel, while only a few support both GRE and Cisco IP tunnels.
OSPF Metric	Displays the cost for sending packets across the GRE tunnel. Cost is used by OSPF routers to calculate the shortest path.
Create button	Click **Create** to create a new GRE tunnel route.
Edit button	Click **Edit** to edit an existing GRE tunnel.
Delete button	Click **Delete** to delete an existing GRE tunnel.

IS-IS RIB Tab

The IS-IS RIB tab allows you to view the intermediate system-to-intermediate system (IS-IS) protocol routing information base (RIB). IS-IS is an OSI link-state hierarchical routing protocol that floods the network with link-state information that enables the NEs to build a complete and consistent picture of a network topology.

Table B-258 Field Descriptions for the IS-IS RIB Tab

Field	Description
Router Number	Displays the OSI router number. The ONS 15454 SONET provides three virtual routers, numbered 1 through 3.
Subnet Type	Indicates the OSI subnetwork point-of-attachment type used to access the destination address. It includes SDCC, LDCC, GCC, OSC, and LAN.
Destination Address	Displays the Network Service Access Point (NSAP).
MAC Address	Displays the NE's MAC address for destinations that are accessed by the LAN subnets.

ES-IS RIB Tab

The ES-IS RIB tab allows you to view the end system-to-intermediate system (ES-IS) protocol RIB. ES-IS is an OSI protocol that defines how end systems (hosts) and intermediate systems (routers) learn about each other.

Table B-259 Field Descriptions for the ES-IS RIB Tab

Field	Description
Router Number	Displays the OSI router number. The ONS 15454 SONET provides three virtual routers, numbered 1 through 3.
Subnet Type	Indicates the OSI subnetwork point-of-attachment type used to access the destination address. It includes SDCC, LDCC, GCC, OSC, and LAN.
Destination Address	Displays the NSAP of the destination ES.
MAC Address	Displays the NE's MAC address for destinations that are accessed by the LAN subnets.

Rack Properties Pane—ONS 15454 MSTP

The Rack Properties pane displays a graphic of the ONS 15454 MSTP rack that is selected in the NE Explorer tree.

The following table lists the number of shelves and racks supported for Multishelf NEs across Prime Optical releases:

Prime Optical Release	Number of racks and shelves supported
9.6	Up to 50
9.2	Up to 30
9.1	Up to 12
9.0	Up to 12

Prime Optical Release	Number of racks and shelves supported
8.5.x	Up to 12
8.0.x	Up to 8
7.0.x	Up to 8

Moving the mouse pointer over the rack, shelves, slots, or cards displays the current alarms for the highlighted item. Double-clicking a shelf displays the shelf in the properties pane.

Shelf Properties Pane—ONS 15454 MSTP

The Shelf Properties pane displays information about the shelf that contains the ONS 15454 MSTP cards and modules.

The following table lists the number of shelves and racks supported for Multishelf NEs across Prime Optical releases:

Prime Optical Release	Number of racks and shelves supported
9.6	Up to 50
9.2	Up to 30
9.1	Up to 12
9.0	Up to 12
8.5.x	Up to 12
8.0.x	Up to 8
7.0.x	Up to 8

The shelf properties pane contains the following tabs:

- Shelf View, page B-183
- General, page B-184
- Alarm, page B-184
- Protection, page B-185
- Timing, page B-186

Shelf View

The Shelf View Properties pane displays a graphic of the ONS 15454 MSTP shelf that is selected in the NE Explorer tree. Moving the mouse pointer over the shelves, slots, or cards displays the current state and alarms for the highlighted item. Double-clicking a slot or card displays the slot or card in the properties pane. The right-click menu allows you to reset, delete, or change a card. For unprovisioned slots, the right-click menu allows you to add a card.

General

The General Properties pane contains information about voltage thresholds and multishelf configurations for the ONS 15454 MSTP. The General Properties pane contains Power Monitor and Multishelf Config tabs.

Power Monitor Tab

Table B-260 Field Descriptions for the Power Monitor Tab

Field	Description
ELWBATVG	Allows you to set the monitor value for extreme low battery voltage (ELWBATVG) in volts direct current (VDC).
LWBATVG	Allows you to set the monitor value for low battery voltage (LWBATVG) in VDC.
HIBATVG	Allows you to set the monitor value for high battery voltage (HIBATVG) in VDC.
EHIBATVG	Allows you to set the monitor value for extreme high battery voltage (EHIBATVG) in VDC.
Current Voltage Environment	Shows the current voltage environment.

Multishelf Config Tab

Table B-261 Field Descriptions for the Multishelf Config Tab

Field	Description
Shelf Role	Specify the configuration for multishelf NEs, where the primary NE is configured to take care of other NEs in the shelf. Select one of the following radio buttons: • Disable Multishelf • Enable as Subtended Shelf • Enable as Node Controller
Shelf ID	Unique number that identifies the shelf. Shelf ID #1 is reserved for the node controller.
LAN Config	Used to specify the LAN configuration that is used for the multishelf NE. A change in this attribute will force an automatic TCC reboot.

Alarm

The Alarm Properties pane allows you to change default alarm severities by creating unique alarm profiles for individual ONS 15454 MSTP shelves. The Alarm Properties pane contains Profile and Alarm Behavior tabs.

Profile Tab

The Profile tab allows you to view, create, or delete alarm profiles.

Table B-262 Field Descriptions for the Profile Tab

Field	Description
Alarm Profile Name	Choose an alarm profile for the NE from the drop-down list.
Create button	Click **Create** to create a new alarm profile for the NE.
Delete button	Click **Delete** to delete an alarm profile from the NE.
Condition	Displays the alarm condition.
Severity	Displays the alarm severity.

Alarm Behavior Tab

The Alarm Behavior tab allows you to change default alarm severities by creating unique alarm profiles.

Table B-263 Field Descriptions for the Alarm Behavior Tab

Field	Description
Alarm Profile	Choose a global alarm profile for the NE from the drop-down list.
Suppress Alarms	If checked, all alarms are suppressed.
Slot No.	Displays the location of the module.
Equipment Type	Displays the type of module in the slot.
Profile	Choose an alarm profile for the slot from the drop-down list.
Suppress Alarms	Indicates whether or not the alarms for a particular card are suppressed. If checked, all alarms are suppressed for the port.

Protection

The Protection Properties pane contains Protection Groups and Operations tabs.

Protection Groups Tab

The Protection Groups tab displays a list of available protection groups and allows you to create, delete, and view protection groups.

Table B-264 Field Descriptions for the Protection Groups Tab

Field	Descriptions
Protection Groups	
Protection Groups	Displays a list of available protection groups. Click the **Create** or **Delete** button to create a new protection group or delete an existing one.
Selected Protection Group	
Name	Modify the name of the selected protection group. The name can have up to 32 alphanumeric characters.

Table B-264 Field Descriptions for the Protection Groups Tab (continued)

Field	Descriptions
Type	View the protection type (1:1 [card], 1:N [card], Y Cable [port], 1+1 [port], or 1+1 Optimized [port]) of the selected protection group.
Protect Module	View the protect module if using 1:1 or 1:N protection.
Available Entities	Displays a list of available entities. You can toggle between available and working entities.
Working Entities	Displays a list of working entities. You can toggle between working and available entities.
Bidirectional Switching	Click if you want both the transmit and the receive channels to switch if a failure occurs on one. This option is available only if you select the 1+1 (port) type.
Revertive	If checked, the node reverts traffic to the working card or port after failure conditions for the amount of time entered in Reversion Time. This option is not available if you select the 1:N (card) type.
Reversion Time	If Revertive is checked, choose the amount of time following failure condition correction after which the node should switch back to the working card or port. Use half-minute increments. This option is available only if you select the 1:1 (card) type.

Operations Tab

The Operations tab displays protection group operation information.

Table B-265 Field Descriptions for the Operations Tab

Field	Descriptions
Protection Groups	Displays a list of available protection groups.
Protection Group Details	Displays details about the selected protection groups and allows you to execute switch commands.
Switch Commands	Allows you to perform a manual switch, perform a forced switch, or clear the existing command switching.
Inhibit Switching	Allows you to inhibit unlock switching, lock out switching, or lock on switching.

Timing

The Timing Properties pane contains the following tabs:

- General Tab, page B-187
- Facility Tab, page B-187
- Reference List Tab, page B-188
- Status Tab, page B-188
- Timing Report Tab, page B-189

General Tab

The General tab displays general timing information.

Table B-266 Field Descriptions for the General Tab

Field	Description
General Timing Area	
Timing Mode	Set to External if the ONS 15454 derives its timing from a BITS source wired to the backplane pins; set to Line if timing is derived from an OC-N card that is optically connected to the timing node. A third option, Mixed, allows you to set external and line timing references. **Caution** Mixed timing might cause timing loops. Use this mode with care.
SSM Message Set	Choose the SSM set level supported by your network. SSM is an SONET protocol that communicates information about the quality of the timing source. SSM messages are carried on the S1 byte of the SONET Line layer. They enable SONET devices to automatically select the highest quality timing reference and to avoid timing loops. If a Generation 1 node receives a Generation 2 message, the message is mapped down to the next available Generation 1 node. For example, an ST3E message becomes an ST3.
Revertive	If checked, the ONS 15454 reverts to a primary reference source after the conditions that caused it to switch to a secondary timing reference are corrected. Use the Reversion Time field to specify the time in half-minute increments.
Reversion Time	Specify the reversion time in half-minute increments.
Quality of RES	If your timing source supports the reserved S1 byte, set the timing quality here. (Most timing sources do not use RES.) Qualities are displayed in descending quality order as ranges. For example, ST3 < RES < ST2 means the timing reference is higher than a Stratum 3 and lower than a Stratum 2.

Facility Tab

The Facility tab displays the facility type, and BITS IN and OUT information.

Table B-267 Field Descriptions for the Facility Tab

Field	Description
BITS-IN-OUT Facility Type	
In Facility Type	Provisions the BITS In facility type.
Out Facility Type	Provisions the BITS Out facility type.
BITS IN Facilities and BITS OUT Facilities	
In State/Out State	Set the BITS reference to IS (In Service) or OOS (Out of Service). For nodes set to Line timing with no equipment timed through BITS Out, set the state to OOS. For nodes using External timing or Line timing with equipment timed through BITS Out, set the state to IS. **Note** BITS IN Facilities and BITS OUT Facilities values apply to both BITS-1 and BITS-2.
Coding	Set to the coding used by your BITS reference, either B8ZS or AMI.
Framing	Set to the framing used by your BITS reference, either ESF or SF (D4). SSM is not available with Super Frame.
Sync Messaging	If checked, enables the SSM for BITS In. (SSM is not available if Framing is set to Super Frame.)

Table B-267 Field Descriptions for the Facility Tab (continued)

Field	Description
Admin. SSM	If the Sync Messaging check box is not checked, you can choose the SSM Generation 2 type from the drop-down list.
AIS Threshold	If SSM is disabled or Super Frame is used, sets the quality level where a node sends an AIS from the BITS-1 Out and BITS-2 Out backplane pins. An AIS is raised when the optical source for the BITS reference falls to or below the SSM quality level defined in this field.
LBO	If you are timing an external device connected to the BITS Out pins, set the distance between it and the ONS 15454. Options are 0-133 ft (Cisco default), 134-266 ft, 267-399 ft, 400-533 ft, and 534-655 ft.

Reference List Tab

The Reference List tab provides timing reference information.

Table B-268 Field Descriptions for the Reference List Tab

Field	Description
NE References	Allows you to define three timing references (Ref-1, Ref-2, and Ref-3). The node uses Reference 1 unless a failure occurs on that reference, in which case, the node uses Reference 2. If that fails, the node uses Reference 3, which is typically set to the internal clock. This is the Stratum 3 clock provided on the TCC+. The options displayed depend on the Timing Mode setting: • Timing Mode set to External—Options are BITS-1, BITS-2, and Internal. • Timing Mode set to Line—Options are the node's working optical cards and Internal. **Note** For Timing Mode set to External and Timing Mode set to Line, select the cards/ports that are directly or indirectly connected to the node wired to the BITS source; that is, the node's trunk cards. Set Reference 1 to the trunk card that is closest to the BITS source. For example, if Slot 5 is connected to the node wired to the BITS source, select Slot 5 as Reference 1. • Timing Mode set to Mixed—Both BITS and optical cards are available, allowing you to set a mixture of external BITS and optical trunk cards as timing references.
BITS-1 Out References	Allows you to define three timing references (Ref-1, Ref-2, and Ref-3) for equipment wired to the BITS Out backplane pins. Normally, BITS Out is used with line nodes, so the options displayed are the working optical cards. BITS-1 and BITS-2 Out are enabled as soon as BITS-1 and BITS-2 facilities are placed in service.
BITS-2 Out References	Allows you to define three timing references (Ref-1, Ref-2, and Ref-3) for equipment wired to the BITS Out backplane pins. Normally, BITS Out is used with line nodes, so the options displayed are the working optical cards. BITS-1 and BITS-2 Out are enabled as soon as BITS-1 and BITS-2 facilities are placed in service.

Status Tab

The Status tab displays timing status information.

Note If you change any values in the Status tab and click Apply at the bottom of the screen, the values are not set. Instead, use the following buttons to apply changes:

- Clear—Releases any existing switch request. For example, if you issue a Force Switch and then issue a Clear, the Force Switch request is released.

- Manual Switch—Switches the timing reference from one source to another.
- Force Switch—Switches the timing reference from one source to another. This request has a higher priority than the Manual Switch request.

Table B-269 Field Descriptions for the Status Tab

Field	Description
NE Clock	
NE Reference	Set the NE timing reference to internal, BITS-1, or BITS-2.
Status	Displays the status of the NE clock.
Operations	Execute a switch on the NE timing reference.
BITS-1 Out	
BITS-1 Out	Set the BITS-1 out timing reference.
Status	Displays the status of the BITS-1 out timing reference.
Operations	Execute a switch on the BITS-1 out timing reference.
BITS-2 Out	
BITS-2 Out	Set the BITS-2 out timing reference.
Status	Displays the status of the BITS-2 out timing reference.
Operations	Execute a switch on the BITS-2 out timing reference.

Timing Report Tab

The Timing Report tab summarizes the NE's current timing settings.

Note See Table 1-22 on page 1-47 for descriptions of actions that you can perform using the buttons at the bottom of the window.

ONS 15454 SONET NE Explorer

When you choose **Configuration > NE Explorer** for the ONS 15454 SONET, the window that Prime Optical displays consists of a tree on the left side and a node properties pane on the right. The tree provides a hierarchical view and alarm status of the NE's physical shelves and slots. The properties pane shows information about the selected entity. See Node Properties Pane—ONS 15454 SONET, page B-190 for more information.

Note If CTC is launched from the web browser for an ONS 15454 SONET node, the CTC GUI might look different from when it is launched from Prime Optical. This discrepancy occurs because the latest version of CTC (for NE releases supported by Prime Optical) is packaged with Prime Optical. If launched from a browser, the CTC software is retrieved from the NE itself, which might be a version different from that packaged with Prime Optical.

When an NE Explorer is in autorefresh mode, all values of an entity that is being edited by the user are automatically refreshed. You will lose all of your changes unless you click the Apply button. To enable autorefresh, click the Refresh Data button in the NE Explorer.

Node Properties Pane—ONS 15454 SONET

The node properties pane displays information about the ONS 15454 SONET NE. The properties pane contains the following tabs, some of which apply only to a specific NE version:

- Shelf View, page B-190
- General, page B-191
- Network, page B-192
- DCC/GCC/OSC, page B-201
- Timing, page B-203
- Protection, page B-207
- Ether Bridge, page B-208
- NE Defaults, page B-209
- Security, page B-210
- Alarm, page B-214
- Alarm Conditions, page B-215
- XC Utilization, page B-217
- BLSR, page B-217
- DWDM, page B-218
- OSI, page B-228

Shelf View

The Shelf View Properties pane displays a graphic of the ONS 15454 SONET that is selected in the NE Explorer tree. Moving the mouse pointer over the NE, its shelves, slots, or cards displays the current alarms for the highlighted item. You can also see the alarm status of two power supplies on the Shelf View in the NE Explorer. Alarm status either displays the location, that is BAT_A or BAT_B, or the severity.

Double-clicking a slot or card displays the slot or card in the properties pane. The right-click menu allows you to reset, delete, or change a card. For unprovisioned slots, the right-click menu allows you to add a card.

General

The General Properties pane displays identification information, voltage thresholds, and multishelf configurations for the ONS 15454 SONET NE.

Table B-270 Field Descriptions for the General Properties Pane

Field	Description
Identification Tab	
NE ID	Displays the ID of the NE from the Domain Explorer.
NE Model	Displays the NE model type.
Software Version	Displays the current running version of the system software.
Contact	Displays the name and phone number of the node contact person.
Description	Enter a description of the NE.
System Description	Displays the NE type and the version of the system software.
SNTP Settings	
Use NTP/SNTP Server	If checked, CTC uses an SNTP server to set the date and time of the node. Using an SNTP server ensures that all ONS 15454 network nodes use the same date and time reference. The server synchronizes the node's time after power outages or software upgrades. If you check the **Use NTP/SNTP Server** check box, enter the server's IP address in the next field. If you do not use an SNTP server, complete the Time and Time Zone fields. The ONS 15454 will use these fields for alarm dates and times.
SNTP Server	Displays the SNTP server IP address.
Location	
Latitude	Allows you to set the latitude of the NE. Select **North** or **South** from the drop-down list; then, enter the degrees and minutes (or click the up and down arrows to increase or decrease each by 1 unit).
Longitude	Allows you to set the longitude of the NE. Select **East** or **West** from the drop-down list; then, enter the degrees and minutes (or click the up and down arrows to increase or decrease each by 1 unit).
Date and Time	
Time	Displays the NE date and time.
Time Zone	Displays the time zone where the NE is located.
Use Daylight Savings Time	If checked, Daylight Savings Time is observed.
AIS-V Insertion on STS-1 Signal Degrade - Path	
Insert AIS-V on STS-1 SD-P	If checked, the NE inserts an AIS-V signal when it detects an STS-1 signal degrade.
SD-P BER	Select the signal degrade path bit error rate for AIS-V insertion.
APC State	
Side	Lists all the NEs and their sides that belong to the automatic power control (APC) domain.

Table B-270 Field Descriptions for the General Properties Pane (continued)

Field	Description
APC State	Displays the actual state of the APC. Values are: • Enabled—APC is enabled. • Disabled—APC is disabled. • Force Disabled—APC is disabled by the user. • Not Applicable—APC domain is incomplete.
Power Monitor Tab	
ELWBATVG	Allows you to set the monitor value for extreme low battery voltage (ELWBATVG) in volts direct current (VDC).
LWBATVG	Allows you to set the monitor value for low battery voltage (LWBATVG) in VDC.
HIBATVG	Allows you to set the monitor value for high battery voltage (HIBATVG) in VDC.
EHIBATVG	Allows you to set the monitor value for extreme high battery voltage (EHIBATVG) in VDC.
Current Voltage Environment	Shows the current voltage environment (48 volts for SONET; 60 volts for SDH).
Multishelf Config Tab	
Shelf Role	Specify the configuration for multishelf NEs, where the primary NE is configured to take care of other NEs in the shelf. Select one of the following radio buttons: • Disable Multishelf • Enable as Subtended Shelf • Enable as Node Controller
Shelf ID	Unique number that identifies the shelf. Shelf ID #1 is reserved for the node controller.
LAN Config	Used to specify the LAN configuration that is used for the multishelf NE. A change in this attribute will force an automatic TCC reboot.
Voltage/Temperature Tab	
Voltage	Displays the voltage (in millivolts) of the shelf that corresponds to the power supply.
Temperature	Displays the temperature (in degrees Celsius) of the shelf.

Network

The Network Properties pane displays information about the NE network address. The Network Properties pane contains the following tabs:

Address Tab, page B-193

Static Routes Tab, page B-193

OSPF Tab, page B-194

OSPF Area Range Tab, page B-195

OSPF Virtual Links Tab, page B-195

SNMP Tab, page B-196

Firewall/Proxy Tab, page B-196

Routing Table Tab, page B-197

RIP Routing Table Tab, page B-197
RIP Tab, page B-198
Proxy Tunnels Tab, page B-198
Firewall Tunnels Tab, page B-199
Secure Config Mode Tab, page B-199
FTP Hosts Tab, page B-200

Address Tab

The Address tab allows you to view and change information about the NE network address.

Table B-271 Field Descriptions for the Address Tab

Field	Description
IP Address	Displays the IP address of the NE.
Default Router	Displays the IP address of the default router.
Subnet Mask	Displays the subnetwork mask ID of the NE.
MAC Address	Displays the ONS 15454 address as it is identified on the IEEE 802 MAC layer.
LCD IP Setting	Allows you to configure the LCD screen. Select from the following values: • Allow Configuration—Enables shelf address changing from the LCD. • Display Only—Prevents users from changing the shelf IP address from the LCD screen. • Suppress Display—Makes the LCD screen blank.
Forward DHCP Requests	If checked, forwards DHCP requests to the IP address entered in the DHCP Server field. When the Forward DHCP Requests check box is unchecked, the DHCP Server field is display-only.
DHCP Server	Displays the IP address of the DHCP server.
IPv6 Config	
Enable IPv6	If checked, allows you to configure the node to use the IPv6 protocol and to assign an IPv6 address to the node.
IPv6 Address	Enter the IPv6 address of the node.
Default IPv6 Router	Enter the IPv6 default router of the node.
IPv6 Subnet Mask	Enter the IPv6 subnetwork mask length.

Static Routes Tab

The Static Routes tab allows you to view information about Prime Optical and ONS 15454 SONET connectivity and create or delete static routes.

Table B-272 Field Descriptions for the Static Routes Tab

Field	Description
Destination IP	Displays the IP address of the computer running Prime Optical.
Subnet Mask	Displays the subnetwork mask.

Table B-272 Field Descriptions for the Static Routes Tab (continued)

Field	Description
Next Hop	Displays the IP address of the router port or the node IP address if the Prime Optical computer is connected to the node directly.
Cost	Displays the number of hops between the ONS 15454 and the computer.

OSPF Tab

The OSPF tab displays OSPF information. OSPF is a link-state Internet routing protocol.

Table B-273 Field Descriptions for the OSPF Tab

Field	Description
Slot	Displays the slot number.
Port	Displays the port number.
DCC OSPF Area ID	Displays the number that identifies the ONS 15454 as a unique OSPF area. The OSPF area number can be from 0.0.0.0 to 255.255.255.255. The number must be unique to the LAN OSPF area.
SDCC Metric	Sets a cost for sending packets across the Section Data Communications Channel (SDCC), which is used by OSPF routers to calculate the shortest path. This value should always be higher than the LAN metric. This value is normally unchanged.
LDCC Metric	Sets a cost for sending packets across the Line Data Communications Channel (LDCC), which is used by OSPF routers to calculate the shortest path. This value should always be higher than the LAN metric. This value is normally unchanged.
OSPF on LAN	
OSPF Active on LAN	If checked, enables the ONS 15454 OSPF topology to be advertised to OSPF routers on the LAN. Enable this field on ONS 15454s that directly connect to OSPF routers.
LAN Port Area ID	Displays the OSPF area ID for the router port where the ONS 15454 is connected. (This number is different from the DCC OSPF area ID.)
Router Priority	Displays the value used for this NE in designated router election. The Cisco default value is zero (0). A router that has Router Priority set to 0 is ineligible to become a designated router on the attached network.
Dead Interval	Displays the number of seconds that will pass while an OSPF router's packets are not visible before its neighbors declare the router down. Forty seconds is the Cisco default.
Retransmit Interval	Displays the time that will elapse before a packet is resent. Five seconds is the Cisco default.
Hello Interval	Displays the number of seconds between OSPF hello packet advertisements sent by OSPF routers. Ten seconds is the Cisco default.
Transit Delay	Displays the service speed. One second is the Cisco default.
LAN Metric	Displays a cost for sending packets across the LAN. This value should always be lower than the DCC metric. Ten is the Cisco default.
OSPF Authentication	
Authentication Type	Displays Simple Password if the router where the ONS 15454 is connected uses authentication. Otherwise, it displays No Authentication.

Table B-273 Field Descriptions for the OSPF Tab (continued)

Field	Description
Authentication Key	Displays the OSPF key (password) if authentication is enabled.
Confirm Authentication Key	Retype the authentication key to confirm it.

OSPF Area Range Tab

The OSPF Area Range tab allows you to view information about OSPF area ranges and create or delete area ranges.

Table B-274 Field Descriptions for the OSPF Area Range Tab

Field	Description
Range Address	Displays the area IP address for the ONS 15454s that reside within the OSPF area. For example, if the ONS 15454 OSPF area includes nodes with IP addresses 10.10.20.100, 10.10.30.150, 10.10.40.200, and 10.10.50.250, the range address would be 10.10.0.0.
Range Area ID	Displays the OSPF area ID for the ONS 15454 NEs. This is either the ID in the DCC OSPF Area ID field or the ID in the LAN Port Area ID field.
Mask Length	Displays the subnet mask length.
Mask	Displays the subnet mask IP address.
Advertise	Indicates whether the OSPF routing table is advertised.

OSPF Virtual Links Tab

The OSPF Virtual Links tab allows you to view information about OSPF virtual links and create, edit, or delete virtual links.

Note You cannot create a new virtual link unless OSPF is active on the LAN.

Table B-275 Field Descriptions for the OSPF Virtual Links Tab

Field	Description
Neighbor	Displays the router ID of the Area 0 router.
Transit Delay	Displays the service speed. One second is the Cisco default.
Retransmit Interval	Displays the time that will elapse before a packet is resent. Five seconds is the Cisco default.
Hello Interval	Displays the number of seconds between OSPF hello packet advertisements sent by OSPF routers. Ten seconds is the Cisco default.
Dead Interval	Displays the number of seconds that will pass while the packets of an OSPF router are not visible before its neighbors declare the router down. Forty seconds is the Cisco default.
Authentication Type	Displays the authentication type.
Authentication Key	Displays the authentication key.

SNMP Tab

The SNMP tab allows you to view SNMP information and create or delete SNMP trap destinations.

Table B-276 Field Descriptions for the SNMP Tab

Field	Description
Allow SNMP Set	If checked, allows you to use SNMP management software with the ONS 15454 SONET.
Allow SNMP Proxy	If checked, allows you to configure the ONS 15454 SONET to proxy SNMP calls.
Use Generic MIB	If checked, allows you to transfer traps to a local MIB browser or server.
IP Address	The IP address of the NMS.
Community Name	The SNMP community name. **Note** The SNMP community string cannot be blank in Prime Optical. If a blank community string is required in CTC builds earlier than R4.6, you must set the blank community string in CTC.
UDP Port	The UDP port for SNMP. The Cisco default UDP port is 162.
Trap Version	The trap version, either SNMP version 1 or version 2. See your NMS documentation to determine whether to use SNMP version 1 or version 2.
Relay A IP Address	The first ONS 15454 to relay traps through. The IP address is appended to the base community string to tell the first NE the IP address and the port to forward the trap to. The second NE recognizes the IP address and strips it from the community string before forwarding the trap.
Relay A Community Name	The community name for the relay A node to use in the trap when forwarding it.
Relay B IP Address	The second ONS 15454 to relay traps through.
Relay B Community Name	The community name for the relay B node to use in the trap when forwarding it.
Relay C IP Address	The third ONS 15454 to relay traps through.
Relay C Community Name	The community name for the relay C node to use in the trap when forwarding it.

Firewall/Proxy Tab

The Firewall/Proxy tab allows you to use an NE as a proxy server or as a firewall.

Table B-277 Field Descriptions for the Firewall/Proxy Tab

Field	Description
Craft Access Only	If checked, only allows CTC to access the firewall and proxy settings of the NE. Check this item only if the LAN port is used for direct workstation-to-NE connections, and not connected to a LAN. Disabling craft-only access allows the installation of a route to the LAN. Disable this only if the LAN port is actually connected to the LAN. **Note** This field applies only to ONS 15454 SONET releases earlier than R4.6.
Enable Firewall	If checked, blocks packets routed between the local area and DCC networks. This causes a loss of connectivity to DCC-only connected NEs. Prime Optical cannot reestablish the connection unless the proxy is enabled. Additionally, all NEs connected to the LAN must also have their firewall enabled, or connectivity problems will result. **Note** This field applies only to ONS 15454 SONET releases earlier than R4.6.

Table B-277 Field Descriptions for the Firewall/Proxy Tab (continued)

Field	Description
Gateway Settings	
Enable Proxy Server on Port	If checked, the ONS 15454 serves as a proxy for connections between the Prime Optical server and ONS 15454s that are DCC-connected to the proxy ONS 15454. The Prime Optical server establishes connections to DCC-connected nodes through the proxy node. The Prime Optical server can connect to nodes that it cannot directly reach from the host on which it runs. The proxy server port number (display-only) is shown following the Enable Proxy Server on Port field. The proxy server uses port 1080. If checked, the following radio buttons are enabled: • End Network Element (ENE)—Configures the ONS 15454 to proxy as an ENE, meaning the NE supports craft access only, supports firewall, and acts as a proxy. Note that an alternate expansion for ENE is *external network element*. • Gateway Network Element (GNE)—Configures the ONS 15454 to proxy as a GNE, meaning the NE supports firewall and acts as a proxy. • Proxy-only—Configures the ONS 15454 to act as a proxy. If unchecked, the node does not proxy; instead, it acts as a LAN-connected NE (LNE).

Routing Table Tab

The Routing Table tab allows you to view the OSPF routing table.

Table B-278 Field Descriptions for the Routing Table Tab

Field	Description
Destination	Displays the IP address of the destination network or host.
Mask	Displays the subnet mask used to reach the destination network or host.
Gateway	Displays the IP address of the gateway used to reach the destination network or host.
Usage	Shows the number of times the listed route has been used.
Interface	Shows the ONS 15454 SONET interface used to access the destination. Values are: • cpm0—The ONS 15454 Ethernet interface (that is, the RJ-45 jack on the TCC+/TCC2 and the LAN 1 pins on the backplane). • pdcc0—An SDCC interface (that is, an OC-N trunk card identified as the SDCC termination). • lo0—A loopback interface.

RIP Routing Table Tab

The RIP Routing Table tab allows you to view the RIP routing table.

Table B-279 Field Descriptions for the RIP Routing Table Tab

Field	Description
Destination	Displays the IP address of the destination network or host.
Mask	Displays the subnet mask used to reach the destination network or host.

Table B-279 Field Descriptions for the RIP Routing Table Tab (continued)

Field	Description
Gateway	Displays the IP address of the gateway used to reach the destination network or host.
Cost	Displays the hop count metric. The valid range is from 1 to 15.

RIP Tab

The RIP tab allows you to view and configure RIP parameters.

Note

- When you enable RIP, you must wait for approximately one minute for the default RIP address summary to become visible.
- When you disable RIP on the NE, all summary address entries in the Summary Address table are deleted.

Table B-280 Field Descriptions for the RIP Tab

Field	Description
RIP Active	Check this check box to enable RIP. Uncheck it to disable RIP. **Note** Checking the RIP Active check box and clicking the **Apply** button does not enable RIP. Instead, you must check the RIP Active check box, click the **Create** button, and use the Create RIP Address Summary dialog box to create a new RIP address. For details, see Using RIP, page 5-8.
RIP Type	Select RIP version 1.0 or RIP version 2.0.
Metric	Enter the hop count metric. The valid range is from 1 to 15.
Authentication Type	Select the authentication type.
Authentication Key	Enter the authentication key (password) if the authentication type is Simple Password.
Confirm Authentication Key	Retype the authentication key to confirm it.
RIP Address Summary	• Summary Address—Displays the summary address. • Mask Length—Displays the subnet mask length. • Cost—Displays the hop count metric. The valid range is from 1 to 15.
Create button	Click **Create** to create a new RIP address. See Using RIP, page 5-8.
Delete button	Click **Delete** to delete an existing RIP address.

Proxy Tunnels Tab

The Proxy Tunnels tab allows you to configure source and destination information and create or delete proxy tunnels.

Table B-281 Field Descriptions for the Proxy Tunnels Tab

Field	Description
Source Address	Specify the source IP address in the source-destination pair for the tunnel that will be routed through the proxy server.
Source Mask	Specify the source subnetwork mask in the source-destination pair for the tunnel that will be routed through the proxy server.
Destination Address	Specify the destination IP address in the source-destination pair for the tunnel that will be routed through the proxy server.
Destination Mask	Specify the destination subnetwork mask in the source-destination pair for the tunnel that will be routed through the proxy server.

Firewall Tunnels Tab

The Firewall Tunnels tab allows you to configure source and destination information and create and delete firewall tunnels.

Table B-282 Field Descriptions for the Firewall Tunnels Tab

Field	Description
Source Address	Specify the source IP address in the source-destination pair for the tunnel that will be routed through the firewall.
Source Mask	Specify the source subnetwork mask in the source-destination pair for the tunnel that will be routed through the firewall.
Destination Address	Specify the destination IP address in the source-destination pair for the tunnel that will be routed through the firewall.
Destination Mask	Specify the destination subnetwork mask in the source-destination pair for the tunnel that will be routed through the firewall.

Secure Config Mode Tab

The TCC2P card supports secure config mode. When the secure mode is on, the NE has two IP addresses, one for the backplane and one for the front port. The front port IP address is used by the DCC-connected NEs. The secure config mode feature applies to the ONS 15454 SONET R5.0 and later.

Note When there is no TCC2P card present, the fields in the following table cannot be configured.

The Secure Config Mode tab allows you to configure the secure config mode. The fields shown depend on whether the NE is in secure mode. For example, the Backplane Ethernet Port values are displayed only when the NE is in secure mode.

Table B-283 Field Descriptions for the Secure Config Mode Tab

Field	Description
TCP/IP Mode	
Normal	When this text is visible, the NE is not in secure mode. There is one IP address shared by TCC and backplane Ethernet ports, with full connectivity between ports.

Table B-283 Field Descriptions for the Secure Config Mode Tab (continued)

Field	Description
Secure	When this text is visible, the NE is in secure mode. There are separate IP addresses for TCC and backplane Ethernet ports, with no connectivity between ports.
Mode not locked	When this text is visible, you can change the secure mode.
Mode permanently locked and cannot be unlocked	When this text is visible, the NE is in secure mode, and the secure mode is locked and cannot be changed.
Backplane Ethernet Port	
IP Address	Displays the IP address of the NE.
Secure IP Address	Displays the backplane IP address.
Secure Subnet Mask Length	Displays the mask length of the secure IP address. Use the up or down arrows to change the mask length.
Default Router	Displays the address of the default router for this NE.
Secure MAC Address	Displays the MAC/Ethernet address for the backplane.
Secure LCD IP Setting	Displays the setting value applicable for the secure mode. Select from the following values: • Allow Configuration—Enables shelf address changing from the LCD. • Display Only—Prevents users from changing the shelf IP address from the LCD screen. • Suppress Display—Makes the LCD screen blank.
Change Mode	
Change Mode button	Opens the Change Secure Mode dialog box, which allows you to change the mode of the NE from secure to unsecure, and vice versa. This button is enabled only if an active TCC2P card exists on the NE.
Lock	
Lock button	When the NE is in secure mode, the Lock button locks the secure mode on the NE/TCC so that it cannot be changed.

FTP Hosts Tab

The FTP Hosts tab allows you to configure database backup or restore and software download to an ENE when the firewall is enabled. You can provision a list of legal FTP hosts for which the firewall opens for all FTP commands. You can configure the FTP hosts to expire after a certain amount of time, after which the FTP relay resumes blocking all FTP access for the ENEs.

Table B-284 Field Descriptions for the FTP Hosts Tab

Field	Description
Create button	Opens the Create New FTP Host dialog box, which allows you to create up to 12 new FTP hosts in a GNE/ENE firewall environment. See Creating an FTP Host, page 5-22. **Note** You cannot create more than 12 FTP hosts.
Delete button	Deletes the selected FTP host.
FTP Host Address	Displays the FTP host IP address.
Prefix Length	Displays the FTP host subnet mask length.

Table B-284 Field Descriptions for the FTP Hosts Tab (continued)

Field	Description
Enable FTP Relay	Indicates whether FTP relay is enabled or disabled. If FTP relay is disabled, the FTP Relay Timer field is dimmed.
FTP Relay Timer	Displays the number of minutes that the FTP relay is configured to run, after which the FTP relay resumes blocking all FTP access for the ENEs.

DCC/GCC/OSC

The DCC/GCC/OSC Properties pane allows you to create, delete, and view SDCCs, LDCCs, Generic Communications Channels (GCCs), Optical Service Channels (OSCs), and DWDM ring IDs.

Table B-285 Field Descriptions for the DCC/GCC/OSC Properties Pane

Field	Description
SDCC	
SDCC Terminations	Displays the slot, port, and card type of an SDCC termination.
OSPF Disabled on Link	Check to prevent the advertisement of the OSPF routing table.
Foreign	A check mark indicates that the far-end node is a non-ONS node.
Foreign IP	Displays the foreign node IP address.
LAPD Config	If the SDCC is provisioned as OSI only, the following SDCC LAP-D parameters are displayed: • AITS/UITS—Indicates the LAP-D acknowledgement type, either Acknowledged Information Transfer Service (AITS) or Unacknowledged Transfer Service (UITS). • Network/User—Indicates the LAP-D frame command/response role, either Network or User. • MTU—Shows the size of the maximum transfer unit (MTU). The range is from 512 to 1500 octets. • T2000—Shows the time between Set Asynchronous Balanced Mode (SABME) frame transmission. The range is from 0.2 to 20 seconds. • T203—Shows the maximum time between LAP-D frame exchanges. The range is from 4 to 120 seconds.
OSI SNPA	If the SDCC is provisioned for OSI, the following subnetwork point-of-attachment (SNPA) information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.

Table B-285 Field Descriptions for the DCC/GCC/OSC Properties Pane (continued)

Field	Description
Service State	Select the state of the termination: • IS-NR—In Service–Normal. • OOS-AU—Out of Service–Autonomous. • OOS-MA—Out of Service–Management. • OOS-AUMA—Out of Service–Autonomous and Management. In addition, a secondary state provides additional information about the status of the entity. Values for secondary state are: • MEA—Mismatch of equipment due to invalid equipment insertion. • UEQ—Unequipped; there is nothing in the slot. • UAS—Unassigned; the entity does not exist, has not been created, or has been deleted. • SWDL—Software download in progress. • MT—Maintenance, as per the Admin State change. • AINS—Automatic in service. • DSBLD—Traffic is disabled on the entity. • LPBK—Port or connection has a loopback on it. • FLT—Fault secondary state. When an entity is faulted, an FLT state is raised. Equipment and ports in FLT state should be cleared as they transition. Transition states are listed in Table 11-11 on page 11-15. See Table 11-11 on page 11-15 for the Service state-Secondary state possible values. **Note** If the NE release does not support the Service state, this field shows N/A.
LDCC	
LDCC Terminations	Displays the slot, port, and card type of an LDCC termination.
OSPF Disabled on Link	Check to prevent the advertisement of the OSPF routing table.
Foreign	A check mark indicates that the far-end node is a non-ONS node.
Foreign IP	Displays the foreign node IP address.
LAPD Config	Displays the LAP-D parameters for the SDCCs that are provisioned as OSI only. For GCCs, this column is always N/A.
OSI SNPA	If the GCC is provisioned for OSI, the following SNPA information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.
Service State	Select the state of the LDCC termination (IS-NR, OOS-AU, OOS-MA, OOS-AUMA) plus the secondary state (MEA, UEQ, UAS, SWDL, MT, AINS, DSBLD, FLT, LPBK).
GCC	
GCC Terminations	Displays the slot, port, and card type of a GCC termination.
OSPF Disabled on Link	Check to prevent the advertisement of the OSPF routing table.
GCC Rate	Displays the GCC rate.
Foreign	A check mark indicates that the far-end node is a non-ONS node.

Table B-285 Field Descriptions for the DCC/GCC/OSC Properties Pane (continued)

Field	Description
Foreign IP	Displays the foreign node IP address.
LAPD Config	Displays the LAP-D parameters for the SDCCs that are provisioned as OSI only. For GCCs, this column is always N/A.
OSI SNPA	If the GCC is provisioned for OSI, the following SNPA information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.
Service State	Select the state of the GCC termination (IS-NR, OOS-AU, OOS-MA, OOS-AUMA) plus the secondary state (MEA, UEQ, UAS, SWDL, MT, AINS, DSBLD, FLT, LPBK).
OSC	
OSC Terminations	Displays the slot, port, and card type of an OSC termination.
LAPD Config	Displays the LAP-D parameters for the SDCCs that are provisioned as OSI only.
OSI SNPA	If the OSC is provisioned for OSI, the following SNPA information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.
Service State	Displays the state of the OSC termination.
DWDM Ring ID	
Ring ID	Displays the ring ID.
West Direction	Lists the OSCM or OSC-CSM port that supports the ring in the west direction. The value is N/A if there are no ports in the west direction.
East Direction	Lists the OSCM or OSC-CSM port that supports the ring in the east direction. The value is N/A if there are no ports in the east direction.
Create button	Allows you to create new terminations on SONET or SDH cards.
Edit button	Allows you to modify existing terminations on SONET or SDH cards.
Delete button	Allows you to delete the selected SDCC, LDCC, GCC, OSC, or DWDM ring ID.

Timing

The Timing Properties pane contains the following tabs:

- General Tab, page B-204
- Facility Tab, page B-204
- Reference List Tab, page B-206
- Status Tab, page B-206
- Timing Report Tab, page B-207

General Tab

The General tab displays general timing information.

Table B-286 Field Descriptions for the General Tab

Field	Description
General Timing	
Timing Mode	Set to External if the ONS 15454 derives its timing from a BITS source wired to the backplane pins; set to Line if timing is derived from an OC-N card that is optically connected to the timing node. A third option, Mixed, allows you to set external and line timing references. **Caution** Mixed timing might cause timing loops. Use this mode with care.
SSM Message Set	Choose the SSM set level supported by your network. SSM is an SONET protocol that communicates information about the quality of the timing source. SSM messages are carried on the S1 byte of the SONET Line layer. They enable SONET devices to automatically select the highest quality timing reference and to avoid timing loops. If a Generation 1 node receives a Generation 2 message, the message is mapped down to the next available Generation 1 node. For example, an ST3E message becomes an ST3.
Revertive	If checked, the ONS 15454 reverts to a primary reference source after the conditions that caused it to switch to a secondary timing reference are corrected. Use the Reversion Time field to specify the time in half-minute increments.
Quality of RES	If your timing source supports the reserved S1 byte, set the timing quality here. (Most timing sources do not use RES.) Qualities are displayed in descending quality order as ranges. For example, ST3 < RES < ST2 means the timing reference is higher than a Stratum 3 and lower than a Stratum 2.
AIS Threshold	If SSM is disabled or Super Frame is used, sets the quality level where a node sends an AIS from the BITS-1 Out and BITS-2 Out backplane pins. An AIS is raised when the optical source for the BITS reference falls to or below the SSM quality level defined in this field.
LBO	If you are timing an external device connected to the BITS Out pins, set the distance between it and the ONS 15454. Options are 0-133 ft (Cisco default), 134-266 ft, 267-399 ft, 400-533 ft, and 534-655 ft.

Facility Tab

The Facility tab displays the facility type, BITS IN and OUT information.

Note BITS IN Facilities and BITS OUT Facilities values apply to both BITS-1 and BITS-2.

Table B-287 Field Descriptions for the Facility Tab

Field	Description
BITS-IN-OUT Facility Type	
In Facility Type	Provisions the BITS In facility type.
Out Facility Type	Provisions the BITS Out facility type.
BITS IN Facilities	

Table B-287 Field Descriptions for the Facility Tab (continued)

Field	Description
In State	Set the BITS reference to IS (In Service) or OOS (Out of Service). For nodes set to Line timing with no equipment timed through BITS Out, set the state to OOS. For nodes using External timing or Line timing with equipment timed through BITS Out, set the state to IS.
Coding	Set to the coding used by your BITS reference, either B8ZS or AMI.
Framing	Set to the framing used by your BITS reference, either ESF or SF (D4). SSM is not available with Super Frame.
Sync Messaging	If checked, enables the SSM for BITS In. (SSM is not available if Framing is set to Super Frame.)
Admin. SSM	If the Sync Messaging check box is not checked, you can choose the SSM Generation 2 type from the drop-down list.
BITS OUT Facilities	
Out State	Set the BITS reference to IS or OOS. For nodes set to Line timing with no equipment timed through BITS Out, set the state to OOS. For nodes using External timing or Line timing with equipment timed through BITS Out, set the state to IS.
Coding	Set to the coding used by your BITS reference, either B8ZS or AMI.
Framing	Set to the framing used by your BITS reference, either ESF or SF (D4). SSM is not available with Super Frame.
AIS Threshold	If SSM is disabled or Super Frame is used, sets the quality level where a node sends an AIS from the BITS-1 Out and BITS-2 Out backplane pins. An AIS is raised when the optical source for the BITS reference falls to or below the SSM quality level defined in this field.
LBO	If you are timing an external device connected to the BITS Out pins, set the distance between it and the ONS 15454. Options are 0-133 ft (Cisco default), 134-266 ft, 267-399 ft, 400-533 ft, and 534-655 ft.

Reference List Tab

The Reference List tab provides timing reference information.

Table B-288 Field Descriptions for the Reference List Tab

Field	Description
NE References	Allows you to define three timing references (Ref-1, Ref-2, and Ref-3). The node uses Reference 1 unless a failure occurs on that reference, in which case, the node uses Reference 2. If that fails, the node uses Reference 3, which is typically set to the internal clock. This is the Stratum 3 clock provided on the TCC+. The options displayed depend on the Timing Mode setting: • Timing Mode set to External—Options are BITS-1, BITS-2, and Internal. • Timing Mode set to Line—Options are the node's working optical cards and Internal. **Note** For Timing Mode set to External and Timing Mode set to Line, select the cards/ports that are directly or indirectly connected to the node wired to the BITS source; that is, the node's trunk cards. Set Reference 1 to the trunk card that is closest to the BITS source. For example, if Slot 5 is connected to the node wired to the BITS source, select Slot 5 as Reference 1. • Timing Mode set to Mixed—Both BITS and optical cards are available, allowing you to set a mixture of external BITS and optical trunk cards as timing references.
BITS-1 Out References	Allows you to define three timing references (Ref-1, Ref-2, and Ref-3) for equipment wired to the BITS Out backplane pins. Normally, BITS Out is used with line nodes, so the options displayed are the working optical cards. BITS-1 and BITS-2 Out are enabled as soon as BITS-1 and BITS-2 facilities are placed in service.
BITS-2 Out References	Allows you to define three timing references (Ref-1, Ref-2, and Ref-3) for equipment wired to the BITS Out backplane pins. Normally, BITS Out is used with line nodes, so the options displayed are the working optical cards. BITS-1 and BITS-2 Out are enabled as soon as BITS-1 and BITS-2 facilities are placed in service.

Status Tab

The Status tab displays timing status information.

Note If you change any values in the Status tab and click Apply at the bottom of the screen, the values are not set. Instead, use the following buttons to apply changes:

- Clear—Releases any existing switch request. For example, if you issue a Force Switch and then issue a Clear, the Force Switch request is released.
- Manual Switch—Switches the timing reference from one source to another.
- Force Switch—Switches the timing reference from one source to another. This request has a higher priority than the Manual Switch request.

Table B-289 Field Descriptions for the Status Tab

Field	Description
NE Clock	
NE Reference	Set the NE timing reference to internal, BITS-1, or BITS-2.

Table B-289 Field Descriptions for the Status Tab (continued)

Field	Description
Status	Displays the status of the NE clock.
Operations	Execute a switch on the NE timing reference.
BITS-1 Out	
BITS-1 Out	Set the BITS-1 out timing reference.
Status	Displays the status of the BITS-1 out timing reference.
Operations	Execute a switch on the BITS-1 out timing reference.
BITS-2 Out	
BITS-2 Out	Set the BITS-2 out timing reference.
Status	Displays the status of the BITS-2 out timing reference.
Operations	Execute a switch on the BITS-2 out timing reference.

Timing Report Tab

The Timing Report tab summarizes the NE's current timing settings.

Protection

The Protection Properties pane contains the following tabs:

- Protection Groups Tab, page B-207
- Operations Tab, page B-208

Protection Groups Tab

The Protection Groups tab displays a list of available protection groups and allows you to create, delete, and view protection groups.

Table B-290 Field Descriptions for the Protection Groups Tab

Field	Description
Protection Groups	
Protection Groups	Displays a list of available protection groups. Click the **Create** or **Delete** button to create a new protection group or delete an existing one.
Selected Protection Group	
Name	Modify the name of the selected protection group. The name can have up to 32 alphanumeric characters.
Type	View the protection type (1:1 [card], 1:N [card], Y Cable [port], 1+1 [port], or 1+1 Optimized [port]) of the selected protection group.
Protect Module	View the protect module if using 1:1 or 1:N protection. **Note** For OTU2_XP cards, the card name might be shown as XP_4_10G_LINE_CARD.
Available Entities	Displays a list of available entities. You can toggle between available and working entities.
Working Entities	Displays a list of working entities. You can toggle between working and available entities.

Table B-290 Field Descriptions for the Protection Groups Tab (continued)

Field	Description
Bidirectional Switching	Click if you want both the transmit and the receive channels to switch if a failure occurs on one. This option is available only if you select the 1+1 (port) type.
Revertive	If checked, the node reverts traffic to the working card or port after failure conditions for the amount of time entered in Reversion Time. This option is not available if you select the 1:N (card) type.
Reversion Time	If Revertive is checked, choose the amount of time following failure condition correction after which the node should switch back to the working card or port. Use half-minute increments. This option is available only if you select the 1:1 (card) type.
Recovery Guard Time	The recovery guard timer prevents rapid switches due to SD or SF failures. After the SD or SF condition is cleared on a facility protected by Optimized 1+1 protection, no switches are performed for the duration of the recovery guard timer.
Verification Guard Time	The verification guard timer specifies the amount of time that a user command has to complete. If a user command cannot be completed within the duration set by the verification guard timer, the command is cleared and an APS_CLEAR event is sent.
Detection Guard Time	The detection guard timer specifies the amount of time after a failure that the system has to complete a switch. After detecting an SD, SF, LOS, LOF, or AISL failure, the detection guard timer is started. If the detection guard timer is set to zero, the system completes a switch within 60 ms for failure events.

Operations Tab

The Operations tab displays protection group operation information.

Table B-291 Field Descriptions for the Operations Tab

Field	Description
Protection Groups	Displays a list of available protection groups.
Protection Group Details	Displays details about the selected protection groups and allows you to execute switch commands. **Note** For OTU2_XP cards, the card name might be shown as XP_4_10G_LINE_CARD.
Switch Commands	Allows you to perform a manual switch, perform a forced switch, or clear the existing command switching.
Inhibit Switching	Allows you to inhibit unlock switching, lock out switching, or lock on switching.

Ether Bridge

The Ether Bridge Properties pane contains the following tabs:

- Spanning Tree Config Tab, page B-209
- Spanning Tree Status Tab, page B-209

Spanning Tree Config Tab

The Spanning Tree Config tab displays spanning tree configuration information for the ONS 15454.

Table B-292 Field Descriptions for the Spanning Tree Config Tab

Field	Description
Index Number	Unique number that identifies the spanning tree.
Priority	Incoming traffic queue. Priority can be either high or low.
Bridge Max Age	Maximum amount of time that received-protocol information is retained before it is discarded.
Bridge Hello Time	Time interval, in seconds, between the transmission of configuration bridge protocol data units (BPDUs) by a bridge that is the spanning-tree root or is attempting to become the spanning-tree root.
Bridge Forward Delay	Time spent by a port in the listening state and the learning state.

Spanning Tree Status Tab

The Spanning Tree Status tab displays spanning tree status information for the ONS 15454.

Table B-293 Field Descriptions for the Spanning Tree Status Tab

Field	Description
Index Number	Unique number that identifies the spanning tree.
Bridge ID	ONS 15454 unique identifier that transmits the configuration BPDU; the bridge ID is a combination of the bridge priority and the ONS 15454 MAC address.
Topology Age	Amount of time, in seconds, since the last topology change.
Topology Changes	Number of times the spanning-tree topology has been changed since the node booted up.
Designated Root	Spanning tree's designated root for a particular spanning-tree instance.
Root Cost	Total path cost to the designated root.
Root Port	Port used to reach the root.
Max Age	Maximum amount of time that received-protocol information is retained before it is discarded.
Hello Time	Time interval, in seconds, between the transmission of configuration BPDUs by a bridge that is the spanning-tree root or is attempting to become the spanning-tree root.
Hold Time	Minimum time period, in seconds, that elapses during the transmission of configuration information on a given port.
Forward Delay	Time spent by a port in the listening state and the learning state.

NE Defaults

The NE Defaults Properties pane displays a list of default thresholds for the ONS 15454 SONET NE. You can edit NE defaults for the ONS 15454 SONET R5.0 and later.

Table B-294 Field Descriptions for the NE Defaults Properties Pane

Field	Description
Parameter	Lists the default NE parameter.
Value	Shows the default parameter value, and allows you to change the default.

Table B-294 Field Descriptions for the NE Defaults Properties Pane (continued)

Field	Description
Units	Lists the unit of measure that corresponds to the default NE parameter.
Range	Lists the possible range of values for the default NE parameter. **Note** This field applies to the ONS 15454 SONET R6.0 and later.
Side Effects	Lists any side effects that could occur as a result of changing the default NE parameter. **Note** This field applies to the ONS 15454 SONET R6.0 and later.

You can load different NE defaults using the NE Defaults Management window. See Restoring NE Defaults, page 4-78.

Security

The Security Properties pane allows you to view and edit security features for the ONS 15454 SONET NE. The Properties pane contains the following tabs:

- Policy Tab, page B-210
- Password Tab, page B-211
- Access Tab, page B-212
- RADIUS Server Tab, page B-213
- Legal Disclaimer Tab, page B-214

Policy Tab

The Policy tab allows you to specify user security parameters.

Note If the user is already logged in, any changes to the NE user type settings take effect only when the user next logs in.

Table B-295 Field Descriptions for the Policy Tab

Field	Description
Idle User Timeout	
Each CTC or TL1 user can be idle during his or her login session for a specified amount of time before the CTC window is locked. The lockouts prevent unauthorized users from making changes. Higher-level users have shorter default idle periods and lower-level users have longer or unlimited default idle periods. The user idle period can be modified by a SuperUser. **Note** A user already logged into the node is not affected by a change to the Idle User Timeout policy.	
Retrieve	Set the idle user timeout for a CTC Retrieve user.
Maintenance	Set the idle user timeout for a CTC Maintenance user.
Provisioner	Set the idle user timeout for a CTC Provisioner user.
SuperUser	Set the idle user timeout for a CTC SuperUser user.

Table B-295 Field Descriptions for the Policy Tab (continued)

Field	Description
User Lockout	
Manual Unlock by SuperUser	If checked, the CTC SuperUser user must manually unlock locked out CTC users. If unchecked, locked out CTC users are automatically unlocked after the lockout duration period elapses.
Lockout Duration	Set the lockout duration period for locked out CTC users. This field is enabled only if the Manual Unlock by SuperUser check box is unchecked.
Failed Logins Allowed	Set the number of failed logins before the CTC user is automatically locked out.
Other	
Single Sessions per User	If checked, each CTC user can launch only one session at a time.
Prevent Disabling the SuperUser	If checked, inactive CTC SuperUsers are never disabled.
Disable Inactive User	If checked, inactive users are disabled automatically. Specify the duration in the Inactive Duration field.
Inactive Duration	Specify the inactive duration in days. The range is from 1 to 90 days; the Cisco default is 45 days. A value of 0 implies the inactive duration is disabled and invalid.

Password Tab

The Password tab allows you to specify user password security parameters.

Table B-296 Field Descriptions for the Password Tab

Field	Description
Password Change	
Prevent Reusing Last	Prevents setting a CTC user's current password to one of the most recent passwords. You can set the number of most recent passwords that cannot be reused.
Disable Password Flipping	If checked, users are not allowed to change passwords for the number of days specified in the Can Change Password After field.
Can Change Password After	Enter the number of days that must elapse before the user can change the password.
Force Password Change After Assigned	If checked, during the first successful login, the user is forced to change the password.
Password Difference	Allows SuperUsers to specify the number of characters by which the new password of a user must differ from the old password, while performing a password change. The default value is 1; the range is from 1 to 5 characters.
Password Aging	
Enable Password Aging	Check this check box to enable password aging.
Aging Period	Enter the aging period, in days, for Retrieve, Maintenance, Provisioner, and SuperUser CTC users. After the aging period expires, CTC users are forced to change their passwords. Default value is 45 days. Range is from 20 to 90 days.
Warning Period	Enter the warning period, in days, for Retrieve, Maintenance, Provisioner, and SuperUser CTC users. After the warning period expires, CTC users are warned that their passwords will soon expire. Default value is 5 days. Range is from 2 to 20 days.

Access Tab

The Access tab allows you to configure LAN and shell access to the NE.

Table B-297 Field Descriptions for the Access Tab

Field	Description
Access	
LAN Access	Specify the type of LAN access allowed. Values are Backplane Only, No LAN Access, Front and Backplane, or Front Only. **Note** After the LAN access to the backplane is set, the Prime Optical client is unusable for 4 to 5 minutes.
Restore Timeout	This time period begins if *No LAN Access* is selected and all DCC connections are lost. If the time expires before a DCC is restored, LAN access is restored so that the node is not isolated. When the DCC comes back, LAN access returns to its specified settings. The range is from 0 (never) to 60 minutes; the Cisco default is 5 minutes.
Serial Craft Access (available for ONS 15454 SONET NEs R6.0 and later)	
Enable Craft Port	Check this check box to enable the craft port.
Shell Access	
Shell Access on	Specify shell access on Telnet or SSH.
SSH Port	Indicates the SSH port number that will be used if the SSH radio button is selected.
Telnet Port	This is enabled if you selected the Telnet radio button. Enter the Telnet port number.
Use Standard Telnet Port	If checked, the standard Telnet port is used for Telnet access.
Shell Access (available for ONS 15454 SONET NEs R6.0 and later)	
Access State	Select the Shell access state from the drop-down list. You can select Disable, Non-secure, or Secure.
SSH Port	Indicates the SSH port number that will be used.
SFTP Port	Indicates the SFTP port number.
Telnet Port	This is enabled if you selected the Non-secure access state. Enter the Telnet port number that will be used.
Use Standard Telnet Port	Check this check box to indicate that the standard Telnet port will be used.
Enable Shell Password	Indicates whether or not the Shell password is enabled. **Note** You cannot enable the Shell password in Prime Optical. Enabling and providing a Shell password is currently done in CTC.
TL1 Access (available for ONS 15454 SONET NEs R6.0 and later)	
Access State	Select the TL1 access state from the drop-down list. You can select Disable, Non-secure, or Secure.
SNMP Access (available for ONS 15454 SONET NEs R6.0 and later)	
Access State	Select the SNMP access state from the drop-down list. You can select either Disable or Non-secure.
Pseudo-IOS Access (available for ONS 15454 SONET R9.2)	

Table B-297 Field Descriptions for the Access Tab (continued)

Field	Description
Access State	Pseudo CLI is a command-line interface on the NE that simulates a Cisco IOS connection. Select the pseudo-IOS access state from the drop-down list. You can select Disable, Non-secure, or Secure. If you choose Disable, the port is not configurable, which means that the node does not listen for pseudo-CLI connections. **Note** Pseudo-IOS functionality is available only if the node contains 10GE_XP or GE_XP cards in L2 mode.
Port	Enter the port number for pseudo-IOS access. If the Access State field is set to Disable, you cannot configure this field.
Other	
PM Clearing Privilege	Select the user privilege that allows clearing PM statistics for the NE.
EMS Access (available for ONS 15454 SONET NEs R6.0 and later)	
Access State	Select the EMS access state from the drop-down list. You can select either Non-secure or Secure.
CORBA Listener Port	Select the port numbers for the TCC CORBA (IIOP) listener port and the TCC CORBA (SSLIOP) listener port. Select one of the following radio buttons: • Default-Fixed—Assigns a default port number. • Standard Constant—The port number for the TCC CORBA (IIOP) listener port is 683. The port number for the TCC CORBA (SSLIOP) listener port is 684. • Other Constant—When selected, enter the port number that will be used.

RADIUS Server Tab

The RADIUS Server tab allows you to configure, create, modify, and delete RADIUS servers for the ONS 15454 SONET R6.0 and later.

Table B-298 Field Descriptions for the RADIUS Server Tab

Field	Description
Enable RADIUS Authentication	Check this check box to enable RADIUS authentication.
Enable RADIUS Accounting	Check this check box to enable RADIUS accounting. This is enabled if the Enable RADIUS Authentication check box is checked.
Enable the Node as the Final Authenticator When no RADIUS Server is Reachable	Select a row from the RADIUS Servers in Order of Authentication table; then, check this check box. This indicates that the RADIUS server that you selected will be the final authenticator when there are no more RADIUS servers that can be reached.
Create button	Click **Create** to create a RADIUS server. See Creating a RADIUS Server, page 8-46.
Edit button	Click **Edit** to modify an existing RADIUS server's information. See Modifying a RADIUS Server, page 8-46.
Delete button	Click **Delete** to delete an existing RADIUS server. See Deleting a RADIUS Server, page 8-46.
Move Up/Move Down buttons	Click **Move Up** or **Move Down** to reorder the list of RADIUS servers in the RADIUS Servers in Order of Authentication table.
RADIUS Servers in Order of Authentication	

Table B-298 Field Descriptions for the RADIUS Server Tab (continued)

Field	Description
IP Address	Displays the IP address of the RADIUS server.
Shared Secret	Displays a text string that serves as a password between a RADIUS client and RADIUS server.
Authentication Port	Displays the authentication port number of the RADIUS server. Default access is through port number 1812.
Accounting Port	Displays the accounting port number of the RADIUS server. Default access is through port number 1813.

Legal Disclaimer Tab

The Legal Disclaimer tab allows you to edit the NE's advisory message and preview the disclaimer.

Table B-299 Field Descriptions for the Legal Disclaimer Tab

Tab	Description
Advisory Message	The existing message is a default, noncustomer-specific disclaimer. If you want to edit this statement with specifics for your company, you can change the text. You can also use the following HTML commands to format the text: • ****—Begins boldface font • ****—Ends boldface font • ** **—Aligns type in the center of the window • ** **—Ends the center alignment • **<font=*n*, where *n* = point size>**—Changes the font to the new size • ****—Ends the font size command • **<p>**—Creates a line break • **_{**—Begins subscript • **}**—Ends subscript • **^{**—Begins superscript • **}**—Ends superscript • **<u>**—Starts underline • **</u>**—Ends underline
Preview	Allows you to view the advisory message before saving it.

Alarm

The Alarm Properties pane allows you to change default alarm severities by creating unique alarm profiles for individual ONS 15454 SONET nodes. The Alarm Properties pane contains Profile and Alarm Behavior tabs.

Profile Tab

The Profile tab allows you to view, create, or delete alarm profiles.

Table B-300 Field Descriptions for the Profile Tab

Field	Description
Alarm Profile Name	Choose an alarm profile for the NE from the drop-down list. Click **Create** to create a new alarm profile for the NE. Click **Delete** to delete an alarm profile from the NE.
Condition	Displays the alarm condition.
Severity	Displays the alarm severity.

Alarm Behavior Tab

The Alarm Behavior tab allows you to change default alarm severities by creating unique alarm profiles.

Table B-301 Field Descriptions for the Alarm Behavior Tab

Field	Description
Alarm Profile	Choose a global alarm profile for the NE from the drop-down list.
Suppress Alarms	If checked, all alarms are suppressed.
Slot Number	Displays the location of the module.
Equipment Type	Displays the type of module in the slot.
Profile	Choose an alarm profile for the slot from the drop-down list.
Suppress Alarms	Indicates whether or not the alarms for a particular card are suppressed. If checked, all alarms are suppressed for the port.

Alarm Conditions

The Conditions Properties pane allows you to view all NE conditions (events with a Not Reported [NR] severity) at the node level. Alarm Conditions Properties pane gives a clear record of changes or events that do not result in alarms.

Note The Alarm Conditions tab is not updated when conditions change; therefore, you must click **Retrieve** to see any changes.

Table B-302 Field Descriptions for the Alarm Conditions Tab

Field	Description
Filter button	Click the **Filter** button to filter the data displayed in the table.
Retrieve button	Click the **Retrieve** button. The Retrieve button requests the current set of fault conditions from the node, card, or network. Conditions include all fault conditions raised on the node, whether or not they are reported. The time stamp of the condition request is also reported next to the **Retrieve** button.
Perceived Severity	Perceived severity of the selected alarm (critical, major, minor, or warning). The background color also indicates the severity, where: • Red = Critical • Orange = Major • Yellow = Minor • Blue = Warning • Green = Cleared
Probable Cause	Probable cause of the selected alarm. Some possible values include: • Not Applicable/Unknown—If no additional information is available • Mismatch of equipment and attributes (MEA) alarm—For misconfigured pluggable port modules (PPMs) • Link Layer Keep-Alive Failure—When the keepalive frame on the POS port is disabled and the port is shut down • Bad Packet Count Exceeds Threshold—When the packets through the front port have CRC errored frames • Auto-Negotiation Remote Failure Indication—When a remote Gigabit Ethernet port is shut down from a local port
Condition	Error message or condition name that is associated with the alarm or event.
Affected Object	Name of the object where the selected alarm occurred.
Module Name	Name of the module where the selected alarm occurred.
Physical Location	Physical location of the equipment where the selected alarm occurred, such as chassis, rack, subrack (shelf), slot, and port numbers.
NE Alarm Time	Date and time when the alarm occurred on the NE.
Service Affecting	Whether the alarm or event is service affecting (SA). Values are: • True—The alarm is service affecting • False—The alarm is not service affecting

XC Utilization

The XC Utilization Properties pane allows you to view a summary of the percentage of XTC cross-connect resources used by circuits that traverse or terminate at an ONS 15454 SONET.

Table B-303 Field Descriptions for the XC Utilization Properties Pane

Field	Description
VT Payload Type	Indicates the payload type of the cross-connect card in the NE. This field is not editable unless the NE contains an XCVXC card. If the NE contains an XCVXC card, you can specify the VT payload type as VT1.5, VT2, or mixed mode (a combination of VT1.5 and VT2).
Summary	
STS-1 Matrix	Provides the percentage of the XC cross-connect STS-1 paths resources that are used.
VT2 Matrix Ports	Provides the percentage of the XTC cross-connect VT2 matrix ports that are used, and the total number of ports available.
VT2 Matrix	Provides the percentage of the VT2 matrix resources that are used, and the total number of resources available.
VT1.5 Matrix Ports	Provides the percentage of the XTC cross-connect VT1.5 matrix ports that are used, and the total number of ports available.
VT1.5 Matrix	Provides the percentage of the V1.5 matrix resources that are used, and the total number of resources available.

BLSR

The BLSR Properties pane allows you to view BLSR information and create or delete BLSRs.

Table B-304 Field Descriptions for the BLSR Properties Pane

Field	Description
Fiber Type	Indicates whether the fiber type is 2-fiber or 4-fiber.
Rate	Select the BLSR rate.
Ring Name	Assign a six-digit alphanumeric ring name. Nodes in the same BLSR must have the same ring name.
Node ID	Assign a node ID. The node ID identifies the node to the BLSR. Nodes in the same BLSR must have unique node IDs.
Ring Reversion	Set the amount of time that will pass before the traffic reverts to the original working path. The Cisco default is 5 minutes. All nodes in a BLSR ring should have the same ring reversion setting, particularly if *never* (nonrevertive) is selected.
Span Reversion	Set the amount of time to pass before the span reverts to the working path.
East Line	Assign the east BLSR port.
East Switch	Displays a list of switch commands for the east port.
West Line	Assign the west BLSR port.
West Switch	Displays a list of switch commands for the west port.
East Protect	For 4-fiber BLSRs, assign the east BLSR protect port.
West Protect	For 4-fiber BLSRs, assign the west BLSR protect port.

DWDM

The DWDM Properties pane allows you to manage and provision DWDM connections. The DWDM Properties pane contains the following tabs:

- Provisioning Tab, page B-218
- Connections Tab, page B-220
- Port Status Tab, page B-220
- Span Check Tab, page B-221
- APC Tab, page B-221
- Side Power Monitoring Tab, page B-222
- Node Setup Tab, page B-223
- Side Tab, page B-224
- All Facilities Tab, page B-224
- Passive Cards Tab, page B-224
- Alien Wavelength Tab, page B-225
- Fiber Attribute Tab, page B-225

Provisioning Tab

The Provisioning tab allows you to view, export, and import a Cisco MetroPlanner configuration file into the DWDM node to configure the node automatically for ONS 15454 SONET NEs R6.*x* and earlier. It also allows you to provision card and ANS parameters using the Automatic Node Setup wizard for ONS 15454 SONET NEs R7.0 and later. See Configuring Automatic Node Setup, page 7-339 for more information.

