

Cisco ONS 15200 Maintenance Manager Installation and Operations Guide

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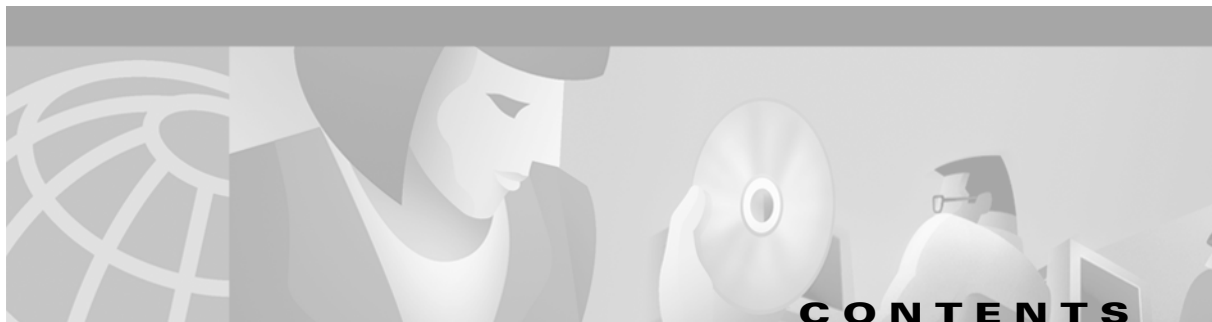
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Cisco ONS 15200 Maintenance Manager Installation and Operations Guide

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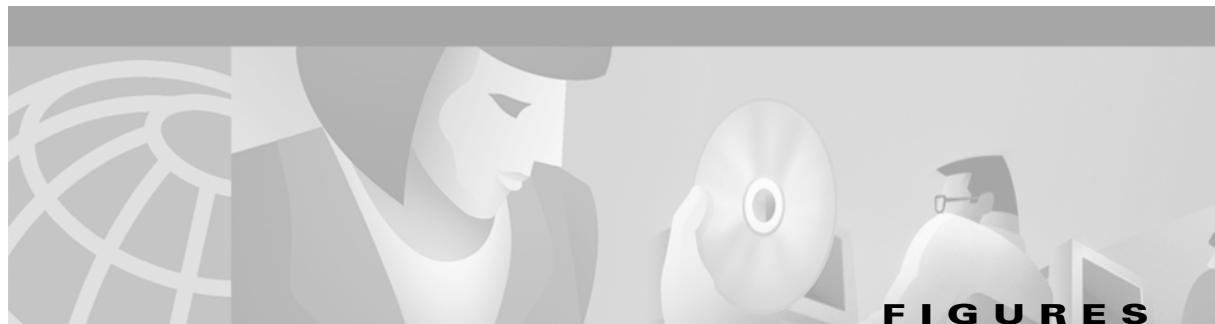
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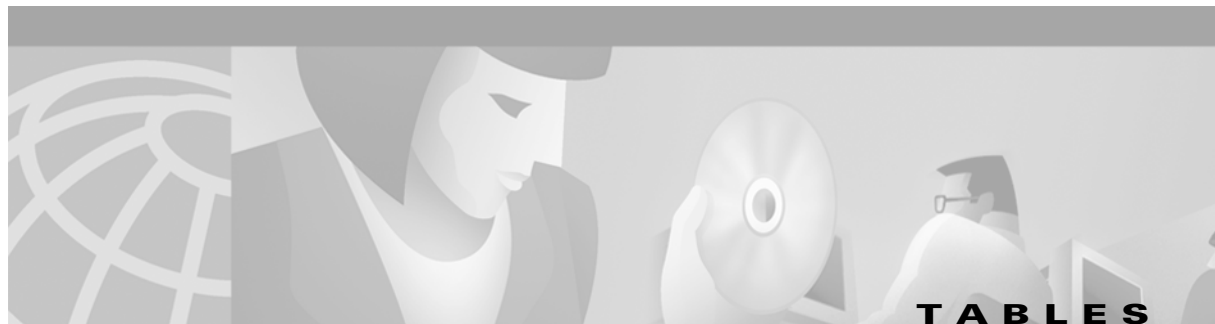
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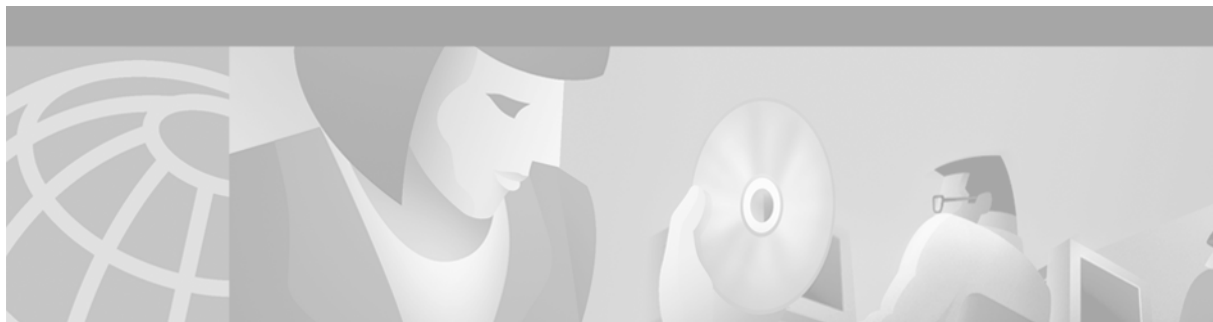
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About this Manual

This publication provides the installation and setup process for the Cisco ONS 15200 Maintenance Manager software program and describes how to use it to configure and view information for an ONS 15200 network.

Manual Structure

The *Cisco ONS 15200 Maintenance Manager Installation and Operations Guide* is organized as follows:

- Chapter 1, “Installation,” explains how to install Maintenance Manager
- Chapter 2, “Software Description,” describes how to begin using the Maintenance Manager application.
- Chapter 3, “CLIP Module Configuration,” provides module and system configuration information.
- Chapter 4, “Alarms,” provides system-level alarm information.
- Appendix A, “Acronyms,” defines acronyms and other abbreviations used in the manual.

Related Documentation

Additional information about ONS 15200 software can be found in the following Cisco publications:

- *Cisco ONS 15200 Command Line Interface Manual*
- *Cisco ONS 15200 Web Interface Software User Manual*

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- Priority level 4 (P4)—You need information or assistance concerning Cisco product capabilities, product installation, or basic product configuration.
- Priority level 3 (P3)—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- Priority level 2 (P2)—Your production network is severely degraded, affecting significant aspects of business operations. No workaround is available.
- Priority level 1 (P1)—Your production network is down, and a critical impact to business operations will occur if service is not restored quickly. No workaround is available.

Which Cisco TAC resource you choose is based on the priority of the problem and the conditions of service contracts, when applicable.

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<http://www.cisco.com/tac>

All customers, partners, and resellers who have a valid Cisco services contract have complete access to the technical support resources on the Cisco TAC Web Site. The Cisco TAC Web Site requires a Cisco.com login ID and password. If you have a valid service contract but do not have a login ID or password, go to the following URL to register:

<http://www.cisco.com/register/>

If you cannot resolve your technical issues by using the Cisco TAC Web Site, and you are a Cisco.com registered user, you can open a case online by using the TAC Case Open tool at the following URL:

<http://www.cisco.com/tac/caseopen>

If you have Internet access, it is recommended that you open P3 and P4 cases through the Cisco TAC Web Site.

Cisco TAC Escalation Center

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To obtain a directory of toll-free Cisco TAC telephone numbers for your country, go to the following URL:

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Before calling, please check with your network operations center to determine the level of Cisco support services to which your company is entitled; for example, SMARTnet, SMARTnet Onsite, or Network Supported Accounts (NSA). In addition, please have available your service agreement number and your product serial number.



Installation

This chapter describes how to install the Maintenance Manager software and connect the ONS 15252 Multichannel Unit (MCU) or ONS 15201 Single-Channel Unit (SCU) to a laptop computer. To connect to a desktop computer, contact the Cisco Technical Assistance Center (TAC) at 1-877-323-7368 for instructions.

1.1 Prerequisites

Before installing Maintenance Manager software, thoroughly review the prerequisites. This section explains the hardware and software requirements for successful installation.



Note

If the Control Area Network (CAN) board has not been installed in the PC that will run the Maintenance Manager software, you must install the hardware driver. Read the installation instructions included on the Maintenance Manager CD-ROM.

1.1.1 Recommended Order of Work

Complete work in the following order:

-
- Step 1** Start up a laptop that runs on Windows 95, 98, 2000, or WinNT.
 - Step 2** Shut down all applications.
 - Step 3** Install the Maintenance Manager.
-

1.1.2 Minimum System Requirements

The following minimum system requirements must be met before you can install Maintenance Manager software.

- 78-13764-01 Laptop computer with at least 300 MHz or faster Pentium processor
- 50 MB free hard disk space
- CD-ROM drive

- PCMCIA slot
- 32 MB RAM
- CAN accessory kit (p/n 800-20162-01, includes the CAN board, CAN cable, and MA CAN cable)
- Cisco ONS 15200 Maintenance Manager CD-ROM (p/n 85-2510-01)

1.2 Installing the Maintenance Manager Software

The following procedure describes how to install the Maintenance Manager software using a CD-ROM.

Procedure: Install the Maintenance Manager Software

- Step 1** Insert the ONS 15200 Maintenance Manager CD-ROM into your CD-ROM drive and close the drive.
- Step 2** After a few seconds, the ONS 15200 Maintenance Manager Operator - InstallShield Wizard window opens (Figure 1-1).



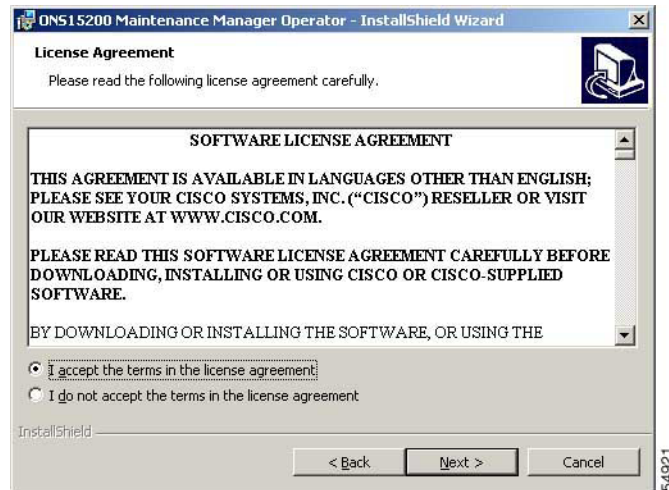
Note If the InstallShield Wizard does not open, use Windows Explorer to navigate to the CD-ROM drive and double-click the **setup.exe** file.

Figure 1-1 ONS 15200 Maintenance Manager Operator - InstallShield Wizard



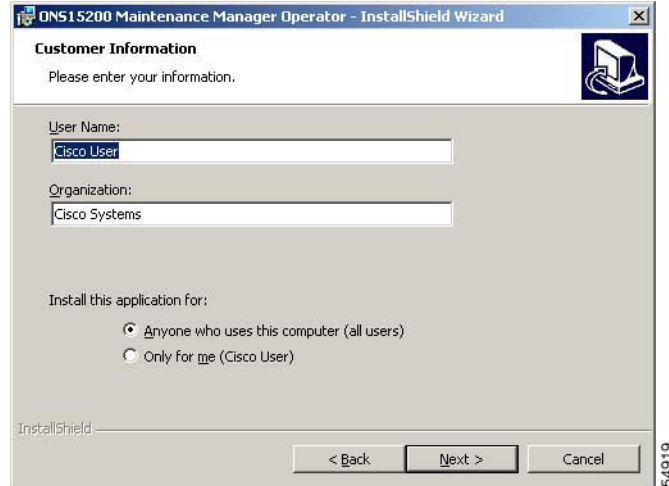
- Step 3** Click **Next**. The License Agreement screen appears (Figure 1-2).

Figure 1-2 ONS 15200 Maintenance Manager InstallShield Wizard - License Agreement

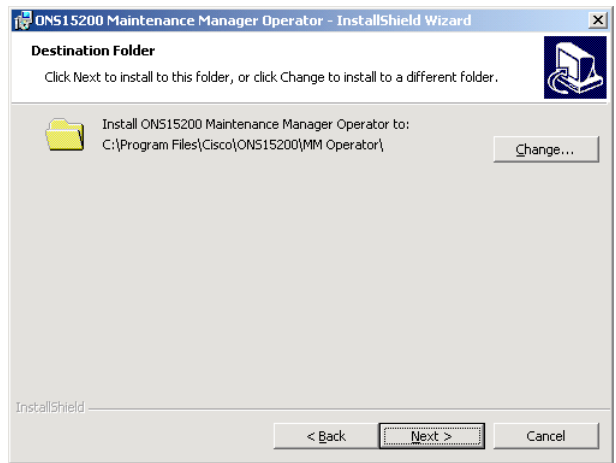


- Step 4** Read the terms, and click **I accept the terms in the license agreement**.
- Step 5** Click **Next**. The Customer Information screen appears (Figure 1-3).
- Step 6** Type the user name and organization in the appropriate boxes.
- Step 7** Select **Anyone who uses this computer (all users)** or **Only for me (Cisco user)**.

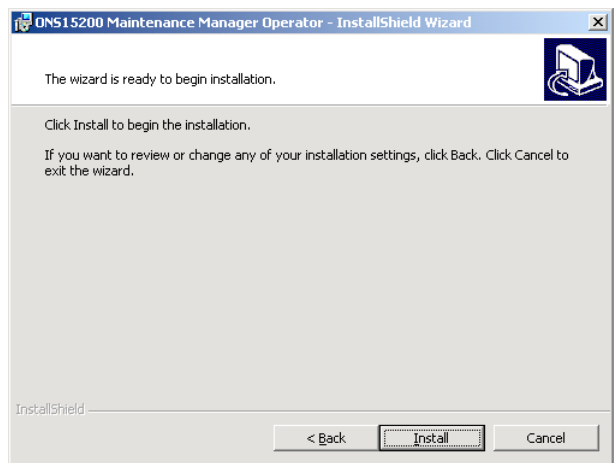
Figure 1-3 ONS 15200 Maintenance Manager InstallShield Wizard - Customer Information



- Step 8** Click **Next**. The Destination Folder Window appears (Figure 1-4).
- Step 9** Select the folder where you want the Maintenance Manager software to reside. The default location is C:\Program Files\Cisco\ONS15200\MM Operator\. To choose a different location, click **Change**. After selecting the location, click **Next**.

Figure 1-4 ONS 15200 Maintenance Manager InstallShield Wizard - Destination Folder

Step 10 Click **Next**. The Ready to Install Window appears (Figure 1-5).

Figure 1-5 ONS 15200 Maintenance Manager InstallShield Wizard - Ready to Install

Step 11 Click **Install**. The Maintenance Manager begins installing. When installation is complete, a message will appear that says, "InstallShield Wizard Completed." Click **Finish**.

1.3 Connecting to the ONS 15200 System

The following sections describe how to connect a laptop computer running Maintenance Manager to an ONS 15200. Connection to the ONS 15200 must be made directly to either an MCU or an SCU. You cannot connect Maintenance Manager to the ONS 15200 indirectly using a local area network (LAN).

1.3.1 Connection Restrictions

Restrictions determine which network elements (NEs) can be accessed based on the unit where the Maintenance Manager is physically connected. If the Maintenance Manager is connected to an SCU, you can only view information for the CLIP module installed in that SCU and its mate, which is assigned the same ITU channel, in another SCU or MCU. All other channels in the network are invisible. If the Maintenance Manager is connected to an MCU, you can see all the CLIP modules installed in that MCU as well as the mates of that MCU's CLIP modules.

**Note**

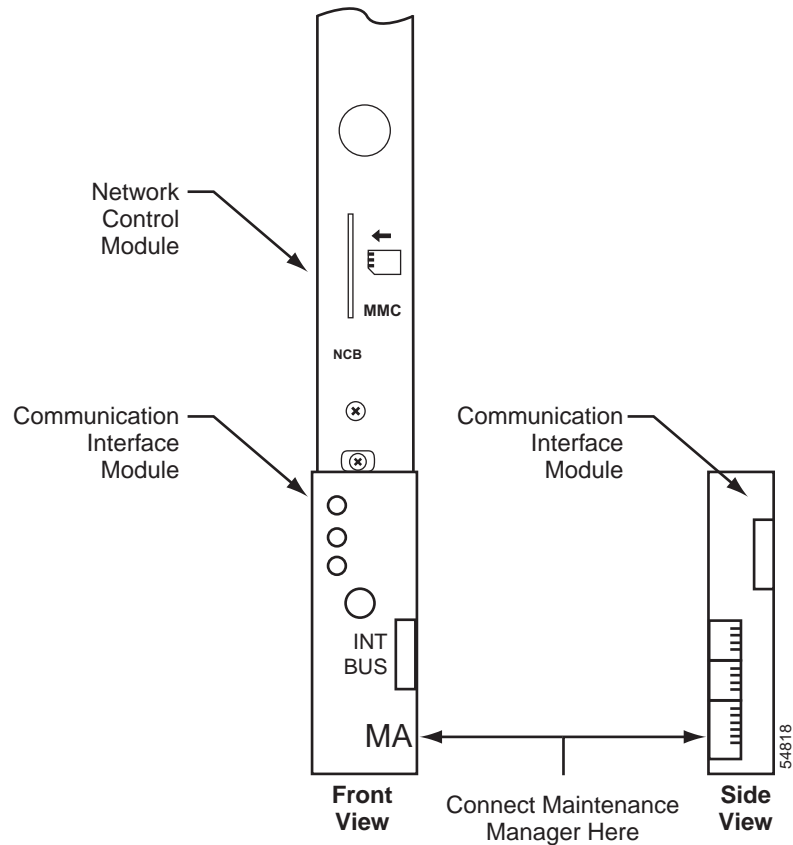
If you connect the Maintenance Manager directly to an MCU, only that Maintenance Manager will receive alarm notifications from the CLIP modules in view, even if other MCUs or SCUs were connected prior to the latest MCU's connection. Before connecting the Maintenance Manager to an MCU, you should make sure no one is already accessing Maintenance Manager through another MCU or SCU in the network.

Procedure: Connect the Laptop to an MCU

The following procedure describes how to connect a laptop with Maintenance Manager to the ONS 15252 MCU. To connect to a desktop computer, contact the Cisco Technical Assistance Center (TAC) at 1-877-323-7368.

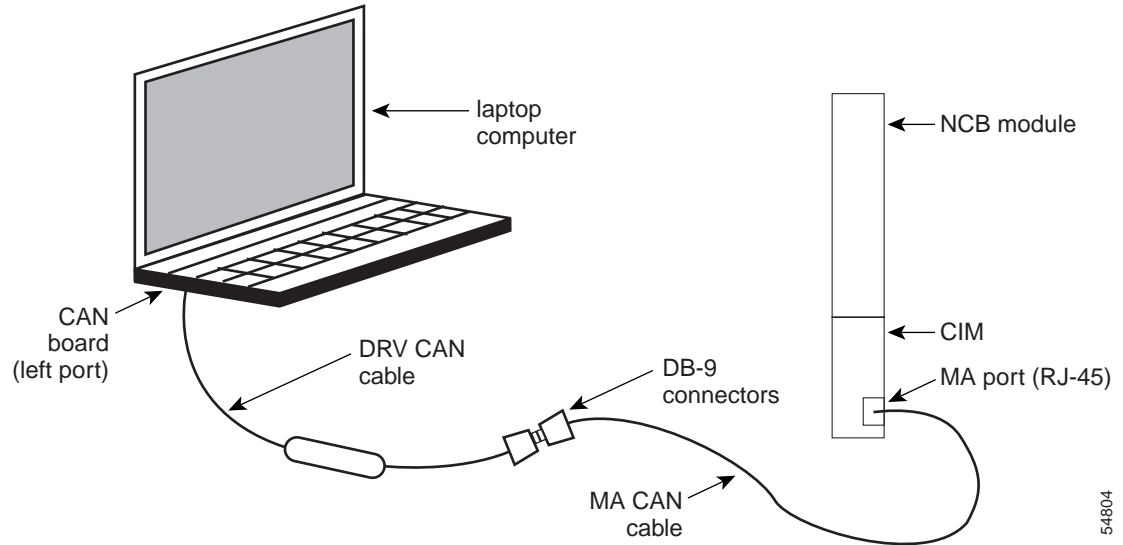
-
- Step 1** Insert the CAN board into an empty PCMCIA slot on the laptop computer.
- If this is the first time the CAN board is being installed in the computer, the hardware driver must be installed. To install the hardware driver, read the installation instructions included on the Maintenance Manager CD-ROM.
- Step 2** Attach the RJ-45 connector at the end of the CCAN LINE connector cable to the Maintenance Access (MA) port on the Communications Interface module (CIM) (Figure 1-6). The CIM is located below the Network Control Board (NCB) module in Slot 17 on the right side of the MCU. The MA connection on the CIM module is a standard RJ-45 connector.