Table B-305 Field Descriptions for the Provisioning Tab

Field	Description
Attribute Name	Displays the Properties pane name that is imported from or exported to the Cisco MetroPlanner configuration file.
Value	Displays the default value of the corresponding Properties pane name imported from or exported to the Cisco MetroPlanner configuration file.

Table B-305 Field Descriptions for the Provisioning Tab (continued)

Field	Description
Origin (*Available in ONS 15454 SONET R8.0 and later*)	Shows how the parameter is set. Possible values are: • Default • Automatic • Provisioned • Imported
Note (*Available in ONS 15454 SONET R8.0 and later*)	Displays error details if ANS fails to set the parameter. Possible errors are: • Error during NE board navigation; value is not calculated • Cannot send the parameter request to far-end node; value is not calculated • No response from far-end node; value is not calculated • Configuration is not supported; value is not calculated • Far-end node configuration is not supported; value is not calculated • OSC far-end launch power is not available; value is not calculated • Far-end launch power is not available; value is not calculated • Span loss value is not available; value is not calculated • Fiber stage insertion loss is not available; value is not calculated • Preamplifier tilt is not available; value is not calculated • Add/drop output power is not available; value is not calculated • NE node launch power is not available; value is not calculated • WXC degree is not available; value is not calculated • Value is out of range • Read-only attribute; value is not calculated

Connections Tab

The Connections tab allows you to create or delete DWDM connections or internal patchcords. It also allows you to calculate DWDM connections.

Table B-306 Field Descriptions for the Connections Tab

Field	Description
Create button	Create a DWDM connection or an internal patchcord. See Calculating DWDM Connections—ONS 15454 SONET and ONS 15454 SDH R7.2 and Earlier, page 7-330 or Creating Internal Patchcords—ONS 15454 SONET and ONS 15454 SDH R8.0 and Later, page 7-331 for more information.
Delete button	Delete a DWDM connection or an internal patchcord. See Deleting DWDM Connections or Internal Patchcords, page 7-333 for more information.
Calculate Connections button	Verify if the DWDM connection matches the connections on the DWDM design plan. See Calculating DWDM Connections—ONS 15454 SONET and ONS 15454 SDH R7.2 and Earlier, page 7-330 for more information. It also automatically creates an internal patchcord based on the card provisioned on the node. See Calculating Internal Patchcord Connections—ONS 15454 SONET and ONS 15454 SDH R8.0 and R9.0, page 7-330 for more information.
ONS 15454 SONET R7.2 and Earlier	
Slot-From	The slot from which the DWDM connection originates.
Unit-From	The unit from which the DWDM connection originates.
Port-From	The port from which the DWDM connection originates.
Slot-To	The slot at which the DWDM connection terminates.
Unit-To	The unit at which the DWDM connection terminates.
Port-To	The port at which the DWDM connection terminates.
State	The state of the DWDM connection.
ONS 15454 SONET R8.0 and Later	
From	The unit or port from which the internal patchcord originates.
To	The unit or port at which the internal patchcord terminates.
Wavelength	Shows the wavelength value if the internal patchcord is between two channel ports. Otherwise, it shows *N/A*.

Port Status Tab

The Port Status tab allows you to view port status and launch automatic node setup (ANS) for the selected port. Click the **Update** button to view the port status of all newly added cards.

This tab applies only to NE releases earlier than NE release 9.2.

Table B-307 Field Descriptions for the Port Status Tab

Field	Description
Launch ANS button	Launches the ANS function for the selected port. ANS adjusts the variable optical attenuators (VOAs) on the different channel paths to equalize the amplifier per-channel input power.
Slot ID (*available in CTM R7.2 and earlier*)	Lists the ONS node slot where the DWDM card is installed.

Table B-307 Field Descriptions for the Port Status Tab (continued)

Field	Description
Card (*available in CTM R7.2 and earlier*)	Describes the card that is installed in the slot.
Port	Displays the card port.
Link Status	Displays the status of the link. Values are: • Success - Changed—The calculated setpoint was changed. • Success - Unchanged—The calculated setpoint was not changed. • Fail - Out of Range—The calculated setpoint is outside the range for that parameter. • Fail - Port in IS State—The setpoint cannot be applied because the port has an IS-NR service state. • Not Applicable—The setpoint does not apply to the node.
Parameter	The parameter name.

Span Check Tab

The Span Check tab allows you to check the span loss between the selected node and the previous node in the chain. The span check is always in reception.

Note If the Measured Span Loss value crosses the Min or Max Expected Span Loss threshold, a condition is raised.

Table B-308 Field Descriptions for the Span Check Tab

Field	Description
Retrieve Span Loss Values button	Runs the span loss verification function and retrieves values for the Measure Span Loss column.
Side	Specifies the side for which span loss information is displayed (east-to-west or west-to-east).
Min Exp. Span Loss	Specifies the minimum expected span loss (in dBm) for the incoming span. This value is imported from MetroPlanner, but can be modified manually.
Max Exp. Span Loss	Specifies the maximum expected span loss (in dBm) for the incoming span.
Meas. Span Loss	The measured span loss value.
Resolution	The resolution or accuracy of the span loss measurement.

APC Tab

The APC tab allows you to manually run the automatic power control (APC) function, disable and enable APC, and view the date and time the power control setpoint was last checked and modified.

Table B-309 Field Descriptions for the APC Tab

Field	Description
Disable APC button (*available in CTM R7.2 and earlier*)	Disables the automatic power control function. **Caution** Disabling APC should be performed only for specific maintenance actions. When APC is disabled, aging compensation calculations are not performed and circuits cannot be activated.
Run APC button (*available in CTM R7.2 and earlier*)	Runs the automatic power control function manually.
Slot ID (*available in CTM R7.2 and earlier*)	Slot number for power control information and actions.
Card (*available in CTM R7.2 and earlier*)	Card type that is installed in the slot.
Port	Port number.
Last Modification	Date and time the power control setpoint was last modified.
Param (*available in CTM R8.0 and later*)	All the APC parameters associated with the ports.
Last Check	Date and time the power control setpoint was last verified.
Side (*available in CTM R8.0 and later*)	Lists all the NEs and their sides that belong to the APC domain.
APC State (*available in CTM R8.0 and later*)	Displays the actual state of the APC. Values are: • Enabled—APC is enabled. • Disabled—APC is disabled. • Force Disabled—APC is disabled by the user. • Not Applicable—APC domain is incomplete.

Side Power Monitoring Tab

The Side Power Monitoring tab allows you to view bar charts of the input and output spectrum on each optical side of the node.

When you place the mouse over each wavelength in the bar chart, the power level and wavelength type are displayed. This feature is available on nodes that are installed with cards with Optical Channel Monitoring (OCM) capability.

Table B-310 Field Descriptions for the Side Power Monitoring Tab

Field	Descriptions
Bar Chart	Displays power monitoring information. The Side Power Monitoring panel is divided into Optical Side X subtabs, where X is the optical side. The number of subtabs is equal to the number of optical sides in the node. Each subtab displays two bar graphs. The IN bar graph displays the optical spectrum at the input port (LINE-RX) of the side in the direction from the fiber to the node provided the OCM functionality is available on this port else the graph displays the aggregate signal spectral distribution on the first port in the signal flow (indicated in the title of the bar chart) that is downstream of the LINE-RX port where an OCM measurement is available (For example, in node using a booster and SMR card, the measurement is done on the EXP port of the SMR card). The OUT bar graph displays the optical spectrum at the output port (LINE-TX) of the side in the direction from the node to the fiber provided the OCM functionality is available on this port else the graph displays the aggregate signal spectral distribution on the first port (indicated in the title of the bar chart) that is upstream of the LINE-TX port where an OCM measurement is available. **Note** Depending on the side layout, the LINE-TX port (output) and the LINE-RX port (input) of the card facing the fiber cannot measure the optical spectrum in a reliable manner if the OCM functionality is not available on these ports. When you place the mouse over each wavelength in the bar chart, the power level and the wavelength type (local ADD/DROP or EXPRESS) are displayed as a tooltip. • IN graph: The tooltip displays the destination side of each wavelength. The wavelength is either dropped locally or expressed to another side. • OUT graph: The tooltip displays the source side of each wavelength. The wavelength is either added locally or expressed from another side.
Tooltip Data	You can select or deselect the tooltip check boxes and the corresponding information is displayed in the tooltip. The tooltip check boxes control the tooltip information for both charts in this tab. Each Optical Side X subtab has these check boxes to control the chart tooltip for its own subtab. The options are: • Power • Lambda • Side • Channel

Node Setup Tab

The Node Setup tab allows you to automatically preprovision NEs from a selected XML configuration file.

Table B-311 Field Descriptions for the Node Setup Tab

Field	Description
XML Settings	
Select XML File	Click **Browse** to select an XML file (generated by the MetroPlanner application). Prime Optical parses the XML file selected by the operator and checks the accuracy of its content.

Table B-311 Field Descriptions for the Node Setup Tab (continued)

Field	Description
Log Settings	
Select Log File	Click **Browse** to select a log file to which the results of the operations you perform will be saved.
Launch ANS Wizard button	Click the **Launch Wizard** button to launch the Automatic Node Setup wizard. See Configuring Automatic Node Setup, page 7-339 for more information.

Side Tab

The Side tab allows you to view, edit, and delete sides defined for an ONS 15454 SONET NE.

Table B-312 Field Descriptions for the Side Tab

Field	Description
Create button	Allows you to create side objects for the NE.
Modify button	Allows you to modify the side ID of an existing side object.
Delete button	Allows you to delete side objects.
Side	Displays the NE's side ID.
Line In	Displays the index of the receive side of the OTS port.
Line Out	Displays the index of the transmit side of the OTS port.

All Facilities Tab

The All Facilities tab allows you to view the DWDM and optical ports for the ONS 15454 SONET NE.

Table B-313 Field Descriptions for the All Facilities Tab

Field	Description
Port	Displays the card port number, shelf ID, and slot number. **Note** Shelf ID is not included in the port number if the node is not a multishelf NE.
Power	Displays the current power for the port.
State	Displays the administrative state of the port.
Service State	Displays the service state of the port.
Keep Selected button	Displays only the ports that you selected.
Load button	Retrieves and displays all the optical and DWDM ports for the NE.

Passive Cards Tab

The Passive Cards tab allows you to view information about passive units provisioned in CTC.

Note Passive units can be provisioned in CTC only.

Table B-314 Field Descriptions for the Passive Cards Tab

Field	Description
Passive Cards	
ID	Displays the passive card shelf ID.
Equipment Name	Displays the general card type/name.
Location	Displays the location of the passive card.
Description	Displays the passive card description.
Optical Ports	
Port	Displays the port number.
Type	Displays the port type.
MPO	Displays any physical multifiber push connectors.
Wavelength	Displays the port wavelength.

Alien Wavelength Tab

The Alien Wavelength tab allows you to view and edit the port and wavelength parameters defined for an ONS 15454 SONET NE. Click the **Refresh** button to refresh the Alien Wavelength table.

Note Alien Wavelength is applicable to ONS 15454 NEs that support WSON nodes.

Table B-315 Field Descriptions for the Alien Wavelength Tab

Field	Description
Filter button	Click the **Filter** button to filter the data displayed in the table.
Create button	Allows you to create alien wavelengths for the NE. See Creating Alien Wavelength, page 7-343 for more information.
Edit button	Allows you to modify the existing alien wavelength value. See Editing Alien Wavelength, page 7-344 for more information.
Position	Displays information about the shelf, slot, and port on which the alien wavelength is configured.
Alien Wavelength	Displays the alien wavelength class.
Lambda	Displays the alien wavelength value.
FEC	Displays the FEC mode.

Fiber Attribute Tab

The Fiber Attribute tab allows you to view the fiber parameters defined for an ONS 15454 SONET NE.

Note Fiber Attribute is applicable to ONS 15454 NEs that support WSON node.

Table B-316 Field Descriptions for the Fiber Attribute Tab

Field	Description
Filter button	Click the **Filter** button to filter the data displayed in the table.
Toggle button	Click the **Toggle** button to select the unit of measure.
Optical Side	Displays the name of the optical side to which the fiber is connected.
Fiber Type	Choose the fiber type from the drop-down list.
Fiber Number	Displays the number of the fiber associated to the optical side. Useful when different types of fiber are present on the span.
Fiber Length	Allows you to edit the fiber length.

WSON Tab

The WSON tab allows you to view and acknowledge the unverified alarms at the circuit level.

Table B-317 Field Descriptions for the WSON Tab

Field	Description
Filter button	Click the **Filter** button to filter the data displayed in the table.
Acknowledge WSON Alarm button	Click the **Acknowledge WSON Alarm** button to acknowledge a WSON alarm.
Affected Circuits button	Click the **Affected Circuits** button to view the affected circuits. If there are circuits affected by the selected alarm, the new circuit report is displayed. See Viewing the Circuit Table, page 7-4 for more information. **Note** The Affected Circuits button is enabled only when an alarm condition is selected.
ID	Displays the ID of the NE from the Domain Explorer.
PS	Perceived severity of the selected alarm (critical, major, minor, or warning). The background color also indicates the severity, where: • Red = Critical • Orange = Major • Yellow = Minor • Blue = Warning • Green = Cleared
Probable Cause	Probable cause of the selected alarm. Some possible values include: • Not Applicable/Unknown—If no additional information is available • Mismatch of equipment and attributes (MEA) alarm—For misconfigured pluggable port modules (PPMs) • Link Layer Keep-Alive Failure—When the keep alive frame on the POS port is disabled and the port is shut down • Bad Packet Count Exceeds Threshold—When the packets through the front port have CRC errored frames • Auto-Negotiation Remote Failure Indication—When a remote Gigabit Ethernet port is shut down from a local port

Table B-317 Field Descriptions for the WSON Tab (continued)

Field	Description
Condition	Error message or condition name that is associated with the alarm or event.
Affected Object	Name of the object where the selected alarm occurred.
Module Name	Name of the module where the selected alarm occurred.
Physical Location	Physical location of the equipment where the selected alarm occurred, such as chassis, rack, subrack (shelf), slot, and port numbers.
NE Alarm Time	Date and time when the alarm occurred on the NE.
SA	Whether the alarm or event is service affecting (SA). Values are: • Yes—The alarm is service affecting • No—The alarm is not service affecting • N/A—No information is provided by the NE

WSON Tab

The WSON tab allows you to view and acknowledge the unverified alarms at the circuit level.

Table B-318 Field Descriptions for the WSON Tab

Field	Description
Filter button	Click the **Filter** button to filter the data displayed in the table.
Acknowledge WSON Alarm button	Click the **Acknowledge WSON Alarm** button to acknowledge a WSON alarm.
Affected Circuits button	Click the **Affected Circuits** button to view the affected circuits. If there are circuits affected by the selected alarm, the new circuit report is displayed. See Working with Circuit Reports, page 7-186 for more information. **Note** The Affected Circuits button is enabled only when an alarm condition is selected.
ID	Displays the ID of the NE from the Domain Explorer.
PS	Perceived severity of the selected alarm (critical, major, minor, or warning). The background color also indicates the severity, where: • Red = Critical • Orange = Major • Yellow = Minor • Blue = Warning • Green = Cleared

Table B-318 Field Descriptions for the WSON Tab (continued)

Field	Description
Probable Cause	Probable cause of the selected alarm. Some possible values include: • Not Applicable/Unknown—If no additional information is available • Mismatch of equipment and attributes (MEA) alarm—For misconfigured pluggable port modules (PPMs) • Link Layer Keep-Alive Failure—When the keep alive frame on the POS port is disabled and the port is shut down • Bad Packet Count Exceeds Threshold—When the packets through the front port have CRC errored frames • Auto-Negotiation Remote Failure Indication—When a remote Gigabit Ethernet port is shut down from a local port
Condition	Error message or condition name that is associated with the alarm or event.
Affected Object	Name of the object where the selected alarm occurred.
Module Name	Name of the module where the selected alarm occurred.
Physical Location	Physical location of the equipment where the selected alarm occurred, such as chassis, rack, subrack (shelf), slot, and port numbers.
NE Alarm Time	Date and time when the alarm occurred on the NE.
SA	Whether the alarm or event is service affecting (SA). Values are: • Yes—The alarm is service affecting • No—The alarm is not service affecting • N/A—No information is provided by the NE

OSI

The OSI Properties pane allows you to provision ONS 15454 SONET Open System Interconnection (OSI) parameters. The Properties pane contains the following tabs:

- Main Setup Tab, page B-228
- TARP-Config Tab, page B-229
- TARP-TDC Tab, page B-231
- TARP-MAT Tab, page B-231
- Routers-Setup Tab, page B-231
- Subnets Tab, page B-232
- Tunnels Tab, page B-233
- IS-IS RIB Tab, page B-233
- ES-IS RIB Tab, page B-234

Main Setup Tab

The Main Setup tab allows you to view and provision the OSI Network Entity Title (NET) address and the OSI routing mode.

Table B-319 Field Descriptions for the Main Setup Tab

Field	Description
Main Network Entity Title	Displays the node NET. The NET is used in OSI networks to identify the node to the end system (ES) or intermediate system (IS).
End System	Provisions the node as an OSI end system (ES). ESs send end system hello (ESH) messages regularly to announce their presence to neighboring ISs and ESs.
Intermediate System Level 1	Provisions the node as an OSI intermediate system (IS). The ONS 15454 SONET performs all IS functions including routing data between ISs and ESs, between networks, and between parts of a network. ISs send intermediate system hello (ISH) messages regularly to announce their presence to neighboring ISs and ESs. For the ONS 15454 SONET, Intermediate System Level 1 is the Cisco default.
Intermediate System Level 1/Level 2	The ONS 15454 SONET performs all IS functions. It communicates with other IS and ES nodes within an OSI area and broadcasts ISHs to IS nodes in other areas to which it is connected.
Node Routing Mode	
L1 LSP Buffer Size	Sets the Level 1 Link State Protocol (LSP) data unit buffer size. The Cisco default is 512.
L2 LSP Buffer Size	Sets the Level 2 LSP data unit buffer size. The Cisco default is 512.

TARP-Config Tab

The TARP-Config tab allows you to provision the TID Address Resolution Protocol (TARP). TARP is used when TL1 TIDs must be translated to an NSAP address. During the TID-to-NSAP translation, the TID is mapped to a NET; then, the NSAP is derived from the NET based on the NSAP selector value.

Table B-320 Field Descriptions for the TARP-Config Tab

Field	Description
TARP PDUs L1 Propagation	If checked (default), TARP Type 1 PDUs received by the node that are not excluded by the loop detection buffer are propagated to other NEs within the OSI Level 1 area. Type 1 PDUs request a protocol address that matches a target TID within a Level 1 routing area. The propagation does not occur if the NE is the target of the Type 1 PDU and the PDUs are not propagated to the NE from which the PDU was received. **Note** This parameter is not used when the node is set to End System.
TARP PDUs L2 Propagation	If checked (default), TARP Type 2 PDUs received by the node that are not excluded by the loop detection buffer are propagated to other NEs within the OSI Level 2 area. Type 2 PDUs request a protocol address that matches a target TID within a Level 2 routing area. The propagation occurs if the NE is the target of the Type 2 PDU and the PDUs are not propagated to the NE from which the PDU was received.
TARP PDUs Origination	If checked (default), the node performs all TARP configuration functions, including: • TID-to-NSAP resolution requests • NSAP-to-TID requests • TARP address changes **Note** TARP Echo and NSAP to TID are not supported.

Table B-320 Field Descriptions for the TARP-Config Tab (continued)

Field	Description
L1 TARP Data Cache	If checked, the node maintains a TARP data cache (TDC). The TDC is a database of TID-to-NSAP pairs created from TARP Type 3 PDUs received by the node. TARP Type 3 PDUs are responses to Type 1 and Type 2 PDUs and modified by TARP Type 4 PDUs (TID-to-NSAP updates or corrections).
L2 TARP Data Cache	If checked (default), the TIDs and NSAPs are added to the TDC before the node propagates the requests to other NEs. **Note** This parameter is designed for IS Level 1/Level 2 nodes that are connected to other IS Level 1/Level 2 nodes. Enabling the parameter for IS Level 1 nodes is not recommended.
LDB	If checked, enables the TARP loop detection buffer (LDB). The LDB prevents TARP PDUs from being sent more than once on the same subnet.
LAN TARP Storm Suppression	If checked (default), enables the TARP storm suppression to prevent redundant TARP PDUs from being propagated across the network.
Send Type 4 PDU on Startup	If checked, a TARP Type 4 PDU is originated during the initial ONS 15454 SONET startup. Type 4 PDUs indicate that a TID or NSAP change has occurred at the NE. This option is disabled by default.
Type 4 PDU Delay	Sets the amount of time that will pass before the Type 4 PDU is generated. The Cisco default value is 60 seconds; the range is from 0 to 255 seconds.
Timers	
LDB Entry	Sets the TARP LDB timer. The LDB buffer time is assigned to each LDB entry for which the TARP sequence number is zero. The Cisco default is 5 minutes; the range is from 1 to 10 minutes.
LDB Flush	Sets the frequency period for flushing the LDB. The Cisco default is 5 minutes; the range is from 0 to 1440 minutes.
T1 Timer	Sets the amount of time to wait for response to a Type 1 Request PDU. Type 1 requests seek a specific NE TID within an OSI Level 1 area. The Cisco default is 15 seconds; the range is from 0 to 3600 seconds.
T2 Timer	Sets the amount of time to wait for a Type 2 Request PDU. TARP Type 2 requests seek a specific NE TID within an OSI Level 1 area. The Cisco default is 25 seconds; the range is from 0 to 3600 seconds.
T3 Timer	Sets the amount of time to wait for an address resolution request. The Cisco default is 40 seconds; the range is from 0 to 3600 seconds.
T4 Timer	Sets the amount of time to wait for an error recovery. The timer begins after the T2 timer expires without successfully finding the NE TID. The Cisco default is 20 seconds; the range is from 0 to 3600 seconds.

TARP-TDC Tab

Table B-321 Field Descriptions for the TARP-TDC Tab

Field	Description
TID	Target ID that is statistically linked to an NSAP or NET. For ONS nodes, the TID is the node name.
NSAP/NET	The NSAP that is statistically linked to the TID.
Type	Indicates how the TARP data cache entry was created. It can be either: • Dynamic—The entry was created through the TARP propagation process. • Static—The entry was manually created and is a static entry.
Add Static Entry button	Click **Add Static Entry** to statically link a TID to an NSAP or NET.
Delete Selected Entry button	Click **Delete Selected Entry** to delete the selected TID-to-NSAP/NET static entry.
TID to NSAP button	Click **TID to NSAP** to query the network for an NSAP that matches a TID.
Flush Dynamic Entries button	Click **Flush Dynamic Entries** to delete all dynamically generated TDC entries.

TARP-MAT Tab

The TARP-MAT tab allows you to manually provision a TARP adjacency.

Table B-322 Field Descriptions for the TARP-MAT Tab

Field	Description
Level	Sets the TARP Type Code that will be sent. • Level 1—Indicates that the manual area adjacency is within the same area as the node. The entry generates Type 1 PDUs. • Level 2—Indicates that the manual area adjacency is in an area different from that of the node. The entry generates Type 2 PDUs.
NSAP	The NSAP address of the node at the other end of the TARP manual adjacency.
Add button	Click **Add** to create a TARP manual area adjacency.
Remove button	Click **Remove** to delete the selected TID-to-NSAP/NET static entry.

Routers-Setup Tab

The Routers-Setup tab allows you to view and manage OSI virtual routers.

Table B-323 Field Descriptions for the Routers-Setup Tab

Field	Description
Router Number	Displays the virtual router number. The ONS 15454 SONET provides three virtual routers, numbered 1 through 3.
System ID	Displays the NSAP system ID of the virtual router. The NSAP system identifier is set to the node's first IEEE 802.3 MAC address + *n*, where *n* = 0 through 2. For the primary router (Router 1), *n* = 0.
Status	Indicates the virtual router status. Select Enabled or Disabled from the drop-down list. **Note** Router 1 must be enabled before additional routers can be enabled.

Table B-323 Field Descriptions for the Routers-Setup Tab (continued)

Field	Description
Primary Area Address	Indicates the primary manual area address. For Router 1, this is the main NET for the node; that is, the NSAP without the system ID and selector (set to 00) fields.
Manual Area Address 1	Indicates the address of any additional manual areas that are created. **Note** An OSI area allows up to two additional manual areas in addition to the primary manual area.
Manual Area Address 2	Indicates the address of any additional manual areas that are created. **Note** An OSI area allows up to two additional manual areas in addition to the primary manual area.
Edit button	Click **Edit** to modify the address parameters.

Subnets Tab

The Subnets tab allows you to view and manage OSI subnetwork point-of-attachment parameters. The parameters are initially provisioned when you enable a subnet on an SDCC, LDCC, GCC, OSC, or LAN interface.

Table B-324 Field Descriptions for the Subnets Tab

Field	Description
Slot/Port	The subnet slot and port.
Router Number	The OSI virtual router where the subnet (SDCC, LDCC, GCC, or OSC) is provisioned.
Type	The interface where the subnet is provisioned: SDCC, LDCC, GCC, OSC, or LAN.
Protocol	The data link protocol that is provisioned for the subnet. It can be: • Point to Point Protocol (PPP) • Link Access Protocol on the D channel (LAP-D) • 802.3 for LAN subnets
ISH	The intermediate system hello (ISH) PDU propagation frequency. Intermediate system NEs send ISHs to other ESs and ISs to inform them about the NETs they serve. The Cisco default is 10 seconds; the range is from 10 to 1000 seconds.
ESH	The end system hello (ESH) PDU propagation frequency. End system NEs transmit ESHs to inform other ESs and ISs about the NSAPs they serve. The Cisco default is 10 seconds; the range is from 10 to 1000 seconds.
IIH	The intermediate system-to-intermediate system hello (IIH) PDU propagation frequency. The IS-IS hello PDUs establish and maintain adjacencies between ISs. The Cisco default is 3 seconds; the range is from 1 to 600 seconds.
DIS Priority	The designated intermediate system (DIS) priority. In IS-IS networks, one router is elected as the DIS. For Cisco routers, the DIS priority is 64. For the ONS 15454 LAN subnet, the default DIS priority is 63. This priority should not be changed.
IS-IS Cost	The cost for sending packets on the subnet. This is used by OSPF routers to calculate the shortest path. The Cisco default value is 20.
Enable LAN Subnet button	*Router 1 only.* Enables OSI over the LAN; that is, it activates the IS-IS protocol on the LAN so OSI traffic is enabled on the LAN.

Table B-324 Field Descriptions for the Subnets Tab (continued)

Field	Description
Edit button	Click **Edit** to modify the subnet parameters.
Disable LAN Subnet button	*Router 1 only.* Disables OSI over the LAN if it has been enabled.

Tunnels Tab

The Tunnels tab allows you to view, create, edit, and delete Generic Routing Encapsulation (GRE) and Cisco tunnels. GRE tunnels encapsulate one network protocol for transfer across another network layer. Within a mixed TCP/IP and OSI network, GRE tunnels tunnel IP traffic over an OSI NE and OSI traffic over an IP NE.

Table B-325 Field Descriptions for the Tunnels Tab

Field	Description
IP Address	Displays the IP address of the GRE destination Prime Optical or CTC computer.
Netmask Address	Displays the IP address subnet mask of the destination Prime Optical or CTC computer.
NSAP Address	The destination NE NSAP address. The NSAP selector (last two NSAP characters) must be 2f (GRE tunnel) or cc (proprietary Cisco tunnel), depending on which tunnel type you want to create. The Cisco proprietary tunnel is slightly more efficient than the GRE tunnel because it does not add an encapsulation header for each IP packet, while the GRE tunnel adds a small header to the packets. The two tunnel types are incompatible. **Note** Most Cisco routers support the Cisco tunnel, while only a few support both GRE and Cisco IP tunnels.
OSPF Metric	Displays the cost for sending packets across the GRE tunnel. Cost is used by OSPF routers to calculate the shortest path.
Create button	Click **Create** to create a new GRE tunnel route.
Edit button	Click **Edit** to edit an existing GRE tunnel.
Delete button	Click **Delete** to delete an existing GRE tunnel.

IS-IS RIB Tab

The IS-IS RIB tab allows you to view the intermediate system-to-intermediate system (IS-IS) protocol routing information base (RIB). IS-IS is an OSI link-state hierarchical routing protocol that floods the network with link-state information that enables the NEs to build a complete and consistent picture of a network topology.

Table B-326 Field Descriptions for the IS-IS RIB Tab

Field	Description
Router Number	Displays the OSI router number. The ONS 15454 SONET provides three virtual routers, numbered 1 through 3.
Subnet Type	Indicates the OSI subnetwork point-of-attachment type used to access the destination address. It includes SDCC, LDCC, GCC, OSC, and LAN.
Destination Address	Displays the Network Service Access Point (NSAP).
MAC Address	Displays the NE's MAC address for destinations that are accessed by the LAN subnets.

ES-IS RIB Tab

The ES-IS RIB tab allows you to view the end system-to-intermediate system (ES-IS) protocol RIB. ES-IS is an OSI protocol that defines how end systems (hosts) and intermediate systems (routers) learn about each other.

Table B-327 Field Descriptions for the ES-IS RIB Tab

Field	Description
Router Number	Displays the OSI router number. The ONS 15454 SONET provides three virtual routers, numbered 1 through 3.
Subnet Type	Indicates the OSI subnetwork point-of-attachment type used to access the destination address. It includes SDCC, LDCC, GCC, OSC, and LAN.
Destination Address	Displays the NSAP of the destination ES.
MAC Address	Displays the NE's MAC address for destinations that are accessed by the LAN subnets.

Note See Table 1-22 on page 1-47 for descriptions of actions that you can perform using the buttons at the bottom of the window.

ONS 15454 SDH NE Explorer

When you choose **Configuration > NE Explorer** for the ONS 15454 SDH, the window that Prime Optical displays consists of a tree on the left side and a properties pane on the right. The tree provides a hierarchical view and alarm status of the NE's physical shelves and slots. The properties pane shows information about the selected entity. See Node Properties Pane—ONS 15454 SDH, page B-235 for more information.

Note If CTC is launched from the web browser for an ONS 15454 SDH node, the CTC GUI might look different from when it is launched from Prime Optical. This discrepancy occurs because the latest version of CTC (for NE releases supported by Prime Optical) is packaged with Prime Optical. If launched from a browser, the CTC software is retrieved from the NE itself, which might be a version different from that packaged with Prime Optical.

When an NE Explorer is in autorefresh mode, all values of an entity that is being edited by the user are automatically refreshed. You will lose all of your changes unless you click the Apply button. To enable autorefresh, click the Refresh Data button in the NE Explorer.

Node Properties Pane—ONS 15454 SDH

The node properties pane displays information about the ONS 15454 SDH NE. The properties pane contains the following tabs, some of which apply only to a specific NE version:

- Shelf View, page B-235
- General, page B-236
- Network, page B-237
- DCC/GCC/OSC, page B-246
- Timing, page B-253
- Protection, page B-256
- Ether Bridge, page B-257
- NE Defaults, page B-258
- Security, page B-259
- Alarm, page B-263
- Alarm Conditions, page B-264
- XC Utilization, page B-266
- MS-SPRing, page B-266
- DWDM, page B-267
- OSI, page B-276

Note When the NE Explorer is in autorefresh mode, any updates made to an entity or object (port, line, card, protection group, DCC, MS-SPRing, and so on) will refresh all the values of that entity even if you are currently editing the values. You will lose your changes on that entity.

Shelf View

The Shelf View Properties pane displays a graphic of the ONS 15454 SDH that is selected in the NE Explorer tree. Moving the mouse pointer over the NE, its shelves, slots, or cards displays the current alarms for the highlighted item. You can also see the alarm status of two power supplies on the Shelf View in the NE Explorer. Alarm status either displays the location, that is BAT_A or BAT_B, or the severity.

Double-clicking a slot or card displays the slot or card in the properties pane. The right-click menu allows you to reset, delete, or change the card. For unprovisioned slots, the right-click menu allows you to add a card.

General

The General Properties pane displays identification information, voltage thresholds, and multishelf configurations for the ONS 15454 SDH NE.

Table B-328 Field Descriptions for the General Properties Pane

Field	Description
Identification Tab	
NE ID	Displays the ID of the NE from the Domain Explorer.
NE Model	Displays the NE model type.
Software Version	Displays the current running version of the system software.
Contact	Displays the name of the node contact person and the phone number.
Description	Enter a description of the NE.
System Description	Displays the NE type and the version of the system software.
SNTP Settings	
Use NTP/SNTP Server	If checked, CTC uses an SNTP server to set the date and time of the node. Using an SNTP server ensures that all ONS 15454 SDH network nodes use the same date and time reference. The server synchronizes the node's time after power outages or software upgrades. If you check the **Use NTP/SNTP Server** check box, enter the server's IP address in the next field. If you do not use an SNTP server, complete the Time and Time Zone fields. The ONS 15454 SDH will use these fields for alarm dates and times.
SNTP Server	Displays the SNTP server IP address.
Location	
Latitude	Allows you to set the latitude of the NE. Select **North** or **South** from the drop-down list; then, enter the degrees and minutes (or click the up and down arrows to increase or decrease each by 1 unit).
Longitude	Allows you to set the longitude of the NE. Select **East** or **West** from the drop-down list; then, enter the degrees and minutes (or click the up and down arrows to increase or decrease each by 1 unit).
Date and Time	
Time	Displays the NE date and time.
Time Zone	Displays the time zone where the NE is located.
Use Daylight Savings Time	If checked, Daylight Savings Time is observed.
APC State	
Side	Lists all the NEs and their sides that belong to the automatic power control (APC) domain.
APC State	Displays the actual state of the APC. Values are: • Enabled—APC is enabled. • Disabled—APC is disabled. • Force Disabled—APC is disabled by the user. • Not Applicable—APC domain is incomplete.
Power Monitor Tab	

Table B-328 Field Descriptions for the General Properties Pane (continued)

Field	Description
ELWBATVG	Allows you to set the monitor value for extreme low battery voltage (ELWBATVG) in volts direct current (VDC).
EHIBATVG	Allows you to set the monitor value for extreme high battery voltage (EHIBATVG) in VDC.
Current Voltage Environment	Shows the current voltage environment.
Multishelf Config Tab	
Shelf Role	Specify the configuration for multishelf NEs, where the primary NE is configured to take care of other NEs in the shelf. Select one of the following radio buttons: • Disable Multishelf • Enable as Subtended Shelf • Enable as Node Controller
Shelf ID	Unique number that identifies the shelf. Shelf ID #1 is reserved for the node controller.
LAN Config	Used to specify the LAN configuration that is used for the multishelf NE. A change in this attribute will force an automatic TCC reboot.
Voltage/Temperature Tab	
Voltage	Displays the voltage (in millivolts) of the shelf that corresponds to the power supply.
Temperature	Displays the temperature (in degrees Celsius) of the shelf.

Network

The Network Properties pane displays information about the NE network address. The Properties pane contains the following tabs:

- Address Tab, page B-238
- Static Routes Tab, page B-238
- OSPF Tab, page B-239
- OSPF Area Range Tab, page B-240
- OSPF Virtual Links Tab, page B-240
- SNMP Tab, page B-241
- Firewall/Proxy Tab, page B-242
- Routing Table Tab, page B-242
- RIP Routing Table Tab, page B-242
- RIP Tab, page B-243
- Proxy Tunnels Tab, page B-243
- Firewall Tunnels Tab, page B-244
- Secure Config Mode Tab, page B-244
- FTP Hosts Tab, page B-245

Address Tab

The Address tab allows you to view and change information about the NE network address.

Table B-329 Field Descriptions for the Address Tab

Field	Description
IP Address	Displays the IP address of the NE.
Default Router	Displays the IP address of the default router.
Subnet Mask	Displays the subnetwork mask ID of the NE.
MAC Address	Displays the ONS 15454 SDH address as it is identified on the IEEE 802 MAC layer.
LCD IP Setting	Allows you to configure the LCD screen. Select from the following values: • Allow Configuration—Enables shelf address changing from the LCD. • Display Only—Prevents users from changing the shelf IP address from the LCD screen. • Suppress Display—Makes the LCD screen blank.
Forward DHCP Requests	If checked, forwards DHCP requests to the IP address entered in the DHCP Server field. When the Forward DHCP Requests check box is unchecked, the DHCP Server field is display-only.
DHCP Server	Displays the IP address of the DHCP server.
IPv6 Config	
Enable IPv6	If checked, allows you to configure the node to use the IPv6 protocol and to assign an IPv6 address to the node.
IPv6 Address	Enter the IPv6 address of the node.
Default IPv6 Router	Enter the IPv6 default router of the node.
IPv6 Subnet Mask	Enter the IPv6 subnetwork mask length.

Static Routes Tab

The Static Routes tab allows you to view information about Prime Optical and ONS 15454 SDH connectivity and create or delete static routes.

Table B-330 Field Descriptions for the Static Routes Tab

Field	Description
Destination IP	Displays the IP address of the computer running Prime Optical.
Subnet Mask	Displays the subnetwork mask.
Next Hop	Displays the IP address of the router port or the node IP address if the Prime Optical computer is connected to the node directly.
Cost	Displays the number of hops between the ONS 15454 SDH and the computer.

OSPF Tab

The OSPF tab displays OSPF information. OSPF is a link-state Internet routing protocol.

Table B-331 Field Descriptions for the OSPF Tab

Field	Description
Slot	Displays the slot number.
Port	Displays the port number.
DCC OSPF Area ID	Displays the number that identifies the ONS 15454 SDH NE as a unique OSPF area. The OSPF area number can be an integer from 0 to 4294967295, and it can take a form similar to an IP address. The number must be unique to the LAN OSPF area.
RS-DCC Metric	Sets a cost for sending packets across the RS-DCC, which is used by OSPF routers to calculate the shortest path. This value should always be higher than the LAN metric. This value is normally unchanged.
MS-DCC Metric	Sets a cost for sending packets across the MS-DCC, which is used by OSPF routers to calculate the shortest path. This value should always be higher than the LAN metric. This value is normally unchanged.
OSPF on LAN	
OSPF Active on LAN	If checked, enables the ONS 15454 SDH OSPF topology to be advertised to OSPF routers on the LAN. Enable this field on ONS 15454 SDH NEs that directly connect to OSPF routers.
LAN Port Area ID	Displays the OSPF area ID for the router port where the ONS 15454 SDH is connected. (This number is different from the DCC OSPF area ID.)
Router Priority	Displays the value used for this NE in designated router election. The Cisco default value is zero (0). A router that has Router Priority set to 0 is ineligible to become a designated router on the attached network.
Dead Interval	Displays the number of seconds that will pass while an OSPF router's packets are not visible before its neighbors declare the router down. Forty seconds is the Cisco default.
Retransmit Interval	Displays the time that will elapse before a packet is resent. Five seconds is the Cisco default.
Hello Interval	Displays the number of seconds between OSPF hello packet advertisements sent by OSPF routers. Ten seconds is the Cisco default.
Transit Delay	Displays the service speed. One second is the Cisco default.
LAN Metric	Displays a cost for sending packets across the LAN. This value should always be lower than the DCC metric. Ten is the Cisco default.
OSPF Authentication	
Authentication Type	Displays Simple Password if the router where the ONS 15454 SDH is connected uses authentication. Otherwise, it displays No Authentication.
Authentication Key	Displays the OSPF key (password) if authentication is enabled.
Confirm Authentication Key	Retype the authentication key to confirm it.

OSPF Area Range Tab

The OSPF Area Range tab allows you to view information about OSPF area ranges and create or delete area ranges.

Table B-332 Field Descriptions for the OSPF Area Range Tab

Field	Description
Range Address	Displays the area IP address for the ONS 15454 SDH NEs that reside within the OSPF area. For example, if the ONS 15454 SDH OSPF area includes nodes with IP addresses 10.10.20.100, 10.10.30.150, 10.10.40.200, and 10.10.50.250, the range address would be 10.10.0.0.
Range Area ID	Displays the OSPF area ID for the ONS 15454 SDH NEs. This is either the ID in the DCC OSPF Area ID field or the ID in the LAN Port Area ID field.
Mask Length	Displays the subnet mask length.
Mask	Displays the subnet mask IP address.
Advertise	Indicates whether the OSPF routing table is advertised.

OSPF Virtual Links Tab

The OSPF Virtual Links tab allows you to view information about OSPF virtual links and create or delete virtual links.

Note You cannot create a new virtual link unless OSPF is active on the LAN.

Table B-333 Field Descriptions for the OSPF Virtual Links Tab

Field	Description
Neighbor	Displays the router ID of the Area 0 router.
Transit Delay	Displays the service speed. One second is the Cisco default.
Retransmit Interval	Displays the time that will elapse before a packet is resent. Five seconds is the Cisco default.
Hello Interval	Displays the number of seconds between OSPF hello packet advertisements sent by OSPF routers. Ten seconds is the Cisco default.
Dead Interval	Displays the number of seconds that will pass while the packets of an OSPF router are not visible before its neighbors declare the router down. Forty seconds is the Cisco default.
Authentication Type	Displays the authentication type.
Authentication Key	Displays the authentication key.

SNMP Tab

The SNMP tab allows you to view SNMP information and create or delete SNMP trap destinations.

Table B-334 Field Descriptions for the SNMP Tab

Field	Description
Allow SNMP Set	If checked, allows you to use SNMP management software with the ONS 15454 SDH.
Allow SNMP Proxy	If checked, allows you to configure the ONS 15454 SDH to proxy SNMP calls.
Use Generic MIB	All enterprise-specific SNMP traps are defined twice in the MIBs, once in CERENT-454-MIB and then again in CERENT-GENERIC-MIB. The ONS 15454 SDH uses SNMP trap definitions from CERENT-454-MIB and does not use the CERENT-GENERIC-MIB. Other ONS nodes use SNMP trap definitions from CERENT-GENERIC-MIB and do not use the CERENT-454-MIB. When you check the Use Generic MIB check box on an ONS 15454 SDH, the node starts using SNMP trap definitions from CERENT-GENERIC-MIB instead of the SNMP trap definitions specified by the CERENT-454-MIB to prepare and send SNMP traps.
IP Address	The IP address of the NMS.
Community Name	The SNMP community name.
UDP Port	The UDP port for SNMP. The Cisco default UDP port is 162.
Trap Version	The trap version, either SNMP version 1 or version 2. See your NMS documentation to determine whether to use SNMP version 1 or version 2.
Relay A IP Address	The first ONS 15454 SDH to relay traps through. The IP address is appended to the base community string to tell the first NE the IP address and the port to forward the trap to. The second NE recognizes the IP address and strips it from the community string before forwarding the trap.
Relay A Community Name	The community name for the relay A node to use in the trap when forwarding it.
Relay B IP Address	The second ONS 15454 SDH to relay traps through.
Relay B Community Name	The community name for the relay B node to use in the trap when forwarding it.
Relay C IP Address	The third ONS 15454 SDH to relay traps through.
Relay C Community Name	The community name for the relay C node to use in the trap when forwarding it.

Firewall/Proxy Tab

The Firewall/Proxy tab allows you to use an NE as a proxy server or as a firewall.

Table B-335 Field Descriptions for the Firewall/Proxy Tab

Field	Description
Gateway Settings	
Enable Proxy Server on Port	If checked, the ONS 15454 SDH serves as a proxy for connections between the Prime Optical server and ONS 15454 SDHs that are DCC-connected to the proxy ONS 15454 SDH. The Prime Optical server establishes connections to DCC-connected nodes through the proxy node. The Prime Optical server can connect to nodes that it cannot directly reach from the host on which it runs. The proxy server uses port 1080. If checked, the following radio buttons are enabled: • End Network Element (ENE)—Configures the ONS 15454 SDH to proxy as an ENE. Note that an alternate expansion for ENE is *external network element*. • Gateway Network Element (GNE)—Configures the ONS 15454 SDH to proxy as a GNE. • Proxy-only—Configures the ONS 15454 SDH to act as a proxy. If unchecked, the node does not proxy; instead, it acts as a LAN-connected NE (LNE).

Routing Table Tab

The Routing Table tab allows you to view the OSPF routing table.

Table B-336 Field Descriptions for the Routing Table Tab

Field	Description
Destination	Displays the IP address of the destination network or host.
Mask	Displays the subnet mask used to reach the destination network or host.
Gateway	Displays the IP address of the gateway used to reach the destination network or host.
Usage	Shows the number of times the listed route has been used.
Interface	Shows the ONS 15454 SDH interface used to access the destination. Values are: • cpm0—The ONS 15454 SDH Ethernet interface (that is, the RJ-45 jack on the TCC+/TCC2 and the LAN 1 pins on the backplane). • pdcc0—An SDCC interface (that is, an OC-N trunk card identified as the SDCC termination). • lo0—A loopback interface.

RIP Routing Table Tab

The RIP Routing Table tab allows you to view the Routing Information Protocol (RIP) routing table.

Table B-337 Field Descriptions for the RIP Routing Table Tab

Field	Description
Destination	Displays the IP address of the destination network or host.
Mask	Displays the subnet mask used to reach the destination network or host.

Table B-337 Field Descriptions for the RIP Routing Table Tab (continued)

Field	Description
Gateway	Displays the IP address of the gateway used to reach the destination network or host.
Cost	Displays the hop count metric. The valid range is from 1 to 15.

RIP Tab

The RIP tab allows you to view and configure the RIP parameters.

Note

- When you enable RIP, you must wait for approximately one minute for the default RIP address summary to become visible.
- When you disable RIP on the NE, all summary address entries in the Summary Address table are deleted.

Table B-338 Field Descriptions for the RIP Tab

Field	Description
RIP Active	Check this check box to enable RIP. Uncheck it to disable RIP. **Note** Checking the RIP Active check box and clicking the **Apply** button does not enable RIP. Instead, you must check the RIP Active check box, click the **Create** button, and use the Create RIP Address Summary dialog box to create a new RIP address. For details, see Using RIP, page 5-8.
RIP Type	Select RIP version 1.0 or RIP version 2.0.
Metric	Enter the hop count metric. The valid range is from 1 to 15.
Authentication Type	Select the authentication type.
Authentication Key	Enter the authentication key (password) if the authentication type is Simple Password.
Confirm Authentication Key	Retype the authentication key to confirm it.
RIP Address Summary	• Summary Address—Displays the summary address. • Mask Length—Displays the subnet mask length. • Cost—Displays the hop count metric. The valid range is from 1 to 15.
Create button	Click **Create** to create a new RIP address. See Using RIP, page 5-8.
Delete button	Click **Delete** to delete an existing RIP address.

Proxy Tunnels Tab

The Proxy Tunnels tab allows you to configure source and destination information and create or delete proxy tunnels.

Table B-339 Field Descriptions for the Proxy Tunnels Tab

Field	Description
Source Address	Specify the source IP address in the source-destination pair for the tunnel that will be routed through the proxy server.
Source Mask	Specify the source subnetwork mask in the source-destination pair for the tunnel that will be routed through the proxy server.
Destination Address	Specify the destination IP address in the source-destination pair for the tunnel that will be routed through the proxy server.
Destination Mask	Specify the destination subnetwork mask in the source-destination pair for the tunnel that will be routed through the proxy server.

Firewall Tunnels Tab

The Firewall Tunnels tab allows you to configure source and destination information and create and delete firewall tunnels.

Table B-340 Field Descriptions for the Firewall Tunnels Tab

Field	Description
Source Address	Specify the source IP address in the source-destination pair for the tunnel that will be routed through the firewall.
Source Mask	Specify the source subnetwork mask in the source-destination pair for the tunnel that will be routed through the firewall.
Destination Address	Specify the destination IP address in the source-destination pair for the tunnel that will be routed through the firewall.
Destination Mask	Specify the destination subnetwork mask in the source-destination pair for the tunnel that will be routed through the firewall.

Secure Config Mode Tab

The TCC2P card supports secure config mode. When the secure mode is on, the NE has two IP addresses, one for the backplane and one for the front port. The front port IP address is used by the DCC-connected NEs. The secure config mode feature applies to the ONS 15454 SDH R5.0 and later.

Note When there is no TCC2P card present, the fields in the following table cannot be configured.

The Secure Config Mode tab allows you to configure the secure config mode. The fields shown depend on whether the NE is in secure mode. For example, the Backplane Ethernet Port values are displayed only when the NE is in secure mode.

Table B-341 Field Descriptions for the Secure Config Mode Tab

Field	Description
TCP/IP Mode	
Normal	When this text is visible, the NE is not in secure mode. There is one IP address shared by TCC and backplane Ethernet ports, with full connectivity between ports.

Table B-341 Field Descriptions for the Secure Config Mode Tab (continued)

Field	Description
Secure	When this text is visible, the NE is in secure mode. There are separate IP addresses for TCC and backplane Ethernet ports, with no connectivity between ports.
Mode not locked	When this text is visible, you can change the secure mode.
Mode permanently locked and cannot be unlocked	When this text is visible, the NE is in secure mode, and the secure mode is locked and cannot be changed.
Backplane Ethernet Port	
IP Address	Displays the IP address of the NE.
Secure IP Address	Displays the backplane IP address.
Secure Subnet Mask Length	Displays the mask length of the secure IP address. Use the up or down arrows to change the mask length.
Default Router	Displays the address of the default router for this NE.
Secure MAC Address	Displays the MAC/Ethernet address for the backplane.
Secure LCD IP Setting	Displays the setting value applicable for the secure mode. Select from the following values: • Allow Configuration—Enables shelf address changing from the LCD. • Display Only—Prevents users from changing the shelf IP address from the LCD screen. • Suppress Display—Makes the LCD screen blank.
Change Mode	
Change Mode button	Opens the Change Secure Mode dialog box, which allows you to change the mode of the NE from secure to unsecure, and vice versa. This button is enabled only if an active TCC2P card exists on the NE.
Lock	
Lock button	When the NE is in secure mode, the Lock button locks the secure mode on the NE/TCC so that it cannot be changed.

FTP Hosts Tab

The FTP Hosts tab allows you to configure database backup or restore and software download to an ENE when the firewall is enabled. You can provision a list of legal FTP hosts for which the firewall opens for all FTP commands. You can configure the FTP hosts to expire after a certain amount of time, after which the FTP relay resumes blocking all FTP access for the ENEs.

Table B-342 Field Descriptions for the FTP Hosts Tab

Field	Description
Create button	Opens the Create New FTP Host dialog box, which allows you to create up to 12 new FTP hosts in a GNE/ENE firewall environment. See Creating an FTP Host, page 5-22. **Note** You cannot create more than 12 FTP hosts.
Delete button	Deletes the selected FTP host.
FTP Host Address	Displays the FTP host IP address.
Prefix Length	Displays the FTP host subnet mask length.

Table B-342 Field Descriptions for the FTP Hosts Tab (continued)

Field	Description
Enable FTP Relay	Indicates whether FTP relay is enabled or disabled. If FTP relay is disabled, the FTP Relay Timer field is dimmed.
FTP Relay Timer	Displays the number of minutes that the FTP relay is configured to run, after which the FTP relay resumes blocking all FTP access for the ENEs.

DCC/GCC/OSC

The DCC/GCC/OSC Properties pane allows you to create, delete, and view RS-DCCs, MS-DCCs, GCCs, OSCs, and DWDM ring IDs.

Table B-343 Field Descriptions for the DCC/GCC/OSC Properties Pane

Field	Description
RS-DCC	
SDCC Terminations	Displays the slot, port, and card type of an RS-DCC termination.
OSPF Disabled on Link	Check to prevent the advertisement of the OSPF routing table.
Foreign	A check mark indicates that the far-end node is a non-ONS node.
Foreign IP	Displays the foreign node IP address.
LAPD Config	If the RS-DCC is provisioned as OSI only, the following LAP-D parameters are displayed: • AITS/UITS—Indicates the LAP-D acknowledgement type, either Acknowledged Information Transfer Service (AITS) or Unacknowledged Transfer Service (UITS). • Network/User—Indicates the LAP-D frame command/response role, either Network or User. • MTU—Shows the size of the maximum transfer unit (MTU). The range is from 512 to 1500 octets. • T2000—Shows the time between Set Asynchronous Balanced Mode (SABME) frame transmission. The range is from 0.2 to 20 seconds. • T203—Shows the maximum time between LAP-D frame exchanges. The range is from 4 to 120 seconds.
OSI SNPA	If the RS-DCC is provisioned for OSI, the following subnetwork point-of-attachment (SNPA) information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.

Table B-343 Field Descriptions for the DCC/GCC/OSC Properties Pane (continued)

Field	Description
Service State	Includes an administrative-operational state and secondary state. Administrative-operational states are used to manage service states and use a status attribute to specify the change in service state. The following are valid administrative-operational states: • Unlocked-enabled—The NE is fully operational and performs as provisioned. • Unlocked-disabled—The NE is not operational because of an autonomous event. • Locked-disabled—The NE is not operational because of an autonomous event; it has also been manually removed from service. • Locked-enabled—The NE has been manually removed from service. The following are valid secondary states: • AutomaticInService—Transitioning to the Unlocked-enabled service state is delayed. The transition to Unlocked-enabled state depends on correction of conditions, or on a soak timer. Alarm reporting is suppressed, but traffic is carried. Raised fault conditions, whether or not their alarms are reported, can be retrieved by using the TL1 **RTRV-COND** command. • Disabled—The NE has been manually removed from service and does not provide its provisioned functions. All services are disrupted; the entity is unable to carry traffic. • Failed—The NE has a raised alarm or condition. • Loopback—The NE is in loopback mode. • MismatchOfEquipment—An improper card is installed, a cross-connect card does not support an installed card, or an incompatible backplane is installed. For example, an installed card is not compatible with the card preprovisioning or the slot. This secondary state applies only to cards. • Maintenance—The NE has been manually removed from service for a maintenance activity but still performs its provisioned functions. Alarm reporting is suppressed, but traffic is carried. You can use the TL1 **RTRV-COND** command to retrieve raised fault conditions even if alarms have not been reported. • OutOfGroup—The virtual concatenation (VCAT) member cross-connect is not used to carry VCAT group traffic. This state is used to put a member circuit out of the group and to stop sending traffic. Locked-enabled,outOfGroup applies only to the cross-connects on an end node where VCAT resides. The cross-connects on intermediate nodes are in the Locked-enabled,maintenance service state. • SoftwareDownload—A card is involved in a software download. This secondary state applies only to cards. • Unassigned—A card is not provisioned in the database. This secondary state applies only to cards. • NotInstalled—A card is not physically present (that is, the slot is empty). This secondary state applies only to cards. **Note** If the NE release does not support the Service state, this field shows N/A.
MS-DCC	
LDCC Terminations	Displays the slot, port, and card type of an MS-DCC termination.
OSPF Disabled on Link	Check to prevent the advertisement of the OSPF routing table.
Foreign	A check mark indicates that the far-end node is a non-ONS node.

Table B-343 Field Descriptions for the DCC/GCC/OSC Properties Pane (continued)

Field	Description
Foreign IP	Displays the foreign node IP address.
LAPD Config	Displays the LAP-D parameters for the MS-DCCs that are provisioned as OSI only.
OSI SNPA	If the MS-DCC is provisioned for OSI, the following SNPA information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.

Table B-343 Field Descriptions for the DCC/GCC/OSC Properties Pane (continued)

Field	Description
Service State	Includes an administrative-operational state and secondary state. Administrative-operational states are used to manage service states and use a status attribute to specify the change in service state. The following are valid administrative-operational states: • Unlocked-enabled—The NE is fully operational and performs as provisioned. • Unlocked-disabled—The NE is not operational because of an autonomous event. • Locked-disabled—The NE is not operational because of an autonomous event; it has also been manually removed from service. • Locked-enabled—The NE has been manually removed from service. The following are valid secondary states: • AutomaticInService—Transitioning to the Unlocked-enabled service state is delayed. The transition to Unlocked-enabled state depends on correction of conditions, or on a soak timer. Alarm reporting is suppressed, but traffic is carried. Raised fault conditions, whether or not their alarms are reported, can be retrieved by using the TL1 **RTRV-COND** command. • Disabled—The NE has been manually removed from service and does not provide its provisioned functions. All services are disrupted; the entity is unable to carry traffic. • Failed—The NE has a raised alarm or condition. • Loopback—The NE is in loopback mode. • MismatchOfEquipment—An improper card is installed, a cross-connect card does not support an installed card, or an incompatible backplane is installed. For example, an installed card is not compatible with the card preprovisioning or the slot. This secondary state applies only to cards. • Maintenance—The NE has been manually removed from service for a maintenance activity but still performs its provisioned functions. Alarm reporting is suppressed, but traffic is carried. You can use the TL1 **RTRV-COND** command to retrieve raised fault conditions even if alarms have not been reported. • OutOfGroup—The virtual concatenation (VCAT) member cross-connect is not used to carry VCAT group traffic. This state is used to put a member circuit out of the group and to stop sending traffic. Locked-enabled,outOfGroup applies only to the cross-connects on an end node where VCAT resides. The cross-connects on intermediate nodes are in the Locked-enabled,maintenance service state. • SoftwareDownload—A card is involved in a software download. This secondary state applies only to cards. • Unassigned—A card is not provisioned in the database. This secondary state applies only to cards. • NotInstalled—A card is not physically present (that is, the slot is empty). This secondary state applies only to cards. **Note** If the NE release does not support the Service state, this field shows N/A.
GCC	
GCC Terminations	Displays the slot, port, and card type of a GCC termination.
OSPF Disabled on Link	Check to prevent the advertisement of the OSPF routing table.
GCC Rate	Displays the GCC rate.

Table B-343 Field Descriptions for the DCC/GCC/OSC Properties Pane (continued)

Field	Description
Foreign	A check mark indicates that the far-end node is a non-ONS node.
Foreign IP	Displays the foreign node IP address.
LAPD Config	Displays the LAP-D parameters for the GCCs that are provisioned as OSI only. For GCCs, this column is always N/A.
OSI SNPA	If the GCC is provisioned for OSI, the following SNPA information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.

Table B-343 Field Descriptions for the DCC/GCC/OSC Properties Pane (continued)

Field	Description
Service State	Includes an administrative-operational state and secondary state. Administrative-operational states are used to manage service states and use a status attribute to specify the change in service state. The following are valid administrative-operational states: • Unlocked-enabled—The NE is fully operational and performs as provisioned. • Unlocked-disabled—The NE is not operational because of an autonomous event. • Locked-disabled—The NE is not operational because of an autonomous event; it has also been manually removed from service. • Locked-enabled—The NE has been manually removed from service. The following are valid secondary states: • AutomaticInService—Transitioning to the Unlocked-enabled service state is delayed. The transition to Unlocked-enabled state depends on correction of conditions, or on a soak timer. Alarm reporting is suppressed, but traffic is carried. Raised fault conditions, whether or not their alarms are reported, can be retrieved by using the TL1 **RTRV-COND** command. • Disabled—The NE has been manually removed from service and does not provide its provisioned functions. All services are disrupted; the entity is unable to carry traffic. • Failed—The NE has a raised alarm or condition. • Loopback—The NE is in loopback mode. • MismatchOfEquipment—An improper card is installed, a cross-connect card does not support an installed card, or an incompatible backplane is installed. For example, an installed card is not compatible with the card preprovisioning or the slot. This secondary state applies only to cards. • Maintenance—The NE has been manually removed from service for a maintenance activity but still performs its provisioned functions. Alarm reporting is suppressed, but traffic is carried. You can use the TL1 **RTRV-COND** command to retrieve raised fault conditions even if alarms have not been reported. • OutOfGroup—The virtual concatenation (VCAT) member cross-connect is not used to carry VCAT group traffic. This state is used to put a member circuit out of the group and to stop sending traffic. Locked-enabled,outOfGroup applies only to the cross-connects on an end node where VCAT resides. The cross-connects on intermediate nodes are in the Locked-enabled,maintenance service state. • SoftwareDownload—A card is involved in a software download. This secondary state applies only to cards. • Unassigned—A card is not provisioned in the database. This secondary state applies only to cards. • NotInstalled—A card is not physically present (that is, the slot is empty). This secondary state applies only to cards. **Note** If the NE release does not support the Service state, this field shows N/A.
OSC	
OSC Terminations	Displays the slot, port, and card type of an OSC termination.
LAPD Config	Displays the LAP-D parameters for the OSCs that are provisioned as OSI only.

Table B-343 Field Descriptions for the DCC/GCC/OSC Properties Pane (continued)

Field	Description
OSI SNPA	If the OSC is provisioned for OSI, the following SNPA information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.
Service State	Includes an administrative-operational state and secondary state. Administrative-operational states are used to manage service states and use a status attribute to specify the change in service state. The following are valid administrative-operational states: • Unlocked-enabled—The NE is fully operational and performs as provisioned. • Unlocked-disabled—The NE is not operational because of an autonomous event. • Locked-disabled—The NE is not operational because of an autonomous event; it has also been manually removed from service. • Locked-enabled—The NE has been manually removed from service. The following are valid secondary states: • AutomaticInService—Transitioning to the Unlocked-enabled service state is delayed. The transition to Unlocked-enabled state depends on correction of conditions, or on a soak timer. Alarm reporting is suppressed, but traffic is carried. Raised fault conditions, whether or not their alarms are reported, can be retrieved by using the TL1 **RTRV-COND** command. • Disabled—The NE has been manually removed from service and does not provide its provisioned functions. All services are disrupted; the entity is unable to carry traffic. • Failed—The NE has a raised alarm or condition. • Loopback—The NE is in loopback mode. • MismatchOfEquipment—An improper card is installed, a cross-connect card does not support an installed card, or an incompatible backplane is installed. For example, an installed card is not compatible with the card preprovisioning or the slot. This secondary state applies only to cards. • Maintenance—The NE has been manually removed from service for a maintenance activity but still performs its provisioned functions. Alarm reporting is suppressed, but traffic is carried. You can use the TL1 **RTRV-COND** command to retrieve raised fault conditions even if alarms have not been reported. • OutOfGroup—The virtual concatenation (VCAT) member cross-connect is not used to carry VCAT group traffic. This state is used to put a member circuit out of the group and to stop sending traffic. Locked-enabled,outOfGroup applies only to the cross-connects on an end node where VCAT resides. The cross-connects on intermediate nodes are in the Locked-enabled,maintenance service state. • SoftwareDownload—A card is involved in a software download. This secondary state applies only to cards. • Unassigned—A card is not provisioned in the database. This secondary state applies only to cards. • NotInstalled—A card is not physically present (that is, the slot is empty). This secondary state applies only to cards. **Note** If the NE release does not support the Service state, this field shows N/A.

Table B-343 Field Descriptions for the DCC/GCC/OSC Properties Pane (continued)

Field	Description
DWDM Ring ID	
Ring ID	Displays the ring ID.
West Direction	Lists the OSCM or OSC-CSM port that supports the ring in the west direction. The value is N/A if there are no ports in the west direction.
East Direction	Lists the OSCM or OSC-CSM port that supports the ring in the east direction. The value is N/A if there are no ports in the east direction.
Create button	Allows you to create new terminations on SONET, SDH, or transponder cards.
Edit button	Allows you to modify existing terminations on SONET, SDH, or transponder cards.
Delete button	Allows you to delete the selected RS-DCC, MS-DCC, GCC, OSC, or DWDM ring ID.

Timing

The Timing Properties pane contains the following tabs:

- General Tab, page B-253
- Facility Tab, page B-253
- Reference List Tab, page B-255
- Status Tab, page B-255
- Timing Report Tab, page B-256

General Tab

The General tab displays general timing information.

Table B-344 Field Descriptions for the General Tab

Field	Description
General Timing	
Timing Mode	Set to External if the ONS 15454 SDH derives its timing from a BITS source wired to the backplane pins; set to Line if timing is derived from an OC-N card that is optically connected to the timing node. A third option, Mixed, allows you to set external and line timing references. **Caution** Mixed timing might cause timing loops. Use this mode with care.
Revertive	If checked, the ONS 15454 SDH reverts to a primary reference source after the conditions that caused it to switch to a secondary timing reference are corrected.
Reversion Time	Specify the reversion time in half-minute increments.

Facility Tab

The Facility tab displays the facility type, BITS IN and OUT information.

Note BITS IN Facilities and BITS OUT Facilities values apply to both BITS-1 and BITS-2.

Table B-345 Field Descriptions for the Facility Tab

Field	Description
BITS-IN-OUT Facility Type	
In Facility Type	Provisions the BITS In facility type.
Out Facility Type	Provisions the BITS Out facility type.
BITS IN Facilities	
In State	Set the BITS reference to Locked or Unlocked. For nodes set to Line timing with no equipment timed through BITS Out, set the state to Locked. For nodes using External timing or Line timing with equipment timed through BITS Out, set the state to Unlocked.
Coding	Set to the coding used by your BITS reference, either AMI or HDB3.
Framing	Set to the framing used by your BITS reference.
Sync Messaging	If checked, enables the SSM for BITS In. (SSM is not available if Framing is set to Super Frame.)
Admin SSM	If the Sync Messaging check box is not checked, you can choose the SSM Generation 2 type from the drop-down list.
Sa Bit	The Sa Bit field is used to transmit the SSM message. The five available Sa bits are Sa4, Sa5, Sa6, Sa7, and Sa8.
BITS OUT Facilities	
Out State	Set the BITS reference to Locked or Unlocked. For nodes set to Line timing with no equipment timed through BITS Out, set the state to Locked. For nodes using External timing or Line timing with equipment timed through BITS Out, set the state to Unlocked.
Coding	Set to the coding used by your BITS reference, either AMI or HDB3.
Framing	Set to the framing used by your BITS reference.
AIS Threshold	If SSM is disabled or Super Frame is used, sets the quality level where a node sends an AIS from the BITS-1 Out and BITS-2 Out backplane pins. An AIS is raised when the optical source for the BITS reference falls to or below the SSM quality level defined in this field.
Sa Bit	The Sa Bit field is used to transmit the SSM message. The five available Sa bits are Sa4, Sa5, Sa6, Sa7, and Sa8.

Reference List Tab

The Reference List tab provides timing reference information.

Table B-346 Field Descriptions for the Reference List Tab

Field	Description
NE References	Allows you to define three timing references (Ref-1, Ref-2, and Ref-3). The node uses Reference 1 unless a failure occurs on that reference, in which case, the node uses Reference 2. If that fails, the node uses Reference 3, which is typically set to Internal Clock. This is the Stratum 3 clock provided on the TCC+. The options displayed depend on the Timing Mode setting: • Timing Mode set to External—Options are BITS-1, BITS-2, and Internal Clock. • Timing Mode set to Line—Options are the node's working optical cards and Internal Clock. **Note** For Timing Mode set to External and Timing Mode set to Line, select the cards/ports that are directly or indirectly connected to the node wired to the BITS source; that is, the node's trunk cards. Set Reference 1 to the trunk card that is closest to the BITS source. For example, if Slot 5 is connected to the node wired to the BITS source, select Slot 5 as Reference 1. • Timing Mode set to Mixed—Both BITS and optical cards are available, allowing you to set a mixture of external BITS and optical trunk cards as timing references.
BITS-1 Out References	Allows you to define three timing references (Ref-1, Ref-2, and Ref-3) for the equipment wired to the BITS Out backplane pins. Normally, BITS Out is used with line nodes, so the options displayed are the working optical cards. BITS-1 and BITS-2 Out are enabled as soon as BITS-1 and BITS-2 facilities are placed in service.
BITS-2 Out References	Allows you to define three timing references (Ref-1, Ref-2, and Ref-3) for the equipment wired to the BITS Out backplane pins. Normally, BITS Out is used with line nodes, so the options displayed are the working optical cards. BITS-1 and BITS-2 Out are enabled as soon as BITS-1 and BITS-2 facilities are placed in service.

Status Tab

The Status tab displays timing status information.

Note If you change any values in the Status tab and click Apply at the bottom of the screen, the values are not set. Instead, use the following buttons to apply changes:

- Clear—Releases any existing switch request. For example, if you issue a Force Switch and then issue a Clear, the Force Switch request is released.
- Manual Switch—Switches the timing reference from one source to another.
- Force Switch—Switches the timing reference from one source to another. This request has a higher priority than the Manual Switch request.

Table B-347 Field Descriptions for the Status Tab

Field	Description
NE Clock	
NE Reference	Set the NE timing reference to internal, BITS-1, or BITS-2.

Table B-347 Field Descriptions for the Status Tab (continued)

Field	Description
Status	Displays the status of the NE clock.
Operations	Execute a switch on the NE timing reference.
BITS-1 Out	
BITS-1 Out	Set the BITS-1 out timing reference.
Status	Displays the status of the BITS-1 out timing reference.
Operations	Execute a switch on the BITS-1 out timing reference.
BITS-2 Out	
BITS-2 Out	Set the BITS-2 out timing reference.
Status	Displays the status of the BITS-2 out timing reference.
Operations	Execute a switch on the BITS-2 out timing reference.

Timing Report Tab

The Timing Report tab summarizes the NE's current timing settings.

Protection

The Protection Properties pane contains the following tabs:

- Protection Groups Tab, page B-256
- Operations Tab, page B-257

Protection Groups Tab

The Protection Groups tab displays a list of available protection groups and allows you to create, delete, and view protection groups.