Figure 1-6 CIM MA connector on the MCU



- Step 3** Connect the DB-9 connector at the end of the MA CAN cable to the DB-9 connector at the end of the DRV CAN cable. The DRV CAN cable is the black cable with the large cylindrical component in the middle.
- Step 4** On the laptop, connect the DRV CAN cable to the port labelled "1" located on the left side of the CAN board. Figure 1-7 illustrates the completed connection.

Figure 1-7 MCU Maintenance Manager connection



Step 5 When the two cables are connected from the laptop to the MA port, open Maintenance Manager.

Procedure: Connect the Laptop to an SCU

The following procedure describes how to connect a laptop with Maintenance Manager to the ONS 15201 SCU. To connect to a desktop computer, contact the Cisco Technical Assistance Center (TAC) at 1-877-323-7368.

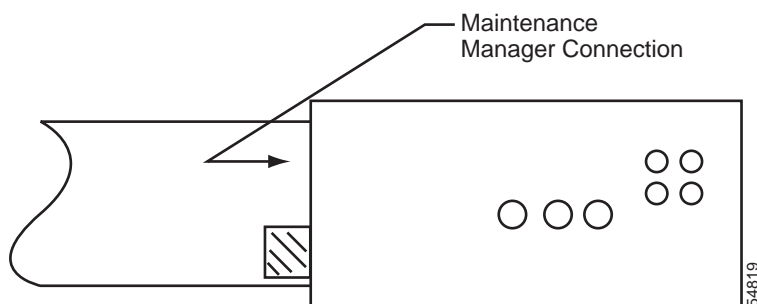
Step 1 Insert the CAN board into an empty PCMCIA slot on the laptop computer.



Note If this is the first time the CAN board is being installed in the computer, the hardware driver must be installed. To install the hardware driver, read the installation instructions included on the Maintenance Manager CD-ROM.

Step 2 Attach the RJ-45 connector at the end of the MA CAN connector cable to the Maintenance Manager connector on the SCU (Figure 1-8). The MA connection on the module is a standard RJ-45 connector.

Figure 1-8 SCU Maintenance Manager connection



- Step 3** Using the DB-9 connector, connect the end of the DRV CAN cable to the DB-9 connector at the end of the CAN cable. The CAN cable is the black cable with the large cylindrical component in the middle.
- Step 4** Connect the DRV CAN cable to the computer. The CAN cable connects to the PCMCIA connector on the CAN board. Figure 1-7 illustrates the completed connection.
- Step 5** When the two cables are connected from the laptop to the MA port, open the Maintenance Manager. The Maintenance Manager main window opens.

1.4 Uninstalling Maintenance Manager

The following procedure describes how to uninstall the Maintenance Manager application.

Procedure: Uninstall Maintenance Manager

- Step 1** From the Windows Start menu, click **Settings > Add/Remove Programs**.
- Step 2** Choose **ONS 15200 Maintenance Manager Operator** from the list.
- Step 3** Click **OK**.

1.5 Upgrading Maintenance Manager

To upgrade Maintenance Manager to a more recent version, you must first uninstall the older version and then install the newer version. Follow the procedure in the “Uninstalling Maintenance Manager” section and then follow the procedure in the “Installing the Maintenance Manager Software” section on page 1-2.

1.6 Opening Maintenance Manager

The following procedure describes how to open the Maintenance Manager application.

Procedure: Open Maintenance Manager

-
- Step 1** Open the Windows Start menu.
 - Step 2** Choose **Programs > ONS 15200 > MM Operator**.
 - Step 3** The Maintenance Manager main window opens.
-

1.7 Closing Maintenance Manager

To exit the Maintenance Manager program, choose **Exit** from the File menu.



Software Description

This chapter provides a general overview of the Maintenance Manager software. See Chapter 3, “CLIP Module Configuration” for detailed information regarding specific Maintenance Manager screens.

2.1 Features

This list describes the features of the Maintenance Manager software:

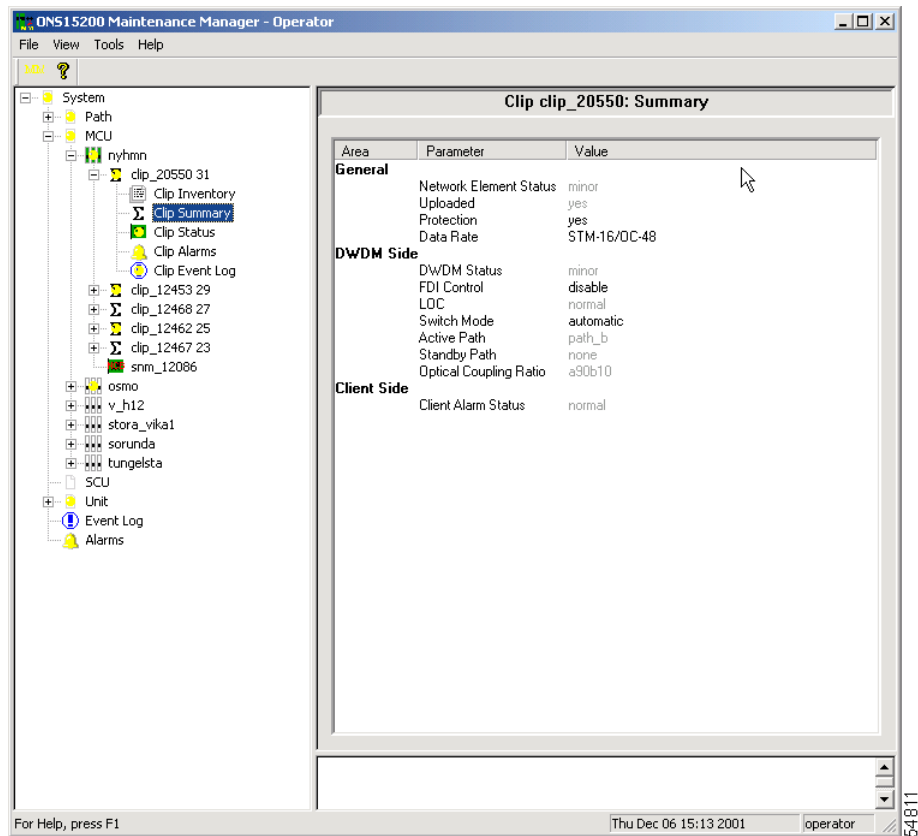
- **Local Craft Interface**—The Maintenance Manager software is the local craft interface for the ONS 15200 system. Use it to view and configure certain types of system information.
- **Limited Read/Write**—With Maintenance Manager you can change the values of a limited number of operations settings and thresholds.
- **Familiar Interface**—The Maintenance Manager user interface is similar to the read-only Web-based interface.
- **Real-time**—The Maintenance Manager provides a real-time view of the network. Changes to the system are reported immediately.

2.2 User Interface

The Maintenance Manager screen (Figure 2-1) is divided into the following three sections:

- The navigation area on the left side of the screen is used to view the ONS 15252 multichannel units (MCUs), ONS 15201 single-channel units (SCUs), modules installed in the network, event logs, and alarm logs.
- The display area in the upper right part of the screen shows information specific to each MCU, SCU, module, or log. To change a value, double-click an editable field. Editable fields are checkboxes and parameters whose names are not greyed out.
- The error notification area in the lower right part of the screen displays software application-specific problems such as a CAN bus failure, database (QDBS) connectivity time out or other major exception faults. This window will contain major critical errors in the system connection such as no connection to the CAN bus or the local database received a time out when connecting to a Client Layer Interface Port (CLIP) module.

Figure 2-1 ONS 15200 Maintenance Manager main window



2.2.1 Navigation

To navigate to different screens, click the folder or page icons in the navigation area. Clicking a folder expands it to display the pages and subfolders it contains. Clicking a page displays the relevant system information.



Note

The Communication Interface Module (CIM) that the Maintenance Manager is connected to determines which CLIP modules are visible. You can view CLIP modules in the shelf where the CIM resides, as well as the mates of those CLIP modules.

2.2.2 System Folder

The System folder contains the following subfolders:

- Path
- MCU
- SCU
- Unit

The System folder also contains the system-level Active Alarms screen and the system-level Event Log screen.