Table B-348 Field Descriptions for the Protection Groups Tab

Field	Description
Protection Groups	
Displays a list of available protection groups. Click the **Create** or **Delete** button to create a new protection group or delete an existing one.	
Selected Protection Group	
Name	Modify the name of the selected protection group. The name can have up to 32 alphanumeric characters.
Type	Choose the protection type (1:1, 1:N, 1+1, or Y-cable) from the drop-down list. The protection selected determines the cards that are available to serve as protect and working cards. For example, if you choose 1:N protection, only DS-1N and DS-3N cards are displayed.
Protect Module	View the protect module if using 1:1, 1:N, or Y-cable protection. **Note** For OTU2_XP cards, the card name might be shown as XP_4_10G_LINE_CARD.
Available Entities	Displays a list of available entities. You can toggle between available and working entities.

Table B-348 Field Descriptions for the Protection Groups Tab (continued)

Field	Description
Working Entities	Displays a list of working entities. You can toggle between working and available entities.
Bidirectional Switching	Click if you want both the transmit and the receive channels to switch if a failure occurs on one. This option is available only if you select the 1+1 (port) type.
Revertive	If checked, the ONS 15454 SDH reverts traffic to the working card or port after failure conditions for the amount of time entered in Reversion Time. This option is not available if you select the 1:N (card) type.
Reversion Time	If Revertive is checked, enter the amount of time following failure condition correction that should elapse before the ONS 15454 SDH switches back to the working card or port. Use half-minute increments. This option is available only if you select the 1:1 (card) type.

Operations Tab

The Operations tab displays protection group operation information.

Table B-349 Field Descriptions for the Operations Tab

Field	Description
Protection Groups	Displays a list of available protection groups.
Protection Group Details	Displays details about the selected protection groups and allows you to execute switch commands. **Note** For OTU2_XP cards, the card name might be shown as XP_4_10G_LINE_CARD.
Switch Commands	Allows you to perform command switching.
Inhibit Switching	Allows you to inhibit command switching.

Ether Bridge

The Ether Bridge Properties pane contains the following tabs:

- Spanning Tree Config Tab, page B-257
- Spanning Tree Status Tab, page B-258

Spanning Tree Config Tab

The Spanning Tree Config tab displays spanning-tree configuration information for the ONS 15454 SDH.

Table B-350 Field Descriptions for the Spanning Tree Config Tab

Field	Description
Index Number	Unique number that identifies the spanning tree.
Priority	Incoming traffic queue. Priority can be either high or low.
Bridge Max Age	Maximum amount of time that received-protocol information is retained before it is discarded.

Table B-350 Field Descriptions for the Spanning Tree Config Tab (continued)

Field	Description
Bridge Hello Time	Time interval, in seconds, between the transmission of configuration bridge protocol data units (BPDUs) by a bridge that is the spanning-tree root or is attempting to become the spanning-tree root.
Bridge Forward Delay	Time spent by a port in the listening state and the learning state.

Spanning Tree Status Tab

The Spanning Tree Status tab displays spanning-tree status information for the ONS 15454 SDH.

Table B-351 Field Descriptions for the Spanning Tree Status Tab

Field	Description
Index Number	Unique number that identifies the spanning tree.
Bridge ID	ONS 15454 SDH unique identifier that transmits the configuration BPDU; the bridge ID is a combination of the bridge priority and the ONS 15454 SDH MAC address.
Topology Age	Amount of time, in seconds, since the last topology change.
Topology Changes	Number of times the spanning-tree topology has been changed since the node booted up.
Designated Root	Spanning tree's designated root for a particular spanning-tree instance.
Root Cost	Total path cost to the designated root.
Root Port	Port used to reach the root.
Max Age	Maximum amount of time that received-protocol information is retained before it is discarded.
Hello Time	Time interval, in seconds, between the transmission of configuration BPDUs by a bridge that is the spanning-tree root or is attempting to become the spanning-tree root.
Hold Time	Minimum time period, in seconds, that elapses during the transmission of configuration information on a given port.
Forward Delay	Time spent by a port in the listening state and the learning state.

NE Defaults

The NE Defaults Properties pane displays a list of default thresholds for the ONS 15454 SDH NE. You can edit NE defaults for the ONS 15454 SDH R5.0 and later.

Table B-352 Field Descriptions for the NE Defaults Properties Pane

Field	Description
Parameter	Lists the default NE parameter.
Value	Shows the default parameter value, and allows you to change the default.
Units	Lists the unit of measure that corresponds to the default NE parameter.

Table B-352 Field Descriptions for the NE Defaults Properties Pane (continued)

Field	Description
Range	Lists the possible range of values for the default NE parameter. **Note** This field applies to the ONS 15454 SDH R6.0 and later.
Side Effects	Lists any side effects that could occur as a result of changing the default NE parameter. **Note** This field applies to the ONS 15454 SDH R6.0 and later.

You can load different NE defaults using the NE Defaults Management window. See Restoring NE Defaults, page 4-78.

Security

The Security Properties pane allows you to view and edit security features for the ONS 15454 SDH NE. The Properties pane contains the following tabs:

- Policy Tab, page B-259
- Password Tab, page B-260
- Access Tab, page B-261
- RADIUS Server Tab, page B-262
- Legal Disclaimer Tab, page B-263

Policy Tab

The Policy tab allows you to specify user security parameters.

Note If the user is already logged in, any changes to the NE user type settings take effect only when the user next logs in.

Table B-353 Field Descriptions for the Policy Tab

Field	Description
Idle User Timeout	
Each CTC or TL1 user can be idle during his or her login session for a specified amount of time before the CTC window is locked. The lockouts prevent unauthorized users from making changes. Higher-level users have shorter default idle periods and lower-level users have longer or unlimited default idle periods. The user idle period can be modified by a SuperUser. **Note** A user already logged into the node is not affected by a change to the Idle User Timeout policy.	
Retrieve	Set the idle user timeout for a CTC Retrieve user.
Maintenance	Set the idle user timeout for a CTC Maintenance user.
Provisioner	Set the idle user timeout for a CTC Provisioner user.
SuperUser	Set the idle user timeout for a CTC SuperUser user.
User Lockout	
Manual Unlock by SuperUser	If checked, the CTC SuperUser user must manually unlock locked out CTC users. If unchecked, locked out CTC users are automatically unlocked after the lockout duration period elapses.

Table B-353 Field Descriptions for the Policy Tab (continued)

Field	Description
Lockout Duration	Set the lockout duration period for locked out CTC users. This field is enabled only if the Manual Unlock by SuperUser check box is unchecked.
Failed Logins Allowed	Set the number of failed logins before the CTC user is automatically locked out.
Other	
Single Sessions per User	If checked, each CTC user can launch only one session at a time.
Prevent Disabling the SuperUser	If checked, inactive CTC SuperUsers are never disabled.
Disable Inactive User	If checked, inactive users are disabled automatically for the amount of time in the Inactive Duration field.
Inactive Duration	Specify the inactive duration in days. The range is from 1 to 90 days; the Cisco default is 45 days. A value of 0 implies the inactive duration is disabled and invalid.

Password Tab

The Password tab allows you to specify user password security parameters.

Table B-354 Field Descriptions for the Password Tab

Field	Description
Password Change	
Prevent Reusing Last	Prevents setting a CTC user's current password to one of the most recent passwords. You can set the number of most recent passwords that cannot be reused.
Disable Password Flipping	If checked, users are not allowed to change passwords for the number of days specified in the Can Change Password After field.
Can Change Password After	Enter the number of days that must elapse before the user can change the password.
Force Password Change After Assigned	If checked, during the first successful login, the user is forced to change the password.
Password Difference	Allows SuperUsers to specify the number of characters by which the new password of a user must differ from the old password, while performing a password change. The default value is 1; the range is from 1 to 5 characters.
Password Aging	
Enable Password Aging	Check this check box to enable password aging.
Aging Period	Enter the aging period, in days, for Retrieve, Maintenance, Provisioner, and SuperUser CTC users. After the aging period expires, CTC users are forced to change their passwords.
Warning Period	Enter the warning period, in days, for Retrieve, Maintenance, Provisioner, and SuperUser CTC users. After the warning period expires, CTC users are warned that their passwords will soon expire.

Access Tab

The Access tab allows you to configure LAN and shell access to the NE.

Table B-355 Field Descriptions for the Access Tab

Field	Description
Access	
LAN Access	Specify the type of LAN access allowed. Values are Backplane Only, No LAN Access, Front and Backplane, or Front Only (for ONS 15454 SONET NEs only). **Note** After the LAN access to the backplane is set, the Prime Optical client is unusable for 4 to 5 minutes.
Restore Timeout	This time period begins if *No LAN Access* is selected and all DCC connections are lost. If the time expires before a DCC is restored, LAN access is restored so that the node is not isolated. When the DCC comes back, LAN access returns to its specified settings. The range is from 0 (never) to 60 minutes; the Cisco default is 5 minutes.
Serial Craft Access	
Enable Craft Port	Check this check box to enable the craft port.
Shell Access	
Shell Access on	Specify shell access on Telnet or SSH.
SSH Port	Indicates the SSH port number that will be used if the SSH radio button is selected.
Telnet Port	This is enabled if you selected the Telnet radio button. Enter the Telnet port number.
Use Standard Telnet Port	If checked, the standard Telnet port is used for Telnet access.
Shell Access	
Access State	Select the Shell access state from the drop-down list. You can select Disable, Non-secure, or Secure.
SSH Port	Indicates the SSH port number that will be used.
SFTP Port	Indicates the SFTP port number.
Telnet Port	This is enabled if you selected the Non-secure access state. Enter the Telnet port number that will be used.
Use Standard Telnet Port	Check this check box to indicate that the standard Telnet port will be used.
Enable Shell Password	Indicates whether or not the Shell password is enabled. **Note** You cannot enable the Shell password in Prime Optical. Enabling and providing a Shell password is currently done in CTC.
TL1 Access	
Access State	Select the TL1 access state from the drop-down list. You can select Disable, Non-secure, or Secure.
SNMP Access	
Access State	Select the SNMP access state from the drop-down list. You can select either Disable or Non-secure.
Pseudo-IOS Access	

Table B-355 Field Descriptions for the Access Tab (continued)

Field	Description
Access State	Pseudo CLI is a command-line interface on the NE that simulates a Cisco IOS connection. Select the pseudo-IOS access state from the drop-down list. You can select Disable, Non-secure, or Secure. If you choose Disable, the port is not configurable, which means that the node does not listen for pseudo-CLI connections. **Note** Pseudo-IOS functionality is available only if the node contains 10GE_XP or GE_XP cards in L2 mode.
Port	Enter the port number for pseudo-IOS access. If the Access State field is set to Disable, you cannot configure this field.
Other	
PM Clearing Privilege	Select the users privilege that allows clearing PM statistics for the NE.
EMS Access	
Access State	Select the EMS access state from the drop-down list. You can select either Non-secure or Secure.
CORBA Listener Port	Select the port numbers for the Controller Card CORBA (IIOP) listener port and the Controller Card CORBA (SSLIOP) listener port. Select one of the following radio buttons: • Default-Fixed—Assigns a default port number. • Standard Constant—The port number for the Controller Card CORBA (IIOP) listener port is 683. The port number for the Controller Card CORBA (SSLIOP) listener port is 684. • Other Constant—When selected, enter the port number that will be used.

RADIUS Server Tab

The RADIUS Server tab allows you to configure, create, modify, and delete RADIUS servers for ONS 15454 SDH R6.0 or later.

Table B-356 Field Descriptions for the RADIUS Server Tab

Field	Description
Enable RADIUS Authentication	Check this check box to enable RADIUS authentication.
Enable RADIUS Accounting	Check this check box to enable RADIUS accounting. This is enabled if the Enable RADIUS Authentication check box is checked.
Enable the Node as the Final Authenticator When no RADIUS Server is Reachable	Select a row from the RADIUS Servers in Order of Authentication table; then, check this check box. This indicates that the RADIUS server that you selected will be the final authenticator when there are no more RADIUS servers that can be reached.
Create button	Click **Create** to create a RADIUS server. See Creating a RADIUS Server, page 8-46.
Edit button	Click **Edit** to modify an existing RADIUS server's information. See Modifying a RADIUS Server, page 8-46.
Delete button	Click **Delete** to delete an existing RADIUS server. See Deleting a RADIUS Server, page 8-46.
Move Up/Move Down buttons	Click **Move Up** or **Move Down** to reorder the list of RADIUS servers in the RADIUS Servers in Order of Authentication table.

Table B-356 Field Descriptions for the RADIUS Server Tab (continued)

Field	Description
RADIUS Servers in Order of Authentication	
IP Address	Displays the IP address of the RADIUS server.
Shared Secret	Displays a text string that serves as a password between a RADIUS client and RADIUS server.
Authentication Port	Displays the authentication port number of the RADIUS server. Default access is through port number 1812.
Accounting Port	Displays the accounting port number of the RADIUS server. Default access is through port number 1813.

Legal Disclaimer Tab

The Legal Disclaimer tab allows you to edit the NE's advisory message and preview the disclaimer.

Table B-357 Field Descriptions for the Legal Disclaimer Tab

Tab	Description
Advisory Message	The existing message is a default, noncustomer-specific disclaimer. If you want to edit this statement with specifics for your company, you can change the text. You can also use the following HTML commands to format the text: • ****—Begins boldface font • ****—Ends boldface font • ** **—Aligns type in the center of the window • ** **—Ends the center alignment • **<font=*n*, where *n* = point size>**—Changes the font to the new size • ****—Ends the font size command • **<p>**—Creates a line break • **_{**—Begins subscript • **}**—Ends subscript • **^{**—Begins superscript • **}**—Ends superscript • **<u>**—Starts underline • **</u>**—Ends underline
Preview	Allows you to view the advisory message before saving it.

Alarm

The Alarm Properties pane allows you to change default alarm severities by creating unique alarm profiles for individual ONS 15454 SDH nodes. The Properties pane contains the following tabs:

- Profile Tab, page B-264
- Alarm Behavior Tab, page B-264

Profile Tab

The Profile tab allows you to select, create, or delete alarm profiles.

Table B-358 Field Descriptions for the Profile Tab

Field	Description
Alarm Profile Name	Choose an alarm profile for the NE from the drop-down list. Click **Create** to create a new alarm profile for the NE. Click **Delete** to delete an alarm profile from the NE.
Condition	Displays the alarm condition.
Severity	Displays the alarm severity.

Alarm Behavior Tab

The Alarm Behavior tab allows you to change default alarm severities by creating unique alarm profiles.

Table B-359 Field Descriptions for the Alarm Behavior Tab

Field	Description
Alarm Profile	Choose a global alarm profile for the NE from the drop-down list.
Suppress Alarms	If checked, all alarms are suppressed.
Slot Number	Displays the location of the module.
Equipment Type	Displays the type of module in the slot.
Profile	Choose an alarm profile for the slot from the drop-down list.
Suppress Alarms	Indicates whether or not the alarms for a particular card are suppressed. If checked, all alarms are suppressed for the port.

Alarm Conditions

The Conditions Properties pane allows you to view all NE conditions (events with a Not Reported [NR] severity) at the node level. Alarm Conditions Properties pane gives a clear record of changes or events that do not result in alarms.

Note The Alarm Conditions tab is not updated when conditions change; therefore, you must click **Retrieve** to see any changes.

Table B-360 Field Descriptions for the Alarm Conditions Tab

Field	Description
Filter button	Click the **Filter** button to filter the data displayed in the table.
Retrieve button	Click the **Retrieve** button. The Retrieve button requests the current set of fault conditions from the node, card, or network. Conditions include all fault conditions raised on the node, whether or not they are reported. The time stamp of the condition request is also reported next to the **Retrieve** button.
Perceived Severity	Perceived severity of the selected alarm (critical, major, minor, or warning). The background color also indicates the severity, where: • Red = Critical • Orange = Major • Yellow = Minor • Blue = Warning • Green = Cleared
Probable Cause	Probable cause of the selected alarm. Some possible values include: • Not Applicable/Unknown—If no additional information is available • Mismatch of equipment and attributes (MEA) alarm—For misconfigured pluggable port modules (PPMs) • Link Layer Keep-Alive Failure—When the keep alive frame on the POS port is disabled and the port is shut down • Bad Packet Count Exceeds Threshold—When the packets through the front port have CRC errored frames • Auto-Negotiation Remote Failure Indication—When a remote Gigabit Ethernet port is shut down from a local port
Condition	Error message or condition name that is associated with the alarm or event.
Affected Object	Name of the object where the selected alarm occurred.
Module Name	Name of the module where the selected alarm occurred.
Physical Location	Physical location of the equipment where the selected alarm occurred, such as chassis, rack, subrack (shelf), slot, and port numbers.
NE Alarm Time	Date and time when the alarm occurred on the NE.
Service Affecting	Whether the alarm or event is service affecting (SA). Values are: • True—The alarm is service affecting • False—The alarm is not service affecting

XC Utilization

The XC Utilization Properties pane allows you to view a summary of the percentage of XTC cross-connect resources used by circuits that traverse or terminate at an ONS 15454 SDH.

Table B-361 Field Descriptions for the XC Utilization Properties Pane

Field	Description
Low Order Payload Type	Indicates the payload type of the cross-connect card in the NE. This field is not editable unless the NE contains an XCVXC card. If the NE contains an XCVXC card, you can specify the payload type as VC11, VC12, or mixed mode (a combination of VC11 and VC12).
Summary	
VC-4 Matrix	Provides the percentage of the XTC cross-connect VC-4 path resources that are used.
TUG3 Matrix Ports	Provides the percentage of the XTC cross-connect TUG3 matrix ports that are used.
TUG3 Matrix	Provides the percentage of the TUG3 matrix resources that are used.
VC12 Matrix Ports	Provides the percentage of the XTC cross-connect VC12 matrix ports that are used.
VC12 Matrix	Provides the percentage of the VC12 matrix resources that are used.
VC11 Matrix Ports	Provides the percentage of the XTC cross-connect VC11 matrix ports that are used.
VC11 Matrix	Provides the percentage of the VC11 matrix resources that are used.

MS-SPRing

The MS-SPRing Properties pane allows you to view MS-SPRing information and create new MS-SPRings. MS-SPRings share the ring bandwidth equally between working and protection traffic. Half of the payload bandwidth is reserved for protection in each direction, making the communication pipe half-full under normal operation. Click **Create** to create a new MS-SPRing; click **Delete** to delete an existing MS-SPRing; click **Ring Map** to open the Ring Map; click **Squelch Table** to open the Squelch table.

Table B-362 Field Descriptions for the MS-SPRing Properties Pane

Field	Description
Fiber Type	Indicates whether the fiber type is 2-fiber or 4-fiber.
Rate	Select the MS-SPRing rate.
Ring Name	Assign a six-digit alphanumeric ring name. Nodes in the same MS-SPRing must have the same ring name.
Node ID	Assign a node ID. The node ID identifies the node to the MS-SPRing. Nodes in the same MS-SPRing must have unique node IDs.
Ring Reversion	Set the amount of time that will pass before the traffic reverts to the original working path. The Cisco default is 5 minutes. All nodes in an MS-SPRing should have the same ring reversion setting, particularly if *never* (nonrevertive) is selected.
Span Reversion	Set the amount of time to pass before the span reverts to the working path.
East Line	Assign the east MS-SPRing port.
East Switch	Displays a list of switch commands for the east port.

Table B-362 Field Descriptions for the MS-SPRing Properties Pane (continued)

Field	Description
West Line	Assign the west MS-SPRing port.
West Switch	Displays a list of switch commands for the west port.
East Protect	For 4-fiber MS-SPRings, assign the east MS-SPRing protect port.
West Protect	For 4-fiber MS-SPRings, assign the west MS-SPRing protect port.

DWDM

The DWDM Properties pane allows you to manage and provision DWDM connections. The Properties pane contains the following tabs:

- Provisioning Tab, page B-267
- Connections Tab, page B-269
- Port Status Tab, page B-269
- Span Check Tab, page B-270
- APC Tab, page B-270
- Side Power Monitoring Tab, page B-271
- Node Setup Tab, page B-272
- Side Tab, page B-273
- All Facilities Tab, page B-273
- Passive Cards Tab, page B-273
- Alien Wavelength Tab, page B-274
- Fiber Attribute Tab, page B-274

Provisioning Tab

The Provisioning tab allows you to view, export, and import a Cisco MetroPlanner configuration file into the DWDM node to configure the node automatically for ONS 15454 SDH NEs R6.*x* and earlier. It also allows you to provision card and ANS parameters using the Automatic Node Setup wizard for ONS 15454 SDH NEs R7.0 and later. See Configuring Automatic Node Setup, page 7-339 for more information.

Table B-363 Field Descriptions for the Provisioning Tab

Field	Description
Attribute Name	Displays the Properties pane name that is imported from or exported to the Cisco MetroPlanner configuration file.
Value	Displays the default value of the corresponding Properties pane name imported from or exported to the Cisco MetroPlanner configuration file.

Table B-363 Field Descriptions for the Provisioning Tab (continued)

Field	Description
Origin (*Available in ONS 15454 SDH R8.0 and later*)	Shows how the parameter is set. Possible values are: • Default • Automatic • Provisioned • Imported
Note (*Available in ONS 15454 SDH R8.0 and later*)	Displays error details if ANS fails to set the parameter. Possible errors are: • Error during NE board navigation; value is not calculated • Cannot send the parameter request to far-end node; value is not calculated • No response from far-end node; value is not calculated • Configuration is not supported; value is not calculated • Far-end node configuration is not supported; value is not calculated • OSC far-end launch power is not available; value is not calculated • Far-end launch power is not available; value is not calculated • Span loss value is not available; value is not calculated • Fiber stage insertion loss is not available; value is not calculated • Preamplifier tilt is not available; value is not calculated • Add/drop output power is not available; value is not calculated • NE node launch power is not available; value is not calculated • WXC degree is not available; value is not calculated • Value is out of range • Read-only attribute; value is not calculated

Connections Tab

The Connections tab allows you to create or delete DWDM connections or internal patchcords. It also allows you to calculate DWDM connections.

Table B-364 Field Descriptions for the Connections Tab

Field	Description
Create button	Create a DWDM connection or an internal patchcord. See Calculating DWDM Connections—ONS 15454 SONET and ONS 15454 SDH R7.2 and Earlier, page 7-330 or Creating Internal Patchcords—ONS 15454 SONET and ONS 15454 SDH R8.0 and Later, page 7-331 for more information.
Delete button	Delete a DWDM connection or an internal patchcord. See Deleting DWDM Connections or Internal Patchcords, page 7-333 for more information.
Calculate Connections button	Verify if the DWDM connection matches the connections on the DWDM design plan. See Calculating DWDM Connections—ONS 15454 SONET and ONS 15454 SDH R7.2 and Earlier, page 7-330 for more information. It also automatically creates an internal patchcord based on the card provisioned on the node. See Calculating Internal Patchcord Connections—ONS 15454 SONET and ONS 15454 SDH R8.0 and R9.0, page 7-330 for more information.
ONS 15454 SDH R7.2 and Earlier	
Slot-From	The slot from which the DWDM connection originates.
Unit-From	The unit from which the DWDM connection originates.
Port-From	The port from which the DWDM connection originates.
Slot-To	The slot at which the DWDM connection terminates.
Unit-To	The unit at which the DWDM connection terminates.
Port-To	The port at which the DWDM connection terminates.
State	The state of the DWDM connection.
ONS 15454 SDH R8.0 and Later	
From	The unit or port from which the internal patchcord originates.
To	The unit or port at which the internal patchcord terminates.
Wavelength	Shows the wavelength value if the internal patchcord is between two channel ports. Otherwise, it shows *N/A*.

Port Status Tab

The Port Status tab allows you to view port status and launch automatic node setup (ANS) for the selected port. Click the **Update** button to view the port status of all newly added cards.

This tab applies only to NE releases earlier than NE release 9.2.

Table B-365 Field Descriptions for the Port Status Tab

Field	Description
Launch ANS button	Launches the ANS function for the selected port. ANS adjusts the variable optical attenuators (VOAs) on the different channel paths to equalize the amplifier per-channel input power.
Slot ID (*available in CTM R7.2 and earlier*)	Lists the ONS node slot where the DWDM card is installed.

Table B-365 Field Descriptions for the Port Status Tab (continued)

Field	Description
Card (*available in CTM R7.2 and earlier*)	Describes the card that is installed in the slot.
Port	Displays the card port.
Link Status	Displays the status of the link. Possible values are: • Success - Changed—The calculated setpoint was changed. • Success - Unchanged—The calculated setpoint was not changed. • Fail - Out of Range—The calculated setpoint is outside the range for that parameter. • Fail - Port in IS State—The setpoint cannot be applied because the port has an IS-NR service state. • Not Applicable—The setpoint does not apply to the node.
Parameter	The parameter name.

Span Check Tab

The Span Check tab allows you to check the span loss between the selected node and the previous node in the chain. The span check is always in reception.

Note If the Measured Span Loss value crosses the Min or Max Expected Span Loss threshold, a condition is raised.

Table B-366 Field Descriptions for the Span Check Tab

Field	Description
Retrieve Span Loss Values button	Runs the span loss verification function and retrieves values for the measured span loss column.
Side	Specifies the side for which span loss information is displayed (east-to-west or west-to-east).
Min Exp. Span Loss	Specifies the minimum expected span loss (in dBm) for the incoming span. This value is imported from MetroPlanner, but can be modified manually.
Max Exp. Span Loss	Specifies the maximum expected span loss (in dBm) for the incoming span.
Meas. Span Loss	The measured span loss value.
Resolution	The resolution or accuracy of the span loss measurement.

APC Tab

The APC tab allows you to manually run the automatic power control (APC) function, disable and enable APC, and view the date and time the power control setpoint was last checked and modified.

Table B-367 Field Descriptions for the APC Tab

Field	Description
Disable APC button (*available in CTM R7.2 and earlier*)	Disables the automatic power control function. **Caution** Disabling APC should be performed only for specific maintenance actions. When APC is disabled, aging compensation calculations are not performed and circuits cannot be activated.
Run APC button (*available in CTM R7.2 and earlier*)	Runs the automatic power control function manually.
Slot ID (*available in CTM R7.2 and earlier*)	The slot number for power control information and actions.
Card (*available in CTM R7.2 and earlier*)	The card type that is installed in the slot.
Port	The port number.
Last Modification	Date and time the power control setpoint was last modified.
Param (*available in CTM R8.0 and later*)	All the parameters associated with the ports.
Last Check	Date and time the power control setpoint was last verified.
Side (*available in CTM R8.0 and later*)	Lists all the NEs and their sides that belong to the APC domain.
APC State (*available in CTM R8.0 and later*)	Displays the actual state of the APC. Values are: • Enabled—APC is enabled. • Disabled—APC is disabled. • Force Disabled—APC is disabled by the user. • Not Applicable—APC domain is incomplete.

Side Power Monitoring Tab

The Side Power Monitoring tab allows you to view bar charts of the input and output spectrum on each optical side of the node.

When you place the mouse over each wavelength in the bar chart, the power level and wavelength type are displayed. This feature is available on nodes that are installed with cards with Optical Channel Monitoring (OCM) capability.

Table B-368 Field Descriptions for the Side Power Monitoring Tab

Field	Descriptions
Bar Chart	Displays power monitoring information. The Side Power Monitoring panel is divided into Optical Side X subtabs, where X is the optical side. The number of subtabs is equal to the number of optical sides in the node. Each subtab displays two bar graphs. The IN bar graph displays the optical spectrum at the input port (LINE-RX) of the side in the direction from the fiber to the node provided the OCM functionality is available on this port else the graph displays the aggregate signal spectral distribution on the first port in the signal flow (indicated in the title of the bar chart) that is downstream of the LINE-RX port where an OCM measurement is available (For example, in node using a booster and SMR card, the measurement is done on the EXP port of the SMR card). The OUT bar graph displays the optical spectrum at the output port (LINE-TX) of the side in the direction from the node to the fiber provided the OCM functionality is available on this port else the graph displays the aggregate signal spectral distribution on the first port (indicated in the title of the bar chart) that is upstream of the LINE-TX port where an OCM measurement is available. **Note** Depending on the side layout, the LINE-TX port (output) and the LINE-RX port (input) of the card facing the fiber cannot measure the optical spectrum in a reliable manner if the OCM functionality is not available on these ports. When you place the mouse over each wavelength in the bar chart, the power level and the wavelength type (local ADD/DROP or EXPRESS) are displayed as a tooltip. • IN graph: The tooltip displays the destination side of each wavelength. The wavelength is either dropped locally or expressed to another side. • OUT graph: The tooltip displays the source side of each wavelength. The wavelength is either added locally or expressed from another side.
Tooltip Data	You can select or deselect the tooltip check boxes and the corresponding information is displayed in the tooltip. The tooltip check boxes control the tooltip information for both charts in this tab. Each Optical Side X subtab has these check boxes to control the chart tooltip for its own subtab. The options are: • Power • Lambda • Side • Channel

Node Setup Tab

The Node Setup tab allows you to automatically preprovision NEs.

Table B-369 Field Descriptions for the Node Setup Tab

Field	Description
XML Settings	
Select XML File	Click **Browse** to select an XML file (generated by the MetroPlanner application). Prime Optical parses the XML file selected by the operator and checks the accuracy of its content.

Table B-369 Field Descriptions for the Node Setup Tab (continued)

Field	Description
Log Settings	
Select Log File	Click **Browse** to select a log file to which the results of the operations you perform will be saved.
Launch ANS Wizard button	Click the **Launch Wizard** button to launch the Automatic Node Setup wizard. See Configuring Automatic Node Setup, page 7-339 for more information.

Side Tab

The Side tab allows you to view, edit, and delete sides defined for an ONS 15454 SDH NE.

Table B-370 Field Descriptions for the Side Tab

Field	Description
Create button	Allows you to create side objects for the NE.
Modify button	Allows you to modify the side ID of an existing side object.
Delete button	Allows you to delete side objects.
Side	Displays the NE's side ID.
Line In	Displays the index of the receive side of the OTS port.
Line Out	Displays the index of the transmit side of the OTS port.

All Facilities Tab

The All Facilities tab allows you to view the DWDM and optical ports for the ONS 15454 SDH NE.

Table B-371 Field Descriptions for the All Facilities Tab

Field	Description
Port	Displays the card port number, shelf ID, and slot number. **Note** Shelf ID is not included in the port number if the node is not a multishelf NE.
Power	Displays the current power for the port.
State	Displays the administrative state of the port.
Service State	Displays the service state of the port.
Retain Selected button	Displays only the ports that you selected.
Show All button	Retrieves and displays all the optical and DWDM ports for the NE.

Passive Cards Tab

The Passive Cards tab allows you to view information about passive units provisioned in CTC.

Note Passive units can be provisioned in CTC only.

Table B-372 Field Descriptions for the Passive Cards Tab

Field	Description
Passive Cards	
ID	Displays the passive card shelf ID.
Equipment Name	Displays the general card type/name.
Location	Displays the location of the passive card.
Description	Displays the passive card description.
Optical Ports	
Port	Displays the port number.
Type	Displays the port type.
MPO	Displays any physical multifiber push connectors.
Wavelength	Displays the port wavelength.

Alien Wavelength Tab

The Alien Wavelength tab allows you to view and edit the port and wavelength parameters defined for an ONS 15454 SDH NE. Click the **Refresh** button to refresh the Alien Wavelength table.

Note Alien Wavelength is applicable to ONS 15454 NEs that support WSON nodes.

Table B-373 Field Descriptions for the Alien Wavelength Tab

Field	Description
Filter button	Click the **Filter** button to filter the data displayed in the table.
Create button	Allows you to create alien wavelengths for the NE. See Creating Alien Wavelength, page 7-343 for more information.
Edit button	Allows you to modify the existing alien wavelength value. See Editing Alien Wavelength, page 7-344 for more information.
Position	Displays information about the shelf, slot, and port on which the alien wavelength is configured.
Alien Wavelength	Displays the alien wavelength class.
Lambda	Displays the alien wavelength value.
FEC	Displays the FEC mode.

Fiber Attribute Tab

The Fiber Attribute tab allows you to view the fiber parameters defined for an ONS 15454 SDH NE.

Note Fiber Attribute is applicable to ONS 15454 NEs that support WSON node.

Table B-374 Field Descriptions for the Fiber Attribute Tab

Field	Description
Filter button	Click the **Filter** button to filter the data displayed in the table.
Toggle button	Click the **Toggle** button to select the unit of measure.
Optical Side	Displays the name of the optical side to which the fiber is connected
Fiber Type	Choose the fiber type from the drop-down list.
Fiber Number	Displays the number of the fiber associated to the optical side. Useful when different types of fiber are present on the span.
Fiber Length	Allows you to edit the fiber length.

WSON Tab

The WSON tab allows you to view and acknowledge the unverified alarms at the circuit level.

Table B-375 Field Descriptions for the WSON Tab

Field	Description
Filter button	Click the **Filter** button to filter the data displayed in the table.
Acknowledge WSON Alarm button	Click the **Acknowledge WSON Alarm** button to acknowledge a WSON alarm.
Affected Circuits button	Click the **Affected Circuits** button to view the affected circuits. If there are circuits affected by the selected alarm, the new circuit report is displayed. See Working with Circuit Reports, page 7-186 for more information. **Note** The Affected Circuits button is enabled only when an alarm condition is selected.
ID	Displays the ID of the NE from the Domain Explorer.
PS	Perceived severity of the selected alarm (critical, major, minor, or warning). The background color also indicates the severity, where: • Red = Critical • Orange = Major • Yellow = Minor • Blue = Warning • Green = Cleared
Probable Cause	Probable cause of the selected alarm. Some possible values include: • Not Applicable/Unknown—If no additional information is available • Mismatch of equipment and attributes (MEA) alarm—For misconfigured pluggable port modules (PPMs) • Link Layer Keep-Alive Failure—When the keepalive frame on the POS port is disabled and the port is shut down • Bad Packet Count Exceeds Threshold—When the packets through the front port have CRC errored frames • Auto-Negotiation Remote Failure Indication—When a remote Gigabit Ethernet port is shut down from a local port

Table B-375 Field Descriptions for the WSON Tab (continued)

Field	Description
Condition	Error message or condition name that is associated with the alarm or event.
Affected Object	Name of the object where the selected alarm occurred.
Module Name	Name of the module where the selected alarm occurred.
Physical Location	Physical location of the equipment where the selected alarm occurred, such as chassis, rack, subrack (shelf), slot, and port numbers.
NE Alarm Time	Date and time when the alarm occurred on the NE.
SA	Whether the alarm or event is service affecting (SA). Values are: • Yes—The alarm is service affecting • No—The alarm is not service affecting • N/A—No information is provided by the NE

OSI

The OSI Properties pane allows you to provision ONS 15454 SDH Open System Interconnection (OSI) parameters. The Properties pane contains the following tabs:

- Main Setup Tab, page B-276
- TARP-Config Tab, page B-277
- TARP-TDC Tab, page B-278
- TARP-MAT Tab, page B-279
- Routers-Setup Tab, page B-279
- Subnets Tab, page B-279
- Tunnels Tab, page B-280
- IS-IS RIB Tab, page B-281
- ES-IS RIB Tab, page B-281

Main Setup Tab

The Main Setup tab allows you to provision the OSI Network Entity Title (NET) address and the OSI routing mode.

Table B-376 Field Descriptions for the Main Setup Tab

Field	Description
Main Network Entity Title	Displays the node NET. The NET is used in OSI networks to identify the node to the end system (ES) or intermediate system (IS).
End System	Provisions the node as an OSI end system (ES). ESs send end system hello (ESH) messages regularly to announce their presence to neighboring ISs and ESs.
Intermediate System Level 1	Provisions the node as an OSI intermediate system (IS). ISs send intermediate system hello (ISH) messages regularly to announce their presence to neighboring ISs and ESs. For the ONS 15454 SDH, Intermediate System Level 1 is the Cisco default.

Table B-376 Field Descriptions for the Main Setup Tab (continued)

Field	Description
Intermediate System Level 1/Level 2	The ONS 15454 SDH performs all IS functions. It communicates with other IS and ES nodes within an OSI area and broadcasts ISHs to IS nodes in other areas to which it is connected.
Node Routing Mode	
L1 LSP Buffer Size	Sets the Level 1 Link State Protocol (LSP) data unit buffer size. The Cisco default is 512.
L2 LSP Buffer Size	Sets the Level 2 LSP data unit buffer size. The Cisco default is 512.

TARP-Config Tab

The TARP-Config tab allows you to provision the TID Address Resolution Protocol (TARP). TARP is used when TL1 TIDs must be translated to an NSAP address. During the TID-to-NSAP translation, the TID is mapped to a NET; then, the NSAP is derived from the NET based on the NSAP selector value.

Table B-377 Field Descriptions for the TARP-Config Tab

Field	Description
TARP PDUs L1 Propagation	If checked (default), TARP Type 1 PDUs received by the node that are not excluded by the loop detection buffer are propagated to other NEs within the OSI Level 1 area. Type 1 PDUs request a protocol address that matches a target TID within a Level 1 routing area. The propagation does not occur if the NE is the target of the Type 1 PDU and the PDUs are not propagated to the NE from which the PDU was received. **Note** This parameter is not used when the node is set to End System.
TARP PDUs L2 Propagation	If checked (default), TARP Type 2 PDUs received by the node that are not excluded by the loop detection buffer are propagated to other NEs within the OSI Level 2 area. Type 2 PDUs request a protocol address that matches a target TID within a Level 2 routing area. The propagation occurs if the NE is the target of the Type 2 PDU and the PDUs are not propagated to the NE from which the PDU was received.
TARP PDUs Origination	If checked (default), the node performs all TARP configuration functions, including: • TID-to-NSAP resolution requests • NSAP-to-TID requests • TARP address changes **Note** TARP Echo and NSAP to TID are not supported.
L1 TARP Data Cache	If checked, the node maintains a TARP data cache (TDC). The TDC is a database of TID-to-NSAP pairs created from TARP Type 3 PDUs received by the node. TARP Type 3 PDUs are responses to Type 1 and Type 2 PDUs and modified by TARP Type 4 PDUs (TID-to-NSAP updates or corrections).
L2 TARP Data Cache	If checked (default), the TIDs and NSAPs are added to the TDC before the node propagates the requests to other NEs. **Note** This parameter is designed for IS Level 1/Level 2 nodes that are connected to other IS Level 1/Level 2 nodes. Enabling the parameter for IS Level 1 nodes is not recommended.
LDB	If checked, enables the TARP loop detection buffer (LDB). The LDB prevents TARP PDUs from being sent more than once on the same subnet.

Table B-377 Field Descriptions for the TARP-Config Tab (continued)

Field	Description
LAN TARP Storm Suppression	If checked (default), enables the TARP storm suppression to prevent redundant TARP PDUs from being propagated across the network.
Send Type 4 PDU on Startup	If checked, a TARP Type 4 PDU is originated during the initial ONS 15454 SDH startup. Type 4 PDUs indicate that a TID or NSAP change has occurred at the NE. This option is disabled by default.
Type 4 PDU Delay	Sets the amount of time that will pass before the Type 4 PDU is generated. The Cisco default value is 60 seconds; the range is from 0 to 255 seconds.
Timers	
LDB Entry	Sets the TARP LDB timer. The LDB buffer time is assigned to each LDB entry for which the TARP sequence number is zero. The Cisco default is 5 minutes; the range is from 1 to 10 minutes.
LDB Flush	Sets the frequency period for flushing the LDB. The Cisco default is 5 minutes; the range is from 0 to 1440 minutes.
T1 Timer	Sets the amount of time to wait for response to a Type 1 Request PDU. Type 1 requests seek a specific NE TID within an OSI Level 1 area. The Cisco default is 15 seconds; the range is from 0 to 3600 seconds.
T2 Timer	Sets the amount of time to wait for a Type 2 Request PDU. TARP Type 2 requests seek a specific NE TID within an OSI Level 1 area. The Cisco default is 25 seconds; the range is from 0 to 3600 seconds.
T3 Timer	Sets the amount of time to wait for an address resolution request. The Cisco default is 40 seconds; the range is from 0 to 3600 seconds.
T4 Timer	Sets the amount of time to wait for an error recovery. The timer begins after the T2 timer expires without successfully finding the NE TID. The Cisco default is 20 seconds; the range is from 0 to 3600 seconds.

TARP-TDC Tab

Table B-378 Field Descriptions for the TARP-TDC Tab

Field	Description
TID	Target ID that is statistically linked to an NSAP or NET. For ONS nodes, the TID is the node name.
NSAP/NET	The NSAP that is statistically linked to the TID.
Type	Indicates how the TARP data cache entry was created. It can be either: • Dynamic—The entry was created through the TARP propagation process. • Static—The entry was manually created and is a static entry.
Add Static Entry button	Click **Add Static Entry** to statically link a TID to an NSAP or NET.
Delete Selected Entry button	Click **Delete Selected Entry** to delete the selected TID-to-NSAP/NET static entry.
TID to NSAP button	Click **TID to NSAP** to query the network for an NSAP that matches a TID.
Flush Dynamic Entries button	Click **Flush Dynamic Entries** to delete all dynamically generated TDC entries.

TARP-MAT Tab

The TARP-MAT tab allows you to manually provision a TARP adjacency.

Table B-379 Field Descriptions for the TARP-MAT Tab

Field	Description
Level	Sets the TARP Type Code that will be sent. • Level 1—Indicates that the manual area adjacency is within the same area as the node. The entry generates Type 1 PDUs. • Level 2—Indicates that the manual area adjacency is in an area different from that of the node. The entry generates Type 2 PDUs.
NSAP	The NSAP address of the node at the other end of the TARP manual adjacency.
Add button	Click **Add** to create a TARP manual area adjacency.
Remove button	Click **Remove** to delete the selected TID-to-NSAP/NET static entry.

Routers-Setup Tab

Table B-380 Field Descriptions for the Routers-Setup Tab

Field	Description
Router Number	Displays the virtual router number. The ONS 15454 SDH provides three virtual routers, numbered 1 through 3.
System ID	Displays the NSAP system ID of the virtual router. The NSAP system identifier is set to the node's first IEEE 802.3 MAC address + *n*, where *n* = 0 through 2. For the primary router (Router 1), *n* = 0.
Status	Indicates the virtual router status. Select Enabled or Disabled from the drop-down list. **Note** Router 1 must be enabled before additional routers can be enabled.
Primary Area Address	Indicates the primary manual area address. For Router 1, this is the main NET for the node; that is, the NSAP without the system ID and selector (set to 00) fields.
Manual Area Address 1	Indicates the address of any additional manual areas that are created. **Note** An OSI area allows up to two additional manual areas in addition to the primary manual area.
Manual Area Address 2	Indicates the address of any additional manual areas that are created. **Note** An OSI area allows up to two additional manual areas in addition to the primary manual area.

Subnets Tab

The Subnets tab allows you to view and manage OSI subnetwork point-of-attachment parameters. The parameters are initially provisioned when you enable a subnet on an SDCC, LDCC, GCC, OSC, or LAN interface.

Table B-381 Field Descriptions for the Subnets Tab

Field	Description
Slot/Port	The subnet slot and port.
Router Number	The OSI virtual router where the subnet (SDCC, LDCC, GCC, or OSC) is provisioned.

Table B-381 Field Descriptions for the Subnets Tab (continued)

Field	Description
Type	The interface where the subnet is provisioned: SDCC, LDCC, GCC, OSC, or LAN.
Protocol	The data link protocol that is provisioned for the subnet. It can be: • Point to Point Protocol (PPP) • Link Access Protocol on the D channel (LAP-D) • 802.3 for LAN subnets
ISH	The intermediate system hello (ISH) PDU propagation frequency. Intermediate system NEs send ISHs to other ESs and ISs to inform them about the NETs they serve. The Cisco default is 10 seconds; the range is from 10 to 1000 seconds.
ESH	The end system hello (ESH) PDU propagation frequency. End system NEs transmit ESHs to inform other ESs and ISs about the NSAPs they serve. The Cisco default is 10 seconds; the range is from 10 to 1000 seconds.
IIH	The intermediate system-to-intermediate system hello (IIH) PDU propagation frequency. The IS-IS hello PDUs establish and maintain adjacencies between ISs. The Cisco default is 3 seconds; the range is from 1 to 600 seconds.
DIS Priority	The designated intermediate system (DIS) priority. In IS-IS networks, one router is elected as the DIS. For Cisco routers, the DIS priority is 64. For the ONS 15454 LAN subnet, the default DIS priority is 63. This priority should not be changed.
IS-IS Cost	The cost for sending packets on the subnet. This is used by OSPF routers to calculate the shortest path. The Cisco default value is 20.
Enable LAN Subnet button	*Router 1 only.* Enables OSI over the LAN; that is, it activates the IS-IS protocol on the LAN so OSI traffic is enabled on the LAN.
Edit button	Click **Edit** to modify the subnet parameters.
Disable LAN Subnet button	*Router 1 only.* Disables OSI over the LAN if it has been enabled.

Tunnels Tab

The Tunnels tab allows you to view, create, edit, and delete Generic Routing Encapsulation (GRE) and Cisco tunnels. GRE tunnels encapsulate one network protocol for transfer across another network layer. Within a mixed TCP/IP and OSI network, GRE tunnels tunnel IP traffic over an OSI NE and OSI traffic over an IP NE.

Table B-382 Field Descriptions for the Tunnels Tab

Field	Description
IP Address	Displays the IP address of the GRE destination Prime Optical or CTC computer.
Netmask Address	Displays the IP address subnet mask of the destination Prime Optical or CTC computer.
NSAP Address	The destination NE NSAP address. The NSAP selector (last two NSAP characters) must be 2f (GRE tunnel) or cc (proprietary Cisco tunnel), depending on which tunnel type you want to create. The Cisco proprietary tunnel is slightly more efficient than the GRE tunnel because it does not add an encapsulation header for each IP packet, while the GRE tunnel adds a small header to the packets. The two tunnel types are incompatible. **Note** Most Cisco routers support the Cisco tunnel, while only a few support both GRE and Cisco IP tunnels.

Table B-382 Field Descriptions for the Tunnels Tab (continued)

Field	Description
OSPF Metric	Displays the cost for sending packets across the GRE tunnel. Cost is used by OSPF routers to calculate the shortest path.
Create button	Click **Create** to create a new GRE tunnel route.
Edit button	Click **Edit** to edit an existing GRE tunnel.
Delete button	Click **Delete** to delete an existing GRE tunnel.

IS-IS RIB Tab

The IS-IS RIB tab allows you to view the intermediate system-to-intermediate system (IS-IS) protocol routing information base (RIB). IS-IS is an OSI link-state hierarchical routing protocol that floods the network with link-state information that enables the NEs to build a complete and consistent picture of a network topology.

Table B-383 Field Descriptions for the IS-IS RIB Tab

Field	Description
Router Number	Displays the OSI router number. The ONS 15454 SDH provides three virtual routers, numbered 1 through 3.
Subnet Type	Indicates the OSI subnetwork point-of-attachment type used to access the destination address. It includes SDCC, LDCC, GCC, OSC, and LAN.
Destination Address	Displays the Network Service Access Point (NSAP).
MAC Address	Displays the NE's MAC address for destinations that are accessed by the LAN subnets.

ES-IS RIB Tab

The ES-IS RIB tab allows you to view the end system-to-intermediate system (ES-IS) protocol RIB. ES-IS is an OSI protocol that defines how end systems (hosts) and intermediate systems (routers) learn about each other.

Table B-384 Field Descriptions for the ES-IS RIB Tab

Field	Description
Router Number	Displays the OSI router number. The ONS 15454 SDH provides three virtual routers, numbered 1 through 3.
Subnet Type	Indicates the OSI subnetwork point-of-attachment type used to access the destination address. It includes SDCC, LDCC, GCC, OSC, and LAN.
Destination Address	Displays the NSAP of the destination ES.
MAC Address	Displays the NE's MAC address for destinations that are accessed by the LAN subnets.

Note See Table 1-22 on page 1-47 for descriptions of actions that you can perform using the buttons at the bottom of the window.

ONS 15454-M6 NE Explorer

When you choose **Configuration > NE Explorer** for the ONS 15454 MSTP, the window that Prime Optical displays consists of a tree on the left side and a properties pane on the right. The tree provides a hierarchical view and alarm status of the NE's physical shelves and slots. The properties pane shows information about the selected entity. See Node Properties Pane—ONS 15454-M6, page B-283 for more information.

Note Refer to the Cisco ONS 15454 SONET, SDH, and DWDM components' installation documents for precautions, guidelines, and procedures for converting single-shelf NEs to multishelf NEs. Incorrect procedures for converting single-shelf NEs to multishelf NEs can result in nodes not being properly discovered and managed by Prime Optical.

Caution If a shelf is added to a node that is managed by Prime Optical, force a Refresh from NE operation to correctly update the node inventory. Inconsistencies in the node inventory can occur if the operation is not performed. Those inconsistencies are reflected in all Prime Optical user interfaces, including the gateways.

Node Properties Pane—ONS 15454-M6

The node properties pane displays information about the ONS 15454-M6 NE. The properties pane contains the following tabs, some of which apply only to a specific NE version:

- Shelf View, page B-283
- General, page B-283
- Network, page B-285
- DCC/GCC/OSC, page B-293
- Timing, page B-295
- Protection, page B-298
- NE Defaults, page B-300
- Security, page B-300
- Alarm, page B-305
- Alarm Conditions, page B-306
- DWDM, page B-307
- OSI, page B-314
- ECU Ports Alarms Suppression, page B-319
- Alarm Extenders, page B-320

Shelf View

The Shelf View Properties pane displays a graphic of the ONS 15454-M6 that is selected in the NE Explorer tree. Moving the mouse pointer over the NE, its shelves, slots, or cards displays the current alarms for the highlighted item. You can also see the alarm status of two power supplies on the Shelf View in the NE Explorer. Alarm status either displays the location, that is BAT_A or BAT_B, or the severity.

Double-clicking a slot or card displays the slot or card in the properties pane. The right-click menu allows you to reset, delete, or change the card. For unprovisioned slots, the right-click menu allows you to add a card.

General

The General Properties pane displays identification information, voltage thresholds, and multishelf configurations for the ONS 15454-M6 NE.

Table B-385 Field Descriptions for the General Properties Pane

Field	Description
Identification Tab	
NE ID	Displays the ID of the NE from the Domain Explorer.
NE Model	Displays the NE model type.
Software Version	Displays the current running version of the system software.
Contact	Displays the name of the node contact person and the phone number.

Table B-385 Field Descriptions for the General Properties Pane (continued)

Field	Description
Description	Enter a description of the NE.
System Description	Displays the NE type and the version of the system software.
SNTP Settings	
Use NTP/SNTP Server	If checked, CTC uses an SNTP server to set the date and time of the node. Using an SNTP server ensures that all ONS 15454-M6 network nodes use the same date and time reference. The server synchronizes the node's time after power outages or software upgrades. If you check the **Use NTP/SNTP Server** check box, enter the server's IP address in the next field. If you do not use an SNTP server, complete the Time and Time Zone fields. The ONS 15454-M6 will use these fields for alarm dates and times.
SNTP Server	Displays the SNTP server IP address.
Location	
Latitude	Allows you to set the latitude of the NE. Select **North** or **South** from the drop-down list; then, enter the degrees and minutes (or click the up and down arrows to increase or decrease each by 1 unit).
Longitude	Allows you to set the longitude of the NE. Select **East** or **West** from the drop-down list; then, enter the degrees and minutes (or click the up and down arrows to increase or decrease each by 1 unit).
Date and Time	
Time	Displays the NE date and time.
Time Zone	Displays the time zone where the NE is located.
Use Daylight Savings Time	If checked, Daylight Savings Time is observed.
APC State	
Side	Lists all the NEs and their sides that belong to the automatic power control (APC) domain.
APC State	Displays the actual state of the APC. Values are: • Enabled—APC is enabled. • Disabled—APC is disabled. • Force Disabled—APC is disabled by the user. • Not Applicable—APC domain is incomplete.
Power Monitor Tab	
Voltage Thresholds	
ELWBATVG	Allows you to set the monitor value for extreme low battery voltage (ELWBATVG) in volts direct current (VDC).
LWBATVG	Allows you to set the monitor value for low battery voltage (LWBATVG) in VDC.
HIBATVG	Allows you to set the monitor value for high battery voltage (HIBATVG) in VDC.
EHIBATVG	Allows you to set the monitor value for extreme high battery voltage (EHIBATVG) in VDC.
Current Voltage Environment	Shows the current voltage environment.
Multishelf Config Tab	

Table B-385 Field Descriptions for the General Properties Pane (continued)

Field	Description
Shelf Role	Specify the configuration for multishelf NEs, where the primary NE is configured to take care of other NEs in the shelf. Select one of the following radio buttons: • Disable Multishelf • Enable as Subtended Shelf • Enable as Node Controller
Shelf ID	Unique number that identifies the shelf. Shelf ID #1 is reserved for the node controller.
LAN Config	Used to specify the LAN configuration that is used for the multishelf NE. A change in this attribute forces an automatic TNC/TSC reboot.
Public VLAN ID	*Display only*. Public VLAN ID is used by the node controller to communicate with the external network.
Internal VLAN ID	*Display only*. Internal VLAN ID is used by the node controller to communicate with the subtending shelves.
Voltage/Temperature Tab	
Voltage A, B, and so on	Displays the voltage (in millivolts) of the shelf that corresponds to the power supply.
Temperature	Displays the temperature (in degrees Celsius) of the shelf.
Cooling Profile	Displays the fan cooling profile. Values are: • High • Medium • Low
Reset	Resets all voltage and temperature values.
Help	Opens context-sensitive help.

Network

The Network Properties pane displays information about the NE network address. The Network Properties pane contains the following tabs:

- Address Tab, page B-286
- Static Routes Tab, page B-286
- OSPF Tab, page B-287
- OSPF Area Range Tab, page B-288
- OSPF Virtual Links Tab, page B-288
- SNMP Tab, page B-289
- Firewall/Proxy Tab, page B-289
- Routing Table Tab, page B-290
- RIP Routing Table Tab, page B-290
- RIP Tab, page B-290
- Proxy Tunnels Tab, page B-291
- Firewall Tunnels Tab, page B-292

- Secure Config Mode Tab, page B-292
- FTP Hosts Tab, page B-292

Address Tab

The Address tab allows you to view and change information about the NE network address.

Table B-386 Field Descriptions for the Address Tab

Field	Description
IP Address	Displays the IP address of the NE.
Default Router	Displays the IP address of the default router.
Subnet Mask	Displays the subnetwork mask ID of the NE.
MAC Address	Displays the ONS 15454-M6 address as it is identified on the IEEE 802 MAC layer.
LCD IP Setting	Allows you to configure the LCD screen. Select from the following values: • Allow Configuration—Enables shelf address changing from the LCD. • Display Only—Prevents users from changing the shelf IP address from the LCD screen. • Suppress Display—Makes the LCD screen blank.
Forward DHCP Requests	If checked, forwards DHCP requests to the IP address entered in the DHCP Server field. When the Forward DHCP Requests check box is unchecked, the DHCP Server field is display-only.
DHCP Server	Displays the IP address of the DHCP server.
IPv6 Config	
Enable IPv6	If checked, allows you to configure the node to use the IPv6 protocol and to assign an IPv6 address to the node.
IPv6 Address	Enter the IPv6 address of the node.
Default IPv6 Router	Enter the IPv6 default router of the node.
IPv6 Subnet Mask	Enter the IPv6 subnetwork mask length.

Static Routes Tab

The Static Routes tab allows you to view information about Prime Optical and ONS 15454-M6 connectivity and create or delete static routes.

Table B-387 Field Descriptions for the Static Routes Tab

Field	Description
Destination IP	Displays the IP address of the computer running Prime Optical.
Subnet Mask	Displays the subnetwork mask.
Next Hop	Displays the IP address of the router port or the node IP address if the Prime Optical computer is connected to the node directly.
Cost	Displays the number of hops between the ONS 15454-M6 and the computer.

OSPF Tab

The OSPF tab displays OSPF information. OSPF is a link-state Internet routing protocol.

Table B-388 Field Descriptions for the OSPF Tab

Field	Description
Slot	Displays the slot number.
Port	Displays the port number.
DCC OSPF Area ID	Displays the number that identifies the ONS 15454-M6 NE as a unique OSPF area. The OSPF area number can be an integer from 0 to 4294967295, and it can take a form similar to an IP address. The number must be unique to the LAN OSPF area.
SDCC Metric	Sets a cost for sending packets across the Section Data Communications Channel (SDCC), which is used by OSPF routers to calculate the shortest path. This value should always be higher than the LAN metric. This value is normally unchanged.
LDCC Metric	Sets a cost for sending packets across the Line Data Communications Channel (LDCC), which is used by OSPF routers to calculate the shortest path. This value should always be higher than the LAN metric. This value is normally unchanged.
OSPF on LAN	
OSPF Active on LAN	If checked, enables the ONS 15454-M6 OSPF topology to be advertised to OSPF routers on the LAN. Enable this field on ONS 15454-M6 SDH NEs that directly connect to OSPF routers.
LAN Port Area ID	Displays the OSPF area ID for the router port where the ONS 15454-M6 is connected. (This number is different from the DCC OSPF area ID.)
Router Priority	Displays the value used for this NE in designated router election. The Cisco default value is zero (0). A router that has Router Priority set to 0 is ineligible to become a designated router on the attached network.
Hello Interval	Displays the number of seconds between OSPF hello packet advertisements sent by OSPF routers. Ten seconds is the Cisco default.
Dead Interval	Displays the number of seconds that will pass while an OSPF router's packets are not visible before its neighbors declare the router down. Forty seconds is the Cisco default.
Transit Delay	Displays the service speed. One second is the Cisco default.
Retransmit Interval	Displays the time that will elapse before a packet is resent. Five seconds is the Cisco default.
LAN Metric	Displays a cost for sending packets across the LAN. This value should always be lower than the DCC metric. Ten is the Cisco default.
OSPF Authentication	
Authentication Type	Displays Simple Password if the router where the ONS 15454-M6 is connected uses authentication. Otherwise, it displays No Authentication.
Authentication Key	Displays the OSPF key (password) if authentication is enabled.
Confirm Authentication Key	Retype the authentication key to confirm it.

OSPF Area Range Tab

The OSPF Area Range tab allows you to view information about OSPF area ranges and create or delete area ranges.

Table B-389 Field Descriptions for the OSPF Area Range Tab

Field	Description
Range Address	Displays the area IP address for the ONS 15454-M6 NEs that reside within the OSPF area. For example, if the ONS 15454-M6 OSPF area includes nodes with IP addresses 10.10.20.100, 10.10.30.150, 10.10.40.200, and 10.10.50.250, the range address would be 10.10.0.0.
Range Area ID	Displays the OSPF area ID for the ONS 15454-M6 NEs. This is either the ID in the DCC OSPF Area ID field or the ID in the LAN Port Area ID field.
Mask Length	Displays the subnet mask length.
Mask	Displays the subnet mask IP address.
Advertise	Indicates whether the OSPF routing table is advertised.

OSPF Virtual Links Tab

The OSPF Virtual Links tab allows you to view information about OSPF virtual links and create or delete virtual links.

Note You cannot create a new virtual link unless OSPF is active on the LAN.

Table B-390 Field Descriptions for the OSPF Virtual Links Tab

Field	Description
Neighbor	Displays the router ID of the Area 0 router.
Transit Delay	Displays the service speed. One second is the Cisco default.
Retransmit Interval	Displays the time that will elapse before a packet is resent. Five seconds is the Cisco default.
Hello Interval	Displays the number of seconds between OSPF hello packet advertisements sent by OSPF routers. Ten seconds is the Cisco default.
Dead Interval	Displays the number of seconds that will pass while the packets of an OSPF router are not visible before its neighbors declare the router down. Forty seconds is the Cisco default.
Authentication Type	Displays the authentication type.
Authentication Key	Displays the authentication key.

SNMP Tab

The SNMP tab allows you to view SNMP information and create or delete SNMP trap destinations.

Table B-391 Field Descriptions for the SNMP Tab

Field	Description
Use Generic MIB	If checked, allows you to transfer traps to a local MIB browser or server.
Engine ID	Displays the unique SNMP node engine ID.
Allow SNMP Set	If checked, allows you to use SNMP management software with the ONS 15454-M6.
Allow SNMP Proxy	If checked, allows you to configure the ONS 15454-M6 to proxy SNMP calls.
IP Address	The IP address of the NMS.
Community Name	The SNMP community name.
UDP Port	The UDP port for SNMP. The Cisco default UDP port is 162.
Trap Version	The trap version, either SNMP version 1 or version 2. See your NMS documentation to determine whether to use SNMP version 1 or version 2.
Relay A IP Address	The first ONS 15454-M6 to relay traps through. The IP address is appended to the base community string to tell the first NE the IP address and the port to forward the trap to. The second NE recognizes the IP address and strips it from the community string before forwarding the trap.
Relay A Community Name	The community name for the relay A node to use in the trap when forwarding it.
Relay B IP Address	The second ONS 15454-M6 to relay traps through.
Relay B Community Name	The community name for the relay B node to use in the trap when forwarding it.
Relay C IP Address	The third ONS 15454-M6 to relay traps through.
Relay C Community Name	The community name for the relay C node to use in the trap when forwarding it.

Firewall/Proxy Tab

The Firewall/Proxy tab allows you to use an NE as a proxy server or as a firewall.

Table B-392 Field Descriptions for the Firewall/Proxy Tab

Field	Description
Gateway Settings	
Enable Proxy Server on Port	If checked, the ONS 15454-M6 serves as a proxy for connections between the Prime Optical server and ONS 15454-M6 that are DCC-connected to the proxy ONS 15454-M6. The Prime Optical server establishes connections to DCC-connected nodes through the proxy node. The Prime Optical server can connect to nodes that it cannot directly reach from the host on which it runs. The proxy server uses port 1080. If checked, the following radio buttons are enabled: • End Network Element (ENE)—Configures the ONS 15454-M6 to proxy as an ENE. Note that an alternate expansion for ENE is *external network element*. • Gateway Network Element (GNE)—Configures the ONS 15454-M6 to proxy as a GNE. • Proxy-only—Configures the ONS 15454-M6 to act as a proxy. If unchecked, the node does not proxy; instead, it acts as a LAN-connected NE (LNE).

Routing Table Tab

The Routing Table tab allows you to view the OSPF routing table.

Table B-393 Field Descriptions for the Routing Table Tab

Field	Description
Destination	Displays the IP address of the destination network or host.
Mask	Displays the subnet mask used to reach the destination network or host.
Gateway	Displays the IP address of the gateway used to reach the destination network or host.
Usage	Shows the number of times the listed route has been used.
Interface	Shows the ONS 15454-M6 interface used to access the destination. Values are: • cpm0—The ONS 15454-M6 Ethernet interface (that is, the RJ-45 jack on the TNC/TSC and the LAN 1 pins on the backplane). • pdcc0—An SDCC interface (that is, an OC-N trunk card identified as the SDCC termination). • lo0—A loopback interface.

RIP Routing Table Tab

The RIP Routing Table tab allows you to view the Routing Information Protocol (RIP) routing table.

Table B-394 Field Descriptions for the RIP Routing Table Tab

Field	Description
Destination	Displays the IP address of the destination network or host.
Mask	Displays the subnet mask used to reach the destination network or host.
Gateway	Displays the IP address of the gateway used to reach the destination network or host.
Cost	Displays the hop count metric. The valid range is from 1 to 15.

RIP Tab

The RIP tab allows you to view and configure the RIP parameters.

Note
- When you enable RIP, you must wait for approximately one minute for the default RIP address summary to become visible.
- When you disable RIP on the NE, all summary address entries in the Summary Address table are deleted.

Table B-395 Field Descriptions for the RIP Tab

Field	Description
RIP Active	Check this check box to enable RIP. Uncheck it to disable RIP. **Note** Checking the RIP Active check box and clicking the **Apply** button does not enable RIP. Instead, you must check the RIP Active check box, click the **Create** button, and use the Create RIP Address Summary dialog box to create a new RIP address. For details, see Using RIP, page 5-8.
RIP Type	Select RIP version 1.0 or RIP version 2.0.
Metric	Enter the hop count metric. The valid range is from 1 to 15.
Authentication Type	Select the authentication type.
Authentication Key	Enter the authentication key (password) if the authentication type is Simple Password.
Confirm Authentication Key	Retype the authentication key to confirm it.
RIP Address Summary	• Summary Address—Displays the summary address. • Mask Length—Displays the subnet mask length. • Cost—Displays the hop count metric. The valid range is from 1 to 15.
Create button	Click **Create** to create a new RIP address. See Using RIP, page 5-8.
Delete button	Click **Delete** to delete an existing RIP address.

Proxy Tunnels Tab

The Proxy Tunnels tab allows you to configure source and destination information and create or delete proxy tunnels.

Table B-396 Field Descriptions for the Proxy Tunnels Tab

Field	Description
Source Address	Specify the source IP address in the source-destination pair for the tunnel that will be routed through the proxy server.
Source Mask	Specify the source subnetwork mask in the source-destination pair for the tunnel that will be routed through the proxy server.
Destination Address	Specify the destination IP address in the source-destination pair for the tunnel that will be routed through the proxy server.
Destination Mask	Specify the destination subnetwork mask in the source-destination pair for the tunnel that will be routed through the proxy server.

Firewall Tunnels Tab

The Firewall Tunnels tab allows you to configure source and destination information and create and delete firewall tunnels.

Table B-397 Field Descriptions for the Firewall Tunnels Tab

Field	Description
Source Address	Specify the source IP address in the source-destination pair for the tunnel that will be routed through the firewall.
Source Mask	Specify the source subnetwork mask in the source-destination pair for the tunnel that will be routed through the firewall.
Destination Address	Specify the destination IP address in the source-destination pair for the tunnel that will be routed through the firewall.
Destination Mask	Specify the destination subnetwork mask in the source-destination pair for the tunnel that will be routed through the firewall.

Secure Config Mode Tab

The Secure Config Mode tab allows you to configure the secure config mode. The fields shown depend on whether the NE is in secure mode. For example, the Backplane Ethernet Port values are displayed only when the NE is in secure mode.

Table B-398 Field Descriptions for the Secure Config Mode Tab

Field	Description
TCP/IP Mode	
Normal	When this text is visible, the NE is not in secure mode. There is one IP address shared by TNC/TSC and backplane Ethernet ports, with full connectivity between ports.
Secure	When this text is visible, the NE is in secure mode. There are separate IP addresses for TNC/TSC and backplane Ethernet ports, with no connectivity between ports.
Mode not locked	When this text is visible, you can change the secure mode.
Mode permanently locked and cannot be unlocked	When this text is visible, the NE is in secure mode, and the secure mode is locked and cannot be changed.
Change Mode	
Change Mode button	Opens the Change Secure Mode dialog box, which allows you to change the mode of the NE from secure to unsecure, and vice versa. This button is enabled only if an active TNC/TSC card exists on the NE.
Lock	
Lock button	When the NE is in secure mode, the Lock button locks the secure mode on the NE/TNC/TSC so that it cannot be changed.

FTP Hosts Tab

The FTP Hosts tab allows you to configure database backup or restore and software download to an ENE when the firewall is enabled. You can provision a list of legal FTP hosts for which the firewall opens for all FTP commands. You can configure the FTP hosts to expire after a certain amount of time, after which the FTP relay resumes blocking all FTP access for the ENEs.

Table B-399 Field Descriptions for the FTP Hosts Tab

Field	Description
Create button	Opens the Create New FTP Host dialog box, which allows you to create up to 12 new FTP hosts in a GNE/ENE firewall environment. See Creating an FTP Host, page 5-22. **Note** You cannot create more than 12 FTP hosts.
Delete button	Deletes the selected FTP host.
FTP Host Address	Displays the FTP host IP address.
Prefix Length	Displays the FTP host subnet mask length.
Enable FTP Relay	Indicates whether FTP relay is enabled or disabled. If FTP relay is disabled, the FTP Relay Timer field is dimmed.
FTP Relay Timer	Displays the number of minutes that the FTP relay is configured to run, after which the FTP relay resumes blocking all FTP access for the ENEs.

DCC/GCC/OSC

The DCC/GCC/OSC Properties pane allows you to create, delete, and view SDCCs, LDCCs, GCCs, and OSCs.

Table B-400 Field Descriptions for the DCC/GCC/OSC Properties Pane

Field	Description
SDCC	
SDCC Terminations	Displays the slot, port, and card type of an SDCC termination.
OSPF Disabled on Link	Check to prevent the advertisement of the OSPF routing table.
Foreign	A check mark indicates that the far-end node is a non-ONS node.
Foreign IP	Displays the foreign node IP address.
LAPD Config	If the SDCC is provisioned as OSI only, the following SDCC LAP-D parameters are displayed: • AITS/UITS—Indicates the LAP-D acknowledgement type, either Acknowledged Information Transfer Service (AITS) or Unacknowledged Transfer Service (UITS). • Network/User—Indicates the LAP-D frame command/response role, either Network or User. • MTU—Shows the size of the maximum transfer unit (MTU). The range is from 512 to 1500 octets. • T2000—Shows the time between Set Asynchronous Balanced Mode (SABME) frame transmission. The range is from 0.2 to 20 seconds. • T203—Shows the maximum time between LAP-D frame exchanges. The range is from 4 to 120 seconds.
OSI SNPA	If the SDCC is provisioned for OSI, the following subnetwork point-of-attachment (SNPA) information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.

Table B-400 Field Descriptions for the DCC/GCC/OSC Properties Pane (continued)

Field	Description
Service State	Select the state of the termination: • IS-NR—In Service–Normal. • OOS-AU—Out of Service–Autonomous. • OOS-MA—Out of Service–Management. • OOS-AUMA—Out of Service–Autonomous and Management. In addition, a secondary state provides additional information about the status of the entity. Values for secondary state are: • MEA—Mismatch of equipment due to invalid equipment insertion. • UEQ—Unequipped; there is nothing in the slot. • UAS—Unassigned; the entity does not exist, has not been created, or has been deleted. • SWDL—Software download in progress. • MT—Maintenance, as per the Admin State change. • AINS—Automatic in service. • DSBLD—Traffic is disabled on the entity. • LPBK—Port or connection has a loopback on it. • FLT—Fault secondary state. When an entity is faulted, an FLT state is raised. Equipment and ports in FLT state should be cleared as they transition. Transition states are listed in Table 11-11 on page 11-15. See Table 11-11 on page 11-15 for the Service state-Secondary state possible values. **Note** If the NE release does not support the Service state, this field shows N/A.
LDCC	
LDCC Terminations	Displays the slot, port, and card type of an LDCC termination.
OSPF Disabled on Link	Check to prevent the advertisement of the OSPF routing table.
Foreign	A check mark indicates that the far-end node is a non-ONS node.
Foreign IP	Displays the foreign node IP address.
LAPD Config	Displays the LAP-D parameters for the SDCCs that are provisioned as OSI only.
OSI SNPA	If the GCC is provisioned for OSI, the following SNPA information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.
Service State	Select the state of the LDCC termination (IS-NR, OOS-AU, OOS-MA, OOS-AUMA) plus the secondary state (MEA, UEQ, UAS, SWDL, MT, AINS, DSBLD, LPBK).
GCC	
GCC Terminations	Displays the slot, port, and card type of a GCC termination.
OSPF Disabled on Link	Check to prevent the advertisement of the OSPF routing table.
GCC Rate	Displays the GCC rate.
Foreign	A check mark indicates that the far-end node is a non-ONS node.
Foreign IP	Displays the foreign node IP address.

Table B-400 Field Descriptions for the DCC/GCC/OSC Properties Pane (continued)

Field	Description
LAPD Config	Displays the LAP-D parameters for the SDCCs that are provisioned as OSI only. For GCCs, this column is always N/A.
OSI SNPA	If the GCC is provisioned for OSI, the following SNPA information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.
Service State	Select the state of the GCC termination (IS-NR, OOS-AU, OOS-MA, OOS-AUMA) plus the secondary state (MEA, UEQ, UAS, SWDL, MT, AINS, DSBLD, LPBK).
OSC	
OSC Terminations	Displays the slot, port, and card type of an OSC termination.
LAPD Config	Displays the LAP-D parameters for the SDCCs that are provisioned as OSI only.
OSI SNPA	If the OSC is provisioned for OSI, the following SNPA information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.
Service State	Displays the state of the OSC termination.

Timing

The Timing Properties pane contains the following tabs:

- General Tab, page B-295
- Facility Tab, page B-296
- Reference List Tab, page B-297
- Status Tab, page B-297
- Timing Report Tab, page B-298

General Tab

The General tab displays general timing information.

Table B-401 Field Descriptions for the General Tab

Field	Description
General Timing	
Timing Mode	Set to External if the ONS 15454-M6 derives its timing from a BITS source wired to the backplane pins; set to Line if timing is derived from an OC-N card that is optically connected to the timing node. A third option, Mixed, allows you to set external and line timing references. **Caution** Mixed timing might cause timing loops. Use this mode with care.

Table B-401 Field Descriptions for the General Tab (continued)

Field	Description
SSM Message Set	Choose the SSM set level supported by your network. SSM is an SDH protocol that communicates information about the quality of the timing source. SSM messages are carried on the S1 byte of the SDH Line layer. They enable SDH devices to automatically select the highest quality timing reference and to avoid timing loops. If a Generation 1 node receives a Generation 2 message, the message is mapped down to the next available Generation 1 node. For example, an ST3E message becomes an ST3.
Revertive	If checked, the ONS 15454-M6 reverts to a primary reference source after the conditions that caused it to switch to a secondary timing reference are corrected.
Quality of RES	If your timing source supports the reserved S1 byte, set the timing quality here. (Most timing sources do not use RES.) Qualities are displayed in descending quality order as ranges. For example, ST3 < RES < ST2 means the timing reference is higher than a Stratum 3 and lower than a Stratum 2.

Facility Tab

The Facility tab displays the facility type, BITS IN and OUT information.

Note BITS IN Facilities and BITS OUT Facilities values apply to both BITS-1 and BITS-2.

Table B-402 Field Descriptions for the Facility Tab

Field	Description
BITS-IN-OUT Facility Type	
In Facility Type	Provisions the BITS In facility type.
Out Facility Type	Provisions the BITS Out facility type.
BITS IN Facilities	
In State	Set the BITS reference to Locked or Unlocked. For nodes set to Line timing with no equipment timed through BITS Out, set the state to Locked. For nodes using External timing or Line timing with equipment timed through BITS Out, set the state to Unlocked.
Coding	Set to the coding used by your BITS reference, either AMI or HDB3.
Framing	Set to the framing used by your BITS reference.
Sync Messaging	If checked, enables the SSM for BITS In. (SSM is not available if Framing is set to Super Frame.)
Admin SSM	If the Sync Messaging check box is not checked, you can choose the SSM Generation 2 type from the drop-down list.
BITS OUT Facilities	
Out State	Set the BITS reference to Locked or Unlocked. For nodes set to Line timing with no equipment timed through BITS Out, set the state to Locked. For nodes using External timing or Line timing with equipment timed through BITS Out, set the state to Unlocked.
Coding	Set to the coding used by your BITS reference, either AMI or HDB3.
Framing	Set to the framing used by your BITS reference.

Table B-402 Field Descriptions for the Facility Tab (continued)

Field	Description
AIS Threshold	If SSM is disabled or Super Frame is used, sets the quality level where a node sends an AIS from the BITS-1 Out and BITS-2 Out backplane pins. An AIS is raised when the optical source for the BITS reference falls to or below the SSM quality level defined in this field.
LBO	If you are timing an external device connected to the BITS Out pins, set the distance between it and the ONS 15454-M6. Options are 0-133 ft (Cisco default), 134-266 ft, 267-399 ft, 400-533 ft, and 534-655 ft.

Reference List Tab

The Reference List tab provides timing reference information.

Table B-403 Field Descriptions for the Reference List Tab

Field	Description
NE References	Allows you to define three timing references (Ref-1, Ref-2, and Ref-3). The node uses Reference 1 unless a failure occurs on that reference, in which case, the node uses Reference 2. If that fails, the node uses Reference 3, which is typically set to Internal Clock. This is the Stratum 3 clock provided on the TNC/TSC. The options displayed depend on the Timing Mode setting: • Timing Mode set to External—Options are BITS-1, BITS-2, and Internal Clock. • Timing Mode set to Line—Options are the node's working optical cards and Internal Clock. **Note** For Timing Mode set to External and Timing Mode set to Line, select the cards/ports that are directly or indirectly connected to the node wired to the BITS source; that is, the node's trunk cards. Set Reference 1 to the trunk card that is closest to the BITS source. For example, if Slot 5 is connected to the node wired to the BITS source, select Slot 5 as Reference 1. • Timing Mode set to Mixed—Both BITS and optical cards are available, allowing you to set a mixture of external BITS and optical trunk cards as timing references.
BITS-1 Out References	Allows you to define three timing references (Ref-1, Ref-2, and Ref-3) for the equipment wired to the BITS Out backplane pins. Normally, BITS Out is used with line nodes, so the options displayed are the working optical cards. BITS-1 and BITS-2 Out are enabled as soon as BITS-1 and BITS-2 facilities are placed in service.
BITS-2 Out References	Allows you to define three timing references (Ref-1, Ref-2, and Ref-3) for the equipment wired to the BITS Out backplane pins. Normally, BITS Out is used with line nodes, so the options displayed are the working optical cards. BITS-1 and BITS-2 Out are enabled as soon as BITS-1 and BITS-2 facilities are placed in service.

Status Tab

The Status tab displays timing status information.

Note If you change any values in the Status tab and click Apply at the bottom of the screen, the values are not set. Instead, use the following buttons to apply changes:

- Clear—Releases any existing switch request. For example, if you issue a Force Switch and then issue a Clear, the Force Switch request is released.
- Manual Switch—Switches the timing reference from one source to another.

- Force Switch—Switches the timing reference from one source to another. This request has a higher priority than the Manual Switch request.

Table B-404 Field Descriptions for the Status Tab

Field	Description
NE Clock	
NE Reference	Set the NE timing reference to internal, BITS-1, or BITS-2.
Status	Displays the status of the NE clock.
Operations	Execute a switch on the NE timing reference.
BITS-1 Out	
BITS-1 Out	Set the BITS-1 out timing reference.
Status	Displays the status of the BITS-1 out timing reference.
Operations	Execute a switch on the BITS-1 out timing reference.
BITS-2 Out	
BITS-2 Out	Set the BITS-2 out timing reference.
Status	Displays the status of the BITS-2 out timing reference.
Operations	Execute a switch on the BITS-2 out timing reference.

Timing Report Tab

The Timing Report tab summarizes the NE's current timing settings.

Protection

The Protection Properties pane contains the following tabs:

- Protection Groups Tab, page B-298
- Operations Tab, page B-299

Protection Groups Tab

The Protection Groups tab displays a list of available protection groups and allows you to create, delete, and view protection groups.

Table B-405 Field Descriptions for the Protection Groups Tab

Field	Description
Protection Groups	
Displays a list of available protection groups. Click the **Create** or **Delete** button to create a new protection group or delete an existing one.	
Selected Protection Group	
Name	Modify the name of the selected protection group. The name can have up to 32 alphanumeric characters.

Table B-405 Field Descriptions for the Protection Groups Tab (continued)

Field	Description
Type	Choose the protection type (1:1, 1:N, 1+1, or Y-cable) from the drop-down list. The protection selected determines the cards that are available to serve as protect and working cards. For example, if you choose 1:N protection, only DS-1N and DS-3N cards are displayed.
Protect Module	View the protect module if using 1:1, 1:N, or Y-cable protection. **Note** For OTU2_XP cards, the card name might be shown as XP_4_10G_LINE_CARD.
Available Entities	Displays a list of available entities. You can toggle between available and working entities.
Working Entities	Displays a list of working entities. You can toggle between working and available entities.
Bidirectional Switching	Click if you want both the transmit and the receive channels to switch if a failure occurs on one. This option is available only if you select the 1+1 (port) type.
Revertive	If checked, the ONS 15454-M6 reverts traffic to the working card or port after failure conditions for the amount of time entered in Reversion Time. This option is not available if you select the 1:N (card) type.
Reversion Time	If Revertive is checked, enter the amount of time following failure condition correction that should elapse before the ONS 15454-M6 switches back to the working card or port. Use half-minute increments. This option is available only if you select the 1:1 (card) type.
Recovery Guard Time	The recovery guard timer prevents rapid switches due to SD or SF failures. After the SD or SF condition is cleared on a facility protected by Optimized 1+1 protection, no switches are performed for the duration of the recovery guard timer.
Verification Guard Time	The verification guard timer specifies the amount of time that a user command has to complete. If a user command cannot be completed within the duration set by the verification guard timer, the command is cleared and an APS_CLEAR event is sent.
Detection Guard Time	The detection guard timer specifies the amount of time after a failure that the system has to complete a switch. After detecting an SD, SF, LOS, LOF, or AISL failure, the detection guard timer is started. If the detection guard timer is set to zero, the system completes a switch within 60 ms for failure events.

Operations Tab

The Operations tab displays protection group operation information.

Table B-406 Field Descriptions for the Operations Tab

Field	Description
Protection Groups	Displays a list of available protection groups.
Protection Group Details	Displays details about the selected protection groups and allows you to execute switch commands. **Note** For OTU2_XP cards, the card name might be shown as XP_4_10G_LINE_CARD.
Switch Commands	Allows you to perform command switching.
Inhibit Switching	Allows you to inhibit command switching.

NE Defaults

The NE Defaults Properties pane displays a list of default thresholds for the ONS 15454-M6 NE.

Table B-407 Field Descriptions for the NE Defaults Properties Pane

Field	Description
Load Data	Loads the NE default values.
Parameter	Lists the default NE parameter.
Value	Shows the default parameter value, and allows you to change the default.
Units	Lists the unit of measure that corresponds to the default NE parameter.
Range	Lists the possible range of values for the default NE parameter.
Side Effects	Lists any side effects that could occur as a result of changing the default NE parameter.

You can load different NE defaults using the NE Defaults Management window. See Restoring NE Defaults, page 4-78.

Security

The Security Properties pane allows you to view and edit security features for the ONS 15454-M6 NE. The Properties pane contains the following tabs:

- Policy Tab, page B-300
- Password Tab, page B-301
- Access Tab, page B-302
- RADIUS Server Tab, page B-303
- Legal Disclaimer Tab, page B-304
- FIPS Tab, page B-305

Policy Tab

The Policy tab allows you to specify user security parameters.

Note If the user is already logged in, any changes to the NE user type settings take effect only when the user next logs in.

Table B-408 Field Descriptions for the Policy Tab

Field	Description
Idle User Timeout	
Each CTC or TL1 user can be idle during his or her login session for a specified amount of time before the CTC window is locked. The lockouts prevent unauthorized users from making changes. Higher-level users have shorter default idle periods and lower-level users have longer or unlimited default idle periods. The user idle period can be modified by a SuperUser. **Note** A user already logged into the node is not affected by a change to the Idle User Timeout policy.	
Retrieve	Set the idle user timeout for a CTC Retrieve user.

Table B-408 Field Descriptions for the Policy Tab (continued)

Field	Description
Maintenance	Set the idle user timeout for a CTC Maintenance user.
Provisioner	Set the idle user timeout for a CTC Provisioner user.
SuperUser	Set the idle user timeout for a CTC SuperUser user.
User Lockout	
Manual Unlock by SuperUser	If checked, the CTC SuperUser user must manually unlock locked out CTC users. If unchecked, locked out CTC users are automatically unlocked after the lockout duration period elapses.
Lockout Duration	Set the lockout duration period for locked out CTC users. This field is enabled only if the Manual Unlock by SuperUser check box is unchecked.
Failed Logins Allowed	Set the number of failed logins before the CTC user is automatically locked out.
Other	
Single Sessions per User	If checked, each CTC user can launch only one session at a time.
Prevent Disabling the SuperUser	If checked, inactive CTC SuperUsers are never disabled.
Disable Inactive User	If checked, inactive users are disabled automatically for the amount of time in the Inactive Duration field.
Inactive Duration	Specify the inactive duration in days. The range is from 1 to 90 days; the Cisco default is 45 days. A value of 0 implies the inactive duration is disabled and invalid.

Password Tab

The Password tab allows you to specify user password security parameters.

Table B-409 Field Descriptions for the Password Tab

Field	Description
Password Change	
Prevent Reusing Last	Prevents setting a CTC user's current password to one of the most recent passwords. You can set the number of most recent passwords that cannot be reused.
Disable Password Flipping	If checked, users are not allowed to change passwords for the number of days specified in the Can Change Password After field.
Can Change Password After	Enter the number of days that must elapse before the user can change the password.
Force Password Change After Assigned	If checked, during the first successful login, the user is forced to change the password.
Password Difference	Allows SuperUsers to specify the number of characters by which the new password of a user must differ from the old password, while performing a password change. The default value is 1; the range is from 1 to 5 characters.
Password Aging	
Enable Password Aging	Check this check box to enable password aging.

Table B-409 Field Descriptions for the Password Tab (continued)

Field	Description
Aging Period	Enter the aging period, in days, for Retrieve, Maintenance, Provisioner, and SuperUser CTC users. After the aging period expires, CTC users are forced to change their passwords.
Warning Period	Enter the warning period, in days, for Retrieve, Maintenance, Provisioner, and SuperUser CTC users. After the warning period expires, CTC users are warned that their passwords will soon expire.

Access Tab

The Access tab allows you to configure LAN and shell access to the NE.

Table B-410 Field Descriptions for the Access Tab

Field	Description
Access	
LAN Access	Specify the type of LAN access allowed. Values are EMS Only, No LAN Access, Front Craft and EMS, or Front and Craft.
Restore Timeout	This time period begins if *No LAN Access* is selected and all DCC connections are lost. If the time expires before a DCC is restored, LAN access is restored so that the node is not isolated. When the DCC comes back, LAN access returns to its specified settings. The range is from 0 (never) to 60 minutes; the Cisco default is 5 minutes.
Serial Craft Access	
Enable Craft Port	Check this check box to enable the craft port.
Shell Access	
Access State	Select the Shell access state from the drop-down list. You can select Disable, Non-secure, or Secure.
SSH Port	Indicates the SSH port number that will be used.
SFTP Port	Indicates the SFTP port number.
Telnet Port	This is enabled if you selected the Non-secure access state. Enter the Telnet port number that will be used.
Use Standard Telnet Port	Check this check box to indicate that the standard Telnet port will be used.
Enable Shell Password	Indicates whether or not the Shell password is enabled. **Note** You cannot enable the Shell password in Prime Optical. Enabling and providing a Shell password is currently done in CTC.
TL1 Access	
Access State	Select the TL1 access state from the drop-down list. You can select Disable, Non-secure, or Secure.
SNMP Access	
Access State	Select the SNMP access state from the drop-down list. You can select either Disable or Non-secure.
Pseudo-IOS Access (available for ONS 15454 SDH R9.2)	

Table B-410 Field Descriptions for the Access Tab (continued)

Field	Description
Access State	Pseudo CLI is a command-line interface on the NE that simulates a Cisco IOS connection. Select the pseudo-IOS access state from the drop-down list. You can select Disable, Non-secure, or Secure. If you choose Disable, the port is not configurable, which means that the node does not listen for pseudo-CLI connections. **Note** Pseudo-IOS functionality is available only if the node contains 10GE_XP or GE_XP cards in L2 mode.
Port	Enter the port number for pseudo-IOS access. If the Access State field is set to Disable, you cannot configure this field.
Other	
PM Clearing Privilege	Select the users privilege that allows clearing PM statistics for the NE.
EMS Access	
Access State	Select the EMS access state from the drop-down list. You can select either Non-secure or Secure.
CORBA Listener Port	Select the port numbers for the Controller Card CORBA (IIOP) listener port and the Controller Card CORBA (SSLIOP) listener port. Select one of the following radio buttons: • Default-Fixed—Assigns a default port number. • Standard Constant—The port number for the Controller Card CORBA (IIOP) listener port is 683. The port number for the Controller Card CORBA (SSLIOP) listener port is 684. • Other Constant—When selected, enter the port number that will be used.

RADIUS Server Tab

The RADIUS Server tab allows you to configure, create, modify, and delete RADIUS servers for the ONS 15454-M6 NE.

Table B-411 Field Descriptions for the RADIUS Server Tab

Field	Description
Enable RADIUS Authentication	Check this check box to enable RADIUS authentication.
Enable RADIUS Accounting	Check this check box to enable RADIUS accounting. This is enabled if the Enable RADIUS Authentication check box is checked.
Enable the Node as the Final Authenticator When no RADIUS Server is Reachable	Select a row from the RADIUS Servers in Order of Authentication table; then, check this check box. This indicates that the RADIUS server that you selected will be the final authenticator when there are no more RADIUS servers that can be reached.
Create button	Click **Create** to create a RADIUS server. See Creating a RADIUS Server, page 8-46.
Edit button	Click **Edit** to modify an existing RADIUS server's information. See Modifying a RADIUS Server, page 8-46.
Delete button	Click **Delete** to delete an existing RADIUS server. See Deleting a RADIUS Server, page 8-46.
Move Up/Move Down buttons	Click **Move Up** or **Move Down** to reorder the list of RADIUS servers in the RADIUS Servers in Order of Authentication table.

Table B-411 Field Descriptions for the RADIUS Server Tab (continued)

Field	Description
RADIUS Servers in Order of Authentication	
IP Address	Displays the IP address of the RADIUS server.
Shared Secret	Displays a text string that serves as a password between a RADIUS client and RADIUS server.
Authentication Port	Displays the authentication port number of the RADIUS server. Default access is through port number 1812.
Accounting Port	Displays the accounting port number of the RADIUS server. Default access is through port number 1813.

Legal Disclaimer Tab

The Legal Disclaimer tab allows you to edit the NE's advisory message and preview the disclaimer.

Table B-412 Field Descriptions for the Legal Disclaimer Tab

Field	Description
Advisory Message	The existing message is a default, noncustomer-specific disclaimer. If you want to edit this statement with specifics for your company, you can change the text. You can also use the following HTML commands to format the text: • ****—Begins boldface font • ****—Ends boldface font • ** **—Aligns type in the center of the window • ** **—Ends the center alignment • **<font=*n*, where *n* = point size>**—Changes the font to the new size • ****—Ends the font size command • **<p>**—Creates a line break • **_{**—Begins subscript • **}**—Ends subscript • **^{**—Begins superscript • **}**—Ends superscript • **<u>**—Starts underline • **</u>**—Ends underline
Preview	Allows you to view the advisory message before saving it.

FIPS Tab

Table B-413 FIPS Tab

Field	Description
FIPS Mode	Check the check box to configure the node in FIPS mode for encryption and cryptographic services. When the FIPS mode is selected, the node reboots and performs a self-test at startup.
Zeroise Key	Erases all the private keys in the WSE and TNC cards and rewrites the keys with zeros. This implementation for the private keys is a requirement as per the FIPS 140-2 compliance.

Alarm

The Alarm Properties pane allows you to change default alarm severities by creating unique alarm profiles for individual ONS 15454-M6 nodes. The Properties pane contains the following tabs:

- Profile Tab, page B-305
- Alarm Behavior Tab, page B-305

Profile Tab

The Profile tab allows you to select, create, or delete alarm profiles.

Table B-414 Field Descriptions for the Profile Tab

Field	Description
Alarm Profile Name	Choose an alarm profile for the NE from the drop-down list. Click **Create** to create a new alarm profile for the NE. Click **Delete** to delete an alarm profile from the NE.
Condition	Displays the alarm condition.
Severity	Displays the alarm severity.

Alarm Behavior Tab

The Alarm Behavior tab allows you to change default alarm severities by creating unique alarm profiles.

Table B-415 Field Descriptions for the Alarm Behavior Tab

Field	Description
Node Profile	
Alarm Profile	Choose a global alarm profile for the NE from the drop-down list.
Suppress Alarms	If checked, all alarms are suppressed.
Slot Number	Displays the location of the module.
Equipment Type	Displays the type of module in the slot.
Profile	Choose an alarm profile for the slot from the drop-down list.
Suppress Alarms	Indicates whether or not the alarms for a particular card are suppressed. If checked, all alarms are suppressed for the port.

Alarm Conditions

The Conditions Properties pane allows you to view all NE conditions (events with a Not Reported [NR] severity) at the node level. Alarm Conditions Properties pane gives a clear record of changes or events that do not result in alarms.

Note The Alarm Conditions tab is not updated when conditions change; therefore, you must click **Retrieve** to see any changes.

Table B-416 Field Descriptions for the Alarm Conditions Tab

Field	Description
Filter button	Click the **Filter** button to filter the data displayed in the table.
Retrieve button	Click the **Retrieve** button. The Retrieve button requests the current set of fault conditions from the node, card, or network. Conditions include all fault conditions raised on the node, whether or not they are reported. The time stamp of the condition request is also reported next to the **Retrieve** button.
Perceived Severity	Perceived severity of the selected alarm (critical, major, minor, or warning). The background color also indicates the severity, where: • Red = Critical • Orange = Major • Yellow = Minor • Blue = Warning • Green = Cleared
Probable Cause	Probable cause of the selected alarm. Some possible values include: • Not Applicable/Unknown—If no additional information is available • Mismatch of equipment and attributes (MEA) alarm—For misconfigured pluggable port modules (PPMs) • Link Layer Keep-Alive Failure—When the keepalive frame on the POS port is disabled and the port is shut down • Bad Packet Count Exceeds Threshold—When the packets through the front port have CRC errored frames • Auto-Negotiation Remote Failure Indication—When a remote Gigabit Ethernet port is shut down from a local port
Condition	Error message or condition name that is associated with the alarm or event.
Affected Object	Name of the object where the selected alarm occurred.
Module Name	Name of the module where the selected alarm occurred.
Physical Location	Physical location of the equipment where the selected alarm occurred, such as chassis, rack, subrack (shelf), slot, and port numbers.

Table B-416 Field Descriptions for the Alarm Conditions Tab (continued)

Field	Description
Filter button	Click the **Filter** button to filter the data displayed in the table.
Retrieve button	Click the **Retrieve** button. The Retrieve button requests the current set of fault conditions from the node, card, or network. Conditions include all fault conditions raised on the node, whether or not they are reported. The time stamp of the condition request is also reported next to the **Retrieve** button.
Perceived Severity	Perceived severity of the selected alarm (critical, major, minor, or warning). The background color also indicates the severity, where: • Red = Critical • Orange = Major • Yellow = Minor • Blue = Warning • Green = Cleared
NE Alarm Time	Date and time when the alarm occurred on the NE.
Service Affecting	Whether the alarm or event is service affecting (SA). Values are: • True—The alarm is service affecting • False—The alarm is not service affecting

DWDM

The DWDM Properties pane allows you to manage and provision DWDM connections. The Properties pane contains the following tabs:

- Provisioning Tab, page B-308
- Connections Tab, page B-308
- Span Check Tab, page B-309
- APC Tab, page B-309
- Node Setup Tab, page B-310
- Side Tab, page B-310
- All Facilities Tab, page B-311
- Passive Cards Tab, page B-311
- Alien Wavelength Tab, page B-312
- Fiber Attribute Tab, page B-312

Provisioning Tab

The Provisioning tab allows you to view and change the optical parameters for the ONS 15454-M6 NE. The optical parameters might have already been provisioned manually or by automatic node setup (ANS).

Table B-417 Field Descriptions for the Provisioning Tab

Field	Description
Attribute Name	Displays the Properties pane name that is imported from or exported to the Cisco MetroPlanner configuration file.
Value	Displays the default value of the corresponding Properties pane name imported from or exported to the Cisco MetroPlanner configuration file.
Origin (*Available in ONS 15454 SDH R8.0 and later*)	Shows how the parameter is set. Possible values are: • Default • Automatic • Provisioned • Imported
Note (*Available in ONS 15454 SDH R8.0 and later*)	Displays error details if ANS fails to set the parameter. Possible errors are: • Error during NE board navigation; value is not calculated • Cannot send the parameter request to far-end node; value is not calculated • No response from far-end node; value is not calculated • Configuration is not supported; value is not calculated • Far-end node configuration is not supported; value is not calculated • OSC far-end launch power is not available; value is not calculated • Far-end launch power is not available; value is not calculated • Span loss value is not available; value is not calculated • Fiber stage insertion loss is not available; value is not calculated • Preamplifier tilt is not available; value is not calculated • Add/drop output power is not available; value is not calculated • NE node launch power is not available; value is not calculated • WXC degree is not available; value is not calculated • Value is out of range • Read-only attribute; value is not calculated

Connections Tab

The Connections tab allows you to create or delete DWDM connections or internal patchcords. It also allows you to calculate DWDM connections.

Table B-418 Field Descriptions for the Connections Tab

Field	Description
From	The unit or port from which the internal patchcord originates.
To	The unit or port at which the internal patchcord terminates.
Wavelength	Shows the wavelength value if the internal patchcord is between two channel ports. Otherwise, it shows *N/A*.

Span Check Tab

The Span Check tab allows you to check the span loss between the selected node and the previous node in the chain. The span check is always in reception.

Note If the Measured Span Loss value crosses the Min or Max Expected Span Loss threshold, a condition is raised.

Table B-419 Field Descriptions for the Span Check Tab

Field	Description
Retrieve Span Loss Values button	Runs the span loss verification function and retrieves values for the measured span loss column.
Side	Specifies the side for which span loss information is displayed (east-to-west or west-to-east).
Min Exp. Span Loss	Specifies the minimum expected span loss (in dBm) for the incoming span. This value is imported from MetroPlanner, but can be modified manually.
Max Exp. Span Loss	Specifies the maximum expected span loss (in dBm) for the incoming span.
Meas. Span Loss	The measured span loss value.
Resolution	The resolution or accuracy of the span loss measurement.
Measured By	Specifies the channel on which the span check was calculated.

APC Tab

The APC tab allows you to manually run the automatic power control (APC) function, disable and enable APC, and view the date and time the power control setpoint was last checked and modified.

Table B-420 Field Descriptions for the APC Tab

Field	Description
Disable APC button (*available in CTM R7.2 and earlier*)	Disables the automatic power control function. **Caution** Disabling APC should be performed only for specific maintenance actions. When APC is disabled, aging compensation calculations are not performed and circuits cannot be activated.
Run APC button (*available in CTM R7.2 and earlier*)	Runs the automatic power control function manually.

Table B-420 Field Descriptions for the APC Tab (continued)

Field	Description
Slot ID (*available in CTM R7.2 and earlier*)	The slot number for power control information and actions.
Card (*available in CTM R7.2 and earlier*)	The card type that is installed in the slot.
Port	The port number.
Last Modification	Date and time the power control setpoint was last modified.
Param (*available in CTM R8.0 and later*)	All the parameters associated with the ports.
Last Check	Date and time the power control setpoint was last verified.
Side (*available in CTM R8.0 and later*)	Lists all the NEs and their sides that belong to the APC domain.
APC State (*available in CTM R8.0 and later*)	Displays the actual state of the APC. Values are: • Enabled—APC is enabled. • Disabled—APC is disabled. • Force Disabled—APC is disabled by the user. • Not Applicable—APC domain is incomplete.

Node Setup Tab

The Node Setup tab allows you to automatically preprovision NEs.

Table B-421 Field Descriptions for the Node Setup Tab

Field	Description
XML Settings	
Select XML File	Click **Browse** to select an XML file (generated by the MetroPlanner application). Prime Optical parses the XML file selected by the operator and checks the accuracy of its content.
Log Settings	
Select Log File	Click **Browse** to select a log file to which the results of the operations you perform will be saved.
Launch ANS Wizard button	Click the **Launch Wizard** button to launch the Automatic Node Setup wizard. See Configuring Automatic Node Setup, page 7-339 for more information.

Side Tab

The Side tab allows you to view, edit, and delete sides defined for an ONS 15454-M6 NE.

Table B-422 Field Descriptions for the Side Tab

Field	Description
Create button	Allows you to create side objects for the NE.
Modify button	Allows you to modify the side ID of an existing side object.
Delete button	Allows you to delete side objects.

Table B-422 Field Descriptions for the Side Tab (continued)

Field	Description
Side	Displays the NE's side ID.
Line In	Displays the index of the receive side of the OTS port.
Line Out	Displays the index of the transmit side of the OTS port.

All Facilities Tab

The All Facilities tab allows you to view the DWDM and optical ports for the ONS 15454-M6 NE.

Table B-423 Field Descriptions for the All Facilities Tab

Field	Description
Port	Displays the card port number, shelf ID, and slot number. **Note** Shelf ID is not included in the port number if the node is not a multishelf NE.
Power	Displays the current power for the port.
State	Displays the administrative state of the port.
Service State	Displays the service state of the port.
Retain Selected button	Displays only the ports that you selected.
Show All button	Retrieves and displays all the optical and DWDM ports for the NE.

Passive Cards Tab

The Passive Cards tab allows you to view information about passive units provisioned in CTC.

Note Passive units can be provisioned in CTC only.

Table B-424 Field Descriptions for the Passive Cards Tab

Field	Description
Passive Cards	
ID	Displays the passive card shelf ID.
Equipment Name	Displays the general card type/name.
Location	Displays the location of the passive card.
Description	Displays the passive card description.
Optical Ports	
Port	Displays the port number.
Type	Displays the port type.
MPO	Displays any physical multifiber push connectors.
Wavelength	Displays the port wavelength.

Alien Wavelength Tab

The Alien Wavelength tab allows you to view and edit the port and wavelength parameters defined for an ONS 15454-M6 NE. Click the **Refresh** button to refresh the Alien Wavelength table.

Note Alien Wavelength is applicable to ONS 15454 NEs that support WSON nodes.

Table B-425 Field Descriptions for the Alien Wavelength Tab

Field	Description
Filter button	Click the **Filter** button to filter the data displayed in the table.
Create button	Allows you to create alien wavelengths for the NE. See Creating Alien Wavelength, page 7-343 for more information.
Edit button	Allows you to modify the existing alien wavelength value. See Editing Alien Wavelength, page 7-344 for more information.
Position	Displays information about the shelf, slot, and port on which the alien wavelength is configured.
Alien Wavelength	Displays the alien wavelength class.
Lambda	Displays the alien wavelength value.
FEC	Displays the FEC mode.

Fiber Attribute Tab

The Fiber Attribute tab allows you to view the fiber parameters defined for an ONS 15454-M6 NE.

Note Fiber Attribute is applicable to ONS 15454 NEs that support WSON node.

Table B-426 Field Descriptions for the Fiber Attribute Tab

Field	Description
Filter button	Click the **Filter** button to filter the data displayed in the table.
Toggle button	Click the **Toggle** button to select the unit of measure.
Optical Side	Displays the name of the optical side to which the fiber is connected.
Fiber Type	Choose the fiber type from the drop-down list.
Fiber Number	Displays the number of the fiber associated to the optical side. Useful when different types of fiber are present on the span.
Fiber Length	Allows you to edit the fiber length.

WSON Tab

The WSON tab allows you to view and acknowledge the unverified alarms at the circuit level.

Table B-427 Field Descriptions for the WSON Tab

Field	Description
Filter button	Click the **Filter** button to filter the data displayed in the table.
Acknowledge WSON Alarm button	Click the **Acknowledge WSON Alarm** button to acknowledge a WSON alarm.
Affected Circuits button	Click the **Affected Circuits** button to view the affected circuits. If there are circuits affected by the selected alarm, the new circuit report is displayed. See Working with Circuit Reports, page 7-186 for more information. **Note** The Affected Circuits button is enabled only when an alarm condition is selected.
ID	Displays the ID of the NE from the Domain Explorer.
PS	Perceived severity of the selected alarm (critical, major, minor, or warning). The background color also indicates the severity, where: • Red = Critical • Orange = Major • Yellow = Minor • Blue = Warning • Green = Cleared
Probable Cause	Probable cause of the selected alarm. Some possible values include: • Not Applicable/Unknown—If no additional information is available • Mismatch of equipment and attributes (MEA) alarm—For misconfigured pluggable port modules (PPMs) • Link Layer Keep-Alive Failure—When the keepalive frame on the POS port is disabled and the port is shut down • Bad Packet Count Exceeds Threshold—When the packets through the front port have CRC errored frames • Auto-Negotiation Remote Failure Indication—When a remote Gigabit Ethernet port is shut down from a local port
Condition	Error message or condition name that is associated with the alarm or event.
Affected Object	Name of the object where the selected alarm occurred.
Module Name	Name of the module where the selected alarm occurred.
Physical Location	Physical location of the equipment where the selected alarm occurred, such as chassis, rack, subrack (shelf), slot, and port numbers.
NE Alarm Time	Date and time when the alarm occurred on the NE.
SA	Whether the alarm or event is service affecting (SA). Values are: • Yes—The alarm is service affecting • No—The alarm is not service affecting • N/A—No information is provided by the NE

OSI

The OSI Properties pane allows you to provision ONS 15454-M6 Open System Interconnection (OSI) parameters. The Properties pane contains the following tabs:

- Main Setup Tab, page B-314
- TARP-Config Tab, page B-314
- TARP-TDC Tab, page B-316
- TARP-MAT Tab, page B-316
- Routers-Setup Tab, page B-317
- Subnets Tab, page B-317
- Tunnels Tab, page B-318
- IS-IS RIB Tab, page B-319
- ES-IS RIB Tab, page B-319

Main Setup Tab

The Main Setup tab allows you to provision the OSI Network Entity Title (NET) address and the OSI routing mode.

Table B-428 Field Descriptions for the Main Setup Tab

Field	Description
Main Network Entity Title	Displays the node NET. The NET is used in OSI networks to identify the node to the end system (ES) or intermediate system (IS).
End System	Provisions the node as an OSI end system (ES). ESs send end system hello (ESH) messages regularly to announce their presence to neighboring ISs and ESs.
Intermediate System Level 1	Provisions the node as an OSI intermediate system (IS). ISs send intermediate system hello (ISH) messages regularly to announce their presence to neighboring ISs and ESs. For the ONS 15454-M6, Intermediate System Level 1 is the Cisco default.
Intermediate System Level 1/Level 2	The ONS 15454-M6 performs all IS functions. It communicates with other IS and ES nodes within an OSI area and broadcasts ISHs to IS nodes in other areas to which it is connected.
Node Routing Mode	
L1 LSP Buffer Size	Sets the Level 1 Link State Protocol (LSP) data unit buffer size. The Cisco default is 512.
L2 LSP Buffer Size	Sets the Level 2 LSP data unit buffer size. The Cisco default is 512.

TARP-Config Tab

The TARP-Config tab allows you to provision the TID Address Resolution Protocol (TARP). TARP is used when TL1 TIDs must be translated to an NSAP address. During the TID-to-NSAP translation, the TID is mapped to a NET; then, the NSAP is derived from the NET based on the NSAP selector value.

Table B-429 Field Descriptions for the TARP-Config Tab

Field	Description
TARP PDUs L1 Propagation	If checked (default), TARP Type 1 PDUs received by the node that are not excluded by the loop detection buffer are propagated to other NEs within the OSI Level 1 area. Type 1 PDUs request a protocol address that matches a target TID within a Level 1 routing area. The propagation does not occur if the NE is the target of the Type 1 PDU and the PDUs are not propagated to the NE from which the PDU was received. **Note** This parameter is not used when the node is set to End System.
TARP PDUs L2 Propagation	If checked (default), TARP Type 2 PDUs received by the node that are not excluded by the loop detection buffer are propagated to other NEs within the OSI Level 2 area. Type 2 PDUs request a protocol address that matches a target TID within a Level 2 routing area. The propagation occurs if the NE is the target of the Type 2 PDU and the PDUs are not propagated to the NE from which the PDU was received.
TARP PDUs Origination	If checked (default), the node performs all TARP configuration functions, including: • TID-to-NSAP resolution requests • NSAP-to-TID requests • TARP address changes **Note** TARP Echo and NSAP to TID are not supported.
L1 TARP Data Cache	If checked, the node maintains a TARP data cache (TDC). The TDC is a database of TID-to-NSAP pairs created from TARP Type 3 PDUs received by the node. TARP Type 3 PDUs are responses to Type 1 and Type 2 PDUs and modified by TARP Type 4 PDUs (TID-to-NSAP updates or corrections).
L2 TARP Data Cache	If checked (default), the TIDs and NSAPs are added to the TDC before the node propagates the requests to other NEs. **Note** This parameter is designed for IS Level 1/Level 2 nodes that are connected to other IS Level 1/Level 2 nodes. Enabling the parameter for IS Level 1 nodes is not recommended.
LDB	If checked, enables the TARP loop detection buffer (LDB). The LDB prevents TARP PDUs from being sent more than once on the same subnet.
LAN TARP Storm Suppression	If checked (default), enables the TARP storm suppression to prevent redundant TARP PDUs from being propagated across the network.
Send Type 4 PDU on Startup	If checked, a TARP Type 4 PDU is originated during the initial ONS 15454 SDH startup. Type 4 PDUs indicate that a TID or NSAP change has occurred at the NE. This option is disabled by default.
Type 4 PDU Delay	Sets the amount of time that will pass before the Type 4 PDU is generated. The Cisco default value is 60 seconds; the range is from 0 to 255 seconds.
Timers	
LDB Entry	Sets the TARP LDB timer. The LDB buffer time is assigned to each LDB entry for which the TARP sequence number is zero. The Cisco default is 5 minutes; the range is from 1 to 10 minutes.
LDB Flush	Sets the frequency period for flushing the LDB. The Cisco default is 5 minutes; the range is from 0 to 1440 minutes.

Table B-429 Field Descriptions for the TARP-Config Tab (continued)

Field	Description
T1 Timer	Sets the amount of time to wait for response to a Type 1 Request PDU. Type 1 requests seek a specific NE TID within an OSI Level 1 area. The Cisco default is 15 seconds; the range is from 0 to 3600 seconds.
T2 Timer	Sets the amount of time to wait for a Type 2 Request PDU. TARP Type 2 requests seek a specific NE TID within an OSI Level 1 area. The Cisco default is 25 seconds; the range is from 0 to 3600 seconds.
T3 Timer	Sets the amount of time to wait for an address resolution request. The Cisco default is 40 seconds; the range is from 0 to 3600 seconds.
T4 Timer	Sets the amount of time to wait for an error recovery. The timer begins after the T2 timer expires without successfully finding the NE TID. The Cisco default is 20 seconds; the range is from 0 to 3600 seconds.

TARP-TDC Tab

Table B-430 Field Descriptions for the TARP-TDC Tab

Field	Description
TID	Target ID that is statistically linked to an NSAP or NET. For ONS nodes, the TID is the node name.
NSAP/NET	The NSAP that is statistically linked to the TID.
Type	Indicates how the TARP data cache entry was created. It can be either: • Dynamic—The entry was created through the TARP propagation process. • Static—The entry was manually created and is a static entry.
Add Static Entry button	Click **Add Static Entry** to statically link a TID to an NSAP or NET.
Delete Selected Entry button	Click **Delete Selected Entry** to delete the selected TID-to-NSAP/NET static entry.
TID to NSAP button	Click **TID to NSAP** to query the network for an NSAP that matches a TID.
Flush Dynamic Entries button	Click **Flush Dynamic Entries** to delete all dynamically generated TDC entries.

TARP-MAT Tab

The TARP-MAT tab allows you to manually provision a TARP adjacency.

Table B-431 Field Descriptions for the TARP-MAT Tab

Field	Description
Level	Sets the TARP Type Code that will be sent. • Level 1—Indicates that the manual area adjacency is within the same area as the node. The entry generates Type 1 PDUs. • Level 2—Indicates that the manual area adjacency is in an area different from that of the node. The entry generates Type 2 PDUs.
NSAP	The NSAP address of the node at the other end of the TARP manual adjacency.

Table B-431 Field Descriptions for the TARP-MAT Tab (continued)

Field	Description
Add button	Click **Add** to create a TARP manual area adjacency.
Remove button	Click **Remove** to delete the selected TID-to-NSAP/NET static entry.

Routers-Setup Tab

Table B-432 Field Descriptions for the Routers-Setup Tab

Field	Description
Router Number	Displays the virtual router number. The ONS 15454-M6 provides three virtual routers, numbered 1 through 3.
System ID	Displays the NSAP system ID of the virtual router. The NSAP system identifier is set to the node's first IEEE 802.3 MAC address + *n*, where *n* = 0 through 2. For the primary router (Router 1), *n* = 0.
Status	Indicates the virtual router status. Select Enabled or Disabled from the drop-down list. **Note** Router 1 must be enabled before additional routers can be enabled.
Primary Area Address	Indicates the primary manual area address. For Router 1, this is the main NET for the node; that is, the NSAP without the system ID and selector (set to 00) fields.
Manual Area Address 1	Indicates the address of any additional manual areas that are created. **Note** An OSI area allows up to two additional manual areas in addition to the primary manual area.
Manual Area Address 2	Indicates the address of any additional manual areas that are created. **Note** An OSI area allows up to two additional manual areas in addition to the primary manual area.
Edit button	Click **Edit** to modify the address parameters.

Subnets Tab

The Subnets tab allows you to view and manage OSI subnetwork point-of-attachment parameters. The parameters are initially provisioned when you enable a subnet on an SDCC, LDCC, GCC, OSC, or LAN interface.

Table B-433 Field Descriptions for the Subnets Tab

Field	Description
Slot/Port	The subnet slot and port.
Router Number	The OSI virtual router where the subnet (SDCC, LDCC, GCC, or OSC) is provisioned.
Type	The interface where the subnet is provisioned: SDCC, LDCC, GCC, OSC, or LAN.
Protocol	The data link protocol that is provisioned for the subnet. It can be: • Point to Point Protocol (PPP) • Link Access Protocol on the D channel (LAP-D) • 802.3 for LAN subnets
ISH	The intermediate system hello (ISH) PDU propagation frequency. Intermediate system NEs send ISHs to other ESs and ISs to inform them about the NETs they serve. The Cisco default is 10 seconds; the range is from 10 to 1000 seconds.

Table B-433 Field Descriptions for the Subnets Tab (continued)

Field	Description
ESH	The end system hello (ESH) PDU propagation frequency. End system NEs transmit ESHs to inform other ESs and ISs about the NSAPs they serve. The Cisco default is 10 seconds; the range is from 10 to 1000 seconds.
IIH	The intermediate system-to-intermediate system hello (IIH) PDU propagation frequency. The IS-IS hello PDUs establish and maintain adjacencies between ISs. The Cisco default is 3 seconds; the range is from 1 to 600 seconds.
DIS Priority	The designated intermediate system (DIS) priority. In IS-IS networks, one router is elected as the DIS. For Cisco routers, the DIS priority is 64. For the ONS 15454 LAN subnet, the default DIS priority is 63. This priority should not be changed.
IS-IS Cost	The cost for sending packets on the subnet. This is used by OSPF routers to calculate the shortest path. The Cisco default value is 20.
Enable LAN Subnet button	*Router 1 only.* Enables OSI over the LAN; that is, it activates the IS-IS protocol on the LAN so OSI traffic is enabled on the LAN.
Edit button	Click **Edit** to modify the subnet parameters.
Disable LAN Subnet button	*Router 1 only.* Disables OSI over the LAN if it has been enabled.

Tunnels Tab

The Tunnels tab allows you to view, create, edit, and delete Generic Routing Encapsulation (GRE) and Cisco tunnels. GRE tunnels encapsulate one network protocol for transfer across another network layer. Within a mixed TCP/IP and OSI network, GRE tunnels tunnel IP traffic over an OSI NE and OSI traffic over an IP NE.

Table B-434 Field Descriptions for the Tunnels Tab

Field	Description
IP Address	Displays the IP address of the GRE destination Prime Optical or CTC computer.
Netmask Address	Displays the IP address subnet mask of the destination Prime Optical or CTC computer.
NSAP Address	The destination NE NSAP address. The NSAP selector (last two NSAP characters) must be 2f (GRE tunnel) or cc (proprietary Cisco tunnel), depending on which tunnel type you want to create. The Cisco proprietary tunnel is slightly more efficient than the GRE tunnel because it does not add an encapsulation header for each IP packet, while the GRE tunnel adds a small header to the packets. The two tunnel types are incompatible. **Note** Most Cisco routers support the Cisco tunnel, while only a few support both GRE and Cisco IP tunnels.
OSPF Metric	Displays the cost for sending packets across the GRE tunnel. Cost is used by OSPF routers to calculate the shortest path.
Create button	Click **Create** to create a new GRE tunnel route.
Edit button	Click **Edit** to edit an existing GRE tunnel.
Delete button	Click **Delete** to delete an existing GRE tunnel.

IS-IS RIB Tab

The IS-IS RIB tab allows you to view the intermediate system-to-intermediate system (IS-IS) protocol routing information base (RIB). IS-IS is an OSI link-state hierarchical routing protocol that floods the network with link-state information that enables the NEs to build a complete and consistent picture of a network topology.

Table B-435 Field Descriptions for the IS-IS RIB Tab

Field	Description
Router Number	Displays the OSI router number. The ONS 15454-M6 provides three virtual routers, numbered 1 through 3.
Subnet Type	Indicates the OSI subnetwork point-of-attachment type used to access the destination address. It includes SDCC, LDCC, GCC, OSC, and LAN.
Destination Address	Displays the Network Service Access Point (NSAP).
MAC Address	Displays the NE's MAC address for destinations that are accessed by the LAN subnets.

ES-IS RIB Tab

The ES-IS RIB tab allows you to view the end system-to-intermediate system (ES-IS) protocol RIB. ES-IS is an OSI protocol that defines how end systems (hosts) and intermediate systems (routers) learn about each other.

Table B-436 Field Descriptions for the ES-IS RIB Tab

Field	Description
Router Number	Displays the OSI router number. The ONS 15454-M6 provides three virtual routers, numbered 1 through 3.
Subnet Type	Indicates the OSI subnetwork point-of-attachment type used to access the destination address. It includes SDCC, LDCC, GCC, OSC, and LAN.
Destination Address	Displays the NSAP of the destination ES.
MAC Address	Displays the NE's MAC address for destinations that are accessed by the LAN subnets.

Note See Table 1-22 on page 1-47 for descriptions of actions that you can perform using the buttons at the bottom of the window.

ECU Ports Alarms Suppression

The External Control Unit (ECU) Ports Alarms Suppression Properties pane allows you to suppress the alarms for the MS_ISC ports of the ECU.

Table B-437 Field Descriptions for the ECU Ports Alarms Suppression Properties Pane

Field	Description
Ports	The port number.
Suppress Alarms	Indicates whether or not the alarms for a particular card are suppressed. If checked, all alarms for the MS_ISC ports of the ECU are suppressed.

Alarm Extenders

The Alarm Extenders Properties pane allows you to view external alarm information and create custom alarm types. The Alarm Extenders Properties pane contains the following tabs:

- Alarm Dry Contacts Mode Tab, page B-320
- External Alarms Tab, page B-320
- External Controls Tab, page B-320
- User Defined Alarms Tab, page B-321

Alarm Dry Contacts Mode Tab

The Alarm Dry Contacts Mode tab indicates whether the input and output ports are External Alarms or External Controls.

Table B-438 Field Descriptions for the Alarm Dry Contacts Mode Tab

Field	Description
Input/Output	Select External Alarm if you use external alarms only; select External Control if you use both external alarms and external controls. Selecting only External Alarm gives you 14 external alarm ports and no external control ports. If you select External Control, four of the ports are converted to external control ports, leaving you with 10 external alarm ports.
External Controls	Allows you to view and update external controls.
External Alarms	Allows you to view and update external alarm information.

External Alarms Tab

Table B-439 Field Descriptions for the External Alarms Tab

Field	Description
Input No.	Displays the number assigned to the external alarm. To activate the input number, check the Enabled check box and set the input number.
Enabled	If checked, the Input No. field for the alarm gets activated.
Alarm Type	Sets the type of alarm. Select an alarm type from the drop-down list; more than 50 types of alarms are available.
Severity	Defines the severity of the alarm. The alarm severity level indicates the state of the LEDs. The LEDs are active if the alarm level is set to one of the following: Critical (CR), Major (MJ), or Minor (MN). The LEDs are not active if the alarm level is set to one of the following: Not Alarmed (NA) or Not Reported (NR). However, even if the LEDs are not active, they will continue to send reports to Prime Optical.
Raised When	Indicates the contact condition of the device (Open or Closed), which triggered the alarm.
Virtual Wire	Assigns the alarm to a virtual wire.
Description	Allows you to enter a description for the alarm.

External Controls Tab

The External Controls tab allows you to view and update external controls.

Table B-440 Field Descriptions for the External Controls Tab

Field	Description
Control No.	The control number.
Enabled	Check to activate the fields for the control number.
Control Type	Choose a control type from the provided list.
Trigger Type	Choose a trigger type: a local minor, major, or critical alarm; a remote minor, major, or critical alarm; or a virtual wire activation.
Description	Enter a description.

User Defined Alarms Tab

The User-Defined Alarms tab allows you to view, add, and delete custom alarm types on the ONS 15454-M6 SONET/SDH NE.

Table B-441 Field Descriptions for the User Defined Alarms Tab

Field	Description
Alarm Types	Lists the user-defined alarm types that have been created on the ONS 15454-M6 SONET/SDH. You can create up to 50 custom environmental alarms, which are reported in the Condition column in the Alarm Log and Alarm Browser windows.
Add	Click the Add button to add a new custom alarm type. Enter a unique alarm type name that contains 20 characters or fewer. Only the following characters are valid: 0-9, A-Z, a-z, and hyphen (-).
Delete	Click the Delete button to delete an existing alarm type.

ONS 15454-M2 NE Explorer

When you choose **Configuration > NE Explorer** for the ONS 15454 MSTP, the window that Prime Optical displays consists of a tree on the left side and a properties pane on the right. The tree provides a hierarchical view and alarm status of the NE's physical shelves and slots. The properties pane shows information about the selected entity. See Node Properties Pane—ONS 15454-M2, page B-322 for more information.

Note Refer to the Cisco ONS 15454 SONET, SDH, and DWDM components' installation documents for precautions, guidelines, and procedures for converting single-shelf NEs to multishelf NEs. Incorrect procedures for converting single-shelf NEs to multishelf NEs can result in nodes not being properly discovered and managed by Prime Optical.

Caution If a shelf is added to a node that is managed by Prime Optical, force a Refresh from NE operation to correctly update the node inventory. Inconsistencies in the node inventory can occur if the operation is not performed. Those inconsistencies are reflected in all Prime Optical user interfaces, including the gateways.

Node Properties Pane—ONS 15454-M2

The node properties pane displays information about the ONS 15454-M2 MSTP NE. The properties pane contains the following tabs, some of which apply only to a specific NE version:

- Shelf View, page B-322
- General, page B-322
- Network, page B-324
- DCC/GCC/OSC, page B-332
- Timing, page B-334
- Protection, page B-337
- NE Defaults, page B-339
- Security, page B-339
- Alarm, page B-344
- Alarm Conditions, page B-345
- DWDM, page B-346
- OSI, page B-353

Shelf View

The Shelf View Properties pane displays a graphic of the ONS 15454-M2 that is selected in the NE Explorer tree. Moving the mouse pointer over the NE, its shelves, slots, or cards displays the current alarms for the highlighted item. Double-clicking a slot or card displays the slot or card in the properties pane. The right-click menu allows you to reset, delete, or change the card. For unprovisioned slots, the right-click menu allows you to add a card.

General

The General Properties pane displays identification information and voltage thresholds for the ONS 15454-M2 NE.

Table B-442 Field Descriptions for the General Properties Pane

Field	Description
Identification Tab	
NE ID	Displays the ID of the NE from the Domain Explorer.
NE Model	Displays the NE model type.

Table B-442 Field Descriptions for the General Properties Pane (continued)

Field	Description
Software Version	Displays the current running version of the system software.
Contact	Displays the name of the node contact person and the phone number.
Description	Enter a description of the NE.
System Description	Displays the NE type and the version of the system software.
SNTP Settings	
Use NTP/SNTP Server	If checked, CTC uses an SNTP server to set the date and time of the node. Using an SNTP server ensures that all ONS 15454-M2 network nodes use the same date and time reference. The server synchronizes the node's time after power outages or software upgrades. If you check the **Use NTP/SNTP Server** check box, enter the server's IP address in the next field. If you do not use an SNTP server, complete the Time and Time Zone fields. The ONS 15454-M2 will use these fields for alarm dates and times.
SNTP Server	Displays the SNTP server IP address.
Location	
Latitude	Allows you to set the latitude of the NE. Select **North** or **South** from the drop-down list; then, enter the degrees and minutes (or click the up and down arrows to increase or decrease each by 1 unit).
Longitude	Allows you to set the longitude of the NE. Select **East** or **West** from the drop-down list; then, enter the degrees and minutes (or click the up and down arrows to increase or decrease each by 1 unit).
Date and Time	
Time	Displays the NE date and time.
Time Zone	Displays the time zone where the NE is located.
Use Daylight Savings Time	If checked, Daylight Savings Time is observed.
APC State	
Side	Lists all the NEs and their sides that belong to the automatic power control (APC) domain.
APC State	Displays the actual state of the APC. Values are: • Enabled—APC is enabled. • Disabled—APC is disabled. • Force Disabled—APC is disabled by the user. • Not Applicable—APC domain is incomplete.
Power Monitor Tab	
ELWBATVG	Allows you to set the monitor value for extreme low battery voltage (ELWBATVG) in volts direct current (VDC).
LWBATVG	Allows you to set the monitor value for low battery voltage (LWBATVG) in VDC.
HIBATVG	Allows you to set the monitor value for high battery voltage (HIBATVG) in VDC.
EHIBATVG	Allows you to set the monitor value for extreme high battery voltage (EHIBATVG) in VDC.
Current Voltage Environment	Shows the current voltage environment.
Multishelf Config Tab	

Table B-442 Field Descriptions for the General Properties Pane (continued)

Field	Description
The Multishelf Config Tab for this card is disabled.	
Voltage/Temperature Tab	
Voltage A, B, and so on	Displays the voltage (in millivolts) of the shelf that corresponds to the power supply.
Temperature	Displays the temperature (in degrees Celsius) of the shelf.
Reset	Resets all voltage and temperature values.
Help	Opens context-sensitive help.

Network

The Network Properties pane displays information about the NE network address. The Network Properties pane contains the following tabs:

- Address Tab, page B-324
- Static Routes Tab, page B-325
- OSPF Tab, page B-325
- OSPF Area Range Tab, page B-326
- OSPF Virtual Links Tab, page B-327
- SNMP Tab, page B-327
- Firewall/Proxy Tab, page B-328
- Routing Table Tab, page B-329
- RIP Routing Table Tab, page B-329
- RIP Tab, page B-329
- Proxy Tunnels Tab, page B-330
- Firewall Tunnels Tab, page B-331
- Secure Config Mode Tab, page B-331
- FTP Hosts Tab, page B-331

Address Tab

The Address tab allows you to view and change information about the NE network address.

Table B-443 Field Descriptions for the Address Tab

Field	Description
IP Address	Displays the IP address of the NE.
Default Router	Displays the IP address of the default router.
Subnet Mask	Displays the subnetwork mask ID of the NE.
MAC Address	Displays the ONS 15454-M2 address as it is identified on the IEEE 802 MAC layer.

Table B-443 Field Descriptions for the Address Tab (continued)

Field	Description
LCD IP Setting	Allows you to configure the LCD screen. Select from the following values: • Allow Configuration—Enables shelf address changing from the LCD. • Display Only—Prevents users from changing the shelf IP address from the LCD screen. • Suppress Display—Makes the LCD screen blank.
Forward DHCP Requests	If checked, forwards DHCP requests to the IP address entered in the DHCP Server field. When the Forward DHCP Requests check box is unchecked, the DHCP Server field is display-only.
DHCP Server	Displays the IP address of the DHCP server.
IPv6 Config	
Enable IPv6	If checked, allows you to configure the node to use the IPv6 protocol and to assign an IPv6 address to the node.
IPv6 Address	Enter the IPv6 address of the node.
Default IPv6 Router	Enter the IPv6 default router of the node.
IPv6 Subnet Mask	Enter the IPv6 subnetwork mask length.

Static Routes Tab

The Static Routes tab allows you to view information about Prime Optical and ONS 15454-M2 connectivity and create or delete static routes.

Table B-444 Field Descriptions for the Static Routes Tab

Field	Description
Destination IP	Displays the IP address of the computer running Prime Optical.
Subnet Mask	Displays the subnetwork mask.
Next Hop	Displays the IP address of the router port or the node IP address if the Prime Optical computer is connected to the node directly.
Cost	Displays the number of hops between the ONS 15454-M2 and the computer.

OSPF Tab

The OSPF tab displays OSPF information. OSPF is a link-state Internet routing protocol.

Table B-445 Field Descriptions for the OSPF Tab

Field	Description
Slot	Displays the slot number.
Port	Displays the port number.
DCC OSPF Area ID	Displays the number that identifies the ONS 15454-M2 as a unique OSPF area. The OSPF area number can be from 0.0.0.0 to 255.255.255.255. The number must be unique to the LAN OSPF area.

Table B-445 Field Descriptions for the OSPF Tab (continued)

Field	Description
SDCC Metric	Sets a cost for sending packets across the Section Data Communications Channel (SDCC), which is used by OSPF routers to calculate the shortest path. This value should always be higher than the LAN metric. This value is normally unchanged.
LDCC Metric	Sets a cost for sending packets across the Line Data Communications Channel (LDCC), which is used by OSPF routers to calculate the shortest path. This value should always be higher than the LAN metric. This value is normally unchanged.
OSPF on LAN	
OSPF Active on LAN	If checked, enables the ONS 15454-M2 OSPF topology to be advertised to OSPF routers on the LAN. Enable this field on ONS 15454-M2 NEs that directly connect to OSPF routers.
LAN Port Area ID	Displays the OSPF area ID for the router port where the ONS 15454-M2 is connected. (This number is different from the DCC OSPF area ID.)
Router Priority	Displays the value used for this NE in designated router election. The Cisco default value is zero (0). A router that has Router Priority set to 0 is ineligible to become a designated router on the attached network.
Hello Interval	Displays the number of seconds between OSPF hello packet advertisements sent by OSPF routers. Ten seconds is the Cisco default.
Dead Interval	Displays the number of seconds that will pass while an OSPF router's packets are not visible before its neighbors declare the router down. Forty seconds is the Cisco default.
Transit Delay	Displays the service speed. One second is the Cisco default.
Retransmit Interval	Displays the time that will elapse before a packet is resent. Five seconds is the Cisco default.
LAN Metric	Displays a cost for sending packets across the LAN. This value should always be lower than the DCC metric. Ten is the Cisco default.
OSPF Authentication	
Authentication Type	Displays Simple Password if the router where the ONS 15454-M2 is connected uses authentication. Otherwise, it displays No Authentication.
Authentication Key	Displays the OSPF key (password) if authentication is enabled.
Confirm Authentication Key	Retype the authentication key to confirm it.

OSPF Area Range Tab

The OSPF Area Range tab allows you to view information about OSPF area ranges and create or delete area ranges.

Table B-446 Field Descriptions for the OSPF Area Range Tab

Field	Description
Range Address	Displays the area IP address for the ONS 15454-M2 NEs that reside within the OSPF area. For example, if the ONS 15454-M2 OSPF area includes nodes with IP addresses 10.10.20.100, 10.10.30.150, 10.10.40.200, and 10.10.50.250, the range address would be 10.10.0.0.
Range Area ID	Displays the OSPF area ID for the ONS 15454-M2 NEs. This is either the ID in the DCC OSPF Area ID field or the ID in the LAN Port Area ID field.
Mask Length	Displays the subnet mask length.

Table B-446 Field Descriptions for the OSPF Area Range Tab (continued)

Field	Description
Mask	Displays the subnet mask IP address.
Advertise	Indicates whether the OSPF routing table is advertised.

OSPF Virtual Links Tab

The OSPF Virtual Links tab allows you to view information about OSPF virtual links and create or delete virtual links.

Note You cannot create a new virtual link unless OSPF is active on the LAN.

Table B-447 Field Descriptions for the OSPF Virtual Links

Field	Description
Neighbor	Displays the router ID of the Area 0 router.
Transit Delay	Displays the service speed. One second is the Cisco default.
Retransmit Interval	Displays the time that will elapse before a packet is resent. Five seconds is the Cisco default.
Hello Interval	Displays the number of seconds between OSPF hello packet advertisements sent by OSPF routers. Ten seconds is the Cisco default.
Dead Interval	Displays the number of seconds that will pass while the packets of an OSPF router are not visible before its neighbors declare the router down. Forty seconds is the Cisco default.
Authentication Type	Displays the authentication type.
Authentication Key	Displays the authentication key.

SNMP Tab

The SNMP tab allows you to view SNMP information and create or delete SNMP trap destinations.

Table B-448 Field Descriptions for the SNMP Tab

Field	Description
Use Generic MIB	If checked, allows you to transfer traps to a local MIB browser or server.
Engine ID	Displays the unique SNMP node engine ID.
Allow SNMP Set	If checked, allows you to use SNMP management software with the ONS 15454-M2.
Allow SNMP Proxy	If checked, allows you to configure the ONS 15454-M2 to proxy SNMP calls.
IP Address	The IP address of the NMS.
Community Name	The SNMP community name. **Note** The SNMP community string cannot be blank in Prime Optical. If a blank community string is required in CTC builds earlier than R4.6, you must set the blank community string in CTC.
UDP Port	The UDP port for SNMP. The Cisco default UDP port is 162.

Table B-448 Field Descriptions for the SNMP Tab (continued)

Field	Description
Use Generic MIB	If checked, allows you to transfer traps to a local MIB browser or server.
Engine ID	Displays the unique SNMP node engine ID.
Trap Version	The trap version, either SNMP version 1 or version 2. See your NMS documentation to determine whether to use SNMP version 1 or version 2.
Relay A IP Address	The first ONS 15454-M2 to relay traps through. The IP address is appended to the base community string to tell the first NE the IP address and the port to forward the trap to. The second NE recognizes the IP address and strips it from the community string before forwarding the trap.
Relay A Community Name	The community name for the relay A node to use in the trap when forwarding it.
Relay B IP Address	The second ONS 15454-M2 to relay traps through.
Relay B Community Name	The community name for the relay B node to use in the trap when forwarding it.
Relay C IP Address	The third ONS 15454-M2 to relay traps through.
Relay C Community Name	The community name for the relay C node to use in the trap when forwarding it.

Firewall/Proxy Tab

The Firewall/Proxy tab allows you to use an NE as a proxy server or as a firewall.

Table B-449 Field Descriptions for the Firewall/Proxy Tab

Field	Description
Gateway Settings	
Enable Proxy Server on Port	If checked, the ONS 15454-M2 serves as a proxy for connections between the Prime Optical server and ONS 15454-M2 that are DCC-connected to the proxy ONS 15454-M2. The Prime Optical server establishes connections to DCC-connected nodes through the proxy node. The Prime Optical server can connect to nodes that it cannot directly reach from the host on which it runs. The proxy server uses port 1080. If checked, the following radio buttons are enabled: • End Network Element (ENE)—Configures the ONS 15454-M2 to proxy as an ENE. Note that an alternate expansion for ENE is *external network element*. • Gateway Network Element (GNE)—Configures the ONS 15454-M2 to proxy as a GNE. • Proxy-only—Configures the ONS 15454-M2 to act as a proxy. If unchecked, the node does not proxy; instead, it acts as a LAN-connected NE (LNE).

Routing Table Tab

The Routing Table tab allows you to view the OSPF routing table.

Table B-450 Field Descriptions for the Routing Table Tab

Field	Description
Destination	Displays the IP address of the destination network or host.
Mask	Displays the subnet mask used to reach the destination network or host.
Gateway	Displays the IP address of the gateway used to reach the destination network or host.
Usage	Shows the number of times the listed route has been used.
Interface	Shows the ONS 15454-M2 interface used to access the destination. Values are: • cpm0—The ONS 15454-M2 Ethernet interface (that is, the RJ-45 jack on the TNC or TSC and the LAN 1 pins on the backplane). • pdcc0—An SDCC interface (that is, an OC-N trunk card identified as the SDCC termination). • lo0—A loopback interface.

RIP Routing Table Tab

The RIP Routing Table tab allows you to view the Routing Information Protocol (RIP) routing table.

Table B-451 Field Descriptions for the RIP Routing Table Tab

Field	Description
Destination	Displays the IP address of the destination network or host.
Mask	Displays the subnet mask used to reach the destination network or host.
Gateway	Displays the IP address of the gateway used to reach the destination network or host.
Cost	Displays the hop count metric. The valid range is from 1 to 15.

RIP Tab

The RIP tab allows you to view and configure the RIP parameters.

Note

- When you enable RIP, you must wait for approximately one minute for the default RIP address summary to become visible.
- When you disable RIP on the NE, all summary address entries in the Summary Address table are deleted.

Table B-452 Field Descriptions for the RIP Tab

Field	Description
RIP Active	Check this check box to enable RIP. Uncheck it to disable RIP. **Note** Checking the RIP Active check box and clicking the **Apply** button does not enable RIP. Instead, you must check the RIP Active check box, click the **Create** button, and use the Create RIP Address Summary dialog box to create a new RIP address. For details, see Using RIP, page 5-8.
RIP Type	Select RIP version 1.0 or RIP version 2.0.
Metric	Enter the hop count metric. The valid range is from 1 to 15.
Authentication Type	Select the authentication type.
Authentication Key	Enter the authentication key (password) if the authentication type is Simple Password.
Confirm Authentication Key	Retype the authentication key to confirm it.
RIP Address Summary	• Summary Address—Displays the summary address. • Mask Length—Displays the subnet mask length. • Cost—Displays the hop count metric. The valid range is from 1 to 15.
Create button	Click **Create** to create a new RIP address. See Using RIP, page 5-8.
Delete button	Click **Delete** to delete an existing RIP address.

Proxy Tunnels Tab

The Proxy Tunnels tab allows you to configure source and destination information and create or delete proxy tunnels.