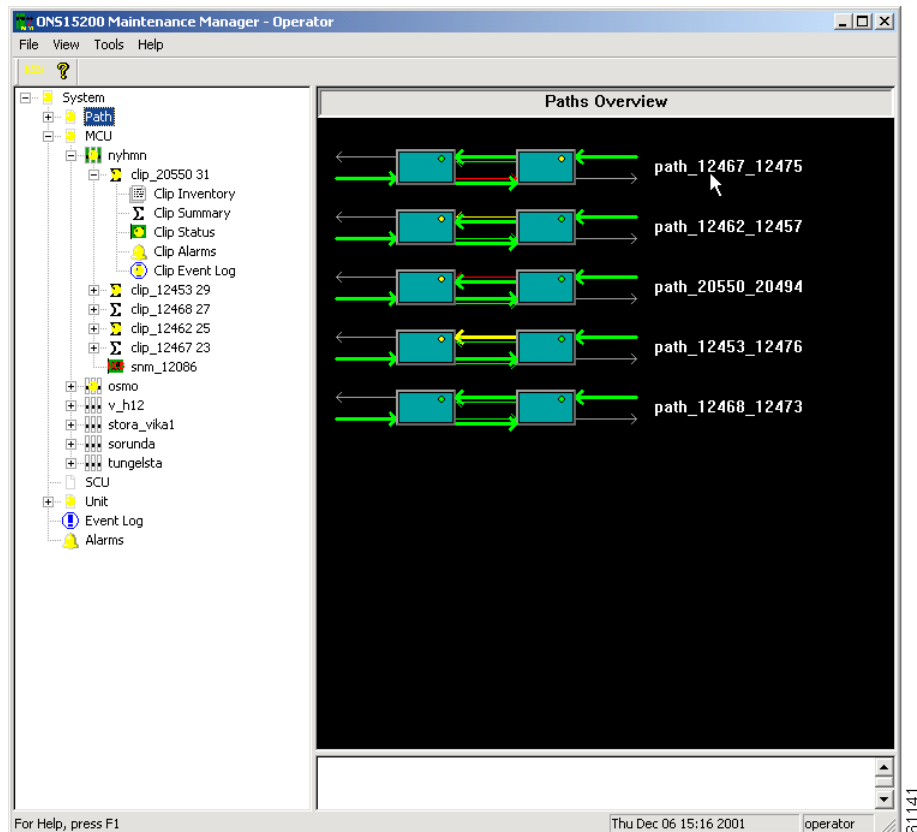
Note

The system-level Event Log screen is an aggregate of all Client Layer Interface Port (CLIP) module event logs. The system-level Active Alarms screen contains all CLIP module alarms plus all system-level alarms.

2.2.2.1 Path Folder

Clicking the Path folder provides a graphical view of any CLIP module circuit paths (Figure 2-2). Icons represent the active path, standby path, network elements, and alarms.

Figure 2-2 Paths Overview screen



Opening this folder displays folders for these paths, and from these subfolders you can access information about the CLIP modules on those paths. See the “CLIP Folders” section on page 2-5 for details on the information available for CLIP modules.

2.2.3 CLIP Folders

The CLIP folders provide access to each CLIP module installed in the system. There are several ways to access the CLIP folder, but each provides the same categories of information. CLIP folders are located in the following folders:

- Path
- MCU
- SCU
- Unit

The CLIP folder is identified by the serial number of the CLIP module and the ITU channel where it is assigned (default) or any name assigned to that CLIP module by a operator user through the Command Line Interface. Refer to the *Cisco ONS 15200 Command Line Interface Manual* for information on assigning a name to a CLIP module.

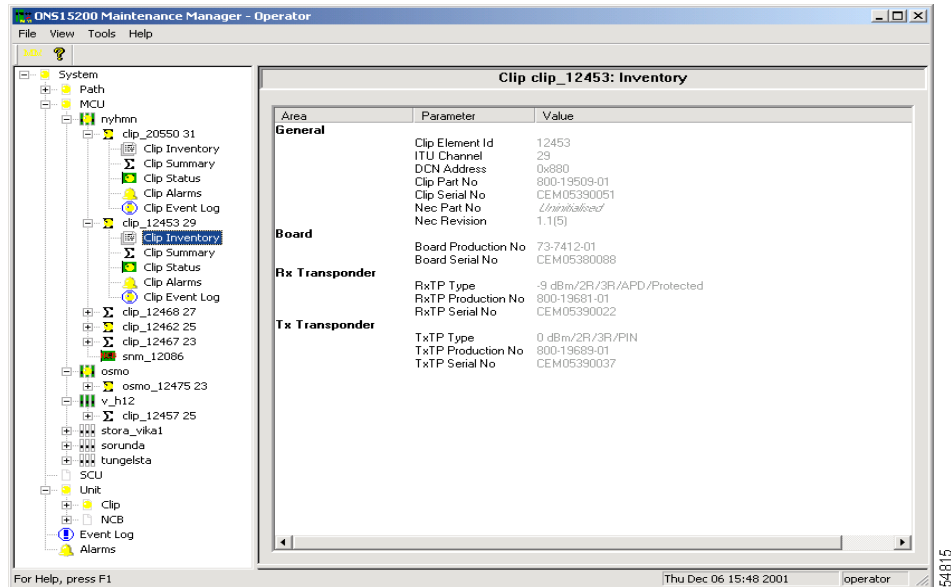
Each CLIP folder contains the following screens:

- CLIP Inventory
- CLIP Summary
- CLIP Status
- CLIP Alarms
- CLIP Event Log

2.2.4 Clip Inventory Screen

The Clip Inventory screen gives general system information, as well as information regarding the board, receive transponder, and transmit transponder (Figure 2-4).

Figure 2-4 Clip Inventory screen



2.2.5 Clip Summary Screen

The information available on the Clip Summary screen varies depending on whether the Clip Summary screen is associated with a CLIP module that is configured as protected or unprotected.

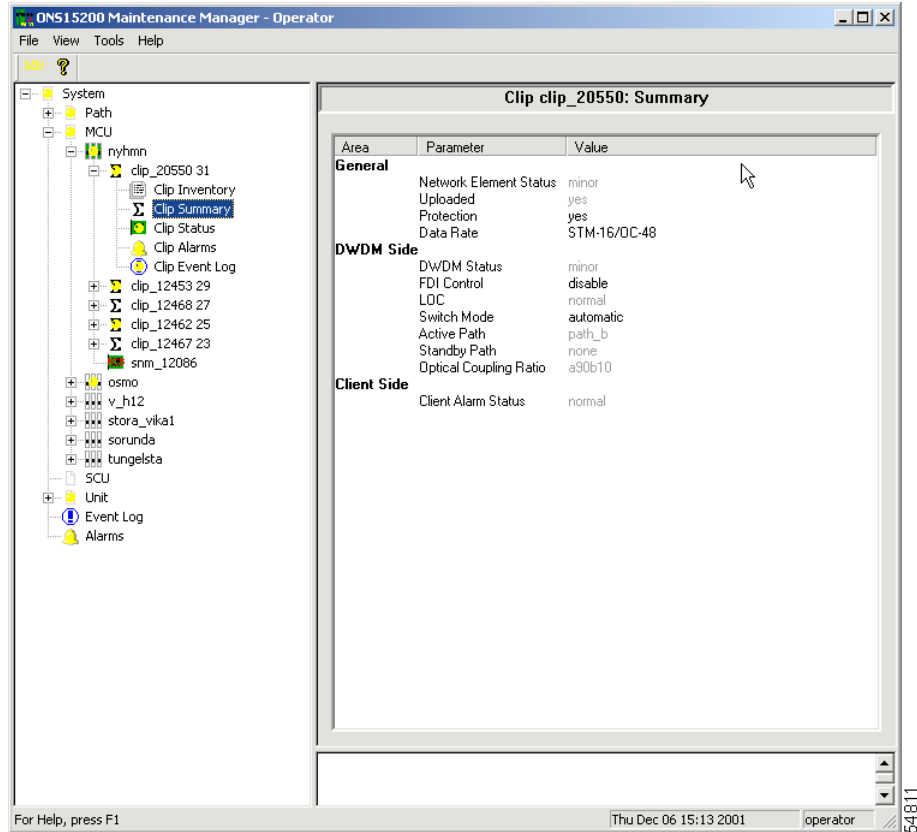
The following information is provided by the Clip Summary screen:

- Network Element Status
- Uploaded
- Protection
- Data Rate
- DWDM Status
- FDI Control
- LOC (Loss of Channel)
- Switch Mode (protected only)
- Active Path
- Standby Path (protected only)
- Optical Coupling Ratio
- Client Alarm Status

For more information regarding each parameter and whether you can configure it from Maintenance Manager, see Chapter 3, “CLIP Module Configuration.”

Figure 2-5 shows the Clip Summary screen for a protected CLIP module.

Figure 2-5 Clip Summary screen (protected)



2.2.6 Clip Status Screen

The information available on the Clip Status screen varies depending on whether the Clip Status screen is associated with a CLIP module that is configured as protected or unprotected.

The Clip Status screen provides the following information:

- FDI Alarm
- LOC
- DWDM RX Power (shown only on unprotected)
- DWDM A RX Power (shown only on protected)
- DWDM B RX Power (shown only on protected)
- DWDM Peltier Current
- DWDM Laser Temp
- DWDM Laser Bias
- Client RX Power
- Client Laser Bias
- Board Temperature

- Power
- CAN alarm
- QPP alarm (shown only on unprotected)
- QPP A alarm (shown only on protected)
- QPP B alarm (shown only on protected)
- DAC Alarm
- Flash Alarm
- Instruction Alarm

For more information regarding each parameter, see to Chapter 3, “CLIP Module Configuration.”

Figure 2-6 shows the Clip Status screen for a protected CLIP.

Figure 2-6 Clip Status screen (protected)

The screenshot shows the ONS15200 Maintenance Manager - Operator interface. The left pane displays a tree view of the system hierarchy, including System, Path, MCU, nyhmn, clip_20550 31, Clip Inventory, Clip Summary, Clip Status, Clip Alarms, Clip Event Log, clip_12453 29, clip_12468 27, clip_12462 25, clip_12467 23, srm_12086, stora_vika1, jonkoping, tungelsta, sorunda, osmo, SCU, Unit, Event Log, and Alarms. The right pane displays the 'Clip clip_20550: Status' screen, which contains a table of alarm parameters.

Area	Name	Suppress	Inhibit	Status	Low Alarm	Low Warning	Present Value	High Warning
DwDM Side	FDI Alarm	<input type="checkbox"/>	<input type="checkbox"/>	normal				
	LOC	<input type="checkbox"/>	<input type="checkbox"/>	normal				
	A Rx Power	<input type="checkbox"/>	<input type="checkbox"/>	lowalarm	-31.0	-28.0	-32.4	-10.0
	B Rx Power	<input type="checkbox"/>	<input type="checkbox"/>	normal	-31.0	-28.0	-15.7	-10.0
	Peltier Current	<input type="checkbox"/>	<input type="checkbox"/>	normal	-80	-60	-24	60
	Laser Temp	<input type="checkbox"/>	<input type="checkbox"/>	normal	19.6	21.1	22.1	23.1
	Laserbias	<input type="checkbox"/>	<input type="checkbox"/>	normal	5.7	10.0	14.4	21.5
Client Side	Rx Power	<input type="checkbox"/>	<input type="checkbox"/>	normal	-20.0	-16.0	-7.6	-6.0
	Laserbias	<input type="checkbox"/>	<input type="checkbox"/>	normal	4.2	10.3	26.0	41.3
Board	Board Temp	<input type="checkbox"/>	<input checked="" type="checkbox"/>	inhibited	0.0	10.0	44.3	70.0
	Power	<input type="checkbox"/>	<input type="checkbox"/>	normal				
DCN	CAN Alarm	<input type="checkbox"/>	<input type="checkbox"/>	normal				
	QPP A Alarm	<input type="checkbox"/>	<input type="checkbox"/>	normal				
	QPP B Alarm	<input type="checkbox"/>	<input type="checkbox"/>	normal				
Miscellane...	DAC Alarm	<input type="checkbox"/>	<input type="checkbox"/>	normal				
	Flash Alarm	<input type="checkbox"/>	<input type="checkbox"/>	normal				
	Instruction Alarm	<input type="checkbox"/>	<input type="checkbox"/>	normal				

For Help, press F1

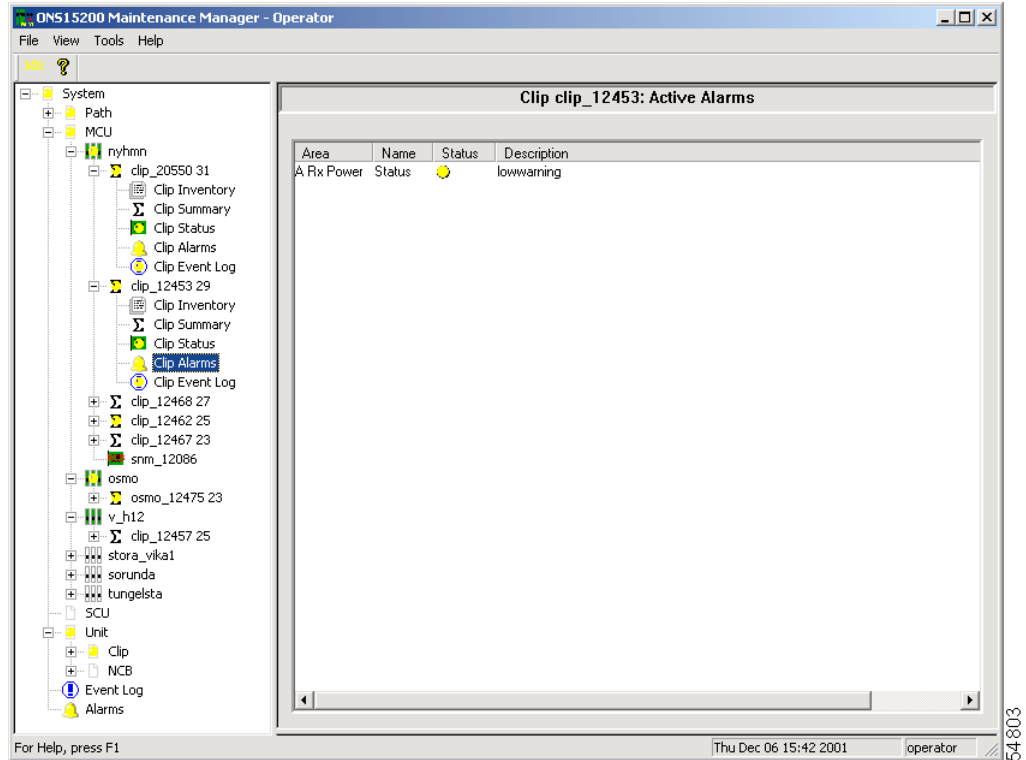
Fri Dec 07 10:18 2001 operator

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2.2.7 Clip Alarms Screen

The Clip Alarms screen provides a list of all active alarms involving that CLIP module (Figure 2-7). A system alarm screen is also available for the complete ONS 15200 system. For more information regarding each parameter, see Chapter 4, “Alarms.” For more information regarding individual alarms, refer to the *Cisco ONS 15200 Product Description*.

Figure 2-7 Clip Active Alarms screen



2.2.8 Clip Event Log Screen

The Clip Event Log screen provides a tabular list of system events (Figure 2-8). The following information is provided:

- Time—in the format month, day, year, and time
- Type—informational, warning, or error
- Source—displays the CLIP module error/number
- Description—displays a description of the event

Figure 2-8 Clip Event Log screen

The screenshot shows the ONS15200 Maintenance Manager - Operator interface. The left pane displays a tree view of the system hierarchy, including System, Path, MCU, nyhmn, clip_20550 31, clip_12453 29, clip_12468 27, clip_12462 25, clip_12467 23, snm_12086, osmo, osmo_12475 23, v_h12, clip_12457 25, stora_vikal, sorunda, tungelsta, SCU, Unit, Clip, NCB, Event Log, and Alarms. The right pane displays the Clip Event Log for clip_12453, showing a table of event log entries.

Time	Type	Source	Description
12/06/01 14:54:23	Informational	clip_12453	Set 'dwdm.standbyok' = "path_b".
12/06/01 14:54:23	Informational	clip_12453	Set 'dwdm.activeok' = "path_a".
12/06/01 14:54:23	Informational	clip_12453	Set 'dwdm.loc' = "normal".
12/06/01 14:54:23	Informational	clip_12453	Set 'dwdm.actled' = "a_on".
12/06/01 14:54:23	Informational	clip_12453	Set 'dwdm.stbled' = "b_on".
12/06/01 14:54:23	Informational	clip_12453	Set 'dwdm.standbyok' = "undefined".
12/06/01 14:54:23	Informational	clip_12453	Set 'dwdm.activeok' = "undefined".
12/06/01 14:54:23	Informational	clip_12453	Set 'dwdm.loc' = "undefined".
12/06/01 14:54:22	Informational	clip_12453	Set 'misc.status' = "normal".
12/06/01 14:54:22	Informational	clip_12453	Set 'uploaded' = "no".
12/06/01 14:54:22	Informational	clip_12453	Set 'subscriber' = "mm".
12/06/01 14:54:22	Informational	clip_12453	Set 'position' = "rack(3)_slot(2)".
12/06/01 14:54:22	Informational	clip_12453	Set 'neid' = "12453".
12/06/01 14:54:22	Informational	clip_12453	Set 'dcnaddress' = "0x880".

For Help, press F1 Thu Dec 06 15:44 2001 operator

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CLIP Module Configuration

This chapter describes how to view and modify the configuration of the Client Layer Interface Port (CLIP) modules using the Maintenance Manager. Refer to the *Cisco ONS 15200 Command Line Interface Manual* for information about parameters shown in the Maintenance Manager.

3.1 Clip Inventory

The Clip Inventory screen provides information about the selected CLIP module. The Clip Inventory screen is divided into four areas: General, Board, RX (receive) transponder, and TX (transmit) transponder. There are no editable fields on the Module Inventory screen.

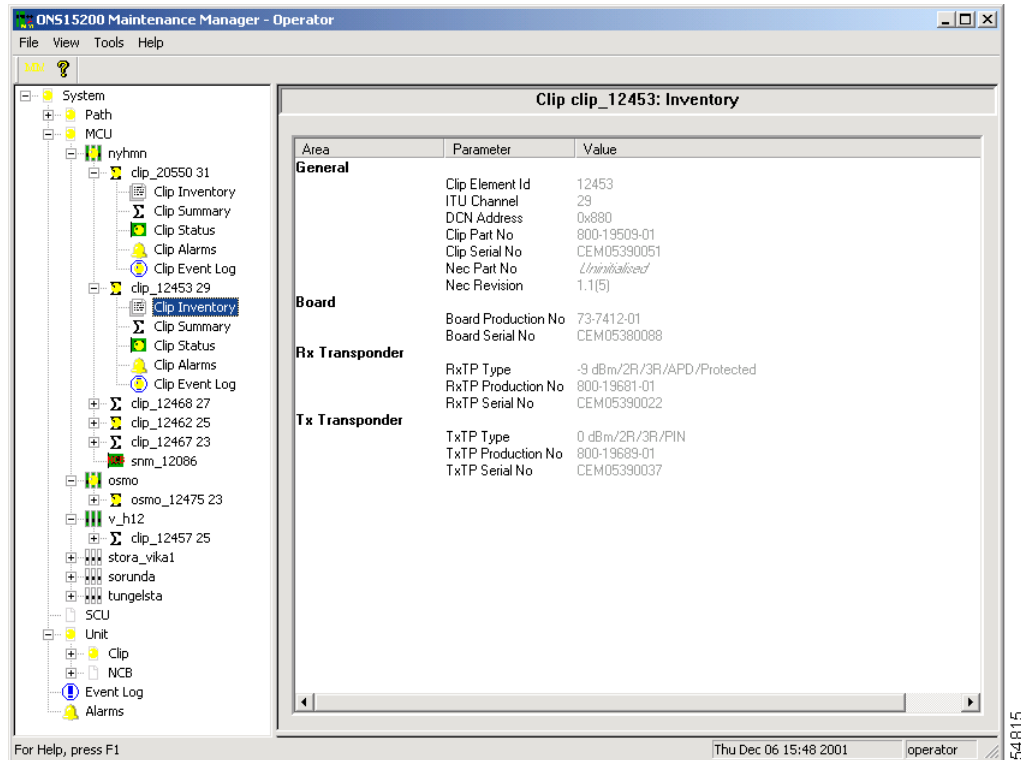
3.1.1 General

The General area of the Clip Inventory screen displays inventory information about the entire CLIP module (Figure 3-1). See Table 3-1 for general parameters.