Table B-453 Field Descriptions for the Proxy Tunnels Tab

Field	Description
Source Address	Specify the source IP address in the source-destination pair for the tunnel that will be routed through the proxy server.
Source Mask	Specify the source subnetwork mask in the source-destination pair for the tunnel that will be routed through the proxy server.
Destination Address	Specify the destination IP address in the source-destination pair for the tunnel that will be routed through the proxy server.
Destination Mask	Specify the destination subnetwork mask in the source-destination pair for the tunnel that will be routed through the proxy server.

Firewall Tunnels Tab

The Firewall Tunnels tab allows you to configure source and destination information and create and delete firewall tunnels.

Table B-454 Field Descriptions for the Firewall Tunnels Tab

Field	Description
Source Address	Specify the source IP address in the source-destination pair for the tunnel that will be routed through the firewall.
Source Mask	Specify the source subnetwork mask in the source-destination pair for the tunnel that will be routed through the firewall.
Destination Address	Specify the destination IP address in the source-destination pair for the tunnel that will be routed through the firewall.
Destination Mask	Specify the destination subnetwork mask in the source-destination pair for the tunnel that will be routed through the firewall.

Secure Config Mode Tab

The Secure Config Mode tab allows you to configure the secure config mode. The fields shown depend on whether the NE is in secure mode. For example, the Backplane Ethernet Port values are displayed only when the NE is in secure mode.

Table B-455 Field Descriptions for the Secure Config Mode Tab

Field	Description
TCP/IP Mode	
Normal	When this text is visible, the NE is not in secure mode. There is one IP address shared by TNC/TSC and backplane Ethernet ports, with full connectivity between ports.
Secure	When this text is visible, the NE is in secure mode. There are separate IP addresses for TNC/TSC and backplane Ethernet ports, with no connectivity between ports.
Mode not locked	When this text is visible, you can change the secure mode.
Mode permanently locked and cannot be unlocked	When this text is visible, the NE is in secure mode, and the secure mode is locked and cannot be changed.
Change Mode	
Change Mode button	Opens the Change Secure Mode dialog box, which allows you to change the mode of the NE from secure to unsecure, and vice versa. This button is enabled only if an active TNC/TSC card exists on the NE.
Lock	
Lock button	When the NE is in secure mode, the Lock button locks the secure mode on the NE/TNC/TSC so that it cannot be changed.

FTP Hosts Tab

The FTP Hosts tab allows you to configure database backup or restore and software download to an ENE when the firewall is enabled. You can provision a list of legal FTP hosts for which the firewall opens for all FTP commands. You can configure the FTP hosts to expire after a certain amount of time, after which the FTP relay resumes blocking all FTP access for the ENEs.

Table B-456 Field Descriptions for the FTP Hosts Tab

Field	Description
Create button	Opens the Create New FTP Host dialog box, which allows you to create up to 12 new FTP hosts in a GNE/ENE firewall environment. See Creating an FTP Host, page 5-22. **Note** You cannot create more than 12 FTP hosts.
Delete button	Deletes the selected FTP host.
FTP Host Address	Displays the FTP host IP address.
Prefix Length	Displays the FTP host subnet mask length.
Enable FTP Relay	Indicates whether FTP relay is enabled or disabled. If FTP relay is disabled, the FTP Relay Timer field is dimmed.
FTP Relay Timer	Displays the number of minutes that the FTP relay is configured to run, after which the FTP relay resumes blocking all FTP access for the ENEs.

DCC/GCC/OSC

The DCC/GCC/OSC Properties pane allows you to create, delete, and view SDCCs, LDCCs, GCCs, OSCs, and DWDM ring IDs.

Table B-457 Field Descriptions for the DCC/GCC/OSC Properties Pane

Field	Description
SDCC	
Create	Click the Create button to create new terminations on SONET or SDH cards.
Edit	Click the Edit button to modify existing terminations on SONET or SDH cards.
Delete	Click the Delete button to delete the selected SDCC, LDCC, GCC, or OSC.
SDCC Terminations	Displays the slot, port, and card type of an SDCC termination.
OSPF Disabled on Link	Check to prevent the advertisement of the OSPF routing table.
Foreign	A check mark indicates that the far-end node is a non-ONS node.
Foreign IP	Displays the foreign node IP address.
LAPD Config	If the SDCC is provisioned as OSI only, the following SDCC LAP-D parameters are displayed: • AITS/UITS—Indicates the LAP-D acknowledgement type, either Acknowledged Information Transfer Service (AITS) or Unacknowledged Transfer Service (UITS). • Network/User—Indicates the LAP-D frame command/response role, either Network or User. • MTU—Shows the size of the maximum transfer unit (MTU). The range is from 512 to 1500 octets. • T2000—Shows the time between Set Asynchronous Balanced Mode (SABME) frame transmission. The range is from 0.2 to 20 seconds. • T203—Shows the maximum time between LAP-D frame exchanges. The range is from 4 to 120 seconds.

Table B-457 Field Descriptions for the DCC/GCC/OSC Properties Pane (continued)

Field	Description
OSI SNPA	If the SDCC is provisioned for OSI, the following subnetwork point-of-attachment (SNPA) information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.
Service State	Select the state of the termination: • IS-NR—In Service–Normal. • OOS-AU—Out of Service–Autonomous. • OOS-MA—Out of Service–Management. • OOS-AUMA—Out of Service–Autonomous and Management. In addition, a secondary state provides additional information about the status of the entity. Values for secondary state are: • MEA—Mismatch of equipment due to invalid equipment insertion. • UEQ—Unequipped; there is nothing in the slot. • UAS—Unassigned; the entity does not exist, has not been created, or has been deleted. • SWDL—Software download in progress. • MT—Maintenance, as per the Admin State change. • AINS—Automatic in service. • DSBLD—Traffic is disabled on the entity. • LPBK—Port or connection has a loopback on it. • FLT—Fault secondary state. When an entity is faulted, an FLT state is raised. Equipment and ports in FLT state should be cleared as they transition. Transition states are listed in Table 11-11 on page 11-15. See Table 11-11 on page 11-15 for the Service state-Secondary state possible values. **Note** If the NE release does not support the Service state, this field shows N/A.
LDCC	
LDCC Terminations	Displays the slot, port, and card type of an LDCC termination.
OSPF Disabled on Link	Check to prevent the advertisement of the OSPF routing table.
Foreign	A check mark indicates that the far-end node is a non-ONS node.
Foreign IP	Displays the foreign node IP address.
LAPD Config	Displays the LAP-D parameters for the SDCCs that are provisioned as OSI only.
OSI SNPA	If the GCC is provisioned for OSI, the following SNPA information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.
Service State	Select the state of the LDCC termination (IS-NR, OOS-AU, OOS-MA, OOS-AUMA) plus the secondary state (MEA, UEQ, UAS, SWDL, MT, AINS, DSBLD, LPBK).
GCC	
GCC Terminations	Displays the slot, port, and card type of a GCC termination.

Table B-457 Field Descriptions for the DCC/GCC/OSC Properties Pane (continued)

Field	Description
OSPF Disabled on Link	Check to prevent the advertisement of the OSPF routing table.
GCC Rate	Displays the GCC rate.
Foreign	A check mark indicates that the far-end node is a non-ONS node.
Foreign IP	Displays the foreign node IP address.
LAPD Config	Displays the LAP-D parameters for the SDCCs that are provisioned as OSI only. For GCCs, this column is always N/A.
OSI SNPA	If the GCC is provisioned for OSI, the following SNPA information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.
Service State	Select the state of the GCC termination (IS-NR, OOS-AU, OOS-MA, OOS-AUMA) plus the secondary state (MEA, UEQ, UAS, SWDL, MT, AINS, DSBLD, LPBK).
OSC	
OSC Terminations	Displays the slot, port, and card type of an OSC termination.
LAPD Config	Displays the LAP-D parameters for the SDCCs that are provisioned as OSI only.
OSI SNPA	If the OSC is provisioned for OSI, the following SNPA information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.
Service State	Displays the state of the OSC termination.

Timing

The Timing Properties pane contains the following tabs:

- General Tab, page B-335
- Facility Tab, page B-335
- Reference List Tab, page B-336
- Status Tab, page B-337
- Timing Report Tab, page B-337

General Tab

The General tab displays general timing information.

Table B-458 Field Descriptions for the General Tab

Field	Description
General Timing	
Timing Mode	Set to External if the ONS 15454-M2 derives its timing from a BITS source wired to the backplane pins; set to Line if timing is derived from an OC-N card that is optically connected to the timing node. A third option, Mixed, allows you to set external and line timing references. **Caution** Mixed timing might cause timing loops. Use this mode with care.
SSM Message Set	Choose the SSM set level supported by your network. SSM is an SDH protocol that communicates information about the quality of the timing source. SSM messages are carried on the S1 byte of the SDH Line layer. They enable SDH devices to automatically select the highest quality timing reference and to avoid timing loops. If a Generation 1 node receives a Generation 2 message, the message is mapped down to the next available Generation 1 node. For example, an ST3E message becomes an ST3.
Revertive	If checked, the ONS 15454-M2 reverts to a primary reference source after the conditions that caused it to switch to a secondary timing reference are corrected.
Quality of RES	If your timing source supports the reserved S1 byte, set the timing quality here. (Most timing sources do not use RES.) Qualities are displayed in descending quality order as ranges. For example, ST3 < RES < ST2 means the timing reference is higher than a Stratum 3 and lower than a Stratum 2.

Facility Tab

The Facility tab displays the facility type, BITS IN and OUT information.

Note BITS IN Facilities and BITS OUT Facilities values apply to both BITS-1 and BITS-2.

Table B-459 Field Descriptions for the Facility Tab

Field	Description
BITS-IN-OUT Facility Type	
In Facility Type	Provisions the BITS In facility type.
Out Facility Type	Provisions the BITS Out facility type.
BITS IN Facilities	
In State	Set the BITS reference to Locked or Unlocked. For nodes set to Line timing with no equipment timed through BITS Out, set the state to Locked. For nodes using External timing or Line timing with equipment timed through BITS Out, set the state to Unlocked.
Coding	Set to the coding used by your BITS reference, either AMI or HDB3.
Framing	Set to the framing used by your BITS reference.
Sync Messaging	If checked, enables the SSM for BITS In. (SSM is not available if Framing is set to Super Frame.)

Table B-459 Field Descriptions for the Facility Tab (continued)

Field	Description
Admin SSM	If the Sync Messaging check box is not checked, you can choose the SSM Generation 2 type from the drop-down list.
BITS OUT Facilities	
Out State	Set the BITS reference to Locked or Unlocked. For nodes set to Line timing with no equipment timed through BITS Out, set the state to Locked. For nodes using External timing or Line timing with equipment timed through BITS Out, set the state to Unlocked.
Coding	Set to the coding used by your BITS reference, either AMI or HDB3.
Framing	Set to the framing used by your BITS reference.
AIS Threshold	If SSM is disabled or Super Frame is used, sets the quality level where a node sends an AIS from the BITS-1 Out and BITS-2 Out backplane pins. An AIS is raised when the optical source for the BITS reference falls to or below the SSM quality level defined in this field.
LBO	If you are timing an external device connected to the BITS Out pins, set the distance between it and the ONS 15454. Options are 0-133 ft (Cisco default), 134-266 ft, 267-399 ft, 400-533 ft, and 534-655 ft.

Reference List Tab

The Reference List tab provides timing reference information.

Table B-460 Field Descriptions for the Reference List Tab

Field	Description
NE References	Allows you to define three timing references (Ref-1, Ref-2, and Ref-3). The node uses Reference 1 unless a failure occurs on that reference, in which case, the node uses Reference 2. If that fails, the node uses Reference 3, which is typically set to Internal Clock. This is the Stratum 3 clock provided on the TNC/TSC. The options displayed depend on the Timing Mode setting: • Timing Mode set to External—Options are BITS-1, BITS-2, and Internal Clock. • Timing Mode set to Line—Options are the node's working optical cards and Internal Clock. **Note** For Timing Mode set to External and Timing Mode set to Line, select the cards/ports that are directly or indirectly connected to the node wired to the BITS source; that is, the node's trunk cards. Set Reference 1 to the trunk card that is closest to the BITS source. For example, if Slot 5 is connected to the node wired to the BITS source, select Slot 5 as Reference 1. • Timing Mode set to Mixed—Both BITS and optical cards are available, allowing you to set a mixture of external BITS and optical trunk cards as timing references.
BITS-1 Out References	Allows you to define three timing references (Ref-1, Ref-2, and Ref-3) for the equipment wired to the BITS Out backplane pins. Normally, BITS Out is used with line nodes, so the options displayed are the working optical cards. BITS-1 and BITS-2 Out are enabled as soon as BITS-1 and BITS-2 facilities are placed in service.
BITS-2 Out References	Allows you to define three timing references (Ref-1, Ref-2, and Ref-3) for the equipment wired to the BITS Out backplane pins. Normally, BITS Out is used with line nodes, so the options displayed are the working optical cards. BITS-1 and BITS-2 Out are enabled as soon as BITS-1 and BITS-2 facilities are placed in service.

Status Tab

The Status tab displays timing status information.

Note If you change any values in the Status tab and click Apply at the bottom of the screen, the values are not set. Instead, use the following buttons to apply changes:

- Clear—Releases any existing switch request. For example, if you issue a Force Switch and then issue a Clear, the Force Switch request is released.
- Manual Switch—Switches the timing reference from one source to another.
- Force Switch—Switches the timing reference from one source to another. This request has a higher priority than the Manual Switch request.

Table B-461 Field Descriptions for the Status Tab

Field	Description
NE Clock	
NE Reference	Set the NE timing reference to internal, BITS-1, or BITS-2.
Status	Displays the status of the NE clock.
Operations	Execute a switch on the NE timing reference.
BITS-1 Out	
BITS-1 Out	Set the BITS-1 out timing reference.
Status	Displays the status of the BITS-1 out timing reference.
Operations	Execute a switch on the BITS-1 out timing reference.
BITS-2 Out	
BITS-2 Out	Set the BITS-2 out timing reference.
Status	Displays the status of the BITS-2 out timing reference.
Operations	Execute a switch on the BITS-2 out timing reference.

Timing Report Tab

The Timing Report tab summarizes the NE's current timing settings.

Protection

The Protection Properties pane contains the following tabs:

- Protection Groups Tab, page B-338
- Operations Tab, page B-339

Protection Groups Tab

The Protection Groups tab displays a list of available protection groups and allows you to create, delete, and view protection groups.

Table B-462 Field Descriptions for the Protection Groups Tab

Field	Description
Protection Groups	
Displays a list of available protection groups. Click the **Create** or **Delete** button to create a new protection group or delete an existing one.	
Selected Protection Group	
Name	Modify the name of the selected protection group. The name can have up to 32 alphanumeric characters.
Type	Choose the protection type (1:1, 1:N, 1+1, or Y-cable) from the drop-down list. The protection selected determines the cards that are available to serve as protect and working cards. For example, if you choose 1:N protection, only DS-1N and DS-3N cards are displayed.
Protect Module	View the protect module if using 1:1, 1:N, or Y-cable protection. **Note** For OTU2_XP cards, the card name might be shown as XP_4_10G_LINE_CARD.
Available Entities	Displays a list of available entities. You can toggle between available and working entities.
Working Entities	Displays a list of working entities. You can toggle between working and available entities.
Bidirectional Switching	Click if you want both the transmit and the receive channels to switch if a failure occurs on one. This option is available only if you select the 1+1 (port) type.
Revertive	If checked, the ONS 15454-M2 reverts traffic to the working card or port after failure conditions for the amount of time entered in Reversion Time. This option is not available if you select the 1:N (card) type.
Reversion Time	If Revertive is checked, enter the amount of time following failure condition correction that should elapse before the ONS 15454-M2 switches back to the working card or port. Use half-minute increments. This option is available only if you select the 1:1 (card) type.
Recovery Guard Time	The recovery guard timer prevents rapid switches due to SD or SF failures. After the SD or SF condition is cleared on a facility protected by Optimized 1+1 protection, no switches are performed for the duration of the recovery guard timer.
Verification Guard Time	The verification guard timer specifies the amount of time that a user command has to complete. If a user command cannot be completed within the duration set by the verification guard timer, the command is cleared and an APS_CLEAR event is sent.
Detection Guard Time	The detection guard timer specifies the amount of time after a failure that the system has to complete a switch. After detecting an SD, SF, LOS, LOF, or AISL failure, the detection guard timer is started. If the detection guard timer is set to zero, the system completes a switch within 60 ms for failure events.

Operations Tab

The Operations tab displays protection group operation information.

Table B-463 Field Descriptions for the Operations Tab

Field	Description
Protection Groups	Displays a list of available protection groups.
Protection Group Details	Displays details about the selected protection groups and allows you to execute switch commands. **Note** For OTU2_XP cards, the card name might be shown as XP_4_10G_LINE_CARD.
Switch Commands	Allows you to perform command switching.
Inhibit Switching	Allows you to inhibit command switching.

NE Defaults

The NE Defaults Properties pane displays a list of default thresholds for the ONS 15454-M2 NE.

Table B-464 Field Descriptions for the NE Defaults Properties Pane

Field	Description
Load Data	Loads the values for NE defaults.
Parameter	Lists the default NE parameter.
Value	Shows the default parameter value, and allows you to change the default.
Units	Lists the unit of measure that corresponds to the default NE parameter.
Range	Lists the possible range of values for the default NE parameter.
Side Effects	Lists any side effects that could occur as a result of changing the default NE parameter.

You can load different NE defaults using the NE Defaults Management window. See Restoring NE Defaults, page 4-78.

Security

The Security Properties pane allows you to view and edit security features for the ONS 15454-M2 NE. The Properties pane contains the following tabs:

- Policy Tab, page B-339
- Password Tab, page B-340
- Access Tab, page B-341
- RADIUS Server Tab, page B-342
- Legal Disclaimer Tab, page B-343
- FIPS Tab, page B-344

Policy Tab

The Policy tab allows you to specify user security parameters.

Note If the user is already logged in, any changes to the NE user type settings take effect only when the user next logs in.

Table B-465 Field Descriptions for the Policy Tab

Field	Description
Idle User Timeout	
Each CTC or TL1 user can be idle during his or her login session for a specified amount of time before the CTC window is locked. The lockouts prevent unauthorized users from making changes. Higher-level users have shorter default idle periods and lower-level users have longer or unlimited default idle periods. The user idle period can be modified by a SuperUser. **Note** A user already logged into the node is not affected by a change to the Idle User Timeout policy.	
Retrieve	Set the idle user timeout for a CTC Retrieve user.
Maintenance	Set the idle user timeout for a CTC Maintenance user.
Provisioner	Set the idle user timeout for a CTC Provisioner user.
SuperUser	Set the idle user timeout for a CTC SuperUser user.
User Lockout	
Manual Unlock by SuperUser	If checked, the CTC SuperUser user must manually unlock locked out CTC users. If unchecked, locked out CTC users are automatically unlocked after the lockout duration period elapses.
Lockout Duration	Set the lockout duration period for locked out CTC users. This field is enabled only if the Manual Unlock by SuperUser check box is unchecked.
Failed Logins Allowed	Set the number of failed logins before the CTC user is automatically locked out.
Other	
Single Sessions per User	If checked, each CTC user can launch only one session at a time.
Prevent Disabling the SuperUser	If checked, inactive CTC SuperUsers are never disabled.
Disable Inactive User	If checked, inactive users are disabled automatically for the amount of time in the Inactive Duration field.
Inactive Duration	Specify the inactive duration in days. The range is from 1 to 90 days; the Cisco default is 45 days. A value of 0 implies the inactive duration is disabled and invalid.

Password Tab

The Password tab allows you to specify user password security parameters.

Table B-466 Field Descriptions for the Password Tab

Field	Description
Password Change	
Prevent Reusing Last	Prevents setting a CTC user's current password to one of the most recent passwords. You can set the number of most recent passwords that cannot be reused.
Disable Password Flipping	If checked, users are not allowed to change passwords for the number of days specified in the Can Change Password After field.
Can Change Password After	Enter the number of days that must elapse before the user can change the password.

Table B-466 Field Descriptions for the Password Tab (continued)

Field	Description
Force Password Change After Assigned	If checked, during the first successful login, the user is forced to change the password.
Password Difference	Allows SuperUsers to specify the number of characters by which the new password of a user must differ from the old password, while performing a password change. The default value is 1; the range is from 1 to 5 characters.
Password Aging	
Enable Password Aging	Check this check box to enable password aging.
Aging Period	Enter the aging period, in days, for Retrieve, Maintenance, Provisioner, and SuperUser CTC users. After the aging period expires, CTC users are forced to change their passwords.
Warning Period	Enter the warning period, in days, for Retrieve, Maintenance, Provisioner, and SuperUser CTC users. After the warning period expires, CTC users are warned that their passwords will soon expire.

Access Tab

The Access tab allows you to configure LAN and shell access to the NE.

Table B-467 Field Descriptions for the Access Tab

Field	Description
Access	
LAN Access	Specify the type of LAN access allowed. Values are EMS Only, No LAN Access, Front Craft and EMS, or Front and Craft.
Restore Timeout	This time period begins if *No LAN Access* is selected and all DCC connections are lost. If the time expires before a DCC is restored, LAN access is restored so that the node is not isolated. When the DCC comes back, LAN access returns to its specified settings. The range is from 0 (never) to 60 minutes; the Cisco default is 5 minutes.
Disable IPv4 Access for IPv6	Check this check box to disable IPv4 access for IPv6 ports.
Serial Craft Access	
Enable Craft Port	Check this check box to enable the craft port.
Shell Access	
Access State	Select the Shell access state from the drop-down list. You can select Disable, Non-secure, or Secure.
SSH Port	Indicates the SSH port number that will be used.
SFTP Port	Indicates the SFTP port number.
Telnet Port	This is enabled if you selected the Non-secure access state. Enter the Telnet port number that will be used.
Use Standard Telnet Port	Check this check box to indicate that the standard Telnet port will be used.
Enable Shell Password	Indicates whether or not the Shell password is enabled. **Note** You cannot enable the Shell password in Prime Optical. Enabling and providing a Shell password is currently done in CTC.

Table B-467 Field Descriptions for the Access Tab (continued)

Field	Description
TL1 Access	
Access State	Select the TL1 access state from the drop-down list. You can select Disable, Non-secure, or Secure.
SNMP Access	
Access State	Select the SNMP access state from the drop-down list. You can select either Disable or Non-secure.
Pseudo-IOS Access (available for ONS 15454 SDH R9.2)	
Access State	Pseudo CLI is a command-line interface on the NE that simulates a Cisco IOS connection. Select the pseudo-IOS access state from the drop-down list. You can select Disable, Non-secure, or Secure. If you choose Disable, the port is not configurable, which means that the node does not listen for pseudo-CLI connections. **Note** Pseudo-IOS functionality is available only if the node contains 10GE_XP or GE_XP cards in L2 mode.
Port	Enter the port number for pseudo-IOS access. If the Access State field is set to Disable, you cannot configure this field.
Other	
PM Clearing Privilege	Select the users privilege that allows clearing PM statistics for the NE.
EMS Access	
Access State	Select the EMS access state from the drop-down list. You can select either Non-secure or Secure.
CORBA Listener Port	Select the port numbers for the Controller Card CORBA (IIOP) listener port and the Controller Card CORBA (SSLIOP) listener port. Select one of the following radio buttons: • Default-Fixed—Assigns a default port number. • Standard Constant—The port number for the Controller Card CORBA (IIOP) listener port is 683. The port number for the Controller Card CORBA (SSLIOP) listener port is 684. • Other Constant—When selected, enter the port number that will be used.

RADIUS Server Tab

The RADIUS Server tab allows you to configure, create, modify, and delete RADIUS servers for the ONS 15454-M2 NE.

Table B-468 Field Descriptions for the RADIUS Server Tab

Field	Description
Enable RADIUS Authentication	Check this check box to enable RADIUS authentication.
Enable RADIUS Accounting	Check this check box to enable RADIUS accounting. This is enabled if the Enable RADIUS Authentication check box is checked.
Enable the Node as the Final Authenticator When no RADIUS Server is Reachable	Select a row from the RADIUS Servers in Order of Authentication table; then, check this check box. This indicates that the RADIUS server that you selected will be the final authenticator when there are no more RADIUS servers that can be reached.
Create button	Click **Create** to create a RADIUS server. See Creating a RADIUS Server, page 8-46.

Table B-468 Field Descriptions for the RADIUS Server Tab (continued)

Field	Description
Edit button	Click **Edit** to modify an existing RADIUS server's information. See Modifying a RADIUS Server, page 8-46.
Delete button	Click **Delete** to delete an existing RADIUS server. See Deleting a RADIUS Server, page 8-46.
Move Up/Move Down buttons	Click **Move Up** or **Move Down** to reorder the list of RADIUS servers in the RADIUS Servers in Order of Authentication table.
RADIUS Servers in Order of Authentication	
IP Address	Displays the IP address of the RADIUS server.
Shared Secret	Displays a text string that serves as a password between a RADIUS client and RADIUS server.
Authentication Port	Displays the authentication port number of the RADIUS server. Default access is through port number 1812.
Accounting Port	Displays the accounting port number of the RADIUS server. Default access is through port number 1813.

Legal Disclaimer Tab

The Legal Disclaimer tab allows you to edit the NE's advisory message and preview the disclaimer.

Table B-469 Field Descriptions for the Legal Disclaimer Tab

Tab	Description
Advisory Message	The existing message is a default, noncustomer-specific disclaimer. If you want to edit this statement with specifics for your company, you can change the text. You can also use the following HTML commands to format the text: • ****—Begins boldface font • ****—Ends boldface font • ** **—Aligns type in the center of the window • ** **—Ends the center alignment • **<font=*n*, where *n* = point size>**—Changes the font to the new size • ****—Ends the font size command • **<p>**—Creates a line break • **_{**—Begins subscript • **}**—Ends subscript • **^{**—Begins superscript • **}**—Ends superscript • **<u>**—Starts underline • **</u>**—Ends underline
Preview	Allows you to view the advisory message before saving it.

FIPS Tab

Table B-470 FIPS Tab

Field	Description
FIPS Mode	Check the check box to configure the node in FIPS mode for encryption and cryptographic services. When the FIPS mode is selected, the node reboots and performs a self-test at startup. **Note** Launching a TL1 interface is not supported if the Network Element is set in FIPS Mode.
Zeroise Key	Erases all the private keys in the WSE and TNC cards and rewrites the keys with zeros. This implementation for the private keys is a requirement as per the FIPS 140-2 compliance.

Alarm

The Alarm Properties pane allows you to change default alarm severities by creating unique alarm profiles for individual ONS 15454-M2 SDH nodes. The Properties pane contains the following tabs:

- Profile Tab, page B-264
- Alarm Behavior Tab, page B-264

Profile Tab

The Profile tab allows you to select, create, or delete alarm profiles.

Table B-471 Field Descriptions for the Profile Tab

Field	Description
Alarm Profile Name	Choose an alarm profile for the NE from the drop-down list. Click **Create** to create a new alarm profile for the NE. Click **Delete** to delete an alarm profile from the NE.
Condition	Displays the alarm condition.
Severity	Displays the alarm severity.

Alarm Behavior Tab

The Alarm Behavior tab allows you to change default alarm severities by creating unique alarm profiles.

Table B-472 Field Descriptions for the Alarm Behavior Tab

Field	Description
Node Profile	
Alarm Profile	Choose a global alarm profile for the NE from the drop-down list.
Suppress Alarms	If checked, all alarms are suppressed.
Slot Number	Displays the location of the module.
Equipment Type	Displays the type of module in the slot.

Table B-472 Field Descriptions for the Alarm Behavior Tab (continued)

Field	Description
Node Profile	
Profile	Choose an alarm profile for the slot from the drop-down list.
Suppress Alarms	Indicates whether or not the alarms for a particular card are suppressed. If checked, all alarms are suppressed for the port.

Alarm Conditions

The Conditions Properties pane allows you to view all NE conditions (events with a Not Reported [NR] severity) at the node level. Alarm Conditions Properties pane gives a clear record of changes or events that do not result in alarms.

Note The Alarm Conditions tab is not updated when conditions change; therefore, you must click **Retrieve** to see any changes.

Table B-473 Field Descriptions for the Alarm Conditions Tab

Field	Description
Filter button	Click the **Filter** button to filter the data displayed in the table.
Retrieve button	Click the **Retrieve** button. The Retrieve button requests the current set of fault conditions from the node, card, or network. Conditions include all fault conditions raised on the node, whether or not they are reported.
Perceived Severity	Perceived severity of the selected alarm (critical, major, minor, or warning). The background color also indicates the severity, where: • Red = Critical • Orange = Major • Yellow = Minor • Blue = Warning • Green = Cleared
Probable Cause	Probable cause of the selected alarm. Some possible values include: • Not Applicable/Unknown—If no additional information is available • Mismatch of equipment and attributes (MEA) alarm—For misconfigured pluggable port modules (PPMs) • Link Layer Keep-Alive Failure—When the keepalive frame on the POS port is disabled and the port is shut down • Bad Packet Count Exceeds Threshold—When the packets through the front port have CRC errored frames • Auto-Negotiation Remote Failure Indication—When a remote Gigabit Ethernet port is shut down from a local port
Condition	Error message or condition name that is associated with the alarm or event.
Affected Object	Name of the object where the selected alarm occurred.

Table B-473 Field Descriptions for the Alarm Conditions Tab (continued)

Field	Description
Filter button	Click the **Filter** button to filter the data displayed in the table.
Retrieve button	Click the **Retrieve** button. The Retrieve button requests the current set of fault conditions from the node, card, or network. Conditions include all fault conditions raised on the node, whether or not they are reported.
Perceived Severity	Perceived severity of the selected alarm (critical, major, minor, or warning). The background color also indicates the severity, where: • Red = Critical • Orange = Major • Yellow = Minor • Blue = Warning • Green = Cleared
Module Name	Name of the module where the selected alarm occurred.
Physical Location	Physical location of the equipment where the selected alarm occurred, such as chassis, rack, subrack (shelf), slot, and port numbers.
NE Alarm Time	Date and time when the alarm occurred on the NE.
Service Affecting	Whether the alarm or event is service affecting (SA). Values are: • True—The alarm is service affecting • False—The alarm is not service affecting

DWDM

The DWDM Properties pane allows you to manage and provision DWDM connections. The Properties pane contains the following tabs:

- Provisioning Tab, page B-347
- Connections Tab, page B-348
- Span Check Tab, page B-348
- APC Tab, page B-348
- Node Setup Tab, page B-349
- Side Tab, page B-350
- All Facilities Tab, page B-350
- Passive Cards Tab, page B-350
- Alien Wavelength Tab, page B-351
- Fiber Attribute Tab, page B-351

Provisioning Tab

The Provisioning tab allows you to view and change the optical parameters for the ONS 15454-M2 NE. The optical parameters might have already been provisioned manually or by automatic node setup (ANS).

Table B-474 Field Descriptions for the Provisioning Tab

Field	Description
Attribute Name	Displays the Properties pane name that is imported from or exported to the Cisco MetroPlanner configuration file.
Value	Displays the default value of the corresponding Properties pane name imported from or exported to the Cisco MetroPlanner configuration file.
Origin (*Available in ONS 15454 SDH R8.0 and later*)	Shows how the parameter is set. Possible values are: • Default • Automatic • Provisioned • Imported
Note (*Available in ONS 15454 SDH R8.0 and later*)	Displays error details if ANS fails to set the parameter. Possible errors are: • Error during NE board navigation; value is not calculated • Cannot send the parameter request to far-end node; value is not calculated • No response from far-end node; value is not calculated • Configuration is not supported; value is not calculated • Far-end node configuration is not supported; value is not calculated • OSC far-end launch power is not available; value is not calculated • Far-end launch power is not available; value is not calculated • Span loss value is not available; value is not calculated • Fiber stage insertion loss is not available; value is not calculated • Preamplifier tilt is not available; value is not calculated • Add/drop output power is not available; value is not calculated • NE node launch power is not available; value is not calculated • WXC degree is not available; value is not calculated • Value is out of range • Read-only attribute; value is not calculated

Connections Tab

The Connections tab allows you to create or delete DWDM connections or internal patchcords. It also allows you to calculate DWDM connections.

Table B-475 Field Descriptions for the Connections Tab

Field	Description
From	The unit or port from which the internal patchcord originates.
To	The unit or port at which the internal patchcord terminates.
Wavelength	Shows the wavelength value if the internal patchcord is between two channel ports. Otherwise, it shows *N/A*.

Span Check Tab

The Span Check tab allows you to check the span loss between the selected node and the previous node in the chain. The span check is always in reception.

Note If the Measured Span Loss value crosses the Min or Max Expected Span Loss threshold, a condition is raised.

Table B-476 Field Descriptions for the Span Check Tab

Field	Description
Retrieve Span Loss Values button	Runs the span loss verification function and retrieves values for the measured span loss column.
Side	Specifies the side for which span loss information is displayed (east-to-west or west-to-east).
Min Exp. Span Loss	Specifies the minimum expected span loss (in dBm) for the incoming span. This value is imported from MetroPlanner, but can be modified manually.
Max Exp. Span Loss	Specifies the maximum expected span loss (in dBm) for the incoming span.
Meas. Span Loss	The measured span loss value.
Resolution	The resolution or accuracy of the span loss measurement.
Measured By	Specifies the channel on which span check was calculated.

APC Tab

The APC tab allows you to manually run the automatic power control (APC) function, disable and enable APC, and view the date and time the power control setpoint was last checked and modified.

Table B-477 Field Descriptions for the APC Tab

Field	Description
Disable APC button (*available in CTM R7.2 and earlier*)	Disables the automatic power control function. **Caution** Disabling APC should be performed only for specific maintenance actions. When APC is disabled, aging compensation calculations are not performed and circuits cannot be activated.
Run APC button (*available in CTM R7.2 and earlier*)	Runs the automatic power control function manually.
Slot ID (*available in CTM R7.2 and earlier*)	The slot number for power control information and actions.
Card (*available in CTM R7.2 and earlier*)	The card type that is installed in the slot.
Port	The port number.
Last Modification	Date and time the power control setpoint was last modified.
Param (*available in CTM R8.0 and later*)	All the parameters associated with the ports.
Last Check	Date and time the power control setpoint was last verified.
Side (*available in CTM R8.0 and later*)	Lists all the NEs and their sides that belong to the APC domain.
APC State (*available in CTM R8.0 and later*)	Displays the actual state of the APC. Values are: • Enabled—APC is enabled. • Disabled—APC is disabled. • Force Disabled—APC is disabled by the user. • Not Applicable—APC domain is incomplete.

Node Setup Tab

The Node Setup tab allows you to automatically preprovision NEs.

Table B-478 Field Descriptions for the Node Setup Tab

Field	Description
XML Settings	
Select XML File	Click **Browse** to select an XML file (generated by the MetroPlanner application). Prime Optical parses the XML file selected by the operator and checks the accuracy of its content.
Log Settings	
Select Log File	Click **Browse** to select a log file to which the results of the operations you perform will be saved.
Launch ANS Wizard button	Click the **Launch Wizard** button to launch the Automatic Node Setup wizard. See Configuring Automatic Node Setup, page 7-339 for more information.

Side Tab

The Side tab allows you to view, edit, and delete sides defined for an ONS 15454-M2 NE.

Table B-479 Field Descriptions for the Side Tab

Field	Description
Create button	Allows you to create side objects for the NE.
Modify button	Allows you to modify the side ID of an existing side object.
Delete button	Allows you to delete side objects.
Side	Displays the NE's side ID.
Line In	Displays the index of the receive side of the OTS port.
Line Out	Displays the index of the transmit side of the OTS port.

All Facilities Tab

The All Facilities tab allows you to view the DWDM and optical ports for the ONS 15454-M2 NE.

Table B-480 Field Descriptions for the All Facilities Tab

Field	Description
Port	Displays the card port number, shelf ID, and slot number. **Note** Shelf ID is not included in the port number if the node is not a multishelf NE.
Power	Displays the current power for the port.
State	Displays the administrative state of the port.
Service State	Displays the service state of the port.
Retain Selected button	Displays only the ports that you selected.
Show All button	Retrieves and displays all the optical and DWDM ports for the NE.

Passive Cards Tab

The Passive Cards tab allows you to view information about passive units provisioned in CTC.

Note Passive units can be provisioned in CTC only.

Table B-481 Field Descriptions for the Passive Cards Tab

Field	Description
Passive Cards	
ID	Displays the passive card shelf ID.
Equipment Name	Displays the general card type/name.
Location	Displays the location of the passive card.
Description	Displays the passive card description.
Optical Ports	

Table B-481 Field Descriptions for the Passive Cards Tab (continued)

Field	Description
Port	Displays the port number.
Type	Displays the port type.
MPO	Displays any physical multifiber push connectors.
Wavelength	Displays the port wavelength.

Alien Wavelength Tab

The Alien Wavelength tab allows you to view and edit the port and wavelength parameters defined for an ONS 15454-M2 NE. Click the **Refresh** button to refresh the Alien Wavelength table.

Note Alien Wavelength is applicable to ONS 15454 NEs that support WSON nodes.

Table B-482 Field Descriptions for the Alien Wavelength Tab

Field	Description
Filter button	Click the **Filter** button to filter the data displayed in the table.
Create button	Allows you to create alien wavelengths for the NE. See Creating Alien Wavelength, page 7-343 for more information.
Edit button	Allows you to modify the existing alien wavelength value. See Editing Alien Wavelength, page 7-344 for more information.
Position	Displays information about the shelf, slot, and port on which the alien wavelength is configured.
Alien Wavelength	Displays the alien wavelength class.
Lambda	Displays the alien wavelength value.
FEC	Displays the FEC mode.

Fiber Attribute Tab

The Fiber Attribute tab allows you to view the fiber parameters defined for an ONS 15454-M2 NE.

Note Fiber Attribute is applicable to ONS 15454 NEs that support WSON node.

Table B-483 Field Descriptions for the Fiber Attribute Tab

Field	Description
Filter button	Click the **Filter** button to filter the data displayed in the table.
Toggle button	Click the **Toggle** button to select the unit of measure.
Optical Side	Displays the name of the optical side to which the fiber is connected.
Fiber Type	Choose the fiber type from the drop-down list.

Table B-483 Field Descriptions for the Fiber Attribute Tab (continued)

Field	Description
Fiber Number	Displays the number of the fiber associated to the optical side. Useful when different types of fiber are present on the span.
Fiber Length	Allows you to edit the fiber length.

WSON Tab

The WSON tab allows you to view and acknowledge the unverified alarms at the circuit level.

Table B-484 Field Descriptions for the WSON Tab

Field	Description
Filter button	Click the **Filter** button to filter the data displayed in the table.
Acknowledge WSON Alarm button	Click the **Acknowledge WSON Alarm** button to acknowledge a WSON alarm.
Affected Circuits button	Click the **Affected Circuits** button to view the affected circuits. If there are circuits affected by the selected alarm, the new circuit report is displayed. See Working with Circuit Reports, page 7-186 for more information. **Note** The Affected Circuits button is enabled only when an alarm condition is selected.
ID	Displays the ID of the NE from the Domain Explorer.
PS	Perceived severity of the selected alarm (critical, major, minor, or warning). The background color also indicates the severity, where: • Red = Critical • Orange = Major • Yellow = Minor • Blue = Warning • Green = Cleared
Probable Cause	Probable cause of the selected alarm. Some possible values include: • Not Applicable/Unknown—If no additional information is available • Mismatch of equipment and attributes (MEA) alarm—For misconfigured pluggable port modules (PPMs) • Link Layer Keep-Alive Failure—When the keepalive frame on the POS port is disabled and the port is shut down • Bad Packet Count Exceeds Threshold—When the packets through the front port have CRC errored frames • Auto-Negotiation Remote Failure Indication—When a remote Gigabit Ethernet port is shut down from a local port
Condition	Error message or condition name that is associated with the alarm or event.
Affected Object	Name of the object where the selected alarm occurred.
Module Name	Name of the module where the selected alarm occurred.

Table B-484 Field Descriptions for the WSON Tab (continued)

Field	Description
Physical Location	Physical location of the equipment where the selected alarm occurred, such as chassis, rack, subrack (shelf), slot, and port numbers.
NE Alarm Time	Date and time when the alarm occurred on the NE.
SA	Whether the alarm or event is service affecting (SA). Values are: • Yes—The alarm is service affecting • No—The alarm is not service affecting • N/A—No information is provided by the NE

OSI

The OSI Properties pane allows you to provision ONS 15454-M2 Open System Interconnection (OSI) parameters. The Properties pane contains the following tabs:

- Main Setup Tab, page B-353
- TARP-Config Tab, page B-354
- TARP-TDC Tab, page B-355
- TARP-MAT Tab, page B-355
- Routers-Setup Tab, page B-356
- Subnets Tab, page B-356
- Tunnels Tab, page B-357
- IS-IS RIB Tab, page B-358
- ES-IS RIB Tab, page B-358

Main Setup Tab

The Main Setup tab allows you to provision the OSI Network Entity Title (NET) address and the OSI routing mode.

Table B-485 Field Descriptions for the Main Setup Tab

Field	Description
Main Network Entity Title	Displays the node NET. The NET is used in OSI networks to identify the node to the end system (ES) or intermediate system (IS).
End System	Provisions the node as an OSI end system (ES). ESs send end system hello (ESH) messages regularly to announce their presence to neighboring ISs and ESs.
Intermediate System Level 1	Provisions the node as an OSI intermediate system (IS). ISs send intermediate system hello (ISH) messages regularly to announce their presence to neighboring ISs and ESs. For the ONS 15454-M2, Intermediate System Level 1 is the Cisco default.
Intermediate System Level 1/Level 2	The ONS 15454-M2 performs all IS functions. It communicates with other IS and ES nodes within an OSI area and broadcasts ISHs to IS nodes in other areas to which it is connected.
Node Routing Mode	

Table B-485 Field Descriptions for the Main Setup Tab (continued)

Field	Description
L1 LSP Buffer Size	Sets the Level 1 Link State Protocol (LSP) data unit buffer size. The Cisco default is 512.
L2 LSP Buffer Size	Sets the Level 2 LSP data unit buffer size. The Cisco default is 512.

TARP-Config Tab

The TARP-Config tab allows you to provision the TID Address Resolution Protocol (TARP). TARP is used when TL1 TIDs must be translated to an NSAP address. During the TID-to-NSAP translation, the TID is mapped to a NET; then, the NSAP is derived from the NET based on the NSAP selector value.

Table B-486 Field Descriptions for the TARP-Config Tab

Field	Description
TARP PDUs L1 Propagation	If checked (default), TARP Type 1 PDUs received by the node that are not excluded by the loop detection buffer are propagated to other NEs within the OSI Level 1 area. Type 1 PDUs request a protocol address that matches a target TID within a Level 1 routing area. The propagation does not occur if the NE is the target of the Type 1 PDU and the PDUs are not propagated to the NE from which the PDU was received. **Note** This parameter is not used when the node is set to End System.
TARP PDUs L2 Propagation	If checked (default), TARP Type 2 PDUs received by the node that are not excluded by the loop detection buffer are propagated to other NEs within the OSI Level 2 area. Type 2 PDUs request a protocol address that matches a target TID within a Level 2 routing area. The propagation occurs if the NE is the target of the Type 2 PDU and the PDUs are not propagated to the NE from which the PDU was received.
TARP PDUs Origination	If checked (default), the node performs all TARP configuration functions, including: • TID-to-NSAP resolution requests • NSAP-to-TID requests • TARP address changes **Note** TARP Echo and NSAP to TID are not supported.
L1 TARP Data Cache	If checked, the node maintains a TARP data cache (TDC). The TDC is a database of TID-to-NSAP pairs created from TARP Type 3 PDUs received by the node. TARP Type 3 PDUs are responses to Type 1 and Type 2 PDUs and modified by TARP Type 4 PDUs (TID-to-NSAP updates or corrections).
L2 TARP Data Cache	If checked (default), the TIDs and NSAPs are added to the TDC before the node propagates the requests to other NEs. **Note** This parameter is designed for IS Level 1/Level 2 nodes that are connected to other IS Level 1/Level 2 nodes. Enabling the parameter for IS Level 1 nodes is not recommended.
LDB	If checked, enables the TARP loop detection buffer (LDB). The LDB prevents TARP PDUs from being sent more than once on the same subnet.
LAN TARP Storm Suppression	If checked (default), enables the TARP storm suppression to prevent redundant TARP PDUs from being propagated across the network.

Table B-486 Field Descriptions for the TARP-Config Tab (continued)

Field	Description
Send Type 4 PDU on Startup	If checked, a TARP Type 4 PDU is originated during the initial ONS 15454-M2 startup. Type 4 PDUs indicate that a TID or NSAP change has occurred at the NE. This option is disabled by default.
Type 4 PDU Delay	Sets the amount of time that will pass before the Type 4 PDU is generated. The Cisco default value is 60 seconds; the range is from 0 to 255 seconds.
Timers	
LDB Entry	Sets the TARP LDB timer. The LDB buffer time is assigned to each LDB entry for which the TARP sequence number is zero. The Cisco default is 5 minutes; the range is from 1 to 10 minutes.
LDB Flush	Sets the frequency period for flushing the LDB. The Cisco default is 5 minutes; the range is from 0 to 1440 minutes.
T1 Timer	Sets the amount of time to wait for response to a Type 1 Request PDU. Type 1 requests seek a specific NE TID within an OSI Level 1 area. The Cisco default is 15 seconds; the range is from 0 to 3600 seconds.
T2 Timer	Sets the amount of time to wait for a Type 2 Request PDU. TARP Type 2 requests seek a specific NE TID within an OSI Level 1 area. The Cisco default is 25 seconds; the range is from 0 to 3600 seconds.
T3 Timer	Sets the amount of time to wait for an address resolution request. The Cisco default is 40 seconds; the range is from 0 to 3600 seconds.
T4 Timer	Sets the amount of time to wait for an error recovery. The timer begins after the T2 timer expires without successfully finding the NE TID. The Cisco default is 20 seconds; the range is from 0 to 3600 seconds.

TARP-TDC Tab

Table B-487 Field Descriptions for the TARP-TDC Tab

Field	Description
TID	Target ID that is statistically linked to an NSAP or NET. For ONS nodes, the TID is the node name.
NSAP/NET	The NSAP that is statistically linked to the TID.
Type	Indicates how the TARP data cache entry was created. It can be either: • Dynamic—The entry was created through the TARP propagation process. • Static—The entry was manually created and is a static entry.
Add Static Entry button	Click **Add Static Entry** to statically link a TID to an NSAP or NET.
Delete Selected Entry button	Click **Delete Selected Entry** to delete the selected TID-to-NSAP/NET static entry.
TID to NSAP button	Click **TID to NSAP** to query the network for an NSAP that matches a TID.
Flush Dynamic Entries button	Click **Flush Dynamic Entries** to delete all dynamically generated TDC entries.

TARP-MAT Tab

The TARP-MAT tab allows you to manually provision a TARP adjacency.

Table B-488 Field Descriptions for the TARP-MAT Tab

Field	Description
Level	Sets the TARP Type Code that will be sent. • Level 1—Indicates that the manual area adjacency is within the same area as the node. The entry generates Type 1 PDUs. • Level 2—Indicates that the manual area adjacency is in an area different from that of the node. The entry generates Type 2 PDUs.
NSAP	The NSAP address of the node at the other end of the TARP manual adjacency.
Add button	Click **Add** to create a TARP manual area adjacency.
Remove button	Click **Remove** to delete the selected TID-to-NSAP/NET static entry.

Routers-Setup Tab

Table B-489 Field Descriptions for the Routers-Setup Tab

Field	Description
Router Number	Displays the virtual router number. The ONS 15454-M2 provides three virtual routers, numbered 1 through 3.
System ID	Displays the NSAP system ID of the virtual router. The NSAP system identifier is set to the node's first IEEE 802.3 MAC address + *n*, where *n* = 0 through 2. For the primary router (Router 1), *n* = 0.
Status	Indicates the virtual router status. Select Enabled or Disabled from the drop-down list. **Note** Router 1 must be enabled before additional routers can be enabled.
Primary Area Address	Indicates the primary manual area address. For Router 1, this is the main NET for the node; that is, the NSAP without the system ID and selector (set to 00) fields.
Manual Area Address 1	Indicates the address of any additional manual areas that are created. **Note** An OSI area allows up to two additional manual areas in addition to the primary manual area.
Manual Area Address 2	Indicates the address of any additional manual areas that are created. **Note** An OSI area allows up to two additional manual areas in addition to the primary manual area.
Edit button	Click **Edit** to modify the address parameters.

Subnets Tab

The Subnets tab allows you to view and manage OSI subnetwork point-of-attachment parameters. The parameters are initially provisioned when you enable a subnet on an SDCC, LDCC, GCC, OSC, or LAN interface.

Table B-490 Field Descriptions for the Subnets Tab

Field	Description
Slot/Port	The subnet slot and port.
Router Number	The OSI virtual router where the subnet (SDCC, LDCC, GCC, or OSC) is provisioned.
Type	The interface where the subnet is provisioned: SDCC, LDCC, GCC, OSC, or LAN.

Table B-490 Field Descriptions for the Subnets Tab (continued)

Field	Description
Protocol	The data link protocol that is provisioned for the subnet. It can be: • Point to Point Protocol (PPP) • Link Access Protocol on the D channel (LAP-D) • 802.3 for LAN subnets
ISH	The intermediate system hello (ISH) PDU propagation frequency. Intermediate system NEs send ISHs to other ESs and ISs to inform them about the NETs they serve. The Cisco default is 10 seconds; the range is from 10 to 1000 seconds.
ESH	The end system hello (ESH) PDU propagation frequency. End system NEs transmit ESHs to inform other ESs and ISs about the NSAPs they serve. The Cisco default is 10 seconds; the range is from 10 to 1000 seconds.
IIH	The intermediate system-to-intermediate system hello (IIH) PDU propagation frequency. The IS-IS hello PDUs establish and maintain adjacencies between ISs. The Cisco default is 3 seconds; the range is from 1 to 600 seconds.
DIS Priority	The designated intermediate system (DIS) priority. In IS-IS networks, one router is elected as the DIS. For Cisco routers, the DIS priority is 64. For the ONS 15454 LAN subnet, the default DIS priority is 63. This priority should not be changed.
IS-IS Cost	The cost for sending packets on the subnet. This is used by OSPF routers to calculate the shortest path. The Cisco default value is 20.
Enable LAN Subnet button	*Router 1 only.* Enables OSI over the LAN; that is, it activates the IS-IS protocol on the LAN so OSI traffic is enabled on the LAN.
Edit button	Click **Edit** to modify the subnet parameters.
Disable LAN Subnet button	*Router 1 only.* Disables OSI over the LAN if it has been enabled.

Tunnels Tab

The Tunnels tab allows you to view, create, edit, and delete Generic Routing Encapsulation (GRE) and Cisco tunnels. GRE tunnels encapsulate one network protocol for transfer across another network layer. Within a mixed TCP/IP and OSI network, GRE tunnels tunnel IP traffic over an OSI NE and OSI traffic over an IP NE.

Table B-491 Field Descriptions for the Tunnels Tab

Field	Description
IP Address	Displays the IP address of the GRE destination Prime Optical or CTC computer.
Netmask Address	Displays the IP address subnet mask of the destination Prime Optical or CTC computer.
NSAP Address	The destination NE NSAP address. The NSAP selector (last two NSAP characters) must be 2f (GRE tunnel) or cc (proprietary Cisco tunnel), depending on which tunnel type you want to create. The Cisco proprietary tunnel is slightly more efficient than the GRE tunnel because it does not add an encapsulation header for each IP packet, while the GRE tunnel adds a small header to the packets. The two tunnel types are incompatible. **Note** Most Cisco routers support the Cisco tunnel, while only a few support both GRE and Cisco IP tunnels.

Table B-491 Field Descriptions for the Tunnels Tab (continued)

Field	Description
OSPF Metric	Displays the cost for sending packets across the GRE tunnel. Cost is used by OSPF routers to calculate the shortest path.
Create button	Click **Create** to create a new GRE tunnel route.
Edit button	Click **Edit** to edit an existing GRE tunnel.
Delete button	Click **Delete** to delete an existing GRE tunnel.

IS-IS RIB Tab

The IS-IS RIB tab allows you to view the intermediate system-to-intermediate system (IS-IS) protocol routing information base (RIB). IS-IS is an OSI link-state hierarchical routing protocol that floods the network with link-state information that enables the NEs to build a complete and consistent picture of a network topology.

Table B-492 Field Descriptions for the IS-IS RIB Tab

Field	Description
Router Number	Displays the OSI router number. The ONS 15454-M2 provides three virtual routers, numbered 1 through 3.
Subnet Type	Indicates the OSI subnetwork point-of-attachment type used to access the destination address. It includes SDCC, LDCC, GCC, OSC, and LAN.
Destination Address	Displays the Network Service Access Point (NSAP).
MAC Address	Displays the NE's MAC address for destinations that are accessed by the LAN subnets.

ES-IS RIB Tab

The ES-IS RIB tab allows you to view the end system-to-intermediate system (ES-IS) protocol RIB. ES-IS is an OSI protocol that defines how end systems (hosts) and intermediate systems (routers) learn about each other.

Table B-493 Field Descriptions for the ES-IS RIB Tab

Field	Description
Router Number	Displays the OSI router number. The ONS 15454-M2 provides three virtual routers, numbered 1 through 3.
Subnet Type	Indicates the OSI subnetwork point-of-attachment type used to access the destination address. It includes SDCC, LDCC, GCC, OSC, and LAN.
Destination Address	Displays the NSAP of the destination ES.
MAC Address	Displays the NE's MAC address for destinations that are accessed by the LAN subnets.

Note See Table 1-22 on page 1-47 for descriptions of actions that you can perform using the buttons at the bottom of the window.

ONS 15600 SONET NE Explorer

When you choose **Configuration > NE Explorer** for the ONS 15600 SONET, the window that Prime Optical displays consists of a tree on the left side and a properties pane on the right. The tree provides a hierarchical view and alarm status of the NE's physical shelves and slots. The properties pane shows information about the selected entity. See Node Properties Pane—ONS 15600 SONET, page B-359 for more information.

Note If CTC is launched from the web browser for an ONS 15600 SONET node, the CTC GUI might look different from when it is launched from Prime Optical. This discrepancy occurs because the latest version of CTC (for NE releases supported by Prime Optical) is packaged with Prime Optical. If launched from a browser, the CTC software is retrieved from the NE itself, which might be a version different from that packaged with Prime Optical.

When an NE Explorer is in autorefresh mode, all values of an entity that is being edited by the user are automatically refreshed. You will lose all of your changes unless you click the Apply button. To enable autorefresh, click the Refresh Data button in the NE Explorer.

Node Properties Pane—ONS 15600 SONET

The node properties pane displays information about the ONS 15600 SONET NE. The properties pane contains the following tabs, some of which apply only to a specific NE version:

- Shelf View, page B-360
- General, page B-360
- Identification, page B-360
- Network, page B-361
- DCC, page B-367
- Timing, page B-369
- Protection, page B-372
- NE Defaults, page B-373
- Security, page B-374
- Alarm, page B-378
- Maintenance, page B-379
- Alarm Extenders, page B-379
- BLSR, page B-381
- OSI, page B-381

Shelf View

The Shelf View Properties pane displays a graphic of the ONS 15600 SONET that is selected in the NE Explorer tree. Moving the mouse pointer over the NE, its shelves, slots, or cards displays the current alarms for the highlighted item. Double-clicking a slot or card displays the slot or card in the properties pane. The right-click menu allows you to reset, delete, or change a card. For unprovisioned slots, the right-click menu allows you to add a card.

General

The General Properties pane displays identification information, voltage thresholds, and multishelf configurations for the ONS 15600 SONET NE.

Table B-494 Field Descriptions for the General Properties Pane

Field	Description
Identification Tab	
NE ID	Displays the ID of the NE from the Domain Explorer.
NE Model	Displays the NE model type.
Software Version	Displays the current running version of the system software.
Contact	Displays the name and phone number of the node contact person.
Description	Enter a description of the NE.
System Description	Displays the NE type and the version of the system software.
Voltage/Temperature Tab	
Voltage	Displays the voltage (in millivolts) of the shelf that corresponds to the power supply.
Temperature	Displays the temperature (in degrees Celsius) of the shelf.

Identification

The Identification Properties pane displays identification information about the ONS 15600 SONET NE.

Table B-495 Field Descriptions for the Identification Properties Pane

Field	Description
NE ID	Displays the ID of the NE from the Domain Explorer.
Description	Displays the description of the NE from the Domain Explorer.
NE Model	Displays the NE model type.
Software Version	Displays the current running version of the system software.
Contact	Displays the name of the node contact person and the phone number.
System Description	Displays a description of the NE.

Table B-495 Field Descriptions for the Identification Properties Pane (continued)

Field	Description
SNTP Settings	
Use NTP/SNTP Server	If checked, CTC uses an SNTP server to set the date and time of the node. Using an SNTP server ensures that all ONS 15600 SONET network nodes use the same date and time reference. The server synchronizes the node's time after power outages or software upgrades. If you check the **Use NTP/SNTP Server** check box, enter the server's IP address in the next field. If you do not use an SNTP server, complete the Time and Time Zone fields. The ONS 15600 SONET will use these fields for alarm dates and times.
SNTP Server	Displays the SNTP server IP address.
Location	
Latitude	Allows you to set the latitude of the NE. Select **North** or **South** from the drop-down list; then, enter the degrees and minutes (or click the up and down arrows to increase or decrease each by 1 unit).
Longitude	Allows you to set the longitude of the NE. Select **East** or **West** from the drop-down list; then, enter the degrees and minutes (or click the up and down arrows to increase or decrease each by 1 unit).
Date and Time	
Time	Displays the NE date and time.
Time Zone	Displays the time zone where the NE is located.
Use Daylight Savings Time	If checked, Daylight Savings Time is observed.

Network

The Network Properties pane displays information about the NE network address. The Properties pane contains the following tabs:

- Address Tab, page B-361
- Static Routes Tab, page B-362
- OSPF Tab, page B-362
- OSPF Area Range Tab, page B-363
- OSPF Virtual Links Tab, page B-364
- SNMP Tab, page B-364
- Firewall/Proxy Tab, page B-365
- Routing Table Tab, page B-365
- Internal Subnet Tab, page B-366
- Proxy Tunnels Tab, page B-366
- Firewall Tunnels Tab, page B-366
- FTP Hosts Tab, page B-367

Address Tab

The Address tab allows you to view and change information about the NE network address.

Table B-496 Field Descriptions for the Address Tab

Field	Description
IP Address	Displays the IP address of the NE.
Default Router	Displays the IP address of the default router.
Subnet Mask	Displays the subnetwork mask ID of the NE.
MAC Address	Displays the ONS 15600 SONET address as it is identified on the IEEE 802 MAC layer.
Forward DHCP Requests	If checked, forwards DHCP requests to the IP address entered in the DHCP Server field. When the Forward DHCP Requests check box is unchecked, the DHCP Server field is display-only.
DHCP Server	Displays the IP address of the DHCP server.
IPv6 Config	
Enable IPv6	If checked, allows you to configure the node to use the IPv6 protocol and to assign an IPv6 address to the node.
IPv6 Address	Enter the IPv6 address of the node.
Default IPv6 Router	Enter the IPv6 default router of the node.
IPv6 Subnet Mask	Enter the IPv6 subnetwork mask length.

Static Routes Tab

The Static Routes tab allows you to view information about Prime Optical and ONS 15600 SONET connectivity and create or delete static routes.

Table B-497 Field Descriptions for the Static Routes Tab

Field	Description
Destination IP	Displays the IP address of the computer running Prime Optical.
Subnet Mask	Displays the subnetwork mask.
Next Hop	Displays the IP address of the router port or the node IP address if the Prime Optical computer is connected to the node directly.
Cost	Displays the number of hops between the ONS 15600 and the computer.

OSPF Tab

The OSPF tab displays OSPF information. OSPF is a link-state Internet routing protocol.

Table B-498 Field Descriptions for the OSPF Tab

Field	Description
Slot	Displays the slot number.
Port	Displays the port number.
DCC OSPF Area ID	Displays the number that identifies the ONS 15600s as a unique OSPF area. The OSPF area number can be from 0.0.0.0 to 255.255.255.255. The number must be unique to the LAN OSPF area.
SDCC Metric	Sets a cost for sending packets across the SDCC, which is used by OSPF routers to calculate the shortest path. This value should always be higher than the LAN metric. The Cisco default DCC metric is 100. This value is normally unchanged.

Table B-498 Field Descriptions for the OSPF Tab (continued)

Field	Description
LDCC Metric	Sets a cost for sending packets across the Line Data Communications Channel (LDCC), which is used by OSPF routers to calculate the shortest path. This value should always be higher than the LAN metric. This value is normally unchanged.
OSPF on LAN	
OSPF Active on LAN	If checked, enables ONS 15600 OSPF topology to be advertised to OSPF routers on the LAN. Enable this field on ONS 15600s that directly connect to OSPF routers.
LAN Port Area ID	Displays the OSPF area ID for the router port where the ONS 15600 is connected. (This number is different from the DCC OSPF area ID.)
Router Priority	Displays the value used for this NE in designated router election. The Cisco default value is zero (0). A router that has Router Priority set to 0 is ineligible to become a designated router on the attached network.
Dead Interval	Displays the number of seconds that will pass while an OSPF router's packets are not visible before its neighbors declare the router down. Forty seconds is the Cisco default.
Retransmit Interval	Displays the time that will elapse before a packet is resent. Five seconds is the Cisco default.
Hello Interval	Displays the number of seconds between OSPF hello packet advertisements sent by OSPF routers. Ten seconds is the Cisco default.
Transit Delay	Displays the service speed. One second is the Cisco default.
LAN Metric	Displays a cost for sending packets across the LAN. This value should always be lower than the DCC metric. Ten is the Cisco default.
OSPF Authentication	
Authentication Type	Displays Simple Password if the router where the ONS 15600 is connected uses authentication. Otherwise, it displays No Authentication.
Authentication Key	Displays the OSPF key (password) if authentication is enabled.
Confirm Authentication Key	Retype the authentication key to confirm it.

OSPF Area Range Tab

The OSPF Area Range tab allows you to view information about OSPF area ranges and create or delete area ranges.

Table B-499 Field Descriptions for the OSPF Area Range Tab

Field	Description
Range Address	Displays the area IP address for the ONS 15600 SONET NEs that reside within the OSPF area. For example, if the ONS 15600 SONET OSPF area includes nodes with IP addresses 10.10.20.100, 10.10.30.150, 10.10.40.200, and 10.10.50.250, the range address would be 10.10.0.0.
Range Area ID	Displays the OSPF area ID for the ONS 15600 SONET NEs. This is either the ID in the DCC OSPF Area ID field or the ID in the LAN Port Area ID field.
Mask Length	Displays the subnet mask length.
Mask	Displays the subnet mask IP address.
Advertise	Indicates whether the OSPF routing table is advertised.

OSPF Virtual Links Tab

The OSPF Virtual Links tab allows you to view information about OSPF virtual links and create or delete virtual links.

Note You cannot create a new virtual link unless OSPF is active on the LAN.

Table B-500 Field Descriptions for the OSPF Virtual Links Tab

Field	Description
Neighbor	Displays the router ID of the Area 0 router.
Transit Delay	Displays the service speed. One second is the Cisco default.
Retransmit Interval	Displays the time that will elapse before a packet is resent. Five seconds is the Cisco default.
Hello Interval	Displays the number of seconds between OSPF hello packet advertisements sent by OSPF routers. Ten seconds is the Cisco default.
Dead Interval	Displays the number of seconds that will pass while the packets of an OSPF router are not visible before its neighbors declare the router down. Forty seconds is the Cisco default.
Authentication Type	Displays the authentication type.
Authentication Key	Displays the authentication key.

SNMP Tab

The SNMP tab allows you to view SNMP information and create or delete SNMP trap destinations.

Table B-501 Field Descriptions for the SNMP Tab

Field	Description
IP Address	The IP address of the NMS.
Community Name	The SNMP community name. **Note** The SNMP community string cannot be blank in Prime Optical. If a blank community string is required in CTC builds earlier than R4.6, you must set the blank community string in CTC.
UDP Port	The UDP port for SNMP. The Cisco default UDP port is 162.
Trap Version	The trap version, either SNMP version 1 or version 2. See your NMS documentation to determine whether to use SNMP version 1 or version 2.
Allow SNMP Set	If checked, allows you to use SNMP management software with the ONS 15600 SONET.

Firewall/Proxy Tab

The Firewall/Proxy tab allows you to use an NE as a proxy server or as a firewall.

Table B-502 Field Descriptions for the Firewall/Proxy Tab

Field	Description
Enable Proxy Server on Port	If checked, the ONS 15600 SONET serves as a proxy for connections between the Prime Optical server and ONS 15600 SONET NEs that are DCC-connected to the proxy node. The Prime Optical server establishes connections to DCC-connected nodes through the proxy node. The Prime Optical server can connect to nodes that it cannot directly reach from the host on which it runs. The proxy server port number (display-only) is shown following the Enable Proxy Server on Port field. The proxy server uses port 1080. If checked, the following radio buttons are enabled: • End Network Element (ENE)—Enables the ONS 15600 SONET to proxy as an ENE. Note that an alternate expansion for ENE is *external network element*. • Gateway Network Element (GNE)—Enables the ONS 15600 SONET to proxy as a GNE. • Proxy-only—Enables proxy only. If unchecked, the node does not proxy. ⚠ **Caution** Disabling the proxy prevents the NE from relaying packets to DCC-only connected NEs, and can lead to a loss of connectivity.

Routing Table Tab

The Routing Table tab allows you to view the OSPF routing table.

Table B-503 Field Descriptions for the Routing Table Tab

Field	Description
Destination	Displays the IP address of the destination network or host. Destination (0.0.0.0) is the default route entry. All undefined destination network or host entries on this routing table are mapped to the default route entry.
Mask	Displays the subnet mask used to reach the destination network or host. Mask (0.0.0.0) is always 0 for the default route.
Gateway	Displays the IP address of the gateway used to reach the destination network or host. All outbound traffic belonging to this network is sent to this gateway. Gateway (172.20.214.1) is the default gateway address. All outbound traffic that cannot be found in this routing table or is not on the node's local subnet will be sent to this gateway.
Usage	Shows the number of times the listed route has been used.
Interface	Shows the ONS 15600 SONET interface used to access the destination. Values are: • cpm0—The ONS 15600 SONET Ethernet interface (that is, the RJ-45 jack on the TCC+/TCC2 and the LAN 1 pins on the backplane). • pdcc0—An SDCC interface (that is, an OC-N trunk card identified as the SDCC termination). • lo0—A loopback interface.

Internal Subnet Tab

The Internal Subnet tab allows you to change the class B subnet address for timing and shelf controller (TSC) cards. TSC cards perform all system-timing functions for each ONS 15600 SONET. To avoid IP address conflicts, you should change the class B subnet address if your internal network uses the same address range as the default subnet addresses.

Table B-504 Field Descriptions for the Internal Subnet Tab

Field	Description
TSC1	Enter the class B subnet address for the first TSC.
TSC2	If two TSCs are installed, enter the class B subnet address for the second TSC.

Proxy Tunnels Tab

The Proxy Tunnels tab allows you to configure source and destination information and create or delete proxy tunnels.

Table B-505 Field Descriptions for the Proxy Tunnels Tab

Field	Description
Source Address	Specify the source IP address in the source-destination pair for the tunnel that will be routed through the proxy server.
Source Mask	Specify the source subnetwork mask in the source-destination pair for the tunnel that will be routed through the proxy server.
Destination Address	Specify the destination IP address in the source-destination pair for the tunnel that will be routed through the proxy server.
Destination Mask	Specify the destination subnetwork mask in the source-destination pair for the tunnel that will be routed through the proxy server.

Firewall Tunnels Tab

The Firewall Tunnels tab allows you to configure source and destination information and create and delete firewall tunnels.

Table B-506 Field Descriptions for the Firewall Tunnels Tab

Field	Description
Source Address	Specify the source IP address in the source-destination pair for the tunnel that will be routed through the firewall.
Source Mask	Specify the source subnetwork mask in the source-destination pair for the tunnel that will be routed through the firewall.
Destination Address	Specify the destination IP address in the source-destination pair for the tunnel that will be routed through the firewall.
Destination Mask	Specify the destination subnetwork mask in the source-destination pair for the tunnel that will be routed through the firewall.

FTP Hosts Tab

The FTP Hosts tab allows you to configure database backup or restore and software download to an ENE when the firewall is enabled. You can provision a list of legal FTP hosts for which the firewall opens for all FTP commands. You can configure the FTP hosts to expire after a certain amount of time, after which the FTP relay resumes blocking all FTP access for the ENEs.

Table B-507 Field Descriptions for the FTP Hosts Tab

Field	Description
Create button	Opens the Create New FTP Host dialog box, which allows you to create up to 12 new FTP hosts in a GNE/ENE firewall environment. See Creating an FTP Host, page 5-22. **Note** You cannot create more than 12 FTP hosts.
Delete button	Deletes the selected FTP host.
FTP Host Address	Displays the FTP host IP address.
Prefix Length	Displays the FTP host subnet mask length.
Enable FTP Relay	Indicates whether FTP relay is enabled or disabled. If FTP relay is disabled, the FTP Relay Timer field is dimmed.
FTP Relay Timer	Displays the number of minutes that the FTP relay is configured to run, after which the FTP relay resumes blocking all FTP access for the ENEs.