Table 3-1 *Clip Inventory Screen - General*

Parameter	Definition
Clip Element Id	Displays the ID of the Client Layer Interface Port (CLIP) module.
ITU Channel	Displays the channel where the CLIP module is configured to operate. Channels are defined according to the standard ITU grid.
DCN Address	Defines the Data Control Network address assigned to this module.
Clip Part No	Displays the Cisco part number for the CLIP module.
Clip Serial No	Displays the Cisco serial number for the CLIP module.
CLEI code	Displays the CLEI code for the selected module.
NEC Part No	Displays the Network Element Controller part number.
FW Revision No	Displays the revision number of the firmware.

Figure 3-1 Clip Inventory screen



3.1.2 Board

The Board area of the Clip Inventory screen displays inventory information about the main circuit board on the CLIP module (Figure 3-1). See Table 3-2 for Board parameters.

Table 3-2 Clip Inventory Screen – Board

Parameter	Definition
Board Production No	Displays the part number assigned to the CLIP module main circuit board.
Board Serial No	Displays the Cisco serial number of the CLIP module main circuit board.

3.1.3 Rx Transponder

The Rx Transponder area of the Clip Inventory screen displays inventory information about the Rx transponder submodule on the CLIP module (Figure 3-1). See Table 3-3 for Rx Transponder parameters.

Table 3-3 Clip Inventory Screen - Rx Transponder

Parameter	Definition
RxTP Type	Displays the type of Rx transponder installed on the selected CLIP module. The <i>Type</i> definition is divided into these parts: <ul style="list-style-type: none"> • Client laser nominal optical power • Level of signal regeneration (3R, 2R/3R) • APD (only option available) • Protected or unprotected
RxTP Production No	Displays the Cisco part number of the Rx transponder module installed on the selected CLIP module.
RxTP Serial No	Displays the serial number of the Rx transponder module installed on the selected CLIP module.

3.1.4 Tx Transponder

The Tx Transponder area of the Clip Inventory screen displays inventory information about the Tx transponder submodule on the CLIP module (Figure 3-1). See Table 3-4 for Tx Transponder parameters.

Table 3-4 Clip Inventory Screen - Tx Transponder

Parameter	Definition
TxTP Type	Displays the type of Tx transponder installed on the selected CLIP module. The TxTP Type definition has these parts: <ul style="list-style-type: none"> • Transmitted optical power • Level of signal regeneration (3R, 2R/3R) • Protected or unprotected
TxTP Production No	Displays the Cisco part number of the Tx transponder module installed on the selected CLIP module.
TxTP Revision No	Displays the revision of the Tx transponder module installed on the selected CLIP module.
TxTP Serial No	Displays the Cisco serial number of the Tx transponder module installed on the selected CLIP module.

3.2 Clip Summary

The Clip Summary screen displays the configuration of the selected CLIP module (Figure 3-2). The Clip Summary screen is divided into three areas: General, DWDM Side, and Client Side.

The information available on the Summary screen varies, depending on whether the Summary screen is associated with a CLIP module configured as protected or unprotected. Figure 3-2 shows the Summary screen for a protected CLIP. The Summary screen for unprotected clip modules does not show the Switch Mode or Standby Path fields.

The following fields on the Summary screen can be edited by the operator:

- Protection
- Data Rate
- FDI Switch
- Switch Mode (protected CLIPs only)

Figure 3-2 Clip Summary screen (protected)

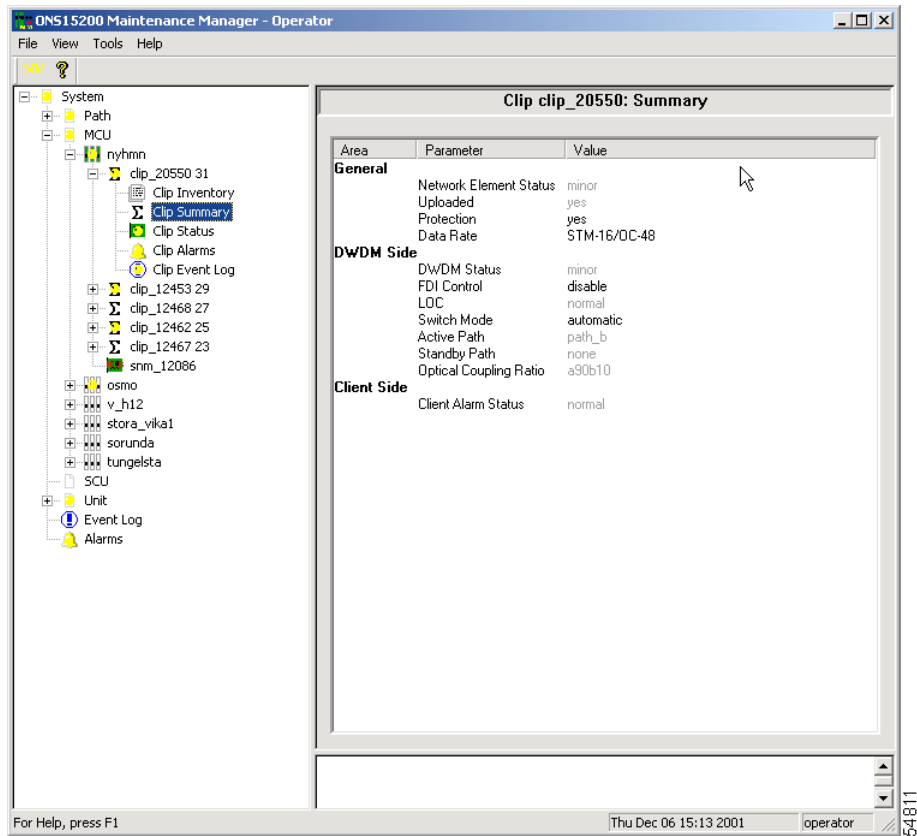
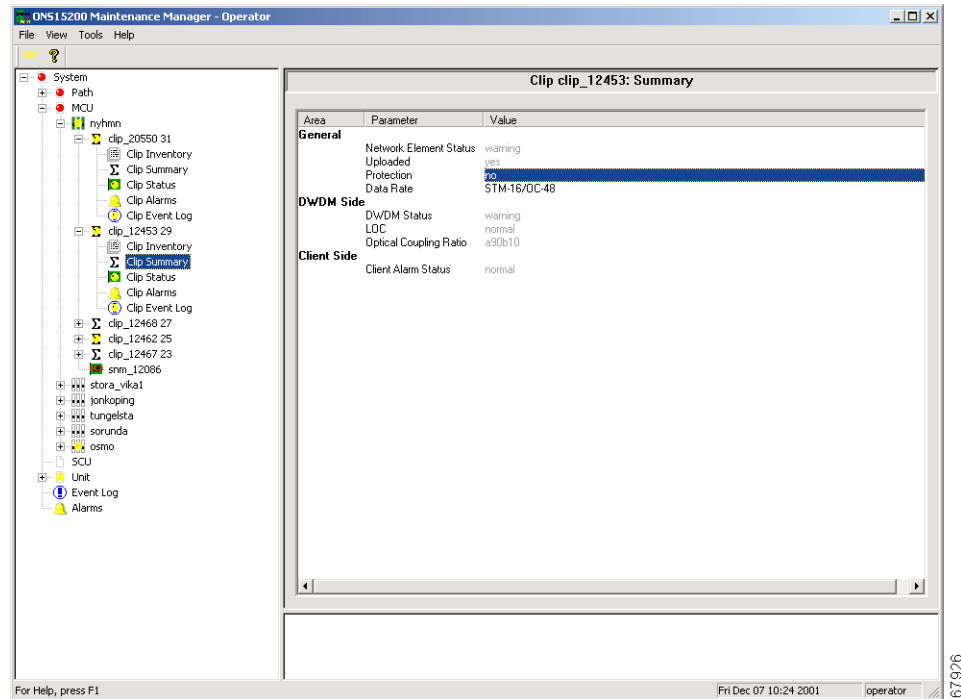


Figure 3-3 Clip Summary screen (unprotected)



3.2.1 General

The General area of the Clip Summary screen describes general parameters that apply to the CLIP module. The values for the Protection Data Rate field can be changed by the operator. Table 3-5 describes the parameters found in the General area of the Clip Summary screen.

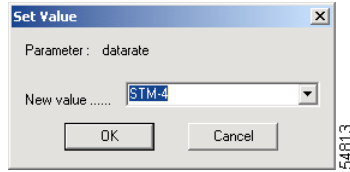
Table 3-5 Clip Summary Screen—General

Parameter	Value
Network Element Status	<p>Uninit—The Maintenance Manager did not receive any information from the selected CLIP module.</p> <p>Normal—The selected CLIP module has not reported any alarms.</p> <p>Warning—The selected CLIP module has reported a condition that exceeds a high warning or lower warning threshold value.</p> <p>Minor—The selected CLIP module generated a minor alarm based on a condition that exceeds a high alarm or lower alarm threshold value.</p> <p>Major—The selected CLIP module generated a major alarm based on a condition that exceeds a high alarm or lower alarm threshold value.</p> <p>Critical—The selected CLIP module generated a critical alarm based on a condition that exceeds a high alarm or lower alarm threshold value.</p> <p>Installed—The NE detects the physical presence of the CLIP module, but data from the CLIP module has not been uploaded yet. Possible causes include a faulty connection or lack of management of the CLIP.</p> <p>Not_installed—The NE has lost contact with the CLIP module.</p> <p>Undefined—An alarm was received but its content cannot be interpreted.</p>
Protection	<p>Yes—The selected CLIP module’s traffic is protected on another circuit.</p> <p>No—The selected CLIP module’s traffic is not protected on another circuit.</p>
Uploaded	<p>Yes—When the CLIP was detected, all required data about the CLIP was successfully retrieved from the CLIP.</p> <p>No—When the CLIP was detected, all required data about the CLIP was not successfully retrieved from the CLIP. To move the Uploaded state from No to Yes, you can manually select Upload from the Tools/Clip menu or right-click the specified CLIP and select Upload.</p> <p>Note If this parameter is set to No, the Network Element Status value will be Installed. Thereby the Status will not be recognized and there will be no status information in the Explorer View (tree control).</p>
Data Rate	Describes the rate at which data is being transmitted in and by the ONS 15200 system. The operator can change this value. The “Changing the Data Rate” section on page 3-6 describes the procedure for changing the data rate.

3.2.2 Changing the Data Rate

Follow these steps to change the data rate for the selected CLIP module:

-
- Step 1** Open the Clip Summary screen and double-click the **Data Rate** value. The Set Value screen opens (Figure 3-4).
 - Step 2** Select the desired data rate from the list. Table 3-6 describes the data rate selections available.
 - Step 3** Click **OK**. The selected data rate appears on the Clip Summary screen. The change is effective immediately.

Figure 3-4 Set Value (datarate) window**Table 3-6 Data Rate Values**

Parameter	Value
OC-3	The selected CLIP module will transmit at a bit rate of 155 Mbps.
STM-1	The selected CLIP module will transmit at a bit rate of 155 Mbps.
OC-12	The selected CLIP module will transmit at a bit rate of 622 Mbps.
STM-4	The selected CLIP module will transmit at a bit rate of 622 Mbps.
OC-48	The selected CLIP module will transmit at a bit rate of 2.5 Gbps.
STM-16	The selected CLIP module will transmit at a bit rate of 2.5 Gbps.
gbit_eth	The selected CLIP module will transmit data at a gigabit ethernet rate (approximately 1.25 Gbps).
pass_through	The selected CLIP module will allow data to pass through regardless of data rate (available only for 2R/3R CLIP modules).

3.2.3 DWDM Side

The DWDM Side area of the Clip Summary screen describes parameters that apply to the ONS 15200 transmissions between CLIP modules. The values for the Switch Mode field can be changed by the operator. Table 3-7 describes the DWDM Side parameters.

Table 3-7 *Clip Summary Screen - DWDM Side*


Parameter	Value
DWDM Status	<ul style="list-style-type: none"> • Normal—The selected CLIP module has not reported any alarms. • Warning—The selected CLIP module has reported a condition that exceeds a high warning or lower warning threshold value. • Minor—The selected CLIP module generated a minor alarm based on a condition that exceeds a high alarm or lower alarm threshold value. • Major—The selected CLIP module generated a major alarm based on a condition that exceeds a high alarm or lower alarm threshold value. • Critical—The selected CLIP module generated a critical alarm based on a condition that exceeds a high alarm or lower alarm threshold value.
FDI Switch	<p>Enable—If a protected CLIP module receives a Forward Defect Indication (FDI) alarm, it will automatically switch to the standby path.</p> <p>Disable—If a protected CLIP module receives a FDI alarm, it will not switch to the standby path.</p> <p> Caution Setting this parameter to Disable could be traffic affecting if an FDI alarm is received.</p>
Switch Mode	<p>(Displayed only if the CLIP supports fiber protection.)</p> <p>Displays the switching scheme assigned to the selected CLIP module. The operator can change this value.</p> <p>The switching scheme selected determines how the ONS 15200 system will behave if the input signal is lost on the active path. The “Procedure: Change the Switch Mode” section on page 3-9 describes the procedure for changing the switching scheme.</p>
Active Path	Displays the primary path on which the CLIP module is receiving. In protected configurations, the active path can be either path_a or path_b.

Table 3-7 Clip Summary Screen - DWDM Side (continued)

Parameter	Value
Standby Path (protected channel only)	<p>Displays the secondary path on which the CLIP module is receiving. In the event of a disruption on the primary path, the system uses the signal received on the standby path. The standby path is always the opposite of the active path, if it exists.</p> <p>Note When switch mode is set to either forced_a or forced_b, there is no alternative standby signal. The system is forced to use either the a or b path.</p>
Optical Coupling Ratio	<p>Describes how the optical power is split between the A side and the B side of the system.</p> <p>In a protected system the following values are available:</p> <ul style="list-style-type: none"> • a90b10—90% of the optical power is allocated to the A side and 10% of the optical power is allocated to the B side. • a50b50—50% of the optical power is allocated to the A side and 50% of the optical power is allocated to the B side. • a10b90—10% of the optical power is allocated to the A-side and 90% of the optical power is allocated to the B side. <p>In an unprotected system the following values are available:</p> <ul style="list-style-type: none"> • a100b0—100% of the optical power is allocated to the A side and 0% of the optical power is allocated to the B side. • a0b100—0% of the optical power is allocated to the A side and 100% of the optical power is allocated to the B side.

Procedure: Change the Switch Mode



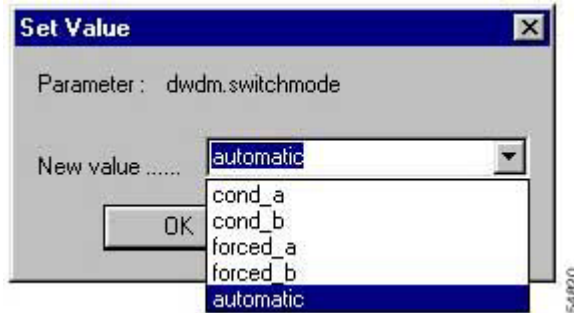
Note

Switch mode is only available on protected channels.

Follow these steps to change the switch mode for the selected CLIP module:

- Step 1** On the Clip Summary screen double-click the **Switch Mode** value (Figure 3-2). The Set Value window opens (Figure 3-5).

Figure 3-5 Set Value (dwdm.switchmode) window



- Step 2** Select the desired switch mode from the list. Table 3-8 describes the selections available.
- Step 3** Click **OK**. The value appears on the Clip Summary screen. The changes are effective immediately.

Table 3-8 Switch Mode Values

Parameter	Value
cond_a	Automatically selects path A as the primary path if the signal on the A side is present. If the signal is lost and power is present on the B side, the path switches. However, as soon as the A-side signal returns, the signal reverts to the A side.
cond_b	Automatically selects path B as the primary path if the signal on the B side is present. If the signal is lost and power is present on the A side, the path switches. However, as soon as the B side signal returns, the signal reverts to the B side.
forced_a	Forces traffic to the A side. Note If the switch mode is set to forced_a, traffic cannot revert to the B side if the A side fails.
forced_b	Forces traffic to the B side. Note If the switch mode is set to forced_b, traffic cannot revert to the A side if the B side fails.
automatic	Automatically switches traffic to the standby path when the active path input signal is lost. The switch is non-revertive.

3.2.4 Client Side

The Client Side area of the Clip Summary screen describes parameters that apply to the ONS 15200 transmissions between the selected CLIP module and the client equipment. Values in this section cannot be modified by the operator. The Client Alarm Status can be set to the follow values:

- Normal—The selected CLIP module has not reported any alarms.
- Warning—The selected CLIP module has reported a condition that exceeds a high warning or lower warning threshold value.
- Minor—The selected CLIP module generated a minor alarm based on a condition that exceeds a high alarm or lower alarm threshold value.

- Major—The selected CLIP module generated a major alarm based on a condition that exceeds a high alarm or lower alarm threshold value.
- Critical—The selected CLIP module generated a critical alarm based on a condition that exceeds a high alarm or lower alarm threshold value.

3.3 Clip Status

The Clip Status screen displays the operating status of the CLIP module (Figure 3-6). Table 3-9 describes the parameters found in this screen.

Table 3-9 CLIP Module Status Screen Parameters

Parameter	Definition
Area	Describes the type of information available.
Name	Displays the name of the measurement or alarm.
Suppress	Contains a checkbox to select or deselect the Suppress feature, which suppresses the alarm in the local database. The CLIP will still send all future alarms to all subscribers including the local database.
Inhibit	Contains a checkbox to select or deselect the Inhibit feature, which inhibits the alarm on the CLIP.
Status	Describes the status of the alarm. The following values are possible: <ul style="list-style-type: none"> • Normal—The selected CLIP module has not reported any alarms. • Uninit—The Maintenance Manager did not receive any information from the selected CLIP module. • Lowalarm—The CLIP module recorded an event that exceeded the lower alarm threshold for the selected parameter. • Lowwarning—The CLIP module recorded an event that exceeded the lower warning threshold for the selected parameter. • Suppressed—The selected parameter will not report its status. (Also indicated by a selected Suppress Alarm checkbox.) • Highwarning—The CLIP module recorded an event that exceeded the high warning threshold for the selected parameter. • Highalarm—The CLIP module recorded an event that exceeded the high alarm threshold for the selected parameter.
Low Alarm	Displays the lower threshold value that will cause an alarm to be generated.
Low Warning	Displays the lower threshold value that will cause a warning to be generated.
Present Value	Displays the real-time value of the parameter as measured by the module.
High Warning	Displays the upper threshold value that will cause a warning to be generated.
High Alarm	Displays the upper threshold value that will cause an alarm to be generated.
Unit	Displays the unit of measure for the values of the selected parameter.