DCC

The DCC Properties pane allows you to create, delete, and view SONET and SDH DCCs.

Table B-508 Field Descriptions for the DCC Properties Pane

Field	Description
SDCC	
SDCC Terminations	Displays the slot, port, and card type of an SDCC termination.
OSPF Disabled on Link	Check to prevent the advertisement of the OSPF routing table.
Foreign	A check mark indicates that the far-end node is a non-ONS node.
Foreign IP	Displays the foreign node IP address.
LAPD Config	Displays the LAP-D parameters for the SDCCs that are provisioned as OSI only.
OSI SNPA	If the SDCC is provisioned for OSI, the following SNPA information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.

Table B-508 Field Descriptions for the DCC Properties Pane (continued)

Field	Description
Service State	Select the state of the termination: • IS-NR—In Service–Normal. • OOS-AU—Out of Service–Autonomous. • OOS-MA—Out of Service–Management. • OOS-AUMA—Out of Service–Autonomous and Management. In addition, a secondary state provides additional information about the status of the entity. Values for secondary state are: • MEA—Mismatch of equipment due to invalid equipment insertion. • UEQ—Unequipped; there is nothing in the slot. • UAS—Unassigned; the entity does not exist, has not been created, or has been deleted. • SWDL—Software download in progress. • MT—Maintenance, as per the Admin State change. • AINS—Automatic in service. • DSBLD—Traffic is disabled on the entity. • LPBK—Port or connection has a loopback on it. • FLT—Fault secondary state. When an entity is faulted, an FLT state is raised. Equipment and ports in FLT state should be cleared as they transition. Transition states are listed in Table 11-11 on page 11-15. See Table 11-11 on page 11-15 for the Service state-Secondary state possible values. **Note** If the NE release does not support the Service state, this field shows N/A.
LDCC	
LDCC Terminations	Displays the slot, port, and card type of an LDCC termination.
OSPF Disabled on Link	Check to prevent the advertisement of the OSPF routing table.
Foreign	A check mark indicates that the far-end node is a non-ONS node.
Foreign IP	Displays the foreign node IP address.
LAPD Config	Displays the LAP-D parameters for the LDCCs that are provisioned as OSI only.
OSI SNPA	If the LDCC is provisioned for OSI, the following SNPA information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.

Table B-508 Field Descriptions for the DCC Properties Pane (continued)

Field	Description
Service State	Select the state of the LDCC termination: • IS-NR—In Service–Normal • OOS-AU—Out of Service–Autonomous • OOS-MA—Out of Service–Management • OOS-AUMA—Out of Service–Autonomous and Management In addition, a secondary state provides additional information about the status of the entity. Values for secondary state are: • MEA—Mismatch of equipment due to invalid equipment insertion • UEQ—Unequipped; there is nothing in the slot • UAS—Unassigned; the entity does not exist, has not been created, or has been deleted • SWDL—Software download in progress • MT—Maintenance, as per the Admin State change • AINS—Automatic in service • DSBLD—Traffic is disabled on the entity • LPBK—Port or connection has a loopback on it
Create button	Allows you to create new terminations on SONET or SDH cards.
Edit button	Allows you to modify existing terminations on SONET or SDH cards.
Delete button	Allows you to delete the selected SDCC or LDCC.

Timing

The Timing Properties pane contains the following tabs:

- General Tab, page B-369
- Facility Tab, page B-370
- Reference List Tab, page B-371
- Status Tab, page B-371
- Timing Report Tab, page B-372

General Tab

The General tab displays general timing information.

Table B-509 Field Descriptions for the General Tab

Field	Description
General Timing	
Timing Mode	Set to External if the ONS 15600 SONET derives its timing from a BITS source wired to the backplane pins; set to Line if timing is derived from an OC-N card that is optically connected to the timing node.

Table B-509 Field Descriptions for the General Tab (continued)

Field	Description
SSM Message Set	Choose the SSM set level supported by your network. SSM is an SONET protocol that communicates information about the quality of the timing source. SSM messages are carried on the S1 byte of the SONET Line layer. They enable SONET devices to automatically select the highest quality timing reference and to avoid timing loops. If a Generation 1 node receives a Generation 2 message, the message is mapped down to the next available Generation 1 node. For example, an ST3E message becomes an ST3.
Revertive	If checked, the ONS 15600 SONET reverts to a primary reference source after the conditions that caused it to switch to a secondary timing reference are corrected.
Reversion Time	Specify the reversion time in half-minute increments.
Quality of RES	If your timing source supports the reserved S1 byte, you set the timing quality here. (Most timing sources do not use RES.) Qualities are displayed in descending quality order as ranges. For example, ST3 < RES < ST2 means the timing reference is higher than a Stratum 3 and lower than a Stratum 2.

Facility Tab

The Facility tab displays the facility type, BITS IN and OUT information.

Note BITS IN Facilities and BITS OUT Facilities values apply to both BITS-1 and BITS-2.

Table B-510 Field Descriptions for the Facility Tab

Field	Description
BITS-IN-OUT Facility Type	
In Facility Type	Provisions the BITS In facility type.
Out Facility Type	Provisions the BITS Out facility type.
BITS IN Facilities	
In State	Set the BITS reference to IS (In Service) or OOS (Out of Service). For nodes set to Line timing with no equipment timed through BITS Out, set the state to OOS. For nodes using External timing or Line timing with equipment timed through BITS Out, set the state to IS.
Coding	Set to the coding used by your BITS reference, either B8ZS or AMI.
Framing	Set to the framing used by your BITS reference, either ESF or SF (D4). SSM is not available with Super Frame.
Sync Messaging	If checked, enables the SSM for BITS In. (SSM is not available if Framing is set to Super Frame.)
BITS OUT Facilities	
Out State	Set the BITS reference to IS or OOS. For nodes set to Line timing with no equipment timed through BITS Out, set the state to OOS. For nodes using External timing or Line timing with equipment timed through BITS Out, set the state to IS.
Coding	Set to the coding used by your BITS reference, either B8ZS or AMI.
Framing	Set to the framing used by your BITS reference, either ESF or SF (D4). SSM is not available with Super Frame.

Table B-510 Field Descriptions for the Facility Tab (continued)

Field	Description
AIS Threshold	If SSM is disabled or Super Frame is used, sets the quality level where a node sends an AIS from the BITS-1 Out and BITS-2 Out backplane pins. An AIS is raised when the optical source for the BITS reference falls to or below the SSM quality level defined in this field.
LBO	If you are timing an external device connected to the BITS Out pins, set the distance between it and the ONS 15600 SONET. Options are 0-133 ft (Cisco default), 134-266 ft, 267-399 ft, 400-533 ft, and 534-655 ft.

Reference List Tab

The Reference List tab provides timing reference information.

Table B-511 Field Descriptions for the Reference List Tab

Field	Description
NE References	Allows you to define three timing references (Ref-1, Ref-2, and Ref-3). The node uses Reference 1 unless a failure occurs on that reference, in which case, the node uses Reference 2. If that fails, the node uses Reference 3, which is typically set to Internal Clock. This is the Stratum 3 clock provided on the TCC+. The options displayed depend on the Timing Mode setting: • Timing Mode set to External—Options are BITS-1, BITS-2, and Internal Clock. • Timing Mode set to Line—Options are the node's working optical cards and Internal Clock. **Note** For Timing Mode set to External and Timing Mode set to Line, select the cards/ports that are directly or indirectly connected to the node wired to the BITS source; that is, the node's trunk cards. Set Reference 1 to the trunk card that is closest to the BITS source. For example, if Slot 5 is connected to the node wired to the BITS source, select Slot 5 as Reference 1. • Timing Mode set to Mixed—Both BITS and optical cards are available, allowing you to set a mixture of external BITS and optical trunk cards as timing references.
BITS-1 Out References	Allows you to define three timing references (Ref-1, Ref-2, and Ref-3) for equipment wired to the BITS Out backplane pins. Normally, BITS Out is used with line nodes, so the options displayed are the working optical cards. BITS-1 and BITS-2 Out are enabled as soon as BITS-1 and BITS-2 facilities are placed in service.
BITS-2 Out References	Allows you to define three timing references (Ref-1, Ref-2, and Ref-3) for equipment wired to the BITS Out backplane pins. Normally, BITS Out is used with line nodes, so the options displayed are the working optical cards. BITS-1 and BITS-2 Out are enabled as soon as BITS-1 and BITS-2 facilities are placed in service.

Status Tab

The Status tab displays timing status information.

Note If you change any values in the Status tab and click Apply at the bottom of the screen, the values are not set. Instead, use the following buttons to apply changes:

- Clear—Releases any existing switch request. For example, if you issue a Force Switch and then issue a Clear, the Force Switch request is released.
- Manual Switch—Switches the timing reference from one source to another.

- Force Switch—Switches the timing reference from one source to another. This request has a higher priority than the Manual Switch request.

Table B-512 Field Descriptions for the Status Tab

Field	Description
NE Clock	
NE Reference	Set the NE timing reference to internal, BITS-1, or BITS-2.
Status	Displays the status of the NE clock.
Operations	Execute a switch on the NE timing reference.
BITS-1 Out	
BITS-1 Out	Set the BITS-1 out timing reference.
Status	Displays the status of the BITS-1 out timing reference.
Operations	Execute a switch on the BITS-1 out timing reference.
BITS-2 Out	
BITS-2 Out	Set the BITS-2 out timing reference.
Status	Displays the status of the BITS-2 out timing reference.
Operations	Execute a switch on the BITS-2 out timing reference.

Timing Report Tab

The Timing Report tab summarizes the NE's current timing settings.

Protection

The Protection Properties pane contains the following tabs:

- Protection Groups Tab, page B-372
- Operations Tab, page B-373

Protection Groups Tab

The Protection Groups tab displays a list of available protection groups and allows you to create, delete, and view protection groups.

Table B-513 Field Descriptions for the Protection Groups Tab

Field	Description
Protection Groups	
Displays a list of available protection groups. Click the **Create** or **Delete** button to create a new protection group or delete an existing one.	
Selected Protection Group	
Name	Modify the name of the selected protection group. The name can have up to 32 alphanumeric characters.

Table B-513 Field Descriptions for the Protection Groups Tab (continued)

Field	Description
Type	Choose the protection type (1:1, 1:N, or 1+1) from the drop-down list. The protection selected determines the cards that are available to serve as protect and working cards. For example, if you choose 1:N protection, only DS-1N and DS-3N cards are displayed. 1+1 protection is only used for optical cards.
Protect Module	Choose the protect card if using 1:1 or 1:N protection.
Available Entities	Displays a list of available entities. You can toggle between available and working entities.
Working Entities	Displays a list of working entities. You can toggle between working and available entities.
Bidirectional Switching	Click if you want both the transmit and the receive channels to switch if a failure occurs on one. This option is available only if you select 1+1 (port) type.
Revertive	If checked, the ONS 15600 SONET reverts traffic to the working card or port after failure conditions are corrected and remain correct for the amount of time entered in Reversion Time.
Reversion Time	If Revertive is checked, enter the amount of time following failure condition correction that should elapse before the ONS 15600 SONET switches back to the working card or port.

Operations Tab

The Operations tab displays protection group operation information.

Table B-514 Field Descriptions for the Operations Tab

Field	Description
Protection Groups	Displays a list of available protection groups.
Protection Group Details	Displays details about the selected protection groups and allows you to execute switch commands.
Switch Commands	Allows you to perform a manual switch, perform a forced switch, or clear the existing command switching.
Inhibit Switching	Allows you to inhibit unlock switching, lock out switching, or lock on switching.

NE Defaults

The NE Defaults Properties pane displays a list of default thresholds for the ONS 15600 SONET NE. You can edit NE defaults for the ONS 15600 SONET R5.0 and later.

Table B-515 Field Descriptions for the NE Defaults Properties Pane

Field	Description
Parameter	Lists the default NE parameter.
Value	Shows the default parameter value, and allows you to change the default.
Units	Lists the unit of measure that corresponds to the default NE parameter.

Table B-515 Field Descriptions for the NE Defaults Properties Pane (continued)

Field	Description
Range	Lists the possible range of values for the default NE parameter. **Note** This field applies to the ONS 15600 SONET R6.0 and later.
Side Effects	Lists any side effects that could occur as a result of changing the default NE parameter. **Note** This field applies to the ONS 15600 SONET R6.0 and later.

You can load different NE defaults using the NE Defaults Management window. See Restoring NE Defaults, page 4-78.

Security

The Security Properties pane allows you to view and edit security features for the ONS 15600 SONET NE. The Security Properties pane contains the following tabs:

- Policy Tab, page B-374
- Password Tab, page B-375
- Access Tab, page B-376
- RADIUS Server Tab, page B-377
- Legal Disclaimer Tab, page B-378

Policy Tab

The Policy tab allows you to specify user security parameters.

Note If the user is already logged in, any changes to the NE user type settings take effect only when the user next logs in.

Table B-516 Field Descriptions for the Policy Tab

Field	Description
Idle User Timeout	
Each CTC or TL1 user can be idle during his or her login session for a specified amount of time before the CTC window is locked. The lockouts prevent unauthorized users from making changes. Higher-level users have shorter default idle periods and lower-level users have longer or unlimited default idle periods. The user idle period can be modified by a SuperUser. **Note** A user already logged into the node is not affected by a change to the Idle User Timeout policy.	
Retrieve	Set the idle user timeout for a CTC Retrieve user.
Maintenance	Set the idle user timeout for a CTC Maintenance user.
Provisioner	Set the idle user timeout for a CTC Provisioner user.
SuperUser	Set the idle user timeout for a CTC SuperUser user.
User Lockout	
Manual Unlock by SuperUser	If checked, the CTC SuperUser user must manually unlock locked out CTC users. If unchecked, locked out CTC users are automatically unlocked after the lockout duration period elapses.

Table B-516 Field Descriptions for the Policy Tab (continued)

Field	Description
Lockout Duration	Set the lockout duration period for locked out CTC users. This field is enabled only if the Manual Unlock by SuperUser check box is unchecked.
Failed Logins Allowed	Set the number of failed logins before the CTC user is automatically locked out.
Other	
Single Sessions per User	If checked, each CTC user can launch only one session at a time.
Prevent Disabling the SuperUser	If checked, inactive CTC SuperUsers are never disabled.
Disable Inactive User	If checked, inactive users are disabled automatically for the amount of time in the Inactive Duration field.
Inactive Duration	Specify the inactive duration in days. The range is from 1 to 90 days; the Cisco default is 45 days. A value of 0 implies the inactive duration is disabled and invalid.

Password Tab

The Password tab allows you to specify user password security parameters.

Table B-517 Field Descriptions for the Password Tab

Field	Description
Password Change	
Prevent Reusing Last	Prevents setting a CTC user's current password to one of the most recent passwords. You can set the number of most recent passwords that cannot be reused.
Disable Password Flipping	If checked, users are not allowed to change passwords for the number of days specified in the Can Change Password After field.
Can Change Password After	Enter the number of days that must elapse before the user can change the password.
Force Password Change After Assigned	If checked, during the first successful login, the user is forced to change the password.
Password Difference	Allows SuperUsers to specify the number of characters by which the new password of a user must differ from the old password, while performing a password change. The default value is 1; the range is from 1 to 5 characters.
Password Aging	
Enable Password Aging	Check this check box to enable password aging.
Aging Period	Enter the aging period, in days, for Retrieve, Maintenance, Provisioner, and SuperUser CTC users. After the aging period expires, CTC users are forced to change their passwords.
Warning Period	Enter the warning period, in days, for Retrieve, Maintenance, Provisioner, and SuperUser CTC users. After the warning period expires, CTC users are warned that their passwords will soon expire.

Access Tab

The Access tab allows you to configure LAN and shell access to the NE.

Table B-518 Field Descriptions for the Access Tab

Field	Description
Access	
LAN Access	Specify the type of LAN access allowed. Values are Backplane Only, No LAN Access, Front and Backplane, or Front Only (for ONS 15454 SONET NEs only). **Note** After the LAN access to the backplane is set, the Prime Optical client is unusable for 4 to 5 minutes.
Restore Timeout	This time period begins if *No LAN Access* is selected and all DCC connections are lost. If the time expires before a DCC is restored, LAN access is restored so that the node is not isolated. When the DCC comes back, LAN access returns to its specified settings. The range is from 0 (never) to 60 minutes; the Cisco default is 5 minutes.
Serial Craft Access (available for ONS 15600 SONET NEs R6.0 and later)	
Enable Craft Port A	Check this check box to enable craft port A.
Enable Craft Port B	Check this check box to enable craft port B.
Shell Access	
Shell Access on	Specify shell access on Telnet or SSH.
SSH Port	Indicates the SSH port number that will be used if the SSH radio button is selected.
Telnet Port	This is enabled if you selected the Telnet radio button. Enter the Telnet port number.
Use Standard Telnet Port	If checked, the standard Telnet port is used for Telnet access.
Shell Access (available for ONS 15600 SONET NEs R6.0 and later)	
Access State	Select the Shell access state from the drop-down list. You can select Disable, Non-secure, or Secure.
SSH Port	Indicates the SSH port number that will be used.
SFTP Port	Indicates the SFTP port number.
Telnet Port	This is enabled if you selected the Non-secure access state. Enter the Telnet port number that will be used.
Use Standard Telnet Port	Check this check box to indicate that the standard Telnet port will be used.
Enable Shell Password	Indicates whether or not the Shell password is enabled. **Note** You cannot enable the Shell password in Prime Optical. Enabling and providing a Shell password is currently done in CTC.
TL1 Access (available for ONS 15600 SONET NEs R6.0 and later)	
Access State	Select the TL1 access state from the drop-down list. You can select Disable, Non-secure, or Secure.
SNMP Access (available for ONS 15600 SONET NEs R6.0 and later)	
Access State	Select the SNMP access state from the drop-down list. You can select either Disable or Non-secure.
Other	
PM Clearing Privilege	Select the users privilege that allows clearing PM statistics for the NE.
EMS Access (available for ONS 15600 SONET NEs R6.0 and later)	

Table B-518 Field Descriptions for the Access Tab (continued)

Field	Description
Access State	Select the EMS access state from the drop-down list. You can select either Non-secure or Secure.
CORBA Listener Port	Select the port numbers for the TCC CORBA (IIOP) listener port and the TCC CORBA (SSLIOP) listener port. Select one of the following radio buttons: • Default-Fixed—Assigns a default port number. • Standard Constant—The port number for the TCC CORBA (IIOP) listener port is 683. The port number for the TCC CORBA (SSLIOP) listener port is 684. • Other Constant—When selected, enter the port number that will be used.

RADIUS Server Tab

The RADIUS Server tab allows you to configure, create, modify, and delete RADIUS servers for the ONS 15600 SONET R6.0 and later.

Table B-519 Field Descriptions for the RADIUS Server Tab

Field	Description
Enable RADIUS Authentication	Check this check box to enable RADIUS authentication.
Enable RADIUS Accounting	Check this check box to enable RADIUS accounting. This is enabled if the Enable RADIUS Authentication check box is checked.
Enable the Node as the Final Authenticator When no RADIUS Server is Reachable	Select a row from the RADIUS Servers in Order of Authentication table; then, check this check box. This indicates that the RADIUS server that you selected will be the final authenticator when there are no more RADIUS servers that can be reached.
Create button	Click **Create** to create a RADIUS server. See Creating a RADIUS Server, page 8-46.
Edit button	Click **Edit** to modify an existing RADIUS server's information. See Modifying a RADIUS Server, page 8-46.
Delete button	Click **Delete** to delete an existing RADIUS server. See Deleting a RADIUS Server, page 8-46.
Move Up/Move Down buttons	Click **Move Up** or **Move Down** to reorder the list of RADIUS servers in the RADIUS Servers in Order of Authentication table.
RADIUS Servers in Order of Authentication	
IP Address	Displays the IP address of the RADIUS server.
Shared Secret	Displays a text string that serves as a password between a RADIUS client and RADIUS server.
Authentication Port	Displays the authentication port number of the RADIUS server. Default access is through port number 1812.
Accounting Port	Displays the accounting port number of the RADIUS server. Default access is through port number 1813.

Legal Disclaimer Tab

The Legal Disclaimer tab allows you to edit the NE's advisory message and preview the disclaimer.

Table B-520 Field Descriptions for the Legal Disclaimer Tab

Tab	Description
Advisory Message	The existing message is a default, noncustomer-specific disclaimer. If you want to edit this statement with specifics for your company, you can change the text. You can also use the following HTML commands to format the text: • ****—Begins boldface font • ****—Ends boldface font • ** **—Aligns type in the center of the window • ** **—Ends the center alignment • **<font=*n*, where *n* = point size>**—Changes the font to the new size • ****—Ends the font size command • **<p>**—Creates a line break • **_{**—Begins subscript • **}**—Ends subscript • **^{**—Begins superscript • **}**—Ends superscript • **<u>**—Starts underline • **</u>**—Ends underline
Preview	Allows you to view the advisory message before saving it.

Alarm

The Alarm Properties pane allows you to change default alarm severities by creating unique alarm profiles for individual ONS 15600 SONET nodes. The Alarm Properties pane contains the following tabs:

- Profile Tab, page B-378
- Alarm Behavior Tab, page B-379

Profile Tab

The Profile tab allows you to select, create, or delete alarm profiles.

Table B-521 Field Descriptions for the Profile Tab

Field	Description
Alarm Profile Name	Choose an alarm profile for the NE from the drop-down list. Click **Create** to create a new alarm profile for the NE. Click **Delete** to delete an alarm profile from the NE.
Condition	Displays the alarm condition.
Severity	Displays the alarm severity.

Alarm Behavior Tab

The Alarm behavior tab allows you to change default alarm severities by creating unique alarm profiles.

Table B-522 Field Descriptions for the Alarm Behavior Tab

Field	Description
Alarm Profile	Choose a global alarm profile for the NE from the drop-down list.
Suppress Alarms	If checked, all alarms are suppressed.
Slot Number	Displays the location of the module.
Equipment Type	Displays the type of module in the slot.
Profile	Choose an alarm profile for the slot from the drop-down list.
Suppress Alarms	Indicates whether or not the alarms for a particular card are suppressed. If checked, all alarms are suppressed for the port.

Maintenance

The ONS 15600 SONET hardware keeps track of which copies of data (backplane STS), SYNC, O&M, and CLK are currently being used by I/O and CXC cards.

Preferred Copy Tab

The Preferred Copy tab allows you to change the preferred data source and view the clock and SYNC copy.

Table B-523 Field Descriptions for the Preferred Copy Tab

Field	Description
Data Copy	
Preferred Data	Allows you to select the data copy (CXC) when both CXC cards are present in the system.
Selected Data	Displays the data copy currently being used.
Clock and Sync Copy	
Preferred Clock	Displays the preferred clock and SYNC copy.
Selected Clock	Displays the clock and SYNC copy currently being used.

Alarm Extenders

The Alarm Extenders Properties pane allows you to view external alarm information and create custom alarm types. The Alarm Extenders Properties pane contains the following tabs:

- External Alarms Tab, page B-379
- External Controls Tab, page B-380
- User-Defined Alarms Tab, page B-380

External Alarms Tab

The External Alarms tab allows you to view and update external alarm information.

Table B-524 Field Descriptions for the External Alarms Tab

Field	Description
Input Number	The alarm input number.
Enabled	Check to activate the fields for the alarm input number.
Alarm Type	Choose an alarm type from the provided list.
Severity	Choose a severity from the list.
Raised When	Choose the contact condition that will trigger the alarm in CTC.
Virtual Wire	To assign the external device to a virtual wire, choose a virtual wire from the list, or choose None if no assignment is required.
Description	Displays a default description for every external alarm that is enabled.
Raised	Indicates whether an alarm has been raised.
Contact Status	Indicates the current status of the contact.

External Controls Tab

The External Controls tab allows you to view and update external controls.

Table B-525 Field Descriptions for the External Controls Tab

Field	Description
Control Number	The control number.
Enabled	Check to activate the fields for the control number.
Control Type	Choose a control type from the provided list.
Trigger Type	Choose a trigger type: a local minor, major, or critical alarm; a remote minor, major, or critical alarm; or a virtual wire activation.
Description	Enter a description.
Current State	The current state of the control.
Auto State	The auto state of the control.
Contact Setting	The current contact setting.

User-Defined Alarms Tab

The User-Defined Alarms tab allows you to view, add, and delete custom alarm types on the ONS 15600 SONET.

Table B-526 Field Descriptions for the User-Defined Alarms Tab

Field	Descriptions
Alarm Types	Lists the user-defined alarm types that have been created on the ONS 15600 SONET. You can create up to 50 custom environmental alarms, which are reported in the Condition column in the Alarm Log and Alarm Browser windows.

Table B-526 Field Descriptions for the User-Defined Alarms Tab (continued)

Field	Descriptions
Add	Click the **Add** button to add a new custom alarm type. Enter a unique alarm type name that contains 20 characters or fewer. Only the following characters are valid: 0-9, A-Z, a-z, and hyphen (-).
Delete	Click the **Delete** button to delete an existing alarm type.

BLSR

The BLSR Properties pane allows you to view BLSR information and create or delete BLSRs.

Table B-527 Field Descriptions for the BLSR Properties Pane

Field	Description
Fiber Type	Indicates whether the fiber type is 2-fiber or 4-fiber.
Rate	Select the BLSR rate.
Ring Name	Assign a ring ID (a number from 0 to 9999). Nodes in the same BLSR must have the same ring ID.
Node ID	Assign a node ID. The node ID identifies the node to the BLSR. Nodes in the same BLSR must have unique node IDs.
Ring Reversion	Set the amount of time that will pass before the traffic reverts to the original working path. The Cisco default is 5 minutes. All nodes in a BLSR ring should have the same ring reversion setting, particularly if *never* (nonrevertive) is selected.
Span Reversion	Set the amount of time to pass before the span reverts to the working path.
East Line	Assign the east BLSR port.
East Switch	Displays a list of switch commands for the east port.
West Line	Assign the west BLSR port.
West Switch	Displays a list of switch commands for the west port.
East Protect	Assign the east BLSR protect port.
West Protect	Assign the west BLSR protect port.

OSI

The OSI Properties pane allows you to provision ONS 15600 SONET Open System Interconnection (OSI) parameters. The Properties pane contains the following tabs:

- Main Setup Tab, page B-382
- TARP-Config Tab, page B-382
- TARP-TDC Tab, page B-384
- TARP-MAT Tab, page B-384
- Routers-Setup Tab, page B-384
- Subnets Tab, page B-385
- Tunnels Tab, page B-386
- IS-IS RIB Tab, page B-386
- ES-IS RIB Tab, page B-386

Main Setup Tab

The Main Setup tab allows you to provision the OSI Network Entity Title (NET) address and the OSI routing mode.

Table B-528 Field Descriptions for the Main Setup Tab

Field	Description
Main Network Entity Title	Displays the node NET. The NET is used in OSI networks to identify the node to the end system (ES) or intermediate system (IS).
End System	Provisions the node as an OSI end system (ES). ESs send end system hello (ESH) messages regularly to announce their presence to neighboring ISs and ESs.
Intermediate System Level 1	Provisions the node as an OSI intermediate system (IS). ISs send intermediate system hello (ISH) messages regularly to announce their presence to neighboring ISs and ESs.
Intermediate System Level 1/Level 2	The ONS 15600 SONET performs all IS functions. It communicates with other IS and ES nodes within an OSI area and broadcasts ISHs to IS nodes in other areas to which it is connected. For the ONS 15600 SONET, Intermediate System Level 1/Level 2 is the default routing mode.
Node Routing Mode	
L1 LSP Buffer Size	Sets the Level 1 Link State Protocol (LSP) data unit buffer size. The Cisco default is 512.
L2 LSP Buffer Size	Sets the Level 2 LSP data unit buffer size. The Cisco default is 512.

TARP-Config Tab

The TARP-Config tab allows you to provision the TID Address Resolution Protocol (TARP). TARP is used when TL1 TIDs must be translated to an NSAP address. During the TID-to-NSAP translation, the TID is mapped to a NET; then, the NSAP is derived from the NET based on the NSAP selector value.

Table B-529 Field Descriptions for the TARP-Config Tab

Field	Description
TARP PDUs L1 Propagation	If checked (default), TARP Type 1 PDUs received by the node that are not excluded by the loop detection buffer are propagated to other NEs within the OSI Level 1 area. Type 1 PDUs request a protocol address that matches a target TID within a Level 1 routing area. The propagation does not occur if the NE is the target of the Type 1 PDU and the PDUs are not propagated to the NE from which the PDU was received. **Note** This parameter is not used when the node is set to End System.
TARP PDUs Origination	If checked (default), the node performs all TARP configuration functions, including: • TID-to-NSAP resolution requests • NSAP-to-TID requests • TARP address changes **Note** TARP Echo and NSAP to TID are not supported.
L2 TARP Data Cache	If checked (default), the TIDs and NSAPs are added to the TDC before the node propagates the requests to other NEs. **Note** This parameter is designed for IS Level 1/Level 2 nodes that are connected to other IS Level 1/Level 2 nodes. Enabling the parameter for IS Level 1 nodes is not recommended.

Table B-529 Field Descriptions for the TARP-Config Tab (continued)

Field	Description
LAN TARP Storm Suppression	If checked (default), enables the TARP storm suppression to prevent redundant TARP PDUs from being propagated across the network.
Type 4 PDU Delay	Sets the amount of time that will pass before the Type 4 PDU is generated. The Cisco default value is 60 seconds; the range is from 0 to 255 seconds.
TARP PDUs L2 Propagation	If checked (default), TARP Type 2 PDUs received by the node that are not excluded by the loop detection buffer are propagated to other NEs within the OSI Level 2 area. Type 2 PDUs request a protocol address that matches a target TID within a Level 2 routing area. The propagation occurs if the NE is the target of the Type 2 PDU and the PDUs are not propagated to the NE from which the PDU was received.
L1 TARP Data Cache	If checked, the node maintains a TARP data cache (TDC). The TDC is a database of TID-to-NSAP pairs created from TARP Type 3 PDUs received by the node. TARP Type 3 PDUs are responses to Type 1 and Type 2 PDUs and modified by TARP Type 4 PDUs (TID-to-NSAP updates or corrections).
LDB	If checked, enables the TARP loop detection buffer (LDB). The LDB prevents TARP PDUs from being sent more than once on the same subnet.
Send Type 4 PDU on Startup	If checked, a TARP Type 4 PDU is originated during the initial ONS 15600 SONET startup. Type 4 PDUs indicate that a TID or NSAP change has occurred at the NE. This option is disabled by default.
Timers	
LDB Entry	Sets the TARP LDB timer. The LDB buffer time is assigned to each LDB entry for which the TARP sequence number is zero. The Cisco default is 5 minutes; the range is from 1 to 10 minutes.
T1 Timer	Sets the amount of time to wait for response to a Type 1 Request PDU. Type 1 requests seek a specific NE TID within an OSI Level 1 area. The Cisco default is 15 seconds; the range is from 0 to 3600 seconds.
T3 Timer	Sets the amount of time to wait for an address resolution request. The Cisco default is 40 seconds; the range is from 0 to 3600 seconds.
LDB Flush	Sets the frequency period for flushing the LDB. The Cisco default is 5 minutes; the range is from 0 to 1440 minutes.
T2 Timer	Sets the amount of time to wait for a Type 2 Request PDU. TARP Type 2 requests seek a specific NE TID within an OSI Level 1 area. The Cisco default is 25 seconds; the range is from 0 to 3600 seconds.
T4 Timer	Sets the amount of time to wait for an error recovery. The timer begins after the T2 timer expires without successfully finding the NE TID. The Cisco default is 20 seconds; the range is from 0 to 3600 seconds.

TARP-TDC Tab

Table B-530 Field Descriptions for the TARP-TDC Tab

Field	Description
TID	Target ID that is statistically linked to an NSAP or NET. For ONS nodes, the TID is the node name.
NSAP/NET	The NSAP that is statistically linked to the TID.
Type	Indicates how the TARP data cache entry was created. It can be either: • Dynamic—The entry was created through the TARP propagation process. • Static—The entry was manually created and is a static entry.
Add Static Entry button	Click **Add Static Entry** to statically link a TID to an NSAP or NET.
Delete Selected Entry button	Click **Delete Selected Entry** to delete the selected TID-to-NSAP/NET static entry.
TID to NSAP button	Click **TID to NSAP** to query the network for an NSAP that matches a TID.
Flush Dynamic Entries button	Click **Flush Dynamic Entries** to delete all dynamically generated TDC entries.

TARP-MAT Tab

The TARP-MAT tab allows you to manually provision a TARP adjacency.

Table B-531 Field Descriptions for the TARP-MAT Tab

Field	Description
Level	Sets the TARP Type Code that will be sent. • Level 1—Indicates that the manual area adjacency is within the same area as the node. The entry generates Type 1 PDUs. • Level 2—Indicates that the manual area adjacency is in an area different from that of the node. The entry generates Type 2 PDUs.
NSAP	The NSAP address of the node at the other end of the TARP manual adjacency.
Add button	Click **Add** to create a TARP manual area adjacency.
Remove button	Click **Remove** to delete the selected TID-to-NSAP/NET static entry.

Routers-Setup Tab

The Routers-Setup tab allows you to view and manage the OSI virtual routers.

Table B-532 Field Descriptions for the Routers-Setup Tab

Field	Description
Router Number	Displays the virtual router number. The ONS 15600 SONET provides six virtual routers, numbered 1 through 6.
System ID	Displays the NSAP system ID of the virtual router. The NSAP system identifier is set to the node's first IEEE 802.3 MAC address + *n*, where *n* = 0 through 6. For the primary router (Router 1), *n* = 0.
Status	Indicates the virtual router status. Select Enabled or Disabled from the drop-down list. **Note** Router 1 must be enabled before additional routers can be enabled.

Table B-532 Field Descriptions for the Routers-Setup Tab (continued)

Field	Description
Primary Area Address	Indicates the primary manual area address. For Router 1, this is the main NET for the node; that is, the NSAP without the system ID and selector (set to 00) fields.
Manual Area Address 1	Indicates the address of any additional manual areas that are created. **Note** An OSI area allows up to two additional manual areas in addition to the primary manual area.
Manual Area Address 2	Indicates the address of any additional manual areas that are created. **Note** An OSI area allows up to two additional manual areas in addition to the primary manual area.
Edit button	Click **Edit** to modify the address parameters.

Subnets Tab

The Subnets tab allows you to view and manage OSI subnetwork point-of-attachment parameters. The parameters are initially provisioned when you enable a subnet on an SDCC, LDCC, GCC, OSC, or LAN interface.

Table B-533 Field Descriptions for the Subnets Tab

Field	Description
Slot/Port	The subnet slot and port.
Router Number	The OSI virtual router where the subnet (SDCC, LDCC, GCC, or OSC) is provisioned.
Type	The interface where the subnet is provisioned: SDCC, LDCC, GCC, OSC, or LAN.
Protocol	The data link protocol that is provisioned for the subnet. It can be: • Point to Point Protocol (PPP) • Link Access Protocol on the D channel (LAP-D) • 802.3 for LAN subnets
ISH	The intermediate system hello (ISH) PDU propagation frequency. Intermediate system NEs send ISHs to other ESs and ISs to inform them about the NETs they serve. The Cisco default is 10 seconds; the range is from 10 to 1000 seconds.
ESH	The end system hello (ESH) PDU propagation frequency. End system NEs transmit ESHs to inform other ESs and ISs about the NSAPs they serve. The Cisco default is 10 seconds; the range is from 10 to 1000 seconds.
IIH	The intermediate system-to-intermediate system hello (IIH) PDU propagation frequency. The IS-IS hello PDUs establish and maintain adjacencies between ISs. The Cisco default is 3 seconds; the range is from 1 to 600 seconds.
DIS Priority	The designated intermediate system (DIS) priority. In IS-IS networks, one router is elected as the DIS. For Cisco routers, the DIS priority is 64.
IS-IS Cost	The cost for sending packets on the subnet. This is used by OSPF routers to calculate the shortest path. The Cisco default value is 20.
Enable LAN Subnet button	*Router 1 only.* Enables OSI over the LAN; that is, it activates the IS-IS protocol on the LAN so OSI traffic is enabled on the LAN.
Edit button	Click **Edit** to modify the subnet parameters.
Disable LAN Subnet button	*Router 1 only.* Disables OSI over the LAN if it has been enabled.

Tunnels Tab

The Tunnels tab allows you to view, create, edit, and delete Generic Routing Encapsulation (GRE) and Cisco tunnels. GRE tunnels encapsulate one network protocol for transfer across another network layer. Within a mixed TCP/IP and OSI network, GRE tunnels tunnel IP traffic over an OSI NE and OSI traffic over an IP NE.

Table B-534 Field Descriptions for the Tunnels Tab

Field	Description
IP Address	Displays the IP address of the GRE destination Prime Optical or CTC computer.
Netmask Address	Displays the IP address subnet mask of the destination Prime Optical or CTC computer.
NSAP Address	The destination NE NSAP address. The NSAP selector (last two NSAP characters) must be 2f (GRE tunnel) or cc (proprietary Cisco tunnel), depending on which tunnel type you want to create. The Cisco proprietary tunnel is slightly more efficient than the GRE tunnel because it does not add an encapsulation header for each IP packet, while the GRE tunnel adds a small header to the packets. The two tunnel types are incompatible. **Note** Most Cisco routers support the Cisco tunnel, while only a few support both GRE and Cisco IP tunnels.
OSPF Metric	Displays the cost for sending packets across the GRE tunnel. Cost is used by OSPF routers to calculate the shortest path.
Create button	Click **Create** to create a new GRE tunnel route.
Edit button	Click **Edit** to edit an existing GRE tunnel.
Delete button	Click **Delete** to delete an existing GRE tunnel.

IS-IS RIB Tab

The IS-IS RIB tab allows you to view the intermediate system-to-intermediate system (IS-IS) protocol routing information base (RIB). IS-IS is an OSI link-state hierarchical routing protocol that floods the network with link-state information that enables the NEs to build a complete and consistent picture of a network topology.

Table B-535 Field Descriptions for the IS-IS RIB Tab

Field	Description
Router Number	Displays the virtual router number. The ONS 15600 SONET provides six virtual routers, numbered 1 through 6.
Subnet Type	Indicates the OSI subnetwork point-of-attachment type used to access the destination address. It includes SDCC, LDCC, GCC, OSC, and LAN.
Destination Address	Displays the Network Service Access Point (NSAP).
MAC Address	Displays the NE's MAC address for destinations that are accessed by the LAN subnets.

ES-IS RIB Tab

The ES-IS RIB tab allows you to view the end system-to-intermediate system (ES-IS) protocol RIB. ES-IS is an OSI protocol that defines how end systems (hosts) and intermediate systems (routers) learn about each other.

Table B-536 Field Descriptions for the ES-IS RIB Tab

Field	Description
Router Number	Displays the virtual router number. The ONS 15600 SONET provides six virtual routers, numbered 1 through 6.
Subnet Type	Indicates the OSI subnetwork point-of-attachment type used to access the destination address. It includes SDCC, LDCC, GCC, OSC, and LAN.
Destination Address	Displays the NSAP of the destination ES.
MAC Address	Displays the NE's MAC address for destinations that are accessed by the LAN subnets.

Note See Table 1-22 on page 1-47 for descriptions of actions that you can perform using the buttons at the bottom of the window.

ONS 15600 SDH NE Explorer

When you choose **Configuration > NE Explorer** for the ONS 15600 SDH, the window that Prime Optical displays consists of a tree on the left side and a properties pane on the right. The tree provides a hierarchical view and alarm status of the NE's physical shelves and slots. The properties pane shows information about the selected entity. See Node Properties Pane—ONS 15600 SDH, page B-387 for more information.

Note If CTC is launched from the web browser for an ONS 15600 SDH node, the CTC GUI might look different from when it is launched from Prime Optical. This discrepancy occurs because the latest version of CTC (for NE releases supported by Prime Optical) is packaged with Prime Optical. If launched from a browser, the CTC software is retrieved from the NE itself, which might be a version different from that packaged with Prime Optical.

When an NE Explorer is in autorefresh mode, all values of an entity that is being edited by the user are automatically refreshed. You will lose all of your changes unless you click the Apply button. To enable autorefresh, click the Refresh Data button in the NE Explorer.

Node Properties Pane—ONS 15600 SDH

The node properties pane displays information about the ONS 15600 SDH NE. The properties pane contains the following tabs, some of which apply only to a specific NE version:

- Shelf View, page B-388
- Identification, page B-388
- Network, page B-389
- DCC, page B-395
- Timing, page B-397
- Protection, page B-400

- NE Defaults, page B-401
- Security, page B-401
- Alarm, page B-405
- Maintenance, page B-406
- Alarm Extenders, page B-407
- MS-SPRing, page B-408
- OSI, page B-408

Shelf View

The Shelf View Properties pane displays a graphic of the ONS 15600 SDH that is selected in the NE Explorer tree. Moving the mouse pointer over the NE, its shelves, slots, or cards displays the current alarms for the highlighted item. Double-clicking a slot or card displays the slot or card in the properties pane. The right-click menu allows you to reset, delete, or change a card. For unprovisioned slots, the right-click menu allows you to add a card.

General

The General Properties pane displays identification information, voltage thresholds, and multishelf configurations for the ONS 15600 SDH NE.

Table B-537 Field Descriptions for the General Properties Pane

Field	Description
Identification Tab	
NE ID	Displays the ID of the NE from the Domain Explorer.
NE Model	Displays the NE model type.
Software Version	Displays the current running version of the system software.
Contact	Displays the name and phone number of the node contact person.
Description	Enter a description of the NE.
System Description	Displays the NE type and the version of the system software.
Voltage/Temperature Tab	
Voltage	Displays the voltage (in millivolts) of the shelf that corresponds to the power supply.
Temperature	Displays the temperature (in degrees Celsius) of the shelf.

Identification

The Identification Properties pane displays identification information about the ONS 15600 SDH NE.

Table B-538 Field Descriptions for the Identification Properties Pane

Field	Description
NE ID	Displays the ID of the NE from the Domain Explorer.
Description	Displays the description of the NE from the Domain Explorer.

Table B-538 Field Descriptions for the Identification Properties Pane (continued)

Field	Description
NE Model	Displays the NE model type.
Software Version	Displays the current running version of the system software.
Contact	Displays the name of the node contact person and the phone number.
System Description	Displays a description of the NE.
SNTP Settings	
Use NTP/SNTP Server	If checked, CTC uses an SNTP server to set the date and time of the node. Using an SNTP server ensures that all ONS 15600 SDH network nodes use the same date and time reference. The server synchronizes the node's time after power outages or software upgrades. If you check the **Use NTP/SNTP Server** check box, enter the server's IP address in the next field. If you do not use an SNTP server, complete the Time and Time Zone fields. The ONS 15600 SDH will use these fields for alarm dates and times.
SNTP Server	Displays the SNTP server IP address.
Location	
Latitude	Allows you to set the latitude of the NE. Select **North** or **South** from the drop-down list; then, enter the degrees and minutes (or click the up and down arrows to increase or decrease each by 1 unit).
Longitude	Allows you to set the longitude of the NE. Select **East** or **West** from the drop-down list; then, enter the degrees and minutes (or click the up and down arrows to increase or decrease each by 1 unit).
Date and Time	
Time	Displays the NE date and time.
Time Zone	Displays the time zone where the NE is located.
Use Daylight Savings Time	If checked, Daylight Savings Time is observed.

Network

The Network Properties pane displays information about the NE network address. The Properties pane contains the following tabs:

- Address Tab, page B-390
- Static Routes Tab, page B-390
- OSPF Tab, page B-390
- OSPF Area Range Tab, page B-391
- OSPF Virtual Links Tab, page B-392
- SNMP Tab, page B-392
- Firewall/Proxy Tab, page B-393
- Routing Table Tab, page B-393
- Internal Subnet Tab, page B-394
- Proxy Tunnels Tab, page B-394
- Firewall Tunnels Tab, page B-395
- FTP Hosts Tab, page B-395

Address Tab

The Address tab allows you to view and change information about the NE network address.

Table B-539 Field Descriptions for the Address Tab

Field	Description
IP Address	Displays the IP address of the NE.
Default Router	Displays the IP address of the default router.
Subnet Mask	Displays the subnetwork mask ID of the NE.
MAC Address	Displays the ONS 15600 SDH address as it is identified on the IEEE 802 MAC layer.
Forward DHCP Requests	If checked, forwards DHCP requests to the IP address entered in the DHCP Server field. When the Forward DHCP Requests check box is unchecked, the DHCP Server field is display-only.
DHCP Server	Displays the IP address of the DHCP server.
IPv6 Config	
Enable IPv6	If checked, allows you to configure the node to use the IPv6 protocol and to assign an IPv6 address to the node.
IPv6 Address	Enter the IPv6 address of the node.
Default IPv6 Router	Enter the IPv6 default router of the node.
IPv6 Subnet Mask	Enter the IPv6 subnetwork mask length.

Static Routes Tab

The Static Routes tab allows you to view information about Prime Optical and ONS 15600 SDH connectivity and create or delete static routes.

Table B-540 Field Descriptions for the Static Routes Tab

Field	Description
Destination IP	Displays the IP address of the computer running Prime Optical.
Subnet Mask	Displays the subnetwork mask.
Next Hop	Displays the IP address of the router port or the node IP address if the Prime Optical computer is connected to the node directly.
Cost	Displays the number of hops between the ONS 15600 SDH and the computer.

OSPF Tab

The OSPF tab displays OSPF information. OSPF is a link-state Internet routing protocol.

Table B-541 Field Descriptions for the OSPF Tab

Field	Description
DCC/GCC OSPF Area ID Table	
Slot	Displays the slot number.
Port	Displays the port number.

Table B-541 Field Descriptions for the OSPF Tab (continued)

Field	Description
DCC OSPF Area ID	Displays the number that identifies the ONS 15600 SDH as a unique OSPF area. The OSPF area number can be from 0.0.0.0 to 255.255.255.255. The number must be unique to the LAN OSPF area.
RS-DCC Metric	Sets a cost for sending packets across the RS-DCC, which is used by OSPF routers to calculate the shortest path. This value should always be higher than the LAN metric. This value is normally unchanged.
MS-DCC Metric	Sets a cost for sending packets across the MS-DCC, which is used by OSPF routers to calculate the shortest path. This value should always be higher than the LAN metric. This value is normally unchanged.
OSPF on LAN	
OSPF Active on LAN	If checked, enables the ONS 15600 SDH OSPF topology to be advertised to OSPF routers on the LAN. Enable this field on ONS 15600 SDHs that directly connect to OSPF routers.
LAN Port Area ID	Displays the OSPF area ID for the router port where the ONS 15600 SDH is connected. (This number is different from the DCC OSPF area ID.)
Router Priority	Displays the value used for this NE in designated router election. The Cisco default value is zero (0). A router that has Router Priority set to 0 is ineligible to become a designated router on the attached network.
Dead Interval	Displays the number of seconds that will pass while an OSPF router's packets are not visible before its neighbors declare the router down. Forty seconds is the Cisco default.
Retransmit Interval	Displays the time that will elapse before a packet is resent. Five seconds is the Cisco default.
Hello Interval	Displays the number of seconds between OSPF hello packet advertisements sent by OSPF routers. Ten seconds is the Cisco default.
Transit Delay	Displays the service speed. One second is the Cisco default.
LAN Metric	Displays a cost for sending packets across the LAN. This value should always be lower than the DCC metric. Ten is the Cisco default.
OSPF Authentication	
Authentication Type	Displays Simple Password if the router where the ONS 15600 SDH is connected uses authentication. Otherwise, it displays No Authentication.
Authentication Key	Displays the OSPF key (password) if authentication is enabled.
Confirm Authentication Key	Retype the authentication key to confirm it.

OSPF Area Range Tab

The OSPF Area Range tab allows you to view information about OSPF area ranges and create or delete area ranges.

Table B-542 Field Descriptions for the OSPF Area Range Tab

Field	Description
Range Address	Displays the area IP address for the ONS 15600 SDHs that reside within the OSPF area. For example, if the ONS 15600 SDH OSPF area includes nodes with IP addresses 10.10.20.100, 10.10.30.150, 10.10.40.200, and 10.10.50.250, the range address would be 10.10.0.0.
Range Area ID	Displays the OSPF area ID for the ONS 15600 SDH NEs. This is either the ID in the DCC OSPF Area ID field or the ID in the LAN Port Area ID field.
Mask Length	Displays the subnet mask length.
Mask	Displays the subnet mask IP address.
Advertise	Indicates whether the OSPF routing table is advertised.

OSPF Virtual Links Tab

The OSPF Virtual Links tab allows you to view information about OSPF virtual links and create or delete virtual links.

Note You cannot create a new virtual link unless OSPF is active on the LAN.

Table B-543 Field Descriptions for the OSPF Virtual Links Tab

Field	Description
Neighbor	Displays the router ID of the Area 0 router.
Transit Delay	Displays the service speed. One second is the Cisco default.
Retransmit Interval	Displays the time that will elapse before a packet is resent. Five seconds is the Cisco default.
Hello Interval	Displays the number of seconds between OSPF hello packet advertisements sent by OSPF routers. Ten seconds is the Cisco default.
Dead Interval	Displays the number of seconds that will pass while the packets of an OSPF router are not visible before its neighbors declare the router down. Forty seconds is the Cisco default.
Authentication Type	Displays the authentication type.
Authentication Key	Displays the authentication key.

SNMP Tab

The SNMP tab allows you to view SNMP information and create or delete SNMP trap destinations.

Table B-544 Field Descriptions for the SNMP Tab

Field	Description
IP Address	The IP address of the NMS.
Community Name	The SNMP community name. **Note** The SNMP community string cannot be blank in Prime Optical. If a blank community string is required in CTC builds earlier than R4.6, you must set the blank community string in CTC.

Table B-544 Field Descriptions for the SNMP Tab (continued)

Field	Description
UDP Port	The UDP port for SNMP. The Cisco default UDP port is 162.
Trap Version	The trap version, either SNMP version 1 or version 2. See your NMS documentation to determine whether to use SNMP version 1 or version 2.

Firewall/Proxy Tab

The Firewall/Proxy tab allows you to use an NE as a proxy server or as a firewall.

Table B-545 Field Descriptions for the Firewall/Proxy Tab

Field	Description
Gateway Settings	
Enable Proxy Server on Port	If checked, the ONS 15600 SDH serves as a proxy for connections between the Prime Optical server and ONS 15600s that are DCC-connected to the proxy ONS 15600 SDH. The Prime Optical server establishes connections to DCC-connected nodes through the proxy node. The Prime Optical server can connect to nodes that it cannot directly reach from the host on which it runs. The proxy server port number (display-only) is shown following the Enable Proxy Server on Port field. The proxy server uses port 1080. If checked, the following radio buttons are enabled: • End Network Element (ENE)—Enables the ONS 15600 SDH to proxy as an ENE. Note that an alternate expansion for ENE is *external network element*. • Gateway Network Element (GNE)—Enables the ONS 15600 SDH to proxy as a GNE. • Proxy-only—Enables proxy only. If unchecked, the node does not proxy.

Routing Table Tab

The Routing Table tab allows you to view the OSPF routing table.

Table B-546 Field Descriptions for the Routing Table Tab

Field	Description
Destination	Displays the IP address of the destination network or host. Destination (0.0.0.0) is the default route entry. All undefined destination network or host entries on this routing table are mapped to the default route entry.
Mask	Displays the subnet mask used to reach the destination network or host. Mask (0.0.0.0) is always 0 for the default route.
Gateway	Displays the IP address of the gateway used to reach the destination network or host. All outbound traffic belonging to this network is sent to this gateway. Gateway (172.20.214.1) is the default gateway address. All outbound traffic that cannot be found in this routing table or is not on the nodes local subnet will be sent to this gateway.

Table B-546 Field Descriptions for the Routing Table Tab (continued)

Field	Description
Usage	Shows the number of times the listed route has been used.
Interface	Shows the ONS 15600 SDH interface used to access the destination. Values are: • cpm0—The ONS 15600 SDH Ethernet interface (that is, the RJ-45 jack on the TCC+/TCC2 and the LAN 1 pins on the backplane). • pdcc0—An SDCC interface (that is, an OC-N trunk card identified as the SDCC termination). • lo0—A loopback interface.

Internal Subnet Tab

The Internal Subnet tab allows you to change the class B subnet address for TSC cards. TSC cards perform all system-timing functions for each ONS 15600 SDH. To avoid IP address conflicts, you should change the class B subnet address if your internal network uses the same address range as the default subnet addresses.

Table B-547 Field Descriptions for the Internal Subnet Tab

Field	Description
TSC1	Enter the class B subnet address for the first TSC.
TSC2	If two TSCs are installed, enter the class B subnet address for the second TSC.

Proxy Tunnels Tab

The Proxy Tunnels tab allows you to configure source and destination information and create or delete proxy tunnels.

Table B-548 Field Descriptions for the Proxy Tunnels Tab

Field	Description
Source Address	Specify the source IP address in the source-destination pair for the tunnel that will be routed through the proxy server.
Source Mask	Specify the source subnetwork mask in the source-destination pair for the tunnel that will be routed through the proxy server.
Destination Address	Specify the destination IP address in the source-destination pair for the tunnel that will be routed through the proxy server.
Destination Mask	Specify the destination subnetwork mask in the source-destination pair for the tunnel that will be routed through the proxy server.

Firewall Tunnels Tab

The Firewall Tunnels tab allows you to configure source and destination information and create and delete firewall tunnels.

Table B-549 Field Descriptions for the Firewall Tunnels Tab

Field	Description
Source Address	Specify the source IP address in the source-destination pair for the tunnel that will be routed through the firewall.
Source Mask	Specify the source subnetwork mask in the source-destination pair for the tunnel that will be routed through the firewall.
Destination Address	Specify the destination IP address in the source-destination pair for the tunnel that will be routed through the firewall.
Destination Mask	Specify the destination subnetwork mask in the source-destination pair for the tunnel that will be routed through the firewall.

FTP Hosts Tab

The FTP Hosts tab allows you to configure database backup or restore and software download to an ENE when the firewall is enabled. You can provision a list of legal FTP hosts for which the firewall opens for all FTP commands. You can configure the FTP hosts to expire after a certain amount of time, after which the FTP relay resumes blocking all FTP access for the ENEs.

Table B-550 Field Descriptions for the FTP Hosts Tab

Field	Description
Create button	Opens the Create New FTP Host dialog box, which allows you to create up to 12 new FTP hosts in a GNE/ENE firewall environment. See Creating an FTP Host, page 5-22. **Note** You cannot create more than 12 FTP hosts.
Delete button	Deletes the selected FTP host.
FTP Host Address	Displays the FTP host IP address.
Prefix Length	Displays the FTP host subnet mask length.
Enable FTP Relay	Indicates whether FTP relay is enabled or disabled. If FTP relay is disabled, the FTP Relay Timer field is dimmed.
FTP Relay Timer	Displays the number of minutes that the FTP relay is configured to run, after which the FTP relay resumes blocking all FTP access for the ENEs.

DCC

The DCC Properties pane allows you to create, delete, and view SONET and SDH DCCs.

Table B-551 Field Descriptions for the DCC Properties Pane

Field	Description
RS-DCC	
SDCC Terminations	Displays the slot, port, and card type of an SDCC termination.

Table B-551 Field Descriptions for the DCC Properties Pane (continued)

Field	Description
OSPF Disabled on Link	Check to prevent the advertisement of the OSPF routing table.
Foreign	A check mark indicates that the far-end node is a non-ONS node.
Foreign IP	Displays the foreign node IP address.
LAPD Config	Displays the LAP-D parameters for the SDCCs that are provisioned as OSI only.
OSI SNPA	If the SDCC is provisioned for OSI, the following SNPA information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.
Service State	Select the state of the termination: • IS-NR—In Service–Normal. • OOS-AU—Out of Service–Autonomous. • OOS-MA—Out of Service–Management. • OOS-AUMA—Out of Service–Autonomous and Management. In addition, a secondary state provides additional information about the status of the entity. Values for secondary state are: • MEA—Mismatch of equipment due to invalid equipment insertion. • UEQ—Unequipped; there is nothing in the slot. • UAS—Unassigned; the entity does not exist, has not been created, or has been deleted. • SWDL—Software download in progress. • MT—Maintenance, as per the Admin State change. • AINS—Automatic in service. • DSBLD—Traffic is disabled on the entity. • LPBK—Port or connection has a loopback on it. • FLT—Fault secondary state. When an entity is faulted, an FLT state is raised. Equipment and ports in FLT state should be cleared as they transition. Transition states are listed in Table 11-11 on page 11-15. See Table 11-11 on page 11-15 for the Service state-Secondary state possible values. **Note** If the NE release does not support the Service state, this field shows N/A.
MS-DCC	
LDCC Terminations	Displays the slot, port, and card type of an LDCC termination.
OSPF Disabled on Link	Check to prevent the advertisement of the OSPF routing table.
Foreign	A check mark indicates that the far-end node is a non-ONS node.
Foreign IP	Displays the foreign node IP address.
LAPD Config	Displays the LAP-D parameters for the LDCCs that are provisioned as OSI only.
OSI SNPA	If the LDCC is provisioned for OSI, the following SNPA information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.

Table B-551 Field Descriptions for the DCC Properties Pane (continued)

Field	Description
Service State	Select the state of the MS-DCC termination: • IS-NR—In Service–Normal • OOS-AU—Out of Service–Autonomous • OOS-MA—Out of Service–Management • OOS-AUMA—Out of Service–Autonomous and Management In addition, a secondary state provides additional information about the status of the entity. Values for secondary state are: • MEA—Mismatch of equipment due to invalid equipment insertion • UEQ—Unequipped; there is nothing in the slot • UAS—Unassigned; the entity does not exist, has not been created, or has been deleted • SWDL—Software download in progress • MT—Maintenance, as per the Admin State change • AINS—Automatic in service • DSBLD—Traffic is disabled on the entity • LPBK—Port or connection has a loopback on it
Create button	Allows you to create new terminations on SONET or SDH cards.
Edit button	Allows you to modify existing terminations on SONET or SDH cards.
Delete button	Allows you to delete the selected RS-DCC or MS-DCC.

Timing

The Timing Properties pane contains the following tabs:

- General Tab, page B-397
- Facility Tab, page B-398
- Reference List Tab, page B-399
- Status Tab, page B-399
- Timing Report Tab, page B-400

General Tab

The General tab displays general timing information.

Table B-552 Field Descriptions for the General Tab

Field	Description
General Timing	
Timing Mode	Set the node timing mode: • External—The ONS 15600 SDH derives its timing from a BITS source wired to the backplane pins. • Line—Timing is derived from an STM-N card that is optically connected to the timing node. • Mixed—Timing is set to external and line timing references. **Caution** Mixed timing might cause timing loops. Use this mode with care.
SSM Message Set	Choose the SSM set level supported by your network. SSM is an SONET protocol that communicates information about the quality of the timing source. SSM messages are carried on the S1 byte of the SONET Line layer. They enable SONET devices to automatically select the highest quality timing reference and to avoid timing loops. If a Generation 1 node receives a Generation 2 message, the message is mapped down to the next available Generation 1 node. For example, an ST3E message becomes an ST3.
Revertive	If checked, the ONS 15600 SDH reverts to a primary reference source after the conditions that caused it to switch to a secondary timing reference are corrected.
Reversion Time	Specify the reversion time in half-minute increments.

Facility Tab

The Facility tab displays the facility type, BITS IN and OUT information.

Note BITS IN Facilities and BITS OUT Facilities values apply to both BITS-1 and BITS-2.

Table B-553 Field Descriptions for the Facility Tab

Field	Description
BITS-IN-OUT Facility Type	
In Facility Type	Provisions the BITS In facility type.
Out Facility Type	Provisions the BITS Out facility type.
BITS In/Out Facilities	
E1, T1, 2.048 MHz, 64 KHz	Select the speed of the BITS facility.
In/Out State	Set the BITS reference to IS or OOS. For nodes set to Line timing with no equipment timed through BITS Out, set the state to OOS. For nodes using External timing or Line timing with equipment timed through BITS Out, set the state to IS. **Note** BITS IN Facilities and BITS OUT Facilities values apply to both BITS-1 and BITS-2.
Coding	Set to the coding used by your BITS reference, either B8ZS or AMI.
Framing	Set to the framing used by your BITS reference, either ESF or SF (D4). SSM is not available with Super Frame.

Table B-553 Field Descriptions for the Facility Tab (continued)

Field	Description
Sync Messaging	If checked, enables the SSM for BITS In. (SSM is not available if Framing is set to Super Frame.)
Admin SSM	If the Sync Messaging check box is not checked, you can choose the SSM Generation 2 type from the drop-down list.
AIS Threshold	If SSM is disabled or Super Frame is used, set the quality level where a node sends an alarm indication signal (AIS) from the BITS-1 Out and BITS-2 Out backplane pins. An AIS is raised when the optical source for the BITS reference falls to or below the SSM quality level defined in this field.
Cable Type	Type of cable. Values are 75 ohm or 120 ohm.
Sa Bit	The Sa Bit is used to transmit the SSM message. Available Sa bits are Sa4, Sa5, Sa6, Sa7, and Sa8.

Reference List Tab

The Reference List tab provides timing reference information.

Table B-554 Field Descriptions for the Reference List Tab

Field	Description
NE References	Allows you to define three timing references (Ref-1, Ref-2, and Ref-3). The node uses Reference 1 unless a failure occurs on that reference, in which case, the node uses Reference 2. If that fails, the node uses Reference 3, which is typically set to Internal Clock. This is the Stratum 3 clock provided on the TCC+. The options displayed depend on the Timing Mode setting: • Timing Mode set to External—Options are BITS-1, BITS-2, and Internal Clock. • Timing Mode set to Line—Options are the node's working optical cards and Internal Clock. Select the cards/ports that are directly or indirectly connected to the node wired to the BITS source; that is, the node's trunk cards. Set Reference 1 to the trunk card that is closest to the BITS source. For example, if Slot 5 is connected to the node wired to the BITS source, select Slot 5 as Reference 1.

Status Tab

The Status tab displays timing status information.

Note If you change any values in the Status tab and click Apply at the bottom of the screen, the values are not set. Instead, use the following buttons to apply changes:

- Clear—Releases any existing switch request. For example, if you issue a Force Switch and then issue a Clear, the Force Switch request is released.
- Manual Switch—Switches the timing reference from one source to another.
- Force Switch—Switches the timing reference from one source to another. This request has a higher priority than the Manual Switch request.

Table B-555 Field Descriptions for the Status Tab

Field	Description
NE Clock	
NE Reference	Set the NE timing reference to internal, BITS-1, or BITS-2.
Status	Displays the status of the NE clock.
Operations	Execute a switch on the NE timing reference.
BITS-1 Out	
BITS-1 Out	Set the BITS-1 out timing reference.
Status	Displays the status of the BITS-1 out timing reference.
Operations	Execute a switch on the BITS-1 out timing reference.
BITS-2 Out	
BITS-2 Out	Set the BITS-2 out timing reference.
Status	Displays the status of the BITS-2 out timing reference.
Operations	Execute a switch on the BITS-2 out timing reference.

Timing Report Tab

The Timing Report tab summarizes the NE's current timing settings.

Protection

The Protection Properties pane contains the following tabs:

- Protection Groups Tab, page B-400
- Operations Tab, page B-401

Protection Groups Tab

The Protection Groups tab displays a list of available protection groups and allows you to create, delete, and view protection groups.

Table B-556 Field Descriptions for the Protection Groups Tab

Field	Description
Protection Groups	
Displays a list of available protection groups. Click the **Create** or **Delete** button to create a new protection group or delete an existing one.	
Selected Protection Group	
Name	Modify the name of the selected protection group. The name can have up to 32 alphanumeric characters.
Type	Choose the protection type (1:1, 1:N, or 1+1) from the drop-down list. The protection selected determines the cards that are available to serve as protect and working cards. For example, if you choose 1:N protection, only DS-1N and DS-3N cards are displayed. 1+1 protection is only used for optical cards.

Table B-556 Field Descriptions for the Protection Groups Tab (continued)

Field	Description
Protect Module	Choose the protect card if using 1:1 or 1:N protection.
Available Entities	Displays a list of available entities. You can toggle between available and working entities.
Working Entities	Displays a list of working entities. You can toggle between working and available entities.
Bidirectional Switching	Click if you want both the transmit and the receive channels to switch if a failure occurs on one. This option is available only if you select 1+1 (port) type.
Revertive	If checked, the ONS 15600 SDH reverts traffic to the working card or port after failure conditions are corrected and remain correct for the amount of time entered in Reversion Time.
Reversion Time	If Revertive is checked, enter the amount of time following failure condition correction that should elapse before the ONS 15600 SDH switches back to the working card or port.

Operations Tab

The Operations tab displays protection group operation information.

Table B-557 Field Descriptions for the Operations Tab

Field	Description
Protection Groups	Displays a list of available protection groups.
Protection Group Details	Displays details about the selected protection groups and allows you to execute switch commands.
Switch Commands	Allows you to perform a manual switch, perform a forced switch, or clear the existing command switching.
Inhibit Switching	Allows you to inhibit unlock switching, lock out switching, or lock on switching.

NE Defaults

The NE Defaults Properties pane displays a list of default thresholds for the ONS 15600 SDH NE. You can load different NE defaults using the NE Defaults Management window. See Restoring NE Defaults, page 4-78.

Security

The Security Properties pane allows you to view and edit the security advisory message for the ONS 15600 SDH NE. The Security Properties pane contains the following tabs:

- Policy Tab, page B-401
- Password Tab, page B-402
- Access Tab, page B-403
- RADIUS Server Tab, page B-404
- Legal Disclaimer Tab, page B-405

Policy Tab

The Policy tab allows you to specify user security parameters.

Note If the user is already logged in, any changes to the NE user type settings take effect only when the user next logs in.

Table B-558 Field Descriptions for the Policy Tab

Field	Description
Idle User Timeout	
Each CTC or TL1 user can be idle during his or her login session for a specified amount of time before the CTC window is locked. The lockouts prevent unauthorized users from making changes. Higher-level users have shorter default idle periods and lower-level users have longer or unlimited default idle periods. The user idle period can be modified by a SuperUser. **Note** A user already logged into the node is not affected by a change to the Idle User Timeout policy.	
Retrieve	Set the idle user timeout for a CTC Retrieve user.
Maintenance	Set the idle user timeout for a CTC Maintenance user.
Provisioner	Set the idle user timeout for a CTC Provisioner user.
SuperUser	Set the idle user timeout for a CTC SuperUser user.
User Lockout	
Manual Unlock by SuperUser	If checked, the CTC SuperUser user must manually unlock locked out CTC users. If unchecked, locked out CTC users are automatically unlocked after the lockout duration period elapses.
Lockout Duration	Set the lockout duration period for locked out CTC users. This field is enabled only if the Manual Unlock by SuperUser check box is unchecked.
Failed Logins Allowed	Set the number of failed logins before the CTC user is automatically locked out.
Other	
Single Sessions per User	If checked, each CTC user can launch only one session at a time.
Prevent Disabling the SuperUser	If checked, inactive CTC SuperUsers are never disabled.
Disable Inactive User	If checked, inactive users are disabled automatically for the amount of time in the Inactive Duration field.
Inactive Duration	Specify the inactive duration in days. The range is from 1 to 90 days; the Cisco default is 45 days. A value of 0 implies the inactive duration is disabled and invalid.

Password Tab

The Password tab allows you to specify user password security parameters.

Table B-559 Field Descriptions for the Password Tab

Field	Description
Password Change	
Prevent Reusing Last	Prevents setting a CTC user's current password to one of the most recent passwords. You can set the number of most recent passwords that cannot be reused.
Disable Password Flipping	If checked, users are not allowed to change passwords for the number of days specified in the Can Change Password After field.
Can Change Password After	Enter the number of days that must elapse before the user can change the password.

Table B-559 Field Descriptions for the Password Tab (continued)

Field	Description
Force Password Change After Assigned	If checked, during the first successful login, the user is forced to change the password.
Password Difference	Allows SuperUsers to specify the number of characters by which the new password of a user must differ from the old password, while performing a password change. The default value is 1; the range is from 1 to 5 characters.
Password Aging	
Enable Password Aging	Check this check box to enable password aging.
Aging Period	Enter the aging period, in days, for Retrieve, Maintenance, Provisioner, and SuperUser CTC users. After the aging period expires, CTC users are forced to change their passwords.
Warning Period	Enter the warning period, in days, for Retrieve, Maintenance, Provisioner, and SuperUser CTC users. After the warning period expires, CTC users are warned that their passwords will soon expire.

Access Tab

The Access tab allows you to configure LAN and shell access to the NE.

Table B-560 Field Descriptions for the Access Tab

Field	Description
Access	
LAN Access	Specify the type of LAN access allowed. Values are Backplane Only, No LAN Access, Front and Backplane, or Front Only. **Note** After the LAN access to the backplane is set, the Prime Optical client is unusable for 4 to 5 minutes.
Restore Timeout	This time period begins if *No LAN Access* is selected and all DCC connections are lost. If the time expires before a DCC is restored, LAN access is restored so that the node is not isolated. When the DCC comes back, LAN access returns to its specified settings. The range is from 0 (never) to 60 minutes; the Cisco default is 5 minutes.
Serial Craft Access	
Enable Craft Port A	Check this check box to enable craft port A.
Enable Craft Port B	Check this check box to enable craft port B.
Shell Access	
Access State	Select the Shell access state from the drop-down list. You can select Disable, Non-secure, or Secure.
SSH Port	Indicates the SSH port number that will be used.
SFTP Port	Indicates the SFTP port number.
Telnet Port	This is enabled if you selected the Non-secure access state. Enter the Telnet port number that will be used.
Use Standard Telnet Port	Check this check box to indicate that the standard Telnet port will be used.

Table B-560 Field Descriptions for the Access Tab (continued)

Field	Description
Enable Shell Password	Indicates whether or not the Shell password is enabled. **Note** You cannot enable the Shell password in Prime Optical. Enabling and providing a Shell password is currently done in CTC.
TL1 Access	
Access State	Select the TL1 access state from the drop-down list. You can select Disable, Non-secure, or Secure.
SNMP Access	
Access State	Select the SNMP access state from the drop-down list. You can select either Disable or Non-secure.
Other	
PM Clearing Privilege	Select the users privilege that allows clearing PM statistics for the NE.
EMS Access	
Access State	Select the EMS access state from the drop-down list. You can select either Non-secure or Secure.
CORBA Listener Port	Select the port numbers for the TSC CORBA (IIOP) listener port and the TSC CORBA (SSLIOP) listener port. Select one of the following radio buttons: • Default-Fixed—Assigns a default port number. • Standard Constant—The port number for the TSC CORBA (IIOP) listener port is 683. The port number for the TSC CORBA (SSLIOP) listener port is 684. • Other Constant—When selected, enter the port number that will be used.

RADIUS Server Tab

The RADIUS Server tab allows you to configure, create, modify, and delete RADIUS servers for the ONS 15600 SDH R8.0 and later.

Table B-561 Field Descriptions for the RADIUS Server Tab

Field	Description
Enable RADIUS Authentication	Check this check box to enable RADIUS authentication.
Enable RADIUS Accounting	Check this check box to enable RADIUS accounting. This is enabled if the Enable RADIUS Authentication check box is checked.
Enable the Node as the Final Authenticator When no RADIUS Server is Reachable	Select a row from the RADIUS Servers in Order of Authentication table; then, check this check box. This indicates that the RADIUS server that you selected will be the final authenticator when there are no more RADIUS servers that can be reached.
Create button	Click **Create** to create a RADIUS server. See Creating a RADIUS Server, page 8-46.
Edit button	Click **Edit** to modify an existing RADIUS server's information. See Modifying a RADIUS Server, page 8-46.
Delete button	Click **Delete** to delete an existing RADIUS server. See Deleting a RADIUS Server, page 8-46.
Move Up/Move Down buttons	Click **Move Up** or **Move Down** to reorder the list of RADIUS servers in the RADIUS Servers in Order of Authentication table.
RADIUS Servers in Order of Authentication	

Table B-561 Field Descriptions for the RADIUS Server Tab (continued)

Field	Description
IP Address	Displays the IP address of the RADIUS server.
Shared Secret	Displays a text string that serves as a password between a RADIUS client and RADIUS server.
Authentication Port	Displays the authentication port number of the RADIUS server. Default access is through port number 1812.
Accounting Port	Displays the accounting port number of the RADIUS server. Default access is through port number 1813.

Legal Disclaimer Tab

The Legal Disclaimer tab allows you to edit the NE's advisory message and preview the disclaimer.

Table B-562 Field Descriptions for the Legal Disclaimer Tab

Tab	Description
Advisory Message	The existing message is a default, noncustomer-specific disclaimer. If you want to edit this statement with specifics for your company, you can change the text. You can also use the following HTML commands to format the text: • ****—Begins boldface font • ****—Ends boldface font • ** **—Aligns type in the center of the window • ** **—Ends the center alignment • **<font=*n*, where *n* = point size>**—Changes the font to the new size • ****—Ends the font size command • **<p>**—Creates a line break • **_{**—Begins subscript • **}**—Ends subscript • **^{**—Begins superscript • **}**—Ends superscript • **<u>**—Starts underline • **</u>**—Ends underline
Preview	Allows you to view the advisory message before saving it.

Alarm

The Alarm Properties pane allows you to change default alarm severities by creating unique alarm profiles for individual ONS 15600 SDH nodes. The Alarm Properties pane contains the following tabs:

- Profile Tab, page B-406
- Alarm Behavior Tab, page B-406

Profile Tab

The Profile tab allows you to select, create, or delete alarm profiles.

Table B-563 Field Descriptions for the Profile Tab

Field	Description
Alarm Profile Name	Choose an alarm profile for the NE from the drop-down list. Click **Create** to create a new alarm profile for the NE. Click **Delete** to delete an alarm profile from the NE.
Condition	Displays the alarm condition.
Severity	Displays the alarm severity.

Alarm Behavior Tab

The Alarm Behavior tab allows you to change default alarm severities by creating unique alarm profiles.

Table B-564 Field Descriptions for the Alarm Behavior Tab

Field	Description
Alarm Profile	Choose a global alarm profile for the NE from the drop-down list.
Suppress Alarms	If checked, all alarms are suppressed.
Slot Number	Displays the location of the module.
Equipment Type	Displays the type of module in the slot.
Profile	Choose an alarm profile for the slot from the drop-down list.
Suppress Alarms	Indicates whether or not the alarms for a particular card are suppressed. If checked, all alarms are suppressed for the port.

Maintenance

The ONS 15600 SDH hardware keeps track of which copies of data (backplane STS), SYNC, O&M, and CLK are currently being used by I/O and CXC cards.

Preferred Copy Tab

The Preferred Copy tab allows you to change the preferred data source and view the clock and SYNC copy.

Table B-565 Field Descriptions for the Preferred Copy Tab

Field	Description
Data Copy	
Preferred Data	Allows you to select the data copy (CXC) when both the CXC cards are present in the system.
Selected Data	Displays the data copy currently being used.
Clock and Sync Copy	
Preferred Clock	Displays the preferred clock and SYNC copy.
Selected Clock	Displays the clock and SYNC copy currently being used.

Alarm Extenders

The Alarm Extenders Properties pane allows you to view external alarm information and create custom alarm types. The Alarm Extenders Properties pane contains the following tabs:

- External Alarms Tab, page B-407
- External Controls Tab, page B-407
- User-Defined Alarms Tab, page B-408

External Alarms Tab

The External Alarms tab allows you to view and update external alarm information.

Table B-566 Field Descriptions for the External Alarms Tab

Field	Description
Input Number	The alarm input number.
Enabled	Check to activate the fields for the alarm input number.
Alarm Type	Choose an alarm type from the provided list.
Severity	Choose a severity from the list.
Raised When	Choose the contact condition that will trigger the alarm in CTC.
Virtual Wire	To assign the external device to a virtual wire, choose a virtual wire from the list, or choose None if no assignment is required.
Description	Displays a default description for every external alarm that is enabled.
Raised	Indicates whether an alarm has been raised.
Contact Status	Indicates the current status of the contact.

External Controls Tab

The External Controls tab allows you to view and update external controls.

Table B-567 Field Descriptions for the External Controls Tab

Field	Description
Control Number	The control number.
Enabled	Check to activate the fields for the control number.
Control Type	Choose a control type from the provided list.
Trigger Type	Choose a trigger type: a local minor, major, or critical alarm; a remote minor, major, or critical alarm; or a virtual wire activation.
Description	Enter a description.
Current State	The current state of the control.
Auto State	The auto state of the control.
Contact Setting	The current contact setting.

User-Defined Alarms Tab

The User-Defined Alarms tab allows you to view, add, and delete custom alarm types on the ONS 15600 SDH.

Table B-568 Field Descriptions for the User-Defined Alarms Tab

Field	Descriptions
Alarm Types	Lists the user-defined alarm types that have been created on the ONS 15600 SDH. You can create up to 50 custom environmental alarms, which are reported in the Condition column in the Alarm Log and Alarm Browser windows.
Add	Click the **Add** button to add a new custom alarm type. Enter a unique alarm type name that contains 20 characters or fewer. Only the following characters are valid: 0-9, A-Z, a-z, and hyphen (-).
Delete	Click the **Delete** button to delete an existing alarm type.

MS-SPRing

The MS-SPRing Properties pane allows you to view MS-SPRing information and create new MS-SPRings. MS-SPRings share the ring bandwidth equally between working and protection traffic. Half of the payload bandwidth is reserved for protection in each direction, making the communication pipe half-full under normal operation. Click **Create** to create a new MS-SPRing; click **Delete** to delete an existing MS-SPRing; click **Ring Map** to open the Ring Map; click **Squelch Table** to open the Squelch table.

Table B-569 Field Descriptions for the MS-SPRing Properties Pane

Field	Description
Fiber Type	Indicates whether the fiber type is 2-fiber or 4-fiber.
Rate	Select the MS-SPRing rate.
Ring Name	Assign a ring name. Nodes in the same MS-SPRing must have the same ring name.
Node ID	Assign a node ID. The node ID identifies the node to the MS-SPRing. Nodes in the same MS-SPRing must have unique node IDs.
Ring Reversion	Set the amount of time that will pass before the traffic reverts to the original working path. The Cisco default is 5 minutes. All nodes in an MS-SPRing should have the same ring reversion setting, particularly if *never* (nonrevertive) is selected.
Span Reversion	Set the amount of time to pass before the span reverts to the working path.
East Line	Assign the east MS-SPRing port.
East Switch	Displays a list of switch commands for the east port.
West Line	Assign the west MS-SPRing port.
West Switch	Displays a list of switch commands for the west port.
East Protect	For the 4-fiber MS-SPRing, assign the east MS-SPRing protect port.
West Protect	For the 4-fiber MS-SPRing, assign the west MS-SPRing protect port.

OSI

The OSI Properties pane allows you to provision ONS 15600 SDH Open System Interconnection (OSI) parameters. The Properties pane contains the following tabs:

- Main Setup Tab, page B-409
- TARP-Config Tab, page B-409
- TARP-TDC Tab, page B-411
- TARP-MAT Tab, page B-411
- Routers-Setup Tab, page B-412
- Subnets Tab, page B-412
- Tunnels Tab, page B-413
- IS-IS RIB Tab, page B-414
- ES-IS RIB Tab, page B-414

Main Setup Tab

The Main Setup tab allows you to provision the OSI Network Entity Title (NET) address and the OSI routing mode.

Table B-570 Field Descriptions for the Main Setup Tab

Field	Description
Main Network Entity Title	Displays the node NET. The NET is used in OSI networks to identify the node to the end system (ES) or intermediate system (IS).
End System	Provisions the node as an OSI end system (ES). ESs send end system hello (ESH) messages regularly to announce their presence to neighboring ISs and ESs.
Intermediate System Level 1	Provisions the node as an OSI intermediate system (IS). ISs send intermediate system hello (ISH) messages regularly to announce their presence to neighboring ISs and ESs.
Intermediate System Level 1/Level 2	The ONS 15600 SDH performs all IS functions. It communicates with other IS and ES nodes within an OSI area and broadcasts ISHs to IS nodes in other areas to which it is connected. For the ONS 15600 SDH, Intermediate System Level 1/Level 2 is the default routing mode.
Node Routing Mode	
L1 LSP Buffer Size	Sets the Level 1 Link State Protocol (LSP) data unit buffer size. The Cisco default is 512.
L2 LSP Buffer Size	Sets the Level 2 LSP data unit buffer size. The Cisco default is 512.

TARP-Config Tab

The TARP-Config tab allows you to provision the TID Address Resolution Protocol (TARP). TARP is used when TL1 TIDs must be translated to an NSAP address. During the TID-to-NSAP translation, the TID is mapped to a NET; then, the NSAP is derived from the NET based on the NSAP selector value.

Table B-571 Field Descriptions for the TARP-Config Tab

Field	Description
TARP PDUs L1 Propagation	If checked (default), TARP Type 1 PDUs received by the node that are not excluded by the loop detection buffer are propagated to other NEs within the OSI Level 1 area. Type 1 PDUs request a protocol address that matches a target TID within a Level 1 routing area. The propagation does not occur if the NE is the target of the Type 1 PDU and the PDUs are not propagated to the NE from which the PDU was received. **Note** This parameter is not used when the node is set to End System.
TARP PDUs Origination	If checked (default), the node performs all TARP configuration functions, including: • TID-to-NSAP resolution requests • NSAP-to-TID requests • TARP address changes **Note** TARP Echo and NSAP to TID are not supported.
L2 TARP Data Cache	If checked (default), the TIDs and NSAPs are added to the TDC before the node propagates the requests to other NEs. **Note** This parameter is designed for IS Level 1/Level 2 nodes that are connected to other IS Level 1/Level 2 nodes. Enabling the parameter for IS Level 1 nodes is not recommended.
LAN TARP Storm Suppression	If checked (default), enables the TARP storm suppression to prevent redundant TARP PDUs from being propagated across the network.
Type 4 PDU Delay	Sets the amount of time that will pass before the Type 4 PDU is generated. The Cisco default value is 60 seconds; the range is from 0 to 255 seconds.
TARP PDUs L2 Propagation	If checked (default), TARP Type 2 PDUs received by the node that are not excluded by the loop detection buffer are propagated to other NEs within the OSI Level 2 area. Type 2 PDUs request a protocol address that matches a target TID within a Level 2 routing area. The propagation occurs if the NE is the target of the Type 2 PDU and the PDUs are not propagated to the NE from which the PDU was received.
L1 TARP Data Cache	If checked, the node maintains a TARP data cache (TDC). The TDC is a database of TID-to-NSAP pairs created from TARP Type 3 PDUs received by the node. TARP Type 3 PDUs are responses to Type 1 and Type 2 PDUs and modified by TARP Type 4 PDUs (TID-to-NSAP updates or corrections).
LDB	If checked, enables the TARP loop detection buffer (LDB). The LDB prevents TARP PDUs from being sent more than once on the same subnet.
Send Type 4 PDU on Startup	If checked, a TARP Type 4 PDU is originated during the initial ONS 15600 SDH startup. Type 4 PDUs indicate that a TID or NSAP change has occurred at the NE. This option is disabled by default.
Timers	
LDB Entry	Sets the TARP LDB timer. The LDB buffer time is assigned to each LDB entry for which the TARP sequence number is zero. The Cisco default is 5 minutes; the range is from 1 to 10 minutes.
T1 Timer	Sets the amount of time to wait for response to a Type 1 Request PDU. Type 1 requests seek a specific NE TID within an OSI Level 1 area. The Cisco default is 15 seconds; the range is from 0 to 3600 seconds.

Table B-571 Field Descriptions for the TARP-Config Tab (continued)

Field	Description
T3 Timer	Sets the amount of time to wait for an address resolution request. The Cisco default is 40 seconds; the range is from 0 to 3600 seconds.
LDB Flush	Sets the frequency period for flushing the LDB. The Cisco default is 5 minutes; the range is from 0 to 1440 minutes.
T2 Timer	Sets the amount of time to wait for a Type 2 Request PDU. TARP Type 2 requests seek a specific NE TID within an OSI Level 1 area. The Cisco default is 25 seconds; the range is from 0 to 3600 seconds.
T4 Timer	Sets the amount of time to wait for an error recovery. The timer begins after the T2 timer expires without successfully finding the NE TID. The Cisco default is 20 seconds; the range is from 0 to 3600 seconds.

TARP-TDC Tab

Table B-572 Field Descriptions for the TARP-TDC Tab

Field	Description
TID	Target ID that is statistically linked to an NSAP or NET. For ONS nodes, the TID is the node name.
NSAP/NET	The NSAP that is statistically linked to the TID.
Type	Indicates how the TARP data cache entry was created. It can be either: • Dynamic—The entry was created through the TARP propagation process. • Static—The entry was manually created and is a static entry.
Add Static Entry button	Click **Add Static Entry** to statically link a TID to an NSAP or NET.
Delete Selected Entry button	Click **Delete Selected Entry** to delete the selected TID-to-NSAP/NET static entry.
TID to NSAP button	Click **TID to NSAP** to query the network for an NSAP that matches a TID.
Flush Dynamic Entries button	Click **Flush Dynamic Entries** to delete all dynamically generated TDC entries.

TARP-MAT Tab

The TARP-MAT tab allows you to manually provision a TARP adjacency.

Table B-573 Field Descriptions for the TARP-MAT Tab

Field	Description
Level	Sets the TARP Type Code that will be sent. • Level 1—Indicates that the manual area adjacency is within the same area as the node. The entry generates Type 1 PDUs. • Level 2—Indicates that the manual area adjacency is in an area different from that of the node. The entry generates Type 2 PDUs.
NSAP	The NSAP address of the node at the other end of the TARP manual adjacency.

Table B-573 Field Descriptions for the TARP-MAT Tab (continued)

Field	Description
Add button	Click **Add** to create a TARP manual area adjacency.
Remove button	Click **Remove** to delete the selected TID-to-NSAP/NET static entry.

Routers-Setup Tab

The Routers-Setup tab allows you to view and manage the OSI virtual routers.

Table B-574 Field Descriptions for the Routers-Setup Tab

Field	Description
Router Number	Displays the virtual router number. The ONS 15600 SDH provides six virtual routers, numbered 1 through 6.
System ID	Displays the NSAP system ID of the virtual router. The NSAP system identifier is set to the node's first IEEE 802.3 MAC address + *n*, where *n* = 0 through 6. For the primary router (Router 1), *n* = 0.
Status	Indicates the virtual router status. Select Enabled or Disabled from the drop-down list. **Note** Router 1 must be enabled before additional routers can be enabled.
Primary Area Address	Indicates the primary manual area address. For Router 1, this is the main NET for the node; that is, the NSAP without the system ID and selector (set to 00) fields.
Manual Area Address 1	Indicates the address of any additional manual areas that are created. **Note** An OSI area allows up to two additional manual areas in addition to the primary manual area.
Manual Area Address 2	Indicates the address of any additional manual areas that are created. **Note** An OSI area allows up to two additional manual areas in addition to the primary manual area.
Edit button	Click **Edit** to modify the address parameters.

Subnets Tab

The Subnets tab allows you to view and manage OSI subnetwork point-of-attachment parameters. The parameters are initially provisioned when you enable a subnet on an SDCC, LDCC, GCC, OSC, or LAN interface.

Table B-575 Field Descriptions for the Subnets Tab

Field	Description
Slot/Port	The subnet slot and port.
Router Number	The OSI virtual router where the subnet (SDCC, LDCC, GCC, or OSC) is provisioned.
Type	The interface where the subnet is provisioned: SDCC, LDCC, GCC, OSC, or LAN.
Protocol	The data link protocol that is provisioned for the subnet. It can be: • Point to Point Protocol (PPP) • Link Access Protocol on the D channel (LAP-D) • 802.3 for LAN subnets

Table B-575 Field Descriptions for the Subnets Tab (continued)

Field	Description
ISH	The intermediate system hello (ISH) PDU propagation frequency. Intermediate system NEs send ISHs to other ESs and ISs to inform them about the NETs they serve. The Cisco default is 10 seconds; the range is from 10 to 1000 seconds.
ESH	The end system hello (ESH) PDU propagation frequency. End system NEs transmit ESHs to inform other ESs and ISs about the NSAPs they serve. The Cisco default is 10 seconds; the range is from 10 to 1000 seconds.
IIH	The intermediate system-to-intermediate system hello (IIH) PDU propagation frequency. The IS-IS hello PDUs establish and maintain adjacencies between ISs. The Cisco default is 3 seconds; the range is from 1 to 600 seconds.
DIS Priority	The designated intermediate system (DIS) priority. In IS-IS networks, one router is elected as the DIS. For Cisco routers, the DIS priority is 64.
IS-IS Cost	The cost for sending packets on the subnet. This is used by OSPF routers to calculate the shortest path. The Cisco default value is 20.
Enable LAN Subnet button	*Router 1 only.* Enables OSI over the LAN; that is, it activates the IS-IS protocol on the LAN so OSI traffic is enabled on the LAN.
Edit button	Click **Edit** to modify the subnet parameters.
Disable LAN Subnet button	*Router 1 only.* Disables OSI over the LAN if it has been enabled.

Tunnels Tab

The Tunnels tab allows you to view, create, edit, and delete Generic Routing Encapsulation (GRE) and Cisco tunnels. GRE tunnels encapsulate one network protocol for transfer across another network layer. Within a mixed TCP/IP and OSI network, GRE tunnels tunnel IP traffic over an OSI NE and OSI traffic over an IP NE.

Table B-576 Field Descriptions for the Tunnels Tab

Field	Description
IP Address	Displays the IP address of the GRE destination Prime Optical or CTC computer.
Netmask Address	Displays the IP address subnet mask of the destination Prime Optical or CTC computer.
NSAP Address	The destination NE NSAP address. The NSAP selector (last two NSAP characters) must be 2f (GRE tunnel) or cc (proprietary Cisco tunnel), depending on which tunnel type you want to create. The Cisco proprietary tunnel is slightly more efficient than the GRE tunnel because it does not add an encapsulation header for each IP packet, while the GRE tunnel adds a small header to the packets. The two tunnel types are incompatible. **Note** Most Cisco routers support the Cisco tunnel, while only a few support both GRE and Cisco IP tunnels.
OSPF Metric	Displays the cost for sending packets across the GRE tunnel. Cost is used by OSPF routers to calculate the shortest path.
Create button	Click **Create** to create a new GRE tunnel route.
Edit button	Click **Edit** to edit an existing GRE tunnel.
Delete button	Click **Delete** to delete an existing GRE tunnel.

IS-IS RIB Tab

The IS-IS RIB tab allows you to view the intermediate system-to-intermediate system (IS-IS) protocol routing information base (RIB). IS-IS is an OSI link-state hierarchical routing protocol that floods the network with link-state information that enables the NEs to build a complete and consistent picture of a network topology.

Table B-577 Field Descriptions for the IS-IS RIB Tab

Field	Description
Router Number	Displays the virtual router number. The ONS 15600 SDH provides six virtual routers, numbered 1 through 6.
Subnet Type	Indicates the OSI subnetwork point-of-attachment type used to access the destination address. It includes SDCC, LDCC, GCC, OSC, and LAN.
Destination Address	Displays the Network Service Access Point (NSAP).
MAC Address	Displays the NE's MAC address for destinations that are accessed by the LAN subnets.

ES-IS RIB Tab

The ES-IS RIB tab allows you to view the end system-to-intermediate system (ES-IS) protocol RIB. ES-IS is an OSI protocol that defines how end systems (hosts) and intermediate systems (routers) learn about each other.

Table B-578 Field Descriptions for the ES-IS RIB Tab

Field	Description
Router Number	Displays the virtual router number. The ONS 15600 SDH provides six virtual routers, numbered 1 through 6.
Subnet Type	Indicates the OSI subnetwork point-of-attachment type used to access the destination address. It includes SDCC, LDCC, GCC, OSC, and LAN.
Destination Address	Displays the NSAP of the destination ES.
MAC Address	Displays the NE's MAC address for destinations that are accessed by the LAN subnets.

Note See Table 1-22 on page 1-47 for descriptions of actions that you can perform using the buttons at the bottom of the window.

CPT 200 NE Explorer

The node properties pane displays information about the CPT 200 NE. The properties pane contains the following tabs, some of which apply only to a specific NE version:

- Shelf View, page B-415
- Alarm, page B-415
- DCC/GCC/OSC, page B-416
- DWDM, page B-418

- General, page B-422
- NE Defaults, page B-423
- Network, page B-423
- OSI, page B-429
- Protection, page B-435
- Security, page B-436
- Timing, page B-440

Shelf View

The Shelf View Properties pane displays a graphic of the CPT 200 NE that is selected in the NE Explorer tree. Moving the mouse pointer over the NE, its shelves, slots, or cards displays the current alarms for the highlighted item. Double-clicking a slot or card displays the slot or card in the properties pane. The right-click menu allows you to reset, delete, or change a card. For unprovisioned slots, the right-click menu allows you to add a card.

Alarm

The Alarm Properties pane allows you to change default alarm severities by creating unique alarm profiles for individual CPT 200 NE nodes. The Alarm Properties pane contains the following tabs:

- Profile Tab, page B-415
- Alarm Behavior Tab, page B-415

Profile Tab

The Profile tab allows you to select, create, or delete alarm profiles.

Table B-579 Field Descriptions for the Profile Tab

Field	Description
Alarm Profile Name	Choose an alarm profile for the NE from the drop-down list. Click **Create** to create a new alarm profile for the NE. Click **Delete** to delete an alarm profile from the NE.
Condition	Displays the alarm condition.
Severity	Displays the alarm severity.

Alarm Behavior Tab

The Alarm Behavior tab allows you to change default alarm severities by creating unique alarm profiles.

Table B-580 Field Descriptions for the Alarm Behavior Tab

Field	Description
Alarm Profile	Choose a global alarm profile for the NE from the drop-down list.
Suppress Alarms	If checked, all alarms are suppressed.
Slot Number	Displays the location of the module.
Equipment Type	Displays the type of module in the slot.

Table B-580 Field Descriptions for the Alarm Behavior Tab (continued)

Field	Description
Profile	Choose an alarm profile for the slot from the drop-down list.
Suppress Alarms	Indicates whether or not the alarms for a particular card are suppressed. If checked, all alarms are suppressed for the port.

DCC/GCC/OSC

The DCC/GCC/OSC Properties pane allows you to create, delete, and view SDCCs, LDCCs, Generic Communications Channels (GCCs), Optical Service Channels (OSCs), and DWDM ring IDs.

Table B-581 Field Descriptions for the DCC/GCC/OSC Properties Pane

Field	Description
Create	Click the **Create** button to create new terminations on SONET or SDH cards.
Edit	Click the **Edit** button to modify existing terminations on SONET or SDH cards.
Delete	Click the **Delete** button to delete the selected SDCC, LDCC, GCC, OSC, or DWDM ring ID.
RS-DCC/SDCC	
SDCC Terminations	Displays the slot, port, and card type of an SDCC termination.
OSPF Disabled on Link	Check to prevent the advertisement of the OSPF routing table.
Foreign	A check mark indicates that the far-end node is a non-ONS node.
Foreign IP	Displays the foreign node IP address.
LAPD Config	If the SDCC is provisioned as OSI only, the following SDCC LAP-D parameters are displayed: • AITS/UITS—Indicates the LAP-D acknowledgement type, either Acknowledged Information Transfer Service (AITS) or Unacknowledged Transfer Service (UITS). • Network/User—Indicates the LAP-D frame command/response role, either Network or User. • MTU—Shows the size of the maximum transfer unit (MTU). The range is from 512 to 1500 octets. • T2000—Shows the time between Set Asynchronous Balanced Mode (SABME) frame transmission. The range is from 0.2 to 20 seconds. • T203—Shows the maximum time between LAP-D frame exchanges. The range is from 4 to 120 seconds.
OSI SNPA	If the SDCC is provisioned for OSI, the following subnetwork point-of-attachment (SNPA) information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.

Table B-581 Field Descriptions for the DCC/GCC/OSC Properties Pane (continued)

Field	Description
Service State	Select the state of the termination: • IS-NR—In Service–Normal. • OOS-AU—Out of Service–Autonomous. • OOS-MA—Out of Service–Management. • OOS-AUMA—Out of Service–Autonomous and Management. In addition, a secondary state provides additional information about the status of the entity. Values for secondary state are: • MEA—Mismatch of equipment due to invalid equipment insertion. • UEQ—Unequipped; there is nothing in the slot. • UAS—Unassigned; the entity does not exist, has not been created, or has been deleted. • SWDL—Software download in progress. • MT—Maintenance, as per the Admin State change. • AINS—Automatic in service. • DSBLD—Traffic is disabled on the entity. • LPBK—Port or connection has a loopback on it. • FLT—Fault secondary state. When an entity is faulted, an FLT state is raised. Equipment and ports in FLT state should be cleared as they transition. Transition states are listed in Table 11-11 on page 11-15. See Table 11-11 on page 11-15 for the Service state-Secondary state possible values. **Note** If the NE release does not support the Service state, this field shows N/A.
MS-DCC/LDCC	
LDCC Terminations	Displays the slot, port, and card type of an LDCC termination.
OSPF Disabled on Link	Check to prevent the advertisement of the OSPF routing table.
Foreign	A check mark indicates that the far-end node is a non-ONS node.
Foreign IP	Displays the foreign node IP address.
LAPD Config	Displays the LAP-D parameters for the SDCCs that are provisioned as OSI only. For GCCs, this column is always N/A.
OSI SNPA	If the GCC is provisioned for OSI, the following SNPA information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.
Service State	Select the state of the LDCC termination (IS-NR, OOS-AU, OOS-MA, OOS-AUMA) plus the secondary state (MEA, UEQ, UAS, SWDL, MT, AINS, DSBLD, LPBK).
GCC	
GCC Terminations	Displays the slot, port, and card type of a GCC termination.
OSPF Disabled on Link	Check to prevent the advertisement of the OSPF routing table.
GCC Rate	Displays the GCC rate.
Foreign	A check mark indicates that the far-end node is a non-ONS node.

Table B-581 Field Descriptions for the DCC/GCC/OSC Properties Pane (continued)

Field	Description
Foreign IP	Displays the foreign node IP address.
LAPD Config	Displays the LAP-D parameters for the SDCCs that are provisioned as OSI only. For GCCs, this column is always N/A.
OSI SNPA	If the GCC is provisioned for OSI, the following SNPA information is displayed: • Router—Indicates the ONS router and SNPA address. • Router State—Indicates whether the router is enabled or disabled.
Service State	Select the state of the GCC termination (IS-NR, OOS-AU, OOS-MA, OOS-AUMA) plus the secondary state (MEA, UEQ, UAS, SWDL, MT, AINS, DSBLD, LPBK).
OSC	
OSC Terminations	Displays the slot, port, and card type of an OSC termination.
LAPD Config	Displays the LAP-D parameters for the SDCCs that are provisioned as OSI only.
OSI SNPA	If the OSC is provisioned for OSI, the following SNPA information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.
Service State	Displays the state of the OSC termination.
DWDM Ring ID	
Ring ID	Displays the ring ID.
West Direction	Lists the OSCM or OSC-CSM port that supports the ring in the west direction. The value is N/A if there are no ports in the west direction.
East Direction	Lists the OSCM or OSC-CSM port that supports the ring in the east direction. The value is N/A if there are no ports in the east direction.

DWDM

The DWDM Properties pane allows you to manage and provision DWDM connections. The DWDM Properties pane contains the following tabs:

- Provisioning Tab, page B-419
- Connections Tab, page B-419
- Span Check Tab, page B-420
- APC Tab, page B-420
- Node Setup Tab, page B-421
- Side Tab, page B-421
- All Facilities Tab, page B-421
- Passive Cards Tab, page B-422

Provisioning Tab

The Provisioning tab allows you to view and change the optical parameters for the CPT 200 NE. The optical parameters might have already been provisioned manually or by automatic node setup (ANS).

Table B-582 Field Descriptions for the Provisioning Tab

Field	Description
Attribute Name	Displays the Properties pane name that is imported from or exported to the Cisco MetroPlanner configuration file.
Value	Displays the default value of the corresponding Properties pane name imported from or exported to the Cisco MetroPlanner configuration file.
Origin	Shows how the parameter is set. Possible values are: • Default • Automatic • Provisioned • Imported
Note	Displays error details if ANS fails to set the parameter. Possible errors are: • Error during NE board navigation; value is not calculated • Cannot send the parameter request to far-end node; value is not calculated • No response from far-end node; value is not calculated • Configuration is not supported; value is not calculated • Far-end node configuration is not supported; value is not calculated • OSC far-end launch power is not available; value is not calculated • Far-end launch power is not available; value is not calculated • Span loss value is not available; value is not calculated • Fiber stage insertion loss is not available; value is not calculated • Preamplifier tilt is not available; value is not calculated • Add/drop output power is not available; value is not calculated • NE node launch power is not available; value is not calculated • WXC degree is not available; value is not calculated • Value is out of range • Read-only attribute; value is not calculated

Connections Tab

The Connections tab allows you retrieve internal patchcords and calculate DWDM connections.

Table B-583 Field Descriptions for the Connections Tab

Field	Description
Slot-From	The slot from which the DWDM connection originates.
Unit-From	The unit from which the DWDM connection originates.

Table B-583 Field Descriptions for the Connections Tab (continued)

Field	Description
Port-From	The port from which the DWDM connection originates.
Slot-To	The slot at which the DWDM connection terminates.
Unit-To	The unit at which the DWDM connection terminates.
Port-To	The port at which the DWDM connection terminates.
State	The state of the DWDM connection.
From	The unit or port from which the internal patchcord originates.
To	The unit or port at which the internal patchcord terminates.
Wavelength	Shows the wavelength value if the internal patchcord is between two channel ports. Otherwise, it shows *N/A*.

Span Check Tab

The Span Check tab allows you to check the span loss between the selected node and the previous node in the chain. The span check is always in reception.

Note If the Measured Span Loss value crosses the Min or Max Expected Span Loss threshold, a condition is raised.

Table B-584 Field Descriptions for the Span Check Tab

Field	Description
Retrieve Span Loss Values button	Runs the span loss verification function and retrieves values for the Measure Span Loss column.
Side	Specifies the side for which span loss information is displayed (east-to-west or west-to-east).
Min Exp. Span Loss	Specifies the minimum expected span loss (in dBm) for the incoming span. This value is imported from MetroPlanner, but can be modified manually.
Max Exp. Span Loss	Specifies the maximum expected span loss (in dBm) for the incoming span.
Meas. Span Loss	The measured span loss value.
Resolution	The resolution or accuracy of the span loss measurement.

APC Tab

The APC tab allows you to view the automatic power control (APC) parameters.

Table B-585 Field Descriptions for the APC Tab

Field	Description
Port	Port number.
Last Modification	Date and time the power control setpoint was last modified.
Param	All the APC parameters associated with the port.
Last Check	Date and time the power control setpoint was last verified.

Table B-585 Field Descriptions for the APC Tab (continued)

Field	Description
Side	Lists all the NEs and their sides that belong to the APC domain.
APC State	Displays the actual state of the APC. Values are: • Enabled—APC is enabled. • Disabled—APC is disabled. • Force Disabled—APC is disabled by the user. • Not Applicable—APC domain is incomplete.

Node Setup Tab

The Node Setup tab allows you to automatically preprovision NEs from a selected XML configuration file.

Table B-586 Field Descriptions for the Node Setup Tab

Field	Description
XML Settings	
Select XML File	Click **Browse** to select an XML file (generated by the MetroPlanner application). Prime Optical parses the XML file selected by the operator and checks the accuracy of its content.
Log Settings	
Select Log File	Click **Browse** to select a log file to which the results of the operations you perform will be saved.
Launch ANS Wizard button	Click the **Launch ANS Wizard** button to launch the Automatic Node Setup wizard. See Configuring Automatic Node Setup, page 7-339 for more information.

Side Tab

The Side tab allows you to view, edit, and delete sides defined for a CPT 200 NE.

Table B-587 Field Descriptions for the Side Tab

Field	Description
Create button	Allows you to create side objects for the NE.
Modify button	Allows you to modify the side ID of an existing side object.
Delete button	Allows you to delete side objects.
Side	Displays the NE's side ID.
Line In	Displays the index of the receive side of the OTS port.
Line Out	Displays the index of the transmit side of the OTS port.

All Facilities Tab

The All Facilities tab allows you to view the DWDM and optical ports for the CPT 200 NE.

Table B-588 Field Descriptions for the All Facilities Tab

Field	Description
Port	Displays the card port number, shelf ID, and slot number.
Power	Displays the current power for the port.
State	Displays the administrative state of the port.
Service State	Displays the service state of the port.
Retain Selected	Displays only the ports that you selected.
Show All	Retrieves and displays all the optical and DWDM ports for the NE.

Passive Cards Tab

The Passive Cards tab allows you to view information about passive units provisioned in CTC.

Note Passive units can be provisioned in CTC only.

Table B-589 Field Descriptions for the Passive Cards Tab

Field	Description
Passive Cards	
ID	Displays the passive card shelf ID.
Equipment Name	Displays the general card type/name.
Location	Displays the location of the passive card.
Description	Displays the passive card description.
Optical Ports	
Port	Displays the port number.
Type	Displays the port type.
MPO	Displays any physical multifiber push connectors.
Wavelength	Displays the port wavelength.

General

The General Properties pane displays identification information, voltage thresholds, and multishelf configurations for the CPT 200 NE.

Table B-590 Field Descriptions for the General Properties Pane

Field	Description
Identification Tab	
NE ID	Displays the ID of the NE from the Domain Explorer.
NE Model	Displays the NE model type.
Software Version	Displays the current running version of the system software.

Table B-590 Field Descriptions for the General Properties Pane (continued)

Field	Description
Contact	Displays the name and phone number of the node contact person.
Description	Enter a description of the NE.
System Description	Displays the NE type and the version of the system software.
Voltage/Temperature Tab	
Voltage	Displays the voltage (in millivolts) of the shelf that corresponds to the power supply.
Temperature	Displays the temperature (in degrees Celsius) of the shelf.

NE Defaults

The NE Defaults Properties pane displays a list of default thresholds for the CPT 200 NE. You can load different NE defaults using the NE Defaults Management window. See Restoring NE Defaults, page 4-78.

Network

The Network Properties pane displays information about the NE network address. The Properties pane contains the following tabs:

- Address Tab, page B-423
- Static Routes Tab, page B-424
- OSPF Tab, page B-424
- OSPF Area Range Tab, page B-425
- OSPF Virtual Links Tab, page B-426
- SNMP Tab, page B-426
- Firewall/Proxy Tab, page B-427
- Routing Table Tab, page B-427
- Internal Subnet Tab, page B-428
- Proxy Tunnels Tab, page B-428
- Firewall Tunnels Tab, page B-428
- FTP Hosts Tab, page B-429

Address Tab

The Address tab allows you to view and change information about the NE network address.

Table B-591 Field Descriptions for the Address Tab

Field	Description
IP Address	Displays the IP address of the NE.
Default Router	Displays the IP address of the default router.
Subnet Mask	Displays the subnetwork mask ID of the NE.

Table B-591 Field Descriptions for the Address Tab (continued)

Field	Description
MAC Address	Displays the CPT 200 NE address as it is identified on the IEEE 802 MAC layer.
Forward DHCP Requests	If checked, forwards DHCP requests to the IP address entered in the DHCP Server field. When the Forward DHCP Requests check box is unchecked, the DHCP Server field is display-only.
DHCP Server	Displays the IP address of the DHCP server.
IPv6 Config	
Enable IPv6	If checked, allows you to configure the node to use the IPv6 protocol and to assign an IPv6 address to the node.
IPv6 Address	Enter the IPv6 address of the node.
Default IPv6 Router	Enter the IPv6 default router of the node.
IPv6 Subnet Mask	Enter the IPv6 subnetwork mask length.

Static Routes Tab

The Static Routes tab allows you to view information about Prime Optical and CPT 200 NE connectivity and create or delete static routes.

Table B-592 Field Descriptions for the Static Routes Tab

Field	Description
Destination IP	Displays the IP address of the computer running Prime Optical.
Subnet Mask	Displays the subnetwork mask.
Next Hop	Displays the IP address of the router port or the node IP address if the Prime Optical computer is connected to the node directly.
Cost	Displays the number of hops between the CPT 200 NE and the computer.

OSPF Tab

The OSPF tab displays OSPF information. OSPF is a link-state Internet routing protocol.

Table B-593 Field Descriptions for the OSPF Tab

Field	Description
DCC/GCC OSPF Area ID Table	
Slot	Displays the slot number.
Port	Displays the port number.
DCC OSPF Area ID	Displays the number that identifies the CPT 200 NE as a unique OSPF area. The OSPF area number can be from 0.0.0.0 to 255.255.255.255. The number must be unique to the LAN OSPF area.
RS-DCC Metric	Sets a cost for sending packets across the RS-DCC, which is used by OSPF routers to calculate the shortest path. This value should always be higher than the LAN metric. This value is normally unchanged.
MS-DCC Metric	Sets a cost for sending packets across the MS-DCC, which is used by OSPF routers to calculate the shortest path. This value should always be higher than the LAN metric. This value is normally unchanged.

Table B-593 Field Descriptions for the OSPF Tab (continued)

Field	Description
OSPF on LAN	
OSPF Active on LAN	If checked, enables the CPT 200 NE OSPF topology to be advertised to OSPF routers on the LAN. Enable this field on CPT 200 NEs that directly connect to OSPF routers.
LAN Port Area ID	Displays the OSPF area ID for the router port where the CPT 200 NE is connected. (This number is different from the DCC OSPF area ID.)
Router Priority	Displays the value used for this NE in designated router election. The Cisco default value is zero (0). A router that has Router Priority set to 0 is ineligible to become a designated router on the attached network.
Dead Interval	Displays the number of seconds that will pass while an OSPF router's packets are not visible before its neighbors declare the router down. Forty seconds is the Cisco default.
Retransmit Interval	Displays the time that will elapse before a packet is resent. Five seconds is the Cisco default.
Hello Interval	Displays the number of seconds between OSPF hello packet advertisements sent by OSPF routers. Ten seconds is the Cisco default.
Transit Delay	Displays the service speed. One second is the Cisco default.
LAN Metric	Displays a cost for sending packets across the LAN. This value should always be lower than the DCC metric. Ten is the Cisco default.
OSPF Authentication	
Authentication Type	Displays Simple Password if the router where the CPT 200 NE is connected uses authentication. Otherwise, it displays No Authentication.
Authentication Key	Displays the OSPF key (password) if authentication is enabled.
Confirm Authentication Key	Retype the authentication key to confirm it.

OSPF Area Range Tab

The OSPF Area Range tab allows you to view information about OSPF area ranges and create or delete area ranges.

Table B-594 Field Descriptions for the OSPF Area Range Tab

Field	Description
Range Address	Displays the area IP address for the CPT 600 NEs that reside within the OSPF area. For example, if the CPT 600 NE OSPF area includes nodes with IP addresses 10.10.20.100, 10.10.30.150, 10.10.40.200, and 10.10.50.250, the range address would be 10.10.0.0.
Range Area ID	Displays the OSPF area ID for the CPT 200 NEs. This is either the ID in the DCC OSPF Area ID field or the ID in the LAN Port Area ID field.
Mask Length	Displays the subnet mask length.
Mask	Displays the subnet mask IP address.
Advertise	Indicates whether the OSPF routing table is advertised.

OSPF Virtual Links Tab

The OSPF Virtual Links tab allows you to view information about OSPF virtual links and create or delete virtual links.

Note You cannot create a new virtual link unless OSPF is active on the LAN.

Table B-595 Field Descriptions for the OSPF Virtual Links Tab

Field	Description
Neighbor	Displays the router ID of the Area 0 router.
Transit Delay	Displays the service speed. One second is the Cisco default.
Retransmit Interval	Displays the time that will elapse before a packet is resent. Five seconds is the Cisco default.
Hello Interval	Displays the number of seconds between OSPF hello packet advertisements sent by OSPF routers. Ten seconds is the Cisco default.
Dead Interval	Displays the number of seconds that will pass while the packets of an OSPF router are not visible before its neighbors declare the router down. Forty seconds is the Cisco default.
Authentication Type	Displays the authentication type.
Authentication Key	Displays the authentication key.

SNMP Tab

The SNMP tab allows you to view SNMP information and create or delete SNMP trap destinations.

Table B-596 Field Descriptions for the SNMP Tab

Field	Description
IP Address	The IP address of the NMS.
Community Name	The SNMP community name. **Note** The SNMP community string cannot be blank in Prime Optical. If a blank community string is required in CTC builds earlier than R4.6, you must set the blank community string in CTC.
UDP Port	The UDP port for SNMP. The Cisco default UDP port is 162.
Trap Version	The trap version, either SNMP version 1 or version 2. See your NMS documentation to determine whether to use SNMP version 1 or version 2.

Firewall/Proxy Tab

The Firewall/Proxy tab allows you to use an NE as a proxy server or as a firewall.

Table B-597 Field Descriptions for the Firewall/Proxy Tab

Field	Description
Gateway Settings	
Enable Proxy Server on Port	If checked, the CPT 200 NE serves as a proxy for connections between the Prime Optical server and CPT 200s that are DCC-connected to the proxy CPT 200 NE. The Prime Optical server establishes connections to DCC-connected nodes through the proxy node. The Prime Optical server can connect to nodes that it cannot directly reach from the host on which it runs. The proxy server port number (display-only) is shown following the Enable Proxy Server on Port field. The proxy server uses port 1080. If checked, the following radio buttons are enabled: • End Network Element (ENE)—Enables the CPT 200 NE to proxy as an ENE. Note that an alternate expansion for ENE is *external network element*. • Gateway Network Element (GNE)—Enables the CPT 200 NE to proxy as a GNE. • Proxy-only—Enables proxy only. If unchecked, the node does not proxy.

Routing Table Tab

The Routing Table tab allows you to view the OSPF routing table.

Table B-598 Field Descriptions for the Routing Table Tab

Field	Description
Destination	Displays the IP address of the destination network or host. Destination (0.0.0.0) is the default route entry. All undefined destination network or host entries on this routing table are mapped to the default route entry.
Mask	Displays the subnet mask used to reach the destination network or host. Mask (0.0.0.0) is always 0 for the default route.
Gateway	Displays the IP address of the gateway used to reach the destination network or host. All outbound traffic belonging to this network is sent to this gateway. Gateway (172.20.214.1) is the default gateway address. All outbound traffic that cannot be found in this routing table or is not on the nodes local subnet will be sent to this gateway.
Usage	Shows the number of times the listed route has been used.
Interface	Shows the CPT 200 NE interface used to access the destination. Values are: • cpm0—The CPT 200 NE Ethernet interface (that is, the RJ-45 jack on the TCC+/TCC2 and the LAN 1 pins on the backplane). • pdcc0—An SDCC interface (that is, an OC-N trunk card identified as the SDCC termination). • lo0—A loopback interface.

Internal Subnet Tab

The Internal Subnet tab allows you to change the class B subnet address for TSC cards. TSC cards perform all system-timing functions for each CPT 200 NE. To avoid IP address conflicts, you should change the class B subnet address if your internal network uses the same address range as the default subnet addresses.

Table B-599 Field Descriptions for the Internal Subnet Tab

Field	Description
TSC1	Enter the class B subnet address for the first TSC.
TSC2	If two TSCs are installed, enter the class B subnet address for the second TSC.

Proxy Tunnels Tab

The Proxy Tunnels tab allows you to configure source and destination information and create or delete proxy tunnels.

Table B-600 Field Descriptions for the Proxy Tunnels Tab

Field	Description
Source Address	Specify the source IP address in the source-destination pair for the tunnel that will be routed through the proxy server.
Source Mask	Specify the source subnetwork mask in the source-destination pair for the tunnel that will be routed through the proxy server.
Destination Address	Specify the destination IP address in the source-destination pair for the tunnel that will be routed through the proxy server.
Destination Mask	Specify the destination subnetwork mask in the source-destination pair for the tunnel that will be routed through the proxy server.

Firewall Tunnels Tab

The Firewall Tunnels tab allows you to configure source and destination information and create and delete firewall tunnels.

Table B-601 Field Descriptions for the Firewall Tunnels Tab

Field	Description
Source Address	Specify the source IP address in the source-destination pair for the tunnel that will be routed through the firewall.
Source Mask	Specify the source subnetwork mask in the source-destination pair for the tunnel that will be routed through the firewall.
Destination Address	Specify the destination IP address in the source-destination pair for the tunnel that will be routed through the firewall.
Destination Mask	Specify the destination subnetwork mask in the source-destination pair for the tunnel that will be routed through the firewall.

FTP Hosts Tab

The FTP Hosts tab allows you to configure database backup or restore and software download to an ENE when the firewall is enabled. You can provision a list of legal FTP hosts for which the firewall opens for all FTP commands. You can configure the FTP hosts to expire after a certain amount of time, after which the FTP relay resumes blocking all FTP access for the ENEs.

Table B-602 Field Descriptions for the FTP Hosts Tab

Field	Description
Create button	Opens the Create New FTP Host dialog box, which allows you to create up to 12 new FTP hosts in a GNE/ENE firewall environment. See Creating an FTP Host, page 5-22. **Note** You cannot create more than 12 FTP hosts.
Delete button	Deletes the selected FTP host.
FTP Host Address	Displays the FTP host IP address.
Prefix Length	Displays the FTP host subnet mask length.
Enable FTP Relay	Indicates whether FTP relay is enabled or disabled. If FTP relay is disabled, the FTP Relay Timer field is dimmed.
FTP Relay Timer	Displays the number of minutes that the FTP relay is configured to run, after which the FTP relay resumes blocking all FTP access for the ENEs.

OSI

The OSI Properties pane allows you to provision CPT 200 NE Open System Interconnection (OSI) parameters. The Properties pane contains the following tabs:

- Main Setup Tab, page B-429
- TARP-Config Tab, page B-430
- TARP-TDC Tab, page B-431
- TARP-MAT Tab, page B-432
- Routers-Setup Tab, page B-432
- Subnets Tab, page B-433
- Tunnels Tab, page B-433
- IS-IS RIB Tab, page B-434
- ES-IS RIB Tab, page B-434

Main Setup Tab

The Main Setup tab allows you to provision the OSI Network Entity Title (NET) address and the OSI routing mode.

Table B-603 Field Descriptions for the Main Setup Tab

Field	Description
Main Network Entity Title	Displays the node NET. The NET is used in OSI networks to identify the node to the end system (ES) or intermediate system (IS).
End System	Provisions the node as an OSI end system (ES). ESs send end system hello (ESH) messages regularly to announce their presence to neighboring ISs and ESs.
Intermediate System Level 1	Provisions the node as an OSI intermediate system (IS). ISs send intermediate system hello (ISH) messages regularly to announce their presence to neighboring ISs and ESs.
Intermediate System Level 1/Level 2	The CPT 200 NE performs all IS functions. It communicates with other IS and ES nodes within an OSI area and broadcasts ISHs to IS nodes in other areas to which it is connected. For the CPT 200 NE, Intermediate System Level 1/Level 2 is the default routing mode.
Node Routing Mode	
L1 LSP Buffer Size	Sets the Level 1 Link State Protocol (LSP) data unit buffer size. The Cisco default is 512.
L2 LSP Buffer Size	Sets the Level 2 LSP data unit buffer size. The Cisco default is 512.

TARP-Config Tab

The TARP-Config tab allows you to provision the TID Address Resolution Protocol (TARP). TARP is used when TL1 TIDs must be translated to an NSAP address. During the TID-to-NSAP translation, the TID is mapped to a NET; then, the NSAP is derived from the NET based on the NSAP selector value.

Table B-604 Field Descriptions for the TARP-Config Tab

Field	Description
TARP PDUs L1 Propagation	If checked (default), TARP Type 1 PDUs received by the node that are not excluded by the loop detection buffer are propagated to other NEs within the OSI Level 1 area. Type 1 PDUs request a protocol address that matches a target TID within a Level 1 routing area. The propagation does not occur if the NE is the target of the Type 1 PDU and the PDUs are not propagated to the NE from which the PDU was received. **Note** This parameter is not used when the node is set to End System.
TARP PDUs Origination	If checked (default), the node performs all TARP configuration functions, including: • TID-to-NSAP resolution requests • NSAP-to-TID requests • TARP address changes **Note** TARP Echo and NSAP to TID are not supported.
L2 TARP Data Cache	If checked (default), the TIDs and NSAPs are added to the TDC before the node propagates the requests to other NEs. **Note** This parameter is designed for IS Level 1/Level 2 nodes that are connected to other IS Level 1/Level 2 nodes. Enabling the parameter for IS Level 1 nodes is not recommended.
LAN TARP Storm Suppression	If checked (default), enables the TARP storm suppression to prevent redundant TARP PDUs from being propagated across the network.
Type 4 PDU Delay	Sets the amount of time that will pass before the Type 4 PDU is generated. The Cisco default value is 60 seconds; the range is from 0 to 255 seconds.

Table B-604 Field Descriptions for the TARP-Config Tab (continued)

Field	Description
TARP PDUs L2 Propagation	If checked (default), TARP Type 2 PDUs received by the node that are not excluded by the loop detection buffer are propagated to other NEs within the OSI Level 2 area. Type 2 PDUs request a protocol address that matches a target TID within a Level 2 routing area. The propagation occurs if the NE is the target of the Type 2 PDU and the PDUs are not propagated to the NE from which the PDU was received.
L1 TARP Data Cache	If checked, the node maintains a TARP data cache (TDC). The TDC is a database of TID-to-NSAP pairs created from TARP Type 3 PDUs received by the node. TARP Type 3 PDUs are responses to Type 1 and Type 2 PDUs and modified by TARP Type 4 PDUs (TID-to-NSAP updates or corrections).
LDB	If checked, enables the TARP loop detection buffer (LDB). The LDB prevents TARP PDUs from being sent more than once on the same subnet.
Send Type 4 PDU on Startup	If checked, a TARP Type 4 PDU is originated during the initial CPT 200 NE startup. Type 4 PDUs indicate that a TID or NSAP change has occurred at the NE. This option is disabled by default.
Timers	
LDB Entry	Sets the TARP LDB timer. The LDB buffer time is assigned to each LDB entry for which the TARP sequence number is zero. The Cisco default is 5 minutes; the range is from 1 to 10 minutes.
T1 Timer	Sets the amount of time to wait for response to a Type 1 Request PDU. Type 1 requests seek a specific NE TID within an OSI Level 1 area. The Cisco default is 15 seconds; the range is from 0 to 3600 seconds.
T3 Timer	Sets the amount of time to wait for an address resolution request. The Cisco default is 40 seconds; the range is from 0 to 3600 seconds.
LDB Flush	Sets the frequency period for flushing the LDB. The Cisco default is 5 minutes; the range is from 0 to 1440 minutes.
T2 Timer	Sets the amount of time to wait for a Type 2 Request PDU. TARP Type 2 requests seek a specific NE TID within an OSI Level 1 area. The Cisco default is 25 seconds; the range is from 0 to 3600 seconds.
T4 Timer	Sets the amount of time to wait for an error recovery. The timer begins after the T2 timer expires without successfully finding the NE TID. The Cisco default is 20 seconds; the range is from 0 to 3600 seconds.

TARP-TDC Tab

Table B-605 Field Descriptions for the TARP-TDC Tab

Field	Description
TID	Target ID that is statistically linked to an NSAP or NET. For ONS nodes, the TID is the node name.
NSAP/NET	The NSAP that is statistically linked to the TID.
Type	Indicates how the TARP data cache entry was created. It can be either: • Dynamic—The entry was created through the TARP propagation process. • Static—The entry was manually created and is a static entry.

Table B-605 Field Descriptions for the TARP-TDC Tab (continued)

Field	Description
Add Static Entry button	Click **Add Static Entry** to statically link a TID to an NSAP or NET.
Delete Selected Entry button	Click **Delete Selected Entry** to delete the selected TID-to-NSAP/NET static entry.
TID to NSAP button	Click **TID to NSAP** to query the network for an NSAP that matches a TID.
Flush Dynamic Entries button	Click **Flush Dynamic Entries** to delete all dynamically generated TDC entries.

TARP-MAT Tab

The TARP-MAT tab allows you to manually provision a TARP adjacency.

Table B-606 Field Descriptions for the TARP-MAT Tab

Field	Description
Level	Sets the TARP Type Code that will be sent. • Level 1—Indicates that the manual area adjacency is within the same area as the node. The entry generates Type 1 PDUs. • Level 2—Indicates that the manual area adjacency is in an area different from that of the node. The entry generates Type 2 PDUs.
NSAP	The NSAP address of the node at the other end of the TARP manual adjacency.
Add button	Click **Add** to create a TARP manual area adjacency.
Remove button	Click **Remove** to delete the selected TID-to-NSAP/NET static entry.

Routers-Setup Tab

The Routers-Setup tab allows you to view and manage the OSI virtual routers.

Table B-607 Field Descriptions for the Routers-Setup Tab

Field	Description
Router Number	Displays the virtual router number. The CPT 200 NE provides six virtual routers, numbered 1 through 6.
System ID	Displays the NSAP system ID of the virtual router. The NSAP system identifier is set to the node's first IEEE 802.3 MAC address + *n*, where *n* = 0 through 6. For the primary router (Router 1), *n* = 0.
Status	Indicates the virtual router status. Select Enabled or Disabled from the drop-down list. **Note** Router 1 must be enabled before additional routers can be enabled.
Primary Area Address	Indicates the primary manual area address. For Router 1, this is the main NET for the node; that is, the NSAP without the system ID and selector (set to 00) fields.
Manual Area Address 1	Indicates the address of any additional manual areas that are created. **Note** An OSI area allows up to two additional manual areas in addition to the primary manual area.
Manual Area Address 2	Indicates the address of any additional manual areas that are created. **Note** An OSI area allows up to two additional manual areas in addition to the primary manual area.
Edit button	Click **Edit** to modify the address parameters.

Subnets Tab

The Subnets tab allows you to view and manage OSI subnetwork point-of-attachment parameters. The parameters are initially provisioned when you enable a subnet on an SDCC, LDCC, GCC, OSC, or LAN interface.

Table B-608 Field Descriptions for the Subnets Tab

Field	Description
Slot/Port	The subnet slot and port.
Router Number	The OSI virtual router where the subnet (SDCC, LDCC, GCC, or OSC) is provisioned.
Type	The interface where the subnet is provisioned: SDCC, LDCC, GCC, OSC, or LAN.
Protocol	The data link protocol that is provisioned for the subnet. It can be: • Point to Point Protocol (PPP) • Link Access Protocol on the D channel (LAP-D) • 802.3 for LAN subnets
ISH	The intermediate system hello (ISH) PDU propagation frequency. Intermediate system NEs send ISHs to other ESs and ISs to inform them about the NETs they serve. The Cisco default is 10 seconds; the range is from 10 to 1000 seconds.
ESH	The end system hello (ESH) PDU propagation frequency. End system NEs transmit ESHs to inform other ESs and ISs about the NSAPs they serve. The Cisco default is 10 seconds; the range is from 10 to 1000 seconds.
IIH	The intermediate system-to-intermediate system hello (IIH) PDU propagation frequency. The IS-IS hello PDUs establish and maintain adjacencies between ISs. The Cisco default is 3 seconds; the range is from 1 to 600 seconds.
DIS Priority	The designated intermediate system (DIS) priority. In IS-IS networks, one router is elected as the DIS. For Cisco routers, the DIS priority is 64.
IS-IS Cost	The cost for sending packets on the subnet. This is used by OSPF routers to calculate the shortest path. The Cisco default value is 20.
Enable LAN Subnet button	*Router 1 only.* Enables OSI over the LAN; that is, it activates the IS-IS protocol on the LAN so OSI traffic is enabled on the LAN.
Edit button	Click **Edit** to modify the subnet parameters.
Disable LAN Subnet button	*Router 1 only.* Disables OSI over the LAN if it has been enabled.

Tunnels Tab

The Tunnels tab allows you to view, create, edit, and delete Generic Routing Encapsulation (GRE) and Cisco tunnels. GRE tunnels encapsulate one network protocol for transfer across another network layer. Within a mixed TCP/IP and OSI network, GRE tunnels tunnel IP traffic over an OSI NE and OSI traffic over an IP NE.

Table B-609 Field Descriptions for the Tunnels Tab

Field	Description
IP Address	Displays the IP address of the GRE destination Prime Optical or CTC computer.
Netmask Address	Displays the IP address subnet mask of the destination Prime Optical or CTC computer.

Table B-609 Field Descriptions for the Tunnels Tab (continued)

Field	Description
NSAP Address	The destination NE NSAP address. The NSAP selector (last two NSAP characters) must be 2f (GRE tunnel) or cc (proprietary Cisco tunnel), depending on which tunnel type you want to create. The Cisco proprietary tunnel is slightly more efficient than the GRE tunnel because it does not add an encapsulation header for each IP packet, while the GRE tunnel adds a small header to the packets. The two tunnel types are incompatible. **Note** Most Cisco routers support the Cisco tunnel, while only a few support both GRE and Cisco IP tunnels.
OSPF Metric	Displays the cost for sending packets across the GRE tunnel. Cost is used by OSPF routers to calculate the shortest path.
Create button	Click **Create** to create a new GRE tunnel route.
Edit button	Click **Edit** to edit an existing GRE tunnel.
Delete button	Click **Delete** to delete an existing GRE tunnel.

IS-IS RIB Tab

The IS-IS RIB tab allows you to view the intermediate system-to-intermediate system (IS-IS) protocol routing information base (RIB). IS-IS is an OSI link-state hierarchical routing protocol that floods the network with link-state information that enables the NEs to build a complete and consistent picture of a network topology.

Table B-610 Field Descriptions for the IS-IS RIB Tab

Field	Description
Router Number	Displays the virtual router number. The CPT 200 NE provides six virtual routers, numbered 1 through 6.
Subnet Type	Indicates the OSI subnetwork point-of-attachment type used to access the destination address. It includes SDCC, LDCC, GCC, OSC, and LAN.
Destination Address	Displays the Network Service Access Point (NSAP).
MAC Address	Displays the NE's MAC address for destinations that are accessed by the LAN subnets.

ES-IS RIB Tab

The ES-IS RIB tab allows you to view the end system-to-intermediate system (ES-IS) protocol RIB. ES-IS is an OSI protocol that defines how end systems (hosts) and intermediate systems (routers) learn about each other.

Table B-611 Field Descriptions for the ES-IS RIB Tab

Field	Description
Router Number	Displays the virtual router number. The CPT 200 NE provides six virtual routers, numbered 1 through 6.
Subnet Type	Indicates the OSI subnetwork point-of-attachment type used to access the destination address. It includes SDCC, LDCC, GCC, OSC, and LAN.

Table B-611 Field Descriptions for the ES-IS RIB Tab (continued)

Field	Description
Destination Address	Displays the NSAP of the destination ES.
MAC Address	Displays the NE's MAC address for destinations that are accessed by the LAN subnets.

Note See Table 1-22 on page 1-47 for descriptions of actions that you can perform using the buttons at the bottom of the window.

Protection

The Protection Properties pane contains the following tabs:

- Protection Groups Tab, page B-435
- Operations Tab, page B-436

Protection Groups Tab

The Protection Groups tab displays a list of available protection groups and allows you to create, delete, and view protection groups.

Table B-612 Field Descriptions for the Protection Groups Tab

Field	Description
Protection Groups	
Displays a list of available protection groups. Click the **Create** or **Delete** button to create a new protection group or delete an existing one.	
Selected Protection Group	
Name	Modify the name of the selected protection group. The name can have up to 32 alphanumeric characters.
Type	Choose the protection type (1:1, 1:N, or 1+1) from the drop-down list. The protection selected determines the cards that are available to serve as protect and working cards. For example, if you choose 1:N protection, only DS-1N and DS-3N cards are displayed. 1+1 protection is only used for optical cards.
Protect Module	Choose the protect card if using 1:1 or 1:N protection.
Available Entities	Displays a list of available entities. You can toggle between available and working entities.
Working Entities	Displays a list of working entities. You can toggle between working and available entities.
Bidirectional Switching	Click if you want both the transmit and the receive channels to switch if a failure occurs on one. This option is available only if you select 1+1 (port) type.
Revertive	If checked, the CPT 200 NE reverts traffic to the working card or port after failure conditions are corrected and remain correct for the amount of time entered in Reversion Time.
Reversion Time	If Revertive is checked, enter the amount of time following failure condition correction that should elapse before the CPT 200 NE switches back to the working card or port.

Operations Tab

The Operations tab displays protection group operation information.

Table B-613 Field Descriptions for the Operations Tab

Field	Description
Protection Groups	Displays a list of available protection groups.
Protection Group Details	Displays details about the selected protection groups and allows you to execute switch commands.
Switch Commands	Allows you to perform a manual switch, perform a forced switch, or clear the existing command switching.
Inhibit Switching	Allows you to inhibit unlock switching, lock out switching, or lock on switching.

Security

The Security Properties pane allows you to view and edit the security advisory message for the CPT 200 NE. The Security Properties pane contains the following tabs:

- Policy Tab, page B-436
- Password Tab, page B-437
- Access Tab, page B-438
- RADIUS Server Tab, page B-439
- Legal Disclaimer Tab, page B-440

Policy Tab

The Policy tab allows you to specify user security parameters.

Note If the user is already logged in, any changes to the NE user type settings take effect only when the user next logs in.

Table B-614 Field Descriptions for the Policy Tab

Field	Description
Idle User Timeout	
Each CTC or TL1 user can be idle during his or her login session for a specified amount of time before the CTC window is locked. The lockouts prevent unauthorized users from making changes. Higher-level users have shorter default idle periods and lower-level users have longer or unlimited default idle periods. The user idle period can be modified by a SuperUser. **Note** A user already logged into the node is not affected by a change to the Idle User Timeout policy.	
Retrieve	Set the idle user timeout for a CTC Retrieve user.
Maintenance	Set the idle user timeout for a CTC Maintenance user.
Provisioner	Set the idle user timeout for a CTC Provisioner user.
SuperUser	Set the idle user timeout for a CTC SuperUser user.
User Lockout	

Table B-614 Field Descriptions for the Policy Tab (continued)

Field	Description
Manual Unlock by SuperUser	If checked, the CTC SuperUser user must manually unlock locked out CTC users. If unchecked, locked out CTC users are automatically unlocked after the lockout duration period elapses.
Lockout Duration	Set the lockout duration period for locked out CTC users. This field is enabled only if the Manual Unlock by SuperUser check box is unchecked.
Failed Logins Allowed	Set the number of failed logins before the CTC user is automatically locked out.
Other	
Single Sessions per User	If checked, each CTC user can launch only one session at a time.
Prevent Disabling the SuperUser	If checked, inactive CTC SuperUsers are never disabled.
Disable Inactive User	If checked, inactive users are disabled automatically for the amount of time in the Inactive Duration field.
Inactive Duration	Specify the inactive duration in days. The range is from 1 to 90 days; the Cisco default is 45 days. A value of 0 implies the inactive duration is disabled and invalid.

Password Tab

The Password tab allows you to specify user password security parameters.

Table B-615 Field Descriptions for the Password Tab

Field	Description
Password Change	
Prevent Reusing Last	Prevents setting a CTC user's current password to one of the most recent passwords. You can set the number of most recent passwords that cannot be reused.
Disable Password Flipping	If checked, users are not allowed to change passwords for the number of days specified in the Can Change Password After field.
Can Change Password After	Enter the number of days that must elapse before the user can change the password.
Force Password Change After Assigned	If checked, during the first successful login, the user is forced to change the password.
Password Difference	Allows SuperUsers to specify the number of characters by which the new password of a user must differ from the old password, while performing a password change. The default value is 1; the range is from 1 to 5 characters.
Password Aging	
Enable Password Aging	Check this check box to enable password aging.
Aging Period	Enter the aging period, in days, for Retrieve, Maintenance, Provisioner, and SuperUser CTC users. After the aging period expires, CTC users are forced to change their passwords.
Warning Period	Enter the warning period, in days, for Retrieve, Maintenance, Provisioner, and SuperUser CTC users. After the warning period expires, CTC users are warned that their passwords will soon expire.

Access Tab

The Access tab allows you to configure LAN and shell access to the NE.

Table B-616 Field Descriptions for the Access Tab

Field	Description
Access	
LAN Access	Specify the type of LAN access allowed. Values are Backplane Only, No LAN Access, Front and Backplane, or Front Only. **Note** After the LAN access to the backplane is set, the Prime Optical client is unusable for 4 to 5 minutes.
Restore Timeout	This time period begins if *No LAN Access* is selected and all DCC connections are lost. If the time expires before a DCC is restored, LAN access is restored so that the node is not isolated. When the DCC comes back, LAN access returns to its specified settings. The range is from 0 (never) to 60 minutes; the Cisco default is 5 minutes.
Serial Craft Access	
Enable Craft Port A	Check this check box to enable craft port A.
Enable Craft Port B	Check this check box to enable craft port B.
Shell Access	
Access State	Select the Shell access state from the drop-down list. You can select Disable, Non-secure, or Secure.
SSH Port	Indicates the SSH port number that will be used.
SFTP Port	Indicates the SFTP port number.
Telnet Port	This is enabled if you selected the Non-secure access state. Enter the Telnet port number that will be used.
Use Standard Telnet Port	Check this check box to indicate that the standard Telnet port will be used.
Enable Shell Password	Indicates whether or not the Shell password is enabled. **Note** You cannot enable the Shell password in Prime Optical. Enabling and providing a Shell password is currently done in CTC.
TL1 Access	
Access State	Select the TL1 access state from the drop-down list. You can select Disable, Non-secure, or Secure.
SNMP Access	
Access State	Select the SNMP access state from the drop-down list. You can select either Disable or Non-secure.
Other	
PM Clearing Privilege	Select the users privilege that allows clearing PM statistics for the NE.
EMS Access	

Table B-616 Field Descriptions for the Access Tab (continued)

Field	Description
Access State	Select the EMS access state from the drop-down list. You can select either Non-secure or Secure.
CORBA Listener Port	Select the port numbers for the TSC CORBA (IIOP) listener port and the TSC CORBA (SSLIOP) listener port. Select one of the following radio buttons: • Default-Fixed—Assigns a default port number. • Standard Constant—The port number for the TSC CORBA (IIOP) listener port is 683. The port number for the TSC CORBA (SSLIOP) listener port is 684. • Other Constant—When selected, enter the port number that will be used.

RADIUS Server Tab

The RADIUS Server tab allows you to configure, create, modify, and delete RADIUS servers for the CPT 200 NE and later.

Table B-617 Field Descriptions for the RADIUS Server Tab

Field	Description
Enable RADIUS Authentication	Check this check box to enable RADIUS authentication.
Enable RADIUS Accounting	Check this check box to enable RADIUS accounting. This is enabled if the Enable RADIUS Authentication check box is checked.
Enable the Node as the Final Authenticator When no RADIUS Server is Reachable	Select a row from the RADIUS Servers in Order of Authentication table; then, check this check box. This indicates that the RADIUS server that you selected will be the final authenticator when there are no more RADIUS servers that can be reached.
Create button	Click **Create** to create a RADIUS server. See Creating a RADIUS Server, page 8-46.
Edit button	Click **Edit** to modify an existing RADIUS server's information. See Modifying a RADIUS Server, page 8-46.
Delete button	Click **Delete** to delete an existing RADIUS server. See Deleting a RADIUS Server, page 8-46.
Move Up/Move Down buttons	Click **Move Up** or **Move Down** to reorder the list of RADIUS servers in the RADIUS Servers in Order of Authentication table.
RADIUS Servers in Order of Authentication	
IP Address	Displays the IP address of the RADIUS server.
Shared Secret	Displays a text string that serves as a password between a RADIUS client and RADIUS server.
Authentication Port	Displays the authentication port number of the RADIUS server. Default access is through port number 1812.
Accounting Port	Displays the accounting port number of the RADIUS server. Default access is through port number 1813.

Legal Disclaimer Tab

The Legal Disclaimer tab allows you to edit the NE's advisory message and preview the disclaimer.

Table B-618 Field Descriptions for the Legal Disclaimer Tab

Tab	Description
Advisory Message	The existing message is a default, noncustomer-specific disclaimer. If you want to edit this statement with specifics for your company, you can change the text. You can also use the following HTML commands to format the text: • ****—Begins boldface font • ****—Ends boldface font • ** **—Aligns type in the center of the window • ** **—Ends the center alignment • **<font=*n*, where *n* = point size>**—Changes the font to the new size • ****—Ends the font size command • **<p>**—Creates a line break • **_{**—Begins subscript • **}**—Ends subscript • **^{**—Begins superscript • **}**—Ends superscript • **<u>**—Starts underline • **</u>**—Ends underline
Preview	Allows you to view the advisory message before saving it.

Timing

The Timing Properties pane contains the following tabs:

- General Tab, page B-440
- Reference List Tab, page B-442
- Status Tab, page B-442
- Timing Report Tab, page B-443

General Tab

The General tab displays general timing information.

Table B-619 Field Descriptions for the General Tab

Field	Description
General Timing	
Timing Mode	Set the node timing mode: • External—The CPT 200 NE derives its timing from a BITS source wired to the backplane pins. • Line—Timing is derived from an STM-N card that is optically connected to the timing node. • Mixed—Timing is set to external and line timing references. **Caution** Mixed timing might cause timing loops. Use this mode with care.
SSM Message Set	Choose the SSM set level supported by your network. SSM is an SONET protocol that communicates information about the quality of the timing source. SSM messages are carried on the S1 byte of the SONET Line layer. They enable SONET devices to automatically select the highest quality timing reference and to avoid timing loops. If a Generation 1 node receives a Generation 2 message, the message is mapped down to the next available Generation 1 node. For example, an ST3E message becomes an ST3.
Revertive	If checked, the CPT 200 NE reverts to a primary reference source after the conditions that caused it to switch to a secondary timing reference are corrected.
Reversion Time	Specify the reversion time in half-minute increments.

Facility Tab

The Facility tab displays the facility type, BITS IN and OUT information.

Note BITS IN Facilities and BITS OUT Facilities values apply to both BITS-1 and BITS-2.

Table B-620 Field Descriptions for the Facility Tab

Field	Description
BITS-IN-OUT Facility Type	
In Facility Type	Provisions the BITS In facility type.
Out Facility Type	Provisions the BITS Out facility type.
BITS In/Out Facilities	
E1, T1, 2.048 MHz, 64 KHz	Select the speed of the BITS facility.
In/Out State	Set the BITS reference to IS or OOS. For nodes set to Line timing with no equipment timed through BITS Out, set the state to OOS. For nodes using External timing or Line timing with equipment timed through BITS Out, set the state to IS. **Note** BITS IN Facilities and BITS OUT Facilities values apply to both BITS-1 and BITS-2.
Coding	Set to the coding used by your BITS reference, either B8ZS or AMI.
Framing	Set to the framing used by your BITS reference, either ESF or SF (D4). SSM is not available with Super Frame.

Table B-620 Field Descriptions for the Facility Tab (continued)

Field	Description
Sync Messaging	If checked, enables the SSM for BITS In. (SSM is not available if Framing is set to Super Frame.)
Admin SSM	If the Sync Messaging check box is not checked, you can choose the SSM Generation 2 type from the drop-down list.
AIS Threshold	If SSM is disabled or Super Frame is used, set the quality level where a node sends an alarm indication signal (AIS) from the BITS-1 Out and BITS-2 Out backplane pins. An AIS is raised when the optical source for the BITS reference falls to or below the SSM quality level defined in this field.
Cable Type	Type of cable. Values are 75 ohm or 120 ohm.
Sa Bit	The Sa Bit is used to transmit the SSM message. Available Sa bits are Sa4, Sa5, Sa6, Sa7, and Sa8.

Reference List Tab

The Reference List tab provides timing reference information.

Table B-621 Field Descriptions for the Reference List Tab

Field	Description
NE References	Allows you to define three timing references (Ref-1, Ref-2, and Ref-3). The node uses Reference 1 unless a failure occurs on that reference, in which case, the node uses Reference 2. If that fails, the node uses Reference 3, which is typically set to Internal Clock. This is the Stratum 3 clock provided on the TCC+. The options displayed depend on the Timing Mode setting: • Timing Mode set to External—Options are BITS-1, BITS-2, and Internal Clock. • Timing Mode set to Line—Options are the node's working optical cards and Internal Clock. Select the cards/ports that are directly or indirectly connected to the node wired to the BITS source; that is, the node's trunk cards. Set Reference 1 to the trunk card that is closest to the BITS source. For example, if Slot 5 is connected to the node wired to the BITS source, select Slot 5 as Reference 1.

Status Tab

The Status tab displays timing status information.

Note If you change any values in the Status tab and click Apply at the bottom of the screen, the values are not set. Instead, use the following buttons to apply changes:

- Clear—Releases any existing switch request. For example, if you issue a Force Switch and then issue a Clear, the Force Switch request is released.
- Manual Switch—Switches the timing reference from one source to another.
- Force Switch—Switches the timing reference from one source to another. This request has a higher priority than the Manual Switch request.

Table B-622 Field Descriptions for the Status Tab

Field	Description
NE Clock	
NE Reference	Set the NE timing reference to internal, BITS-1, or BITS-2.
Status	Displays the status of the NE clock.
Operations	Execute a switch on the NE timing reference.
BITS-1 Out	
BITS-1 Out	Set the BITS-1 out timing reference.
Status	Displays the status of the BITS-1 out timing reference.
Operations	Execute a switch on the BITS-1 out timing reference.
BITS-2 Out	
BITS-2 Out	Set the BITS-2 out timing reference.
Status	Displays the status of the BITS-2 out timing reference.
Operations	Execute a switch on the BITS-2 out timing reference.

Timing Report Tab

The Timing Report tab summarizes the NE's current timing settings.

CPT 600 NE Explorer

The node properties pane displays information about the CPT 600 NE. The properties pane contains the following tabs, some of which apply only to a specific NE version:

- Shelf View, page B-444
- Alarm, page B-444
- Alarm Extenders, page B-444
- DCC/GCC/OSC, page B-446
- DWDM, page B-448
- ECU Ports Alarms Suppression, page B-452
- General, page B-453
- NE Defaults, page B-453
- Network, page B-453
- OSI, page B-459
- Protection, page B-465
- Security, page B-466
- Timing, page B-471

Shelf View

The Shelf View Properties pane displays a graphic of the CPT 600 NE that is selected in the NE Explorer tree. Moving the mouse pointer over the NE, its shelves, slots, or cards displays the current alarms for the highlighted item. Double-clicking a slot or card displays the slot or card in the properties pane. The right-click menu allows you to reset, delete, or change a card. For unprovisioned slots, the right-click menu allows you to add a card.

Alarm

The Alarm Properties pane allows you to change default alarm severities by creating unique alarm profiles for individual CPT 600 NE nodes. The Alarm Properties pane contains the following tabs:

- Profile Tab, page B-406
- Alarm Behavior Tab, page B-406

Profile Tab

The Profile tab allows you to select, create, or delete alarm profiles.

Table B-623 Field Descriptions for the Profile Tab

Field	Description
Alarm Profile Name	Choose an alarm profile for the NE from the drop-down list. Click **Create** to create a new alarm profile for the NE. Click **Delete** to delete an alarm profile from the NE.
Condition	Displays the alarm condition.
Severity	Displays the alarm severity.

Alarm Behavior Tab

The Alarm Behavior tab allows you to change default alarm severities by creating unique alarm profiles.

Table B-624 Field Descriptions for the Alarm Behavior Tab

Field	Description
Alarm Profile	Choose a global alarm profile for the NE from the drop-down list.
Suppress Alarms	If checked, all alarms are suppressed.
Slot Number	Displays the location of the module.
Equipment Type	Displays the type of module in the slot.
Profile	Choose an alarm profile for the slot from the drop-down list.
Suppress Alarms	Indicates whether or not the alarms for a particular card are suppressed. If checked, all alarms are suppressed for the port.

Alarm Extenders

The Alarm Extenders Properties pane allows you to view external alarm information and create custom alarm types. The Alarm Extenders Properties pane contains the following tabs:

- External Alarms Tab, page B-445

- External Controls Tab, page B-445
- User-Defined Alarms Tab, page B-445

External Alarms Tab

The External Alarms tab allows you to view and update external alarm information.

Table B-625 Field Descriptions for the External Alarms Tab

Field	Description
Input Number	The alarm input number.
Enabled	Check to activate the fields for the alarm input number.
Alarm Type	Choose an alarm type from the provided list.
Severity	Choose a severity from the list.
Raised When	Choose the contact condition that will trigger the alarm in CTC.
Virtual Wire	To assign the external device to a virtual wire, choose a virtual wire from the list, or choose None if no assignment is required.
Description	Displays a default description for every external alarm that is enabled.
Raised	Indicates whether an alarm has been raised.
Contact Status	Indicates the current status of the contact.

External Controls Tab

The External Controls tab allows you to view and update external controls.

Table B-626 Field Descriptions for the External Controls Tab

Field	Description
Control Number	The control number.
Enabled	Check to activate the fields for the control number.
Control Type	Choose a control type from the provided list.
Trigger Type	Choose a trigger type: a local minor, major, or critical alarm; a remote minor, major, or critical alarm; or a virtual wire activation.
Description	Enter a description.
Current State	The current state of the control.
Auto State	The auto state of the control.
Contact Setting	The current contact setting.

User-Defined Alarms Tab

The User-Defined Alarms tab allows you to view, add, and delete custom alarm types on the CPT 600 NE.

Table B-627 Field Descriptions for the User-Defined Alarms Tab

Field	Descriptions
Alarm Types	Lists the user-defined alarm types that have been created on the CPT 600 NE. You can create up to 50 custom environmental alarms, which are reported in the Condition column in the Alarm Log and Alarm Browser windows.
Add	Click the **Add** button to add a new custom alarm type. Enter a unique alarm type name that contains 20 characters or fewer. Only the following characters are valid: 0-9, A-Z, a-z, and hyphen (-).
Delete	Click the **Delete** button to delete an existing alarm type.

DCC/GCC/OSC

The DCC/GCC/OSC Properties pane allows you to create, delete, and view SDCCs, LDCCs, Generic Communications Channels (GCCs), Optical Service Channels (OSCs), and DWDM ring IDs.

Table B-628 Field Descriptions for the DCC/GCC/OSC Properties Pane

Field	Description
Create	Click the **Create** button to create new terminations on SONET or SDH cards.
Edit	Click the **Edit** button to modify existing terminations on SONET or SDH cards.
Delete	Click the **Delete** button to delete the selected SDCC, LDCC, GCC, OSC, or DWDM ring ID.
RS-DCC/SDCC	
SDCC Terminations	Displays the slot, port, and card type of an SDCC termination.
OSPF Disabled on Link	Check to prevent the advertisement of the OSPF routing table.
Foreign	A check mark indicates that the far-end node is a non-ONS node.
Foreign IP	Displays the foreign node IP address.
LAPD Config	If the SDCC is provisioned as OSI only, the following SDCC LAP-D parameters are displayed: • AITS/UITS—Indicates the LAP-D acknowledgement type, either Acknowledged Information Transfer Service (AITS) or Unacknowledged Transfer Service (UITS). • Network/User—Indicates the LAP-D frame command/response role, either Network or User. • MTU—Shows the size of the maximum transfer unit (MTU). The range is from 512 to 1500 octets. • T2000—Shows the time between Set Asynchronous Balanced Mode (SABME) frame transmission. The range is from 0.2 to 20 seconds. • T203—Shows the maximum time between LAP-D frame exchanges. The range is from 4 to 120 seconds.
OSI SNPA	If the SDCC is provisioned for OSI, the following subnetwork point-of-attachment (SNPA) information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.

Table B-628 Field Descriptions for the DCC/GCC/OSC Properties Pane (continued)

Field	Description
Service State	Select the state of the termination: • IS-NR—In Service–Normal. • OOS-AU—Out of Service–Autonomous. • OOS-MA—Out of Service–Management. • OOS-AUMA—Out of Service–Autonomous and Management. In addition, a secondary state provides additional information about the status of the entity. Values for secondary state are: • MEA—Mismatch of equipment due to invalid equipment insertion. • UEQ—Unequipped; there is nothing in the slot. • UAS—Unassigned; the entity does not exist, has not been created, or has been deleted. • SWDL—Software download in progress. • MT—Maintenance, as per the Admin State change. • AINS—Automatic in service. • DSBLD—Traffic is disabled on the entity. • LPBK—Port or connection has a loopback on it. • FLT—Fault secondary state. When an entity is faulted, an FLT state is raised. Equipment and ports in FLT state should be cleared as they transition. Transition states are listed in Table 11-11 on page 11-15. See Table 11-11 on page 11-15 for the Service state-Secondary state possible values. **Note** If the NE release does not support the Service state, this field shows N/A.
MS-DCC/LDCC	
LDCC Terminations	Displays the slot, port, and card type of an LDCC termination.
OSPF Disabled on Link	Check to prevent the advertisement of the OSPF routing table.
Foreign	A check mark indicates that the far-end node is a non-ONS node.
Foreign IP	Displays the foreign node IP address.
LAPD Config	Displays the LAP-D parameters for the SDCCs that are provisioned as OSI only. For GCCs, this column is always N/A.
OSI SNPA	If the GCC is provisioned for OSI, the following SNPA information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.
Service State	Select the state of the LDCC termination (IS-NR, OOS-AU, OOS-MA, OOS-AUMA) plus the secondary state (MEA, UEQ, UAS, SWDL, MT, AINS, DSBLD, LPBK).
GCC	
GCC Terminations	Displays the slot, port, and card type of a GCC termination.
OSPF Disabled on Link	Check to prevent the advertisement of the OSPF routing table.
GCC Rate	Displays the GCC rate.
Foreign	A check mark indicates that the far-end node is a non-ONS node.

Table B-628 Field Descriptions for the DCC/GCC/OSC Properties Pane (continued)

Field	Description
Foreign IP	Displays the foreign node IP address.
LAPD Config	Displays the LAP-D parameters for the SDCCs that are provisioned as OSI only. For GCCs, this column is always N/A.
OSI SNPA	If the GCC is provisioned for OSI, the following SNPA information is displayed: • Router—Indicates the ONS router and SNPA address. • Router State—Indicates whether the router is enabled or disabled.
Service State	Select the state of the GCC termination (IS-NR, OOS-AU, OOS-MA, OOS-AUMA) plus the secondary state (MEA, UEQ, UAS, SWDL, MT, AINS, DSBLD, LPBK).
OSC	
OSC Terminations	Displays the slot, port, and card type of an OSC termination.
LAPD Config	Displays the LAP-D parameters for the SDCCs that are provisioned as OSI only.
OSI SNPA	If the OSC is provisioned for OSI, the following SNPA information is displayed: • Router—Indicates the ONS router and NSAP address. • Router State—Indicates whether the router is enabled or disabled.
Service State	Displays the state of the OSC termination.
DWDM Ring ID	
Ring ID	Displays the ring ID.
West Direction	Lists the OSCM or OSC-CSM port that supports the ring in the west direction. The value is N/A if there are no ports in the west direction.
East Direction	Lists the OSCM or OSC-CSM port that supports the ring in the east direction. The value is N/A if there are no ports in the east direction.

DWDM

The DWDM Properties pane allows you to manage and provision DWDM connections. The DWDM Properties pane contains the following tabs:

- Provisioning Tab, page B-449
- Connections Tab, page B-449
- Span Check Tab, page B-450
- APC Tab, page B-450
- Node Setup Tab, page B-451
- Side Tab, page B-451
- All Facilities Tab, page B-451
- Passive Cards Tab, page B-452

Provisioning Tab

The Provisioning tab allows you to view and change the optical parameters for the CPT 600 NE. The optical parameters might have already been provisioned manually or by automatic node setup (ANS).

Table B-629 Field Descriptions for the Provisioning Tab

Field	Description
Attribute Name	Displays the Properties pane name that is imported from or exported to the Cisco MetroPlanner configuration file.
Value	Displays the default value of the corresponding Properties pane name imported from or exported to the Cisco MetroPlanner configuration file.
Origin	Shows how the parameter is set. Possible values are: • Default • Automatic • Provisioned • Imported
Note	Displays error details if ANS fails to set the parameter. Possible errors are: • Error during NE board navigation; value is not calculated • Cannot send the parameter request to far-end node; value is not calculated • No response from far-end node; value is not calculated • Configuration is not supported; value is not calculated • Far-end node configuration is not supported; value is not calculated • OSC far-end launch power is not available; value is not calculated • Far-end launch power is not available; value is not calculated • Span loss value is not available; value is not calculated • Fiber stage insertion loss is not available; value is not calculated • Preamplifier tilt is not available; value is not calculated • Add/drop output power is not available; value is not calculated • NE node launch power is not available; value is not calculated • WXC degree is not available; value is not calculated • Value is out of range • Read-only attribute; value is not calculated

Connections Tab

The Connections tab allows you retrieve internal patchcords and calculate DWDM connections.

Table B-630 Field Descriptions for the Connections Tab

Field	Description
Slot-From	The slot from which the DWDM connection originates.
Unit-From	The unit from which the DWDM connection originates.

Table B-630 Field Descriptions for the Connections Tab (continued)

Field	Description
Port-From	The port from which the DWDM connection originates.
Slot-To	The slot at which the DWDM connection terminates.
Unit-To	The unit at which the DWDM connection terminates.
Port-To	The port at which the DWDM connection terminates.
State	The state of the DWDM connection.
From	The unit or port from which the internal patchcord originates.
To	The unit or port at which the internal patchcord terminates.
Wavelength	Shows the wavelength value if the internal patchcord is between two channel ports. Otherwise, it shows *N/A*.

Span Check Tab

The Span Check tab allows you to check the span loss between the selected node and the previous node in the chain. The span check is always in reception.

Note If the Measured Span Loss value crosses the Min or Max Expected Span Loss threshold, a condition is raised.

Table B-631 Field Descriptions for the Span Check Tab

Field	Description
Retrieve Span Loss Values button	Runs the span loss verification function and retrieves values for the Measure Span Loss column.
Side	Specifies the side for which span loss information is displayed (east-to-west or west-to-east).
Min Exp. Span Loss	Specifies the minimum expected span loss (in dBm) for the incoming span. This value is imported from MetroPlanner, but can be modified manually.
Max Exp. Span Loss	Specifies the maximum expected span loss (in dBm) for the incoming span.
Meas. Span Loss	The measured span loss value.
Resolution	The resolution or accuracy of the span loss measurement.

APC Tab

The APC tab allows you to view the automatic power control (APC) parameters.

Table B-632 Field Descriptions for the APC Tab

Field	Description
Port	Port number.
Last Modification	Date and time the power control setpoint was last modified.
Param	All the APC parameters associated with the port.
Last Check	Date and time the power control setpoint was last verified.

Table B-632 Field Descriptions for the APC Tab (continued)

Field	Description
Side	Lists all the NEs and their sides that belong to the APC domain.
APC State	Displays the actual state of the APC. Values are: • Enabled—APC is enabled. • Disabled—APC is disabled. • Force Disabled—APC is disabled by the user. • Not Applicable—APC domain is incomplete.

Node Setup Tab

The Node Setup tab allows you to automatically preprovision NEs from a selected XML configuration file.

Table B-633 Field Descriptions for the Node Setup Tab

Field	Description
XML Settings	
Select XML File	Click **Browse** to select an XML file (generated by the MetroPlanner application). Prime Optical parses the XML file selected by the operator and checks the accuracy of its content.
Log Settings	
Select Log File	Click **Browse** to select a log file to which the results of the operations you perform will be saved.
Launch ANS Wizard button	Click the **Launch ANS Wizard** button to launch the Automatic Node Setup wizard. See Configuring Automatic Node Setup, page 7-339 for more information.

Side Tab

The Side tab allows you to view, edit, and delete sides defined for a CPT 600 NE.

Table B-634 Field Descriptions for the Side Tab

Field	Description
Create button	Allows you to create side objects for the NE.
Modify button	Allows you to modify the side ID of an existing side object.
Delete button	Allows you to delete side objects.
Side	Displays the NE's side ID.
Line In	Displays the index of the receive side of the OTS port.
Line Out	Displays the index of the transmit side of the OTS port.

All Facilities Tab

The All Facilities tab allows you to view the DWDM and optical ports for the CPT 600 NE.

Table B-635 Field Descriptions for the All Facilities Tab

Field	Description
Port	Displays the card port number, shelf ID, and slot number.
Power	Displays the current power for the port.
State	Displays the administrative state of the port.
Service State	Displays the service state of the port.
Retain Selected	Displays only the ports that you selected.
Show All	Retrieves and displays all the optical and DWDM ports for the NE.

Passive Cards Tab

The Passive Cards tab allows you to view information about passive units provisioned in CTC.

Note Passive units can be provisioned in CTC only.

Table B-636 Field Descriptions for the Passive Cards Tab

Field	Description
Passive Cards	
ID	Displays the passive card shelf ID.
Equipment Name	Displays the general card type/name.
Location	Displays the location of the passive card.
Description	Displays the passive card description.
Optical Ports	
Port	Displays the port number.
Type	Displays the port type.
MPO	Displays any physical multifiber push connectors.
Wavelength	Displays the port wavelength.

ECU Ports Alarms Suppression

The External Control Unit (ECU) Ports Alarms Suppression Properties pane allows you to suppress the alarms for the MS_ISC ports of the ECU.

Table B-637 Field Descriptions for the ECU Ports Alarms Suppression Properties Pane

Field	Description
Ports	The port number.
Suppress Alarms	Indicates whether or not the alarms for a particular card are suppressed. If checked, all alarms for the MS_ISC ports of the ECU are suppressed.

General

The General Properties pane displays identification information, voltage thresholds, and multishelf configurations for the CPT 600 NE.

Table B-638 Field Descriptions for the General Properties Pane

Field	Description
Identification Tab	
NE ID	Displays the ID of the NE from the Domain Explorer.
NE Model	Displays the NE model type.
Software Version	Displays the current running version of the system software.
Contact	Displays the name and phone number of the node contact person.
Description	Enter a description of the NE.
System Description	Displays the NE type and the version of the system software.
Voltage/Temperature Tab	
Voltage	Displays the voltage (in millivolts) of the shelf that corresponds to the power supply.
Temperature	Displays the temperature (in degrees Celsius) of the shelf.

NE Defaults

The NE Defaults Properties pane displays a list of default thresholds for the CPT 600 NE. You can load different NE defaults using the NE Defaults Management window. See Restoring NE Defaults, page 4-78.

Network

The Network Properties pane displays information about the NE network address. The Properties pane contains the following tabs:

- Address Tab, page B-454
- Static Routes Tab, page B-454
- OSPF Tab, page B-454
- OSPF Area Range Tab, page B-455
- OSPF Virtual Links Tab, page B-456
- SNMP Tab, page B-456
- Firewall/Proxy Tab, page B-457
- Routing Table Tab, page B-457
- Internal Subnet Tab, page B-458
- Proxy Tunnels Tab, page B-458
- Firewall Tunnels Tab, page B-459
- FTP Hosts Tab, page B-459

Address Tab

The Address tab allows you to view and change information about the NE network address.

Table B-639 Field Descriptions for the Address Tab

Field	Description
IP Address	Displays the IP address of the NE.
Default Router	Displays the IP address of the default router.
Subnet Mask	Displays the subnetwork mask ID of the NE.
MAC Address	Displays the CPT 600 NE address as it is identified on the IEEE 802 MAC layer.
Forward DHCP Requests	If checked, forwards DHCP requests to the IP address entered in the DHCP Server field. When the Forward DHCP Requests check box is unchecked, the DHCP Server field is display-only.
DHCP Server	Displays the IP address of the DHCP server.
IPv6 Config	
Enable IPv6	If checked, allows you to configure the node to use the IPv6 protocol and to assign an IPv6 address to the node.
IPv6 Address	Enter the IPv6 address of the node.
Default IPv6 Router	Enter the IPv6 default router of the node.
IPv6 Subnet Mask	Enter the IPv6 subnetwork mask length.

Static Routes Tab

The Static Routes tab allows you to view information about Prime Optical and CPT 600 NE connectivity and create or delete static routes.

Table B-640 Field Descriptions for the Static Routes Tab

Field	Description
Destination IP	Displays the IP address of the computer running Prime Optical.
Subnet Mask	Displays the subnetwork mask.
Next Hop	Displays the IP address of the router port or the node IP address if the Prime Optical computer is connected to the node directly.
Cost	Displays the number of hops between the CPT 600 NE and the computer.

OSPF Tab

The OSPF tab displays OSPF information. OSPF is a link-state Internet routing protocol.

Table B-641 Field Descriptions for the OSPF Tab

Field	Description
DCC/GCC OSPF Area ID Table	
Slot	Displays the slot number.
Port	Displays the port number.

Table B-641 Field Descriptions for the OSPF Tab (continued)

Field	Description
DCC OSPF Area ID	Displays the number that identifies the CPT 600 NE as a unique OSPF area. The OSPF area number can be from 0.0.0.0 to 255.255.255.255. The number must be unique to the LAN OSPF area.
RS-DCC Metric	Sets a cost for sending packets across the RS-DCC, which is used by OSPF routers to calculate the shortest path. This value should always be higher than the LAN metric. This value is normally unchanged.
MS-DCC Metric	Sets a cost for sending packets across the MS-DCC, which is used by OSPF routers to calculate the shortest path. This value should always be higher than the LAN metric. This value is normally unchanged.
OSPF on LAN	
OSPF Active on LAN	If checked, enables the CPT 600 NE OSPF topology to be advertised to OSPF routers on the LAN. Enable this field on CPT 600 NEs that directly connect to OSPF routers.
LAN Port Area ID	Displays the OSPF area ID for the router port where the CPT 600 NE is connected. (This number is different from the DCC OSPF area ID.)
Router Priority	Displays the value used for this NE in designated router election. The Cisco default value is zero (0). A router that has Router Priority set to 0 is ineligible to become a designated router on the attached network.
Dead Interval	Displays the number of seconds that will pass while an OSPF router's packets are not visible before its neighbors declare the router down. Forty seconds is the Cisco default.
Retransmit Interval	Displays the time that will elapse before a packet is resent. Five seconds is the Cisco default.
Hello Interval	Displays the number of seconds between OSPF hello packet advertisements sent by OSPF routers. Ten seconds is the Cisco default.
Transit Delay	Displays the service speed. One second is the Cisco default.
LAN Metric	Displays a cost for sending packets across the LAN. This value should always be lower than the DCC metric. Ten is the Cisco default.
OSPF Authentication	
Authentication Type	Displays Simple Password if the router where the CPT 600 NE is connected uses authentication. Otherwise, it displays No Authentication.
Authentication Key	Displays the OSPF key (password) if authentication is enabled.
Confirm Authentication Key	Retype the authentication key to confirm it.

OSPF Area Range Tab

The OSPF Area Range tab allows you to view information about OSPF area ranges and create or delete area ranges.

Table B-642 Field Descriptions for the OSPF Area Range Tab

Field	Description
Range Address	Displays the area IP address for the CPT 600 NEs that reside within the OSPF area. For example, if the CPT 600 NE OSPF area includes nodes with IP addresses 10.10.20.100, 10.10.30.150, 10.10.40.200, and 10.10.50.250, the range address would be 10.10.0.0.
Range Area ID	Displays the OSPF area ID for the CPT 600 NEs. This is either the ID in the DCC OSPF Area ID field or the ID in the LAN Port Area ID field.
Mask Length	Displays the subnet mask length.
Mask	Displays the subnet mask IP address.
Advertise	Indicates whether the OSPF routing table is advertised.

OSPF Virtual Links Tab

The OSPF Virtual Links tab allows you to view information about OSPF virtual links and create or delete virtual links.

Note You cannot create a new virtual link unless OSPF is active on the LAN.

Table B-643 Field Descriptions for the OSPF Virtual Links Tab

Field	Description
Neighbor	Displays the router ID of the Area 0 router.
Transit Delay	Displays the service speed. One second is the Cisco default.
Retransmit Interval	Displays the time that will elapse before a packet is resent. Five seconds is the Cisco default.
Hello Interval	Displays the number of seconds between OSPF hello packet advertisements sent by OSPF routers. Ten seconds is the Cisco default.
Dead Interval	Displays the number of seconds that will pass while the packets of an OSPF router are not visible before its neighbors declare the router down. Forty seconds is the Cisco default.
Authentication Type	Displays the authentication type.
Authentication Key	Displays the authentication key.

SNMP Tab

The SNMP tab allows you to view SNMP information and create or delete SNMP trap destinations.

Table B-644 Field Descriptions for the SNMP Tab

Field	Description
IP Address	The IP address of the NMS.
Community Name	The SNMP community name. **Note** The SNMP community string cannot be blank in Prime Optical. If a blank community string is required in CTC builds earlier than R4.6, you must set the blank community string in CTC.

Table B-644 Field Descriptions for the SNMP Tab (continued)

Field	Description
UDP Port	The UDP port for SNMP. The Cisco default UDP port is 162.
Trap Version	The trap version, either SNMP version 1 or version 2. See your NMS documentation to determine whether to use SNMP version 1 or version 2.

Firewall/Proxy Tab

The Firewall/Proxy tab allows you to use an NE as a proxy server or as a firewall.

Table B-645 Field Descriptions for the Firewall/Proxy Tab

Field	Description
Gateway Settings	
Enable Proxy Server on Port	If checked, the CPT 600 NE serves as a proxy for connections between the Prime Optical server and CPT 600s that are DCC-connected to the proxy CPT 600 NE. The Prime Optical server establishes connections to DCC-connected nodes through the proxy node. The Prime Optical server can connect to nodes that it cannot directly reach from the host on which it runs. The proxy server port number (display-only) is shown following the Enable Proxy Server on Port field. The proxy server uses port 1080. If checked, the following radio buttons are enabled: • End Network Element (ENE)—Enables the CPT 600 NE to proxy as an ENE. Note that an alternate expansion for ENE is *external network element*. • Gateway Network Element (GNE)—Enables the CPT 600 NE to proxy as a GNE. • Proxy-only—Enables proxy only. If unchecked, the node does not proxy.

Routing Table Tab

The Routing Table tab allows you to view the OSPF routing table.

Table B-646 Field Descriptions for the Routing Table Tab

Field	Description
Destination	Displays the IP address of the destination network or host. Destination (0.0.0.0) is the default route entry. All undefined destination network or host entries on this routing table are mapped to the default route entry.
Mask	Displays the subnet mask used to reach the destination network or host. Mask (0.0.0.0) is always 0 for the default route.
Gateway	Displays the IP address of the gateway used to reach the destination network or host. All outbound traffic belonging to this network is sent to this gateway. Gateway (172.20.214.1) is the default gateway address. All outbound traffic that cannot be found in this routing table or is not on the nodes local subnet will be sent to this gateway.

Table B-646 Field Descriptions for the Routing Table Tab (continued)

Field	Description
Usage	Shows the number of times the listed route has been used.
Interface	Shows the CPT 600 NE interface used to access the destination. Values are: • cpm0—The CPT 600 NE Ethernet interface (that is, the RJ-45 jack on the TCC+/TCC2 and the LAN 1 pins on the backplane). • pdcc0—An SDCC interface (that is, an OC-N trunk card identified as the SDCC termination). • lo0—A loopback interface.

Internal Subnet Tab

The Internal Subnet tab allows you to change the class B subnet address for TSC cards. TSC cards perform all system-timing functions for each CPT 600 NE. To avoid IP address conflicts, you should change the class B subnet address if your internal network uses the same address range as the default subnet addresses.

Table B-647 Field Descriptions for the Internal Subnet Tab

Field	Description
TSC1	Enter the class B subnet address for the first TSC.
TSC2	If two TSCs are installed, enter the class B subnet address for the second TSC.

Proxy Tunnels Tab

The Proxy Tunnels tab allows you to configure source and destination information and create or delete proxy tunnels.

Table B-648 Field Descriptions for the Proxy Tunnels Tab

Field	Description
Source Address	Specify the source IP address in the source-destination pair for the tunnel that will be routed through the proxy server.
Source Mask	Specify the source subnetwork mask in the source-destination pair for the tunnel that will be routed through the proxy server.
Destination Address	Specify the destination IP address in the source-destination pair for the tunnel that will be routed through the proxy server.
Destination Mask	Specify the destination subnetwork mask in the source-destination pair for the tunnel that will be routed through the proxy server.

Firewall Tunnels Tab

The Firewall Tunnels tab allows you to configure source and destination information and create and delete firewall tunnels.

Table B-649 Field Descriptions for the Firewall Tunnels Tab

Field	Description
Source Address	Specify the source IP address in the source-destination pair for the tunnel that will be routed through the firewall.
Source Mask	Specify the source subnetwork mask in the source-destination pair for the tunnel that will be routed through the firewall.
Destination Address	Specify the destination IP address in the source-destination pair for the tunnel that will be routed through the firewall.
Destination Mask	Specify the destination subnetwork mask in the source-destination pair for the tunnel that will be routed through the firewall.

FTP Hosts Tab

The FTP Hosts tab allows you to configure database backup or restore and software download to an ENE when the firewall is enabled. You can provision a list of legal FTP hosts for which the firewall opens for all FTP commands. You can configure the FTP hosts to expire after a certain amount of time, after which the FTP relay resumes blocking all FTP access for the ENEs.

Table B-650 Field Descriptions for the FTP Hosts Tab

Field	Description
Create button	Opens the Create New FTP Host dialog box, which allows you to create up to 12 new FTP hosts in a GNE/ENE firewall environment. See Creating an FTP Host, page 5-22. **Note** You cannot create more than 12 FTP hosts.
Delete button	Deletes the selected FTP host.
FTP Host Address	Displays the FTP host IP address.
Prefix Length	Displays the FTP host subnet mask length.
Enable FTP Relay	Indicates whether FTP relay is enabled or disabled. If FTP relay is disabled, the FTP Relay Timer field is dimmed.
FTP Relay Timer	Displays the number of minutes that the FTP relay is configured to run, after which the FTP relay resumes blocking all FTP access for the ENEs.

OSI

The OSI Properties pane allows you to provision CPT 600 NE Open System Interconnection (OSI) parameters. The Properties pane contains the following tabs:

- Main Setup Tab, page B-460
- TARP-Config Tab, page B-460
- TARP-TDC Tab, page B-462
- TARP-MAT Tab, page B-462

- Routers-Setup Tab, page B-463
- Subnets Tab, page B-463
- Tunnels Tab, page B-464
- IS-IS RIB Tab, page B-465
- ES-IS RIB Tab, page B-465

Main Setup Tab

The Main Setup tab allows you to provision the OSI Network Entity Title (NET) address and the OSI routing mode.

Table B-651 Field Descriptions for the Main Setup Tab

Field	Description
Main Network Entity Title	Displays the node NET. The NET is used in OSI networks to identify the node to the end system (ES) or intermediate system (IS).
End System	Provisions the node as an OSI end system (ES). ESs send end system hello (ESH) messages regularly to announce their presence to neighboring ISs and ESs.
Intermediate System Level 1	Provisions the node as an OSI intermediate system (IS). ISs send intermediate system hello (ISH) messages regularly to announce their presence to neighboring ISs and ESs.
Intermediate System Level 1/Level 2	The CPT 600 NE performs all IS functions. It communicates with other IS and ES nodes within an OSI area and broadcasts ISHs to IS nodes in other areas to which it is connected. For the CPT 600 NE, Intermediate System Level 1/Level 2 is the default routing mode.
Node Routing Mode	
L1 LSP Buffer Size	Sets the Level 1 Link State Protocol (LSP) data unit buffer size. The Cisco default is 512.
L2 LSP Buffer Size	Sets the Level 2 LSP data unit buffer size. The Cisco default is 512.

TARP-Config Tab

The TARP-Config tab allows you to provision the TID Address Resolution Protocol (TARP). TARP is used when TL1 TIDs must be translated to an NSAP address. During the TID-to-NSAP translation, the TID is mapped to a NET; then, the NSAP is derived from the NET based on the NSAP selector value.

Table B-652 Field Descriptions for the TARP-Config Tab

Field	Description
TARP PDUs L1 Propagation	If checked (default), TARP Type 1 PDUs received by the node that are not excluded by the loop detection buffer are propagated to other NEs within the OSI Level 1 area. Type 1 PDUs request a protocol address that matches a target TID within a Level 1 routing area. The propagation does not occur if the NE is the target of the Type 1 PDU and the PDUs are not propagated to the NE from which the PDU was received. **Note** This parameter is not used when the node is set to End System.
TARP PDUs Origination	If checked (default), the node performs all TARP configuration functions, including: • TID-to-NSAP resolution requests • NSAP-to-TID requests • TARP address changes **Note** TARP Echo and NSAP to TID are not supported.
L2 TARP Data Cache	If checked (default), the TIDs and NSAPs are added to the TDC before the node propagates the requests to other NEs. **Note** This parameter is designed for IS Level 1/Level 2 nodes that are connected to other IS Level 1/Level 2 nodes. Enabling the parameter for IS Level 1 nodes is not recommended.
LAN TARP Storm Suppression	If checked (default), enables the TARP storm suppression to prevent redundant TARP PDUs from being propagated across the network.
Type 4 PDU Delay	Sets the amount of time that will pass before the Type 4 PDU is generated. The Cisco default value is 60 seconds; the range is from 0 to 255 seconds.
TARP PDUs L2 Propagation	If checked (default), TARP Type 2 PDUs received by the node that are not excluded by the loop detection buffer are propagated to other NEs within the OSI Level 2 area. Type 2 PDUs request a protocol address that matches a target TID within a Level 2 routing area. The propagation occurs if the NE is the target of the Type 2 PDU and the PDUs are not propagated to the NE from which the PDU was received.
L1 TARP Data Cache	If checked, the node maintains a TARP data cache (TDC). The TDC is a database of TID-to-NSAP pairs created from TARP Type 3 PDUs received by the node. TARP Type 3 PDUs are responses to Type 1 and Type 2 PDUs and modified by TARP Type 4 PDUs (TID-to-NSAP updates or corrections).
LDB	If checked, enables the TARP loop detection buffer (LDB). The LDB prevents TARP PDUs from being sent more than once on the same subnet.
Send Type 4 PDU on Startup	If checked, a TARP Type 4 PDU is originated during the initial CPT 600 NE startup. Type 4 PDUs indicate that a TID or NSAP change has occurred at the NE. This option is disabled by default.
Timers	
LDB Entry	Sets the TARP LDB timer. The LDB buffer time is assigned to each LDB entry for which the TARP sequence number is zero. The Cisco default is 5 minutes; the range is from 1 to 10 minutes.
T1 Timer	Sets the amount of time to wait for response to a Type 1 Request PDU. Type 1 requests seek a specific NE TID within an OSI Level 1 area. The Cisco default is 15 seconds; the range is from 0 to 3600 seconds.

Table B-652 Field Descriptions for the TARP-Config Tab (continued)

Field	Description
T3 Timer	Sets the amount of time to wait for an address resolution request. The Cisco default is 40 seconds; the range is from 0 to 3600 seconds.
LDB Flush	Sets the frequency period for flushing the LDB. The Cisco default is 5 minutes; the range is from 0 to 1440 minutes.
T2 Timer	Sets the amount of time to wait for a Type 2 Request PDU. TARP Type 2 requests seek a specific NE TID within an OSI Level 1 area. The Cisco default is 25 seconds; the range is from 0 to 3600 seconds.
T4 Timer	Sets the amount of time to wait for an error recovery. The timer begins after the T2 timer expires without successfully finding the NE TID. The Cisco default is 20 seconds; the range is from 0 to 3600 seconds.

TARP-TDC Tab

Table B-653 Field Descriptions for the TARP-TDC Tab

Field	Description
TID	Target ID that is statistically linked to an NSAP or NET. For ONS nodes, the TID is the node name.
NSAP/NET	The NSAP that is statistically linked to the TID.
Type	Indicates how the TARP data cache entry was created. It can be either: • Dynamic—The entry was created through the TARP propagation process. • Static—The entry was manually created and is a static entry.
Add Static Entry button	Click **Add Static Entry** to statically link a TID to an NSAP or NET.
Delete Selected Entry button	Click **Delete Selected Entry** to delete the selected TID-to-NSAP/NET static entry.
TID to NSAP button	Click **TID to NSAP** to query the network for an NSAP that matches a TID.
Flush Dynamic Entries button	Click **Flush Dynamic Entries** to delete all dynamically generated TDC entries.

TARP-MAT Tab

The TARP-MAT tab allows you to manually provision a TARP adjacency.

Table B-654 Field Descriptions for the TARP-MAT Tab

Field	Description
Level	Sets the TARP Type Code that will be sent. • Level 1—Indicates that the manual area adjacency is within the same area as the node. The entry generates Type 1 PDUs. • Level 2—Indicates that the manual area adjacency is in an area different from that of the node. The entry generates Type 2 PDUs.
NSAP	The NSAP address of the node at the other end of the TARP manual adjacency.

Table B-654 Field Descriptions for the TARP-MAT Tab (continued)

Field	Description
Add button	Click **Add** to create a TARP manual area adjacency.
Remove button	Click **Remove** to delete the selected TID-to-NSAP/NET static entry.

Routers-Setup Tab

The Routers-Setup tab allows you to view and manage the OSI virtual routers.

Table B-655 Field Descriptions for the Routers-Setup Tab

Field	Description
Router Number	Displays the virtual router number. The CPT 600 NE provides six virtual routers, numbered 1 through 6.
System ID	Displays the NSAP system ID of the virtual router. The NSAP system identifier is set to the node's first IEEE 802.3 MAC address + *n*, where *n* = 0 through 6. For the primary router (Router 1), *n* = 0.
Status	Indicates the virtual router status. Select Enabled or Disabled from the drop-down list. **Note** Router 1 must be enabled before additional routers can be enabled.
Primary Area Address	Indicates the primary manual area address. For Router 1, this is the main NET for the node; that is, the NSAP without the system ID and selector (set to 00) fields.
Manual Area Address 1	Indicates the address of any additional manual areas that are created. **Note** An OSI area allows up to two additional manual areas in addition to the primary manual area.
Manual Area Address 2	Indicates the address of any additional manual areas that are created. **Note** An OSI area allows up to two additional manual areas in addition to the primary manual area.
Edit button	Click **Edit** to modify the address parameters.

Subnets Tab

The Subnets tab allows you to view and manage OSI subnetwork point-of-attachment parameters. The parameters are initially provisioned when you enable a subnet on an SDCC, LDCC, GCC, OSC, or LAN interface.

Table B-656 Field Descriptions for the Subnets Tab

Field	Description
Slot/Port	The subnet slot and port.
Router Number	The OSI virtual router where the subnet (SDCC, LDCC, GCC, or OSC) is provisioned.
Type	The interface where the subnet is provisioned: SDCC, LDCC, GCC, OSC, or LAN.
Protocol	The data link protocol that is provisioned for the subnet. It can be: • Point to Point Protocol (PPP) • Link Access Protocol on the D channel (LAP-D) • 802.3 for LAN subnets

Table B-656 Field Descriptions for the Subnets Tab (continued)

Field	Description
ISH	The intermediate system hello (ISH) PDU propagation frequency. Intermediate system NEs send ISHs to other ESs and ISs to inform them about the NETs they serve. The Cisco default is 10 seconds; the range is from 10 to 1000 seconds.
ESH	The end system hello (ESH) PDU propagation frequency. End system NEs transmit ESHs to inform other ESs and ISs about the NSAPs they serve. The Cisco default is 10 seconds; the range is from 10 to 1000 seconds.
IIH	The intermediate system-to-intermediate system hello (IIH) PDU propagation frequency. The IS-IS hello PDUs establish and maintain adjacencies between ISs. The Cisco default is 3 seconds; the range is from 1 to 600 seconds.
DIS Priority	The designated intermediate system (DIS) priority. In IS-IS networks, one router is elected as the DIS. For Cisco routers, the DIS priority is 64.
IS-IS Cost	The cost for sending packets on the subnet. This is used by OSPF routers to calculate the shortest path. The Cisco default value is 20.
Enable LAN Subnet button	*Router 1 only.* Enables OSI over the LAN; that is, it activates the IS-IS protocol on the LAN so OSI traffic is enabled on the LAN.
Edit button	Click **Edit** to modify the subnet parameters.
Disable LAN Subnet button	*Router 1 only.* Disables OSI over the LAN if it has been enabled.

Tunnels Tab

The Tunnels tab allows you to view, create, edit, and delete Generic Routing Encapsulation (GRE) and Cisco tunnels. GRE tunnels encapsulate one network protocol for transfer across another network layer. Within a mixed TCP/IP and OSI network, GRE tunnels tunnel IP traffic over an OSI NE and OSI traffic over an IP NE.

Table B-657 Field Descriptions for the Tunnels Tab

Field	Description
IP Address	Displays the IP address of the GRE destination Prime Optical or CTC computer.
Netmask Address	Displays the IP address subnet mask of the destination Prime Optical or CTC computer.
NSAP Address	The destination NE NSAP address. The NSAP selector (last two NSAP characters) must be 2f (GRE tunnel) or cc (proprietary Cisco tunnel), depending on which tunnel type you want to create. The Cisco proprietary tunnel is slightly more efficient than the GRE tunnel because it does not add an encapsulation header for each IP packet, while the GRE tunnel adds a small header to the packets. The two tunnel types are incompatible. **Note** Most Cisco routers support the Cisco tunnel, while only a few support both GRE and Cisco IP tunnels.
OSPF Metric	Displays the cost for sending packets across the GRE tunnel. Cost is used by OSPF routers to calculate the shortest path.
Create button	Click **Create** to create a new GRE tunnel route.
Edit button	Click **Edit** to edit an existing GRE tunnel.
Delete button	Click **Delete** to delete an existing GRE tunnel.

IS-IS RIB Tab

The IS-IS RIB tab allows you to view the intermediate system-to-intermediate system (IS-IS) protocol routing information base (RIB). IS-IS is an OSI link-state hierarchical routing protocol that floods the network with link-state information that enables the NEs to build a complete and consistent picture of a network topology.

Table B-658 Field Descriptions for the IS-IS RIB Tab

Field	Description
Router Number	Displays the virtual router number. The CPT 600 NE provides six virtual routers, numbered 1 through 6.
Subnet Type	Indicates the OSI subnetwork point-of-attachment type used to access the destination address. It includes SDCC, LDCC, GCC, OSC, and LAN.
Destination Address	Displays the Network Service Access Point (NSAP).
MAC Address	Displays the NE's MAC address for destinations that are accessed by the LAN subnets.

ES-IS RIB Tab

The ES-IS RIB tab allows you to view the end system-to-intermediate system (ES-IS) protocol RIB. ES-IS is an OSI protocol that defines how end systems (hosts) and intermediate systems (routers) learn about each other.

Table B-659 Field Descriptions for the ES-IS RIB Tab

Field	Description
Router Number	Displays the virtual router number. The CPT 600 NE provides six virtual routers, numbered 1 through 6.
Subnet Type	Indicates the OSI subnetwork point-of-attachment type used to access the destination address. It includes SDCC, LDCC, GCC, OSC, and LAN.
Destination Address	Displays the NSAP of the destination ES.
MAC Address	Displays the NE's MAC address for destinations that are accessed by the LAN subnets.

Note See Table 1-22 on page 1-47 for descriptions of actions that you can perform using the buttons at the bottom of the window.

Protection

The Protection Properties pane contains the following tabs:

- Protection Groups Tab, page B-465
- Operations Tab, page B-466

Protection Groups Tab

The Protection Groups tab displays a list of available protection groups and allows you to create, delete, and view protection groups.

Table B-660 Field Descriptions for the Protection Groups Tab

Field	Description
Protection Groups	
Displays a list of available protection groups. Click the **Create** or **Delete** button to create a new protection group or delete an existing one.	
Selected Protection Group	
Name	Modify the name of the selected protection group. The name can have up to 32 alphanumeric characters.
Type	Choose the protection type (1:1, 1:N, or 1+1) from the drop-down list. The protection selected determines the cards that are available to serve as protect and working cards. For example, if you choose 1:N protection, only DS-1N and DS-3N cards are displayed. 1+1 protection is used for optical cards only.
Protect Module	Choose the protect card if using 1:1 or 1:N protection.
Available Entities	Displays a list of available entities. You can toggle between available and working entities.
Working Entities	Displays a list of working entities. You can toggle between working and available entities.
Bidirectional Switching	Click if you want both the transmit and the receive channels to switch if a failure occurs on one. This option is available only if you select 1+1 (port) type.
Revertive	If checked, the CPT 600 NE reverts traffic to the working card or port after failure conditions are corrected and remain correct for the amount of time entered in Reversion Time.
Reversion Time	If Revertive is checked, enter the amount of time following failure condition correction that should elapse before the CPT 600 NE switches back to the working card or port.

Operations Tab

The Operations tab displays protection group operation information.

Table B-661 Field Descriptions for the Operations Tab

Field	Description
Protection Groups	Displays a list of available protection groups.
Protection Group Details	Displays details about the selected protection groups and allows you to execute switch commands.
Switch Commands	Allows you to perform a manual switch, perform a forced switch, or clear the existing command switching.
Inhibit Switching	Allows you to inhibit unlock switching, lock out switching, or lock on switching.

Security

The Security Properties pane allows you to view and edit the security advisory message for the CPT 600 NE. The Security Properties pane contains the following tabs:

- Policy Tab, page B-467
- Password Tab, page B-468
- Access Tab, page B-468

- RADIUS Server Tab, page B-469
- Legal Disclaimer Tab, page B-470

Policy Tab

The Policy tab allows you to specify user security parameters.

Note If the user is already logged in, any changes to the NE user type settings take effect only when the user next logs in.

Table B-662 Field Descriptions for the Policy Tab

Field	Description
Idle User Timeout	
Each CTC or TL1 user can be idle during his or her login session for a specified amount of time before the CTC window is locked. The lockouts prevent unauthorized users from making changes. Higher-level users have shorter default idle periods and lower-level users have longer or unlimited default idle periods. The user idle period can be modified by a SuperUser. **Note** A user already logged into the node is not affected by a change to the Idle User Timeout policy.	
Retrieve	Set the idle user timeout for a CTC Retrieve user.
Maintenance	Set the idle user timeout for a CTC Maintenance user.
Provisioner	Set the idle user timeout for a CTC Provisioner user.
SuperUser	Set the idle user timeout for a CTC SuperUser user.
User Lockout	
Manual Unlock by SuperUser	If checked, the CTC SuperUser user must manually unlock locked out CTC users. If unchecked, locked out CTC users are automatically unlocked after the lockout duration period elapses.
Lockout Duration	Set the lockout duration period for locked out CTC users. This field is enabled only if the Manual Unlock by SuperUser check box is unchecked.
Failed Logins Allowed	Set the number of failed logins before the CTC user is automatically locked out.
Other	
Single Sessions per User	If checked, each CTC user can launch only one session at a time.
Prevent Disabling the SuperUser	If checked, inactive CTC SuperUsers are never disabled.
Disable Inactive User	If checked, inactive users are disabled automatically for the amount of time in the Inactive Duration field.
Inactive Duration	Specify the inactive duration in days. The range is from 1 to 90 days; the Cisco default is 45 days. A value of 0 implies the inactive duration is disabled and invalid.

Password Tab

The Password tab allows you to specify user password security parameters.

Table B-663 Field Descriptions for the Password Tab

Field	Description
Password Change	
Prevent Reusing Last	Prevents setting a CTC user's current password to one of the most recent passwords. You can set the number of most recent passwords that cannot be reused.
Disable Password Flipping	If checked, users are not allowed to change passwords for the number of days specified in the Can Change Password After field.
Can Change Password After	Enter the number of days that must elapse before the user can change the password.
Force Password Change After Assigned	If checked, during the first successful login, the user is forced to change the password.
Password Difference	Allows SuperUsers to specify the number of characters by which the new password of a user must differ from the old password, while performing a password change. The default value is 1; the range is from 1 to 5 characters.
Password Aging	
Enable Password Aging	Check this check box to enable password aging.
Aging Period	Enter the aging period, in days, for Retrieve, Maintenance, Provisioner, and SuperUser CTC users. After the aging period expires, CTC users are forced to change their passwords.
Warning Period	Enter the warning period, in days, for Retrieve, Maintenance, Provisioner, and SuperUser CTC users. After the warning period expires, CTC users are warned that their passwords will soon expire.

Access Tab

The Access tab allows you to configure LAN and shell access to the NE.

Table B-664 Field Descriptions for the Access Tab

Field	Description
Access	
LAN Access	Specify the type of LAN access allowed. Values are Backplane Only, No LAN Access, Front and Backplane, or Front Only. **Note** After the LAN access to the backplane is set, the Prime Optical client is unusable for 4 to 5 minutes.
Restore Timeout	This time period begins if *No LAN Access* is selected and all DCC connections are lost. If the time expires before a DCC is restored, LAN access is restored so that the node is not isolated. When the DCC comes back, LAN access returns to its specified settings. The range is from 0 (never) to 60 minutes; the Cisco default is 5 minutes.
Serial Craft Access	
Enable Craft Port A	Check this check box to enable craft port A.
Enable Craft Port B	Check this check box to enable craft port B.
Shell Access	

Table B-664 Field Descriptions for the Access Tab (continued)

Field	Description
Access State	Select the Shell access state from the drop-down list. You can select Disable, Non-secure, or Secure.
SSH Port	Indicates the SSH port number that will be used.
SFTP Port	Indicates the SFTP port number.
Telnet Port	This is enabled if you selected the Non-secure access state. Enter the Telnet port number that will be used.
Use Standard Telnet Port	Check this check box to indicate that the standard Telnet port will be used.
Enable Shell Password	Indicates whether or not the Shell password is enabled. **Note** You cannot enable the Shell password in Prime Optical. Enabling and providing a Shell password is currently done in CTC.
TL1 Access	
Access State	Select the TL1 access state from the drop-down list. You can select Disable, Non-secure, or Secure.
SNMP Access	
Access State	Select the SNMP access state from the drop-down list. You can select either Disable or Non-secure.
Other	
PM Clearing Privilege	Select the users privilege that allows clearing PM statistics for the NE.
EMS Access	
Access State	Select the EMS access state from the drop-down list. You can select either Non-secure or Secure.
CORBA Listener Port	Select the port numbers for the TSC CORBA (IIOP) listener port and the TSC CORBA (SSLIOP) listener port. Select one of the following radio buttons: • Default-Fixed—Assigns a default port number. • Standard Constant—The port number for the TSC CORBA (IIOP) listener port is 683. The port number for the TSC CORBA (SSLIOP) listener port is 684. • Other Constant—When selected, enter the port number that will be used.

RADIUS Server Tab

The RADIUS Server tab allows you to configure, create, modify, and delete RADIUS servers for the CPT 200 NE and later.

Table B-665 Field Descriptions for the RADIUS Server Tab

Field	Description
Enable RADIUS Authentication	Check this check box to enable RADIUS authentication.
Enable RADIUS Accounting	Check this check box to enable RADIUS accounting. This is enabled if the Enable RADIUS Authentication check box is checked.
Enable the Node as the Final Authenticator When no RADIUS Server is Reachable	Select a row from the RADIUS Servers in Order of Authentication table; then, check this check box. This indicates that the RADIUS server that you selected will be the final authenticator when there are no more RADIUS servers that can be reached.

Table B-665 Field Descriptions for the RADIUS Server Tab (continued)

Field	Description
Create button	Click **Create** to create a RADIUS server. See Creating a RADIUS Server, page 8-46.
Edit button	Click **Edit** to modify an existing RADIUS server's information. See Modifying a RADIUS Server, page 8-46.
Delete button	Click **Delete** to delete an existing RADIUS server. See Deleting a RADIUS Server, page 8-46.
Move Up/Move Down buttons	Click **Move Up** or **Move Down** to reorder the list of RADIUS servers in the RADIUS Servers in Order of Authentication table.
RADIUS Servers in Order of Authentication	
IP Address	Displays the IP address of the RADIUS server.
Shared Secret	Displays a text string that serves as a password between a RADIUS client and RADIUS server.
Authentication Port	Displays the authentication port number of the RADIUS server. Default access is through port number 1812.
Accounting Port	Displays the accounting port number of the RADIUS server. Default access is through port number 1813.

Legal Disclaimer Tab

The Legal Disclaimer tab allows you to edit the NE's advisory message and preview the disclaimer.

Table B-666 Field Descriptions for the Legal Disclaimer Tab

Tab	Description
Advisory Message	The existing message is a default, noncustomer-specific disclaimer. If you want to edit this statement with specifics for your company, you can change the text. You can also use the following HTML commands to format the text: • ****—Begins boldface font • ****—Ends boldface font • ** **—Aligns type in the center of the window • ** **—Ends the center alignment • **<font=*n*, where *n* = point size>**—Changes the font to the new size • ****—Ends the font size command • **<p>**—Creates a line break • **_{**—Begins subscript • **}**—Ends subscript • **^{**—Begins superscript • **}**—Ends superscript • **<u>**—Starts underline • **</u>**—Ends underline
Preview	Allows you to view the advisory message before saving it.

Timing

The Timing Properties pane contains the following tabs:

- General Tab, page B-471
- Reference List Tab, page B-472
- Status Tab, page B-472
- Timing Report Tab, page B-473

General Tab

The General tab displays general timing information.

Table B-667 Field Descriptions for the General Tab

Field	Description
General Timing	
Timing Mode	Set the node timing mode: • External—The CPT 600 NE derives its timing from a BITS source wired to the backplane pins. • Line—Timing is derived from an STM-N card that is optically connected to the timing node. • Mixed—Timing is set to external and line timing references. **Caution** Mixed timing might cause timing loops. Use this mode with care.
SSM Message Set	Choose the SSM set level supported by your network. SSM is an SONET protocol that communicates information about the quality of the timing source. SSM messages are carried on the S1 byte of the SONET Line layer. They enable SONET devices to automatically select the highest quality timing reference and to avoid timing loops. If a Generation 1 node receives a Generation 2 message, the message is mapped down to the next available Generation 1 node. For example, an ST3E message becomes an ST3.
Revertive	If checked, the CPT 600 NE reverts to a primary reference source after the conditions that caused it to switch to a secondary timing reference are corrected.
Reversion Time	Specify the reversion time in half-minute increments.
BITS-IN-OUT Facility Type	
In Facility Type	Provisions the BITS In facility type.
Out Facility Type	Provisions the BITS Out facility type.
BITS In/Out Facilities	
E1, T1, 2.048 MHz, 64 KHz	Select the speed of the BITS facility.
In/Out State	Set the BITS reference to IS or OOS. For nodes set to Line timing with no equipment timed through BITS Out, set the state to OOS. For nodes using External timing or Line timing with equipment timed through BITS Out, set the state to IS. **Note** BITS IN Facilities and BITS OUT Facilities values apply to both BITS-1 and BITS-2.
Coding	Set to the coding used by your BITS reference, either B8ZS or AMI.

Table B-667 Field Descriptions for the General Tab (continued)

Field	Description
Framing	Set to the framing used by your BITS reference, either ESF or SF (D4). SSM is not available with Super Frame.
Sync Messaging	If checked, enables the SSM for BITS In. (SSM is not available if Framing is set to Super Frame.)
Admin SSM	If the Sync Messaging check box is not checked, you can choose the SSM Generation 2 type from the drop-down list.
AIS Threshold	If SSM is disabled or Super Frame is used, set the quality level where a node sends an alarm indication signal (AIS) from the BITS-1 Out and BITS-2 Out backplane pins. An AIS is raised when the optical source for the BITS reference falls to or below the SSM quality level defined in this field.
Cable Type	Type of cable. Values are 75 ohm or 120 ohm.
Sa Bit	The Sa Bit is used to transmit the SSM message. Available Sa bits are Sa4, Sa5, Sa6, Sa7, and Sa8.

Reference List Tab

The Reference List tab provides timing reference information.

Table B-668 Field Descriptions for the Reference List Tab

Field	Description
NE References	Allows you to define three timing references (Ref-1, Ref-2, and Ref-3). The node uses Reference 1 unless a failure occurs on that reference, in which case, the node uses Reference 2. If that fails, the node uses Reference 3, which is typically set to Internal Clock. This is the Stratum 3 clock provided on the TCC+. The options displayed depend on the Timing Mode setting: • Timing Mode set to External—Options are BITS-1, BITS-2, and Internal Clock. • Timing Mode set to Line—Options are the node's working optical cards and Internal Clock. Select the cards/ports that are directly or indirectly connected to the node wired to the BITS source; that is, the node's trunk cards. Set Reference 1 to the trunk card that is closest to the BITS source. For example, if Slot 5 is connected to the node wired to the BITS source, select Slot 5 as Reference 1.

Status Tab

The Status tab displays timing status information.

Note If you change any values in the Status tab and click Apply at the bottom of the screen, the values are not set. Instead, use the following buttons to apply changes:

- Clear—Releases any existing switch request. For example, if you issue a Force Switch and then issue a Clear, the Force Switch request is released.
- Manual Switch—Switches the timing reference from one source to another.
- Force Switch—Switches the timing reference from one source to another. This request has a higher priority than the Manual Switch request.

Table B-669 Field Descriptions for the Status Tab

Field	Description
NE Clock	
NE Reference	Set the NE timing reference to internal, BITS-1, or BITS-2.
Status	Displays the status of the NE clock.
Operations	Execute a switch on the NE timing reference.
BITS-1 Out	
BITS-1 Out	Set the BITS-1 out timing reference.
Status	Displays the status of the BITS-1 out timing reference.
Operations	Execute a switch on the BITS-1 out timing reference.
BITS-2 Out	
BITS-2 Out	Set the BITS-2 out timing reference.
Status	Displays the status of the BITS-2 out timing reference.
Operations	Execute a switch on the BITS-2 out timing reference.

Timing Report Tab

The Timing Report tab summarizes the NE's current timing settings.

CRS-1/3 NE Explorer

When you choose **Configuration > NE Explorer** for the CRS-1/3, the window that Prime Optical displays consists of a tree on the left side and a properties pane on the right. The properties pane shows information about the selected entity. See Node Properties Pane—CRS-1/3 for more information.

Node Properties Pane—CRS-1/3

The node properties pane displays information about the CRS-1/3 NE. The properties pane contains the following tabs:

- General, page B-473
- OTN, page B-474
- PM, page B-474
- Proactive Protection Regen, page B-475
- Status Tab, page B-476

General

The General Properties pane displays admin state, wavelength, and loopback information for the CRS-1/3 NE.

Note Wavelength and Loopback fields are editable only if the Admin State is not IS.

Table B-670 Field Descriptions for the General Properties Pane

Field	Description
Filter	Click the **Filter** button to filter the data displayed in the table.
Refresh	Click the **Refresh Data** button to refresh the table.
Admin State	The port administration state. It can be: • IS—In Service • OOS, DSBLD—Out of Service, Disabled • OOS, MT—Out of Service, Maintenance
Wavelength	Displays the number of wavelengths for this NE.
Loopback	Allows you to configure a port to terminal loopback (Inward) or Facility (Line), or clear the current loopback (none). **Note** The line state must be OOS_MT before you can configure the loopback type.

OTN

The OTN Properties pane allows you to change the line optical transport network (OTN) settings.

Table B-671 Field Descriptions for the OTN Tab

Field	Description
Filter	Click the **Filter** button to filter the data displayed in the table.
Refresh	Click the **Refresh Data** button to refresh the table.
G.709 OTN	Disables or enables the G.709 OTN feature.
FEC	Disables or enables forward error correction. **Note** OTN must be enabled before you can enable FEC.
SF BER	Displays the signal fail bit error rate.
SD BER	Displays the signal degrade bit error rate.

PM

The PM tab allows you to view the optics in the current interval of a PM parameter. The interval is 15 minutes or 1 day.

Note The parameters displayed depend on the PM type selected.

Click the **Refresh** button to refresh the parameters. You can save the data displayed in the text area to your local disk by clicking the **Export** button.

Table B-672 Field Descriptions for the PM Tab

Field	Description
PM Type	Choose Interval or History to display the performance monitor parameters. 1. If you choose Interval PM type, the Interval PM area is displayed: • Intervals – 15-Minute—Displays a collection of PM data every 15 minutes. – 1 Day—Displays a collection of PM data every 24 hours. • PM Layer—Choose the performance monitor layer. Values are: – FEC – Optics – OTN 2. If you choose History PM type, the History PM area is displayed. Possible values are: – All – 15-Minute – 1 Day – FEC – Optics – OTN

Proactive Protection Regen

The Proactive Protection Regen tab allows you to provision proactive protection regen.

Table B-673 Field Description for the Proactive Protection Regen Tab

Field	Description
Filter	Click the **Filter** button to filter the data displayed in the table.
Refresh	Click the **Refresh Data** button to refresh the table.

Table B-673 Field Description for the Proactive Protection Regen Tab

Field	Description
Trigger Threshold	Sets the maximum BER threshold to trigger proactive protection.
Trigger Window (ms)	Sets the duration for which BER is monitored before triggering proactive protection. The trigger window value must be a multiple of: • 10 ms for trigger thresholds between 1E-3 and 6E-6 • 100 ms for trigger threshold between 5E-6 and 1E-7 The trigger window must be less than or equal to 10000 ms.
Revert Threshold	Sets the revert threshold value of BER. **Note** The Revert Threshold settings must be less than the Trigger Threshold values.
Revert Window (ms)	Sets the duration for which BER is monitored for settings that are less than the revert threshold value before which proactive protection provided to the router is removed. The Revert Window value must be at least 2000 ms and a multiple of: • 10ms for a revert threshold of 1E-4 to 6E-7 • 100ms for a revert threshold of 5E-7 to 5E-8 The revert window must be less than or equal to 10000 ms.

Status Tab

The status tab allows you to view the current status of the CRS-1/3 NE. The Status tab provides details on loopback, controller state, FEC, OTU, ODU, and alarm.

Unmanaged NE/Other Vendor Node Properties Pane

The Unmanaged NE/Other Vendor node properties pane displays information about unmanaged NEs or nodes from other vendors. The properties pane contains an Identification Properties pane.

Identification

The Identification Properties pane displays identification information about the unmanaged or other-vendor NE.

Table B-674 Field Descriptions for the Identification Properties Pane

Field	Description
NE ID	Displays the ID of the NE from the Domain Explorer.
Description	Displays the description of the NE from the Domain Explorer.
NE Model	Displays *Unmanaged* as the NE model type.
NE Type	Displays *Not Applicable* as the NE type.
NE Version	Displays the NE version.
Serial Number	Displays the serial number of the NE.
Location Name	Displays the name of the physical location of the NE.
Subnetwork ID	Displays the assigned subnetwork ID of the NE.
Network Partition ID	Displays the network partition ID of the NE.

Note See Table 1-22 on page 1-47 for descriptions of actions that you can perform using the buttons at the bottom of the window.