Figure 3-6 Clip Status screen (protected)

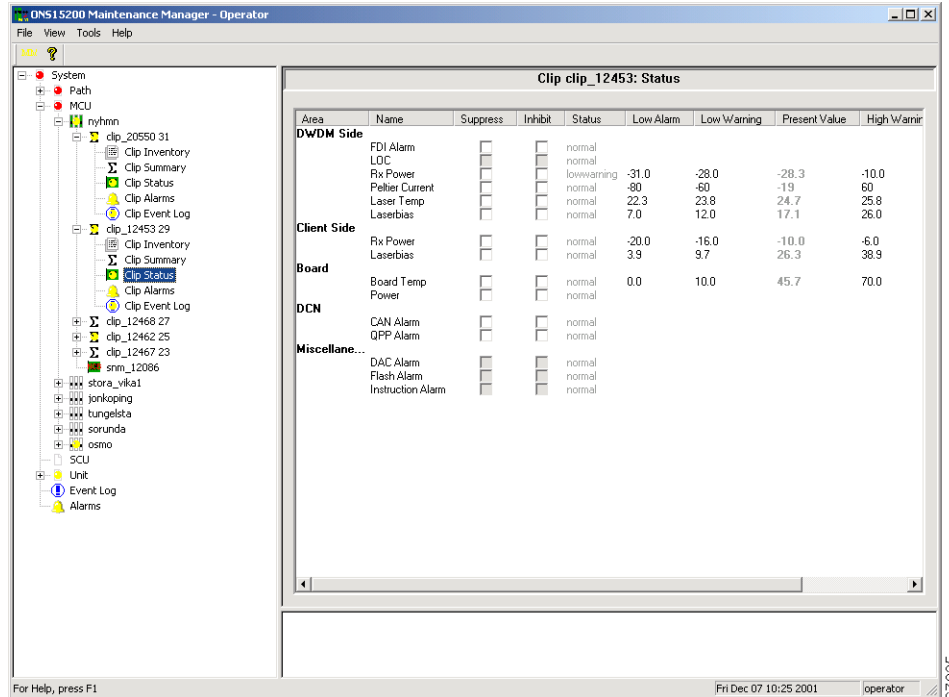
The screenshot shows the ONS 15200 Maintenance Manager - Operator interface. The left pane displays a tree view of the system hierarchy, including System, Path, MCU, nyhmn, clip_20550 31, Clip Inventory, Clip Summary, Clip Status (selected), Clip Alarms, Clip Event Log, and other clips. The right pane displays the 'Clip clip_20550: Status' window, which contains a table of alarm parameters.

Area	Name	Suppress	Inhibit	Status	Low Alarm	Low Warning	Present Value	High Warning
DWDM Side	FDI Alarm	<input type="checkbox"/>	<input type="checkbox"/>	normal				
	LOC	<input type="checkbox"/>	<input type="checkbox"/>	normal				
	A Rx Power	<input type="checkbox"/>	<input type="checkbox"/>	lowalarm	-31.0	-28.0	-32.4	-10.0
	B Rx Power	<input type="checkbox"/>	<input type="checkbox"/>	normal	-31.0	-28.0	-15.7	-10.0
	Peltier Current	<input type="checkbox"/>	<input type="checkbox"/>	normal	-80	-60	-24	60
Client Side	Laser Temp	<input type="checkbox"/>	<input type="checkbox"/>	normal	19.6	21.1	22.1	23.1
	Laserbias	<input type="checkbox"/>	<input type="checkbox"/>	normal	5.7	10.0	14.4	21.5
Board	Rx Power	<input type="checkbox"/>	<input type="checkbox"/>	normal	-20.0	-16.0	-7.6	-6.0
	Laserbias	<input type="checkbox"/>	<input type="checkbox"/>	normal	4.2	10.3	26.0	41.3
DCN	Board Temp	<input type="checkbox"/>	<input checked="" type="checkbox"/>	inhibited	0.0	10.0	44.3	70.0
	Power	<input type="checkbox"/>	<input type="checkbox"/>	normal				
Miscellaneous...	CAN Alarm	<input type="checkbox"/>	<input type="checkbox"/>	normal				
	QPP A Alarm	<input type="checkbox"/>	<input type="checkbox"/>	normal				
	QPP B Alarm	<input type="checkbox"/>	<input type="checkbox"/>	normal				
Miscellaneous...	DAC Alarm	<input type="checkbox"/>	<input type="checkbox"/>	normal				
	Flash Alarm	<input type="checkbox"/>	<input type="checkbox"/>	normal				
	Instruction Alarm	<input type="checkbox"/>	<input type="checkbox"/>	normal				

For Help, press F1 Fri Dec 07 10:18 2001 operator

54809

Figure 3-7 Clip Status screen (unprotected)



The Clip Status screen is divided into four areas: DWDM Side, Client Side, Environment, and DCN. The DWDM Side area lists the settings and current values of the signal from the DWDM side of the ONS 15200 system. Parameters listed in the Client Side area describes the quality of the signal received from the client equipment. The Environment area provides the board temperature and power of the CLIP module. The DCN area indicates any Control Area Network (CAN) or QPP alarms.

The information available on the Status screen varies, depending on whether the associated CLIP module is configured as protected or unprotected. Figure 3-6 shows the Status screen for a protected CLIP. The Status screen for unprotected CLIP modules shows only a general DWDM Rx Power field.

For each parameter, the following fields can be modified:

- High Alarm threshold
- High Warning threshold
- Low Alarm threshold
- Low Warning threshold

Procedure: Suppress Alarms

Follow these steps to configure alarms and warnings so they are not reported.



Caution

Suppressing alarms can be service affecting.

Step 1

Select the **Suppress Alarms** checkbox for the alarm or warning you want to suppress. A check mark appears in the box.

Step 2 To configure the alarm to report, clear the checkbox.

Procedure: Set Threshold Values

Follow these steps to set the CLIP module threshold available on the Clip Status screen:

Step 1 Double-click the desired threshold value. The Set Value window appears.

Step 2 Type the desired value.

Step 3 Click **OK**. The new threshold value takes effect immediately.

3.3.1 DWDM Side

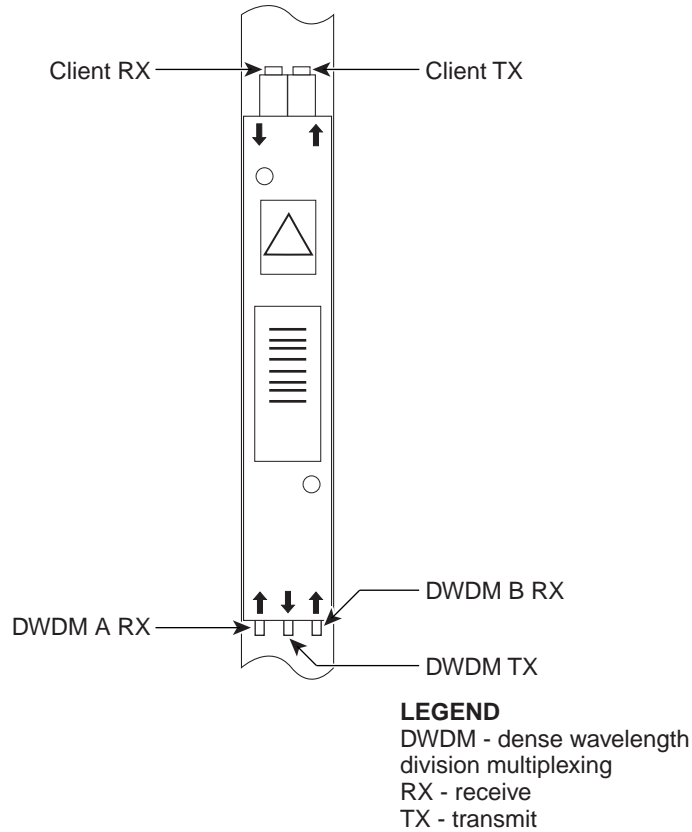
The DWDM Side area of the Clip Status screen describes how the CLIP module is operating in relation to the MCU and SCUs that make up the ONS 15200 network (Figure 3-6). Values for A RX Power, B RX Power, Peltier Current, Laser Temperature, and Laser Bias are listed in this section. Table 3-10 describes the optical network parameters. All parameters except FDI Alarm and LOC can be suppressed/inhibited.

Table 3-10 *Clip Status - DWDM Side*

Parameter	Definition
FDI Alarm	Displays whether the CLIP module received a Forward Defect Indication (FDI) alarm.
LOC	Displays whether the CLIP module received a Loss of Channel (LOC) alarm.
A RX Power (protected channels only)	Displays the values associated with the strength of the signal received from the A-side MCU or SCU.
B RX Power (protected channels only)	Displays the values associated with the strength of the signal received from the B-side MCU or SCU.
RX Power (non-protected channels only)	Displays the values associated with the strength of the received signal.
Peltier Current	Displays the values associated with the strength of the current to the Peltier device. The Peltier device regulates the temperature of the laser and maintains the wavelength of the transmitted signal.
Laser Temp	Displays the values associated with the temperature of the laser that transmits to the SCUs and MCU in the ONS 15200 network.
Laserbias	Displays the laser bias current for the selected CLIP module.

Figure 3-8 shows the RX and TX power measurement points for the optical network interfaces on a CLIP module.

Figure 3-8 CLIP module RX and TX points



3.3.2 Client Side

The Client Side area of the Clip Status screen describes how the CLIP module is operating in relation to the client equipment attached to the ONS 15200 system. Values for Client RX Power and Laser Bias are listed on this screen. Table 3-11 describes the client access parameters.

Table 3-11 *Clip Status - Client Side*

Parameter	Definition
RX Power	Displays the strength of the signal received from the client equipment attached to the ONS 15200 network.
Laserbias	Displays the laser bias current for the selected CLIP module.

3.3.3 Board

The Board area of the Clip Status screen provides the Board Temperature and Power parameters for the CLIP module. Table 3-12 describes the Board parameters.

Table 3-12 Clip Status - Environment

Parameter	Definition
Board Temperature	Displays the values associated with the ambient temperature on the surface of the CLIP module.
Power	Displays the status of the input power coming into the SCU or MCU from the AC to DC converter.

3.3.4 DCN

The DCN area of the Clip Status screen provides the CAN bus and QPP signal status. Table 3-13 describes the DCN parameters.

Table 3-13 Clip Status - DCN

Parameter	Definition
CAN alarm	Displays the status of the CAN bus.
QPP A alarm (protected only)	Displays the transmission status of the internal datacom link on the A side of the network.
QPP B alarm (protected only)	Displays the transmission status of the internal datacom link on the B side of the network.
QPP alarm (unprotected only)	Displays the transmission status of the internal datacom link of the network.

3.3.5 Miscellaneous

The Miscellaneous area of the Clip Status screen provides miscellaneous hardware and software alarm information status. Table 3-14 describes the DCN parameters.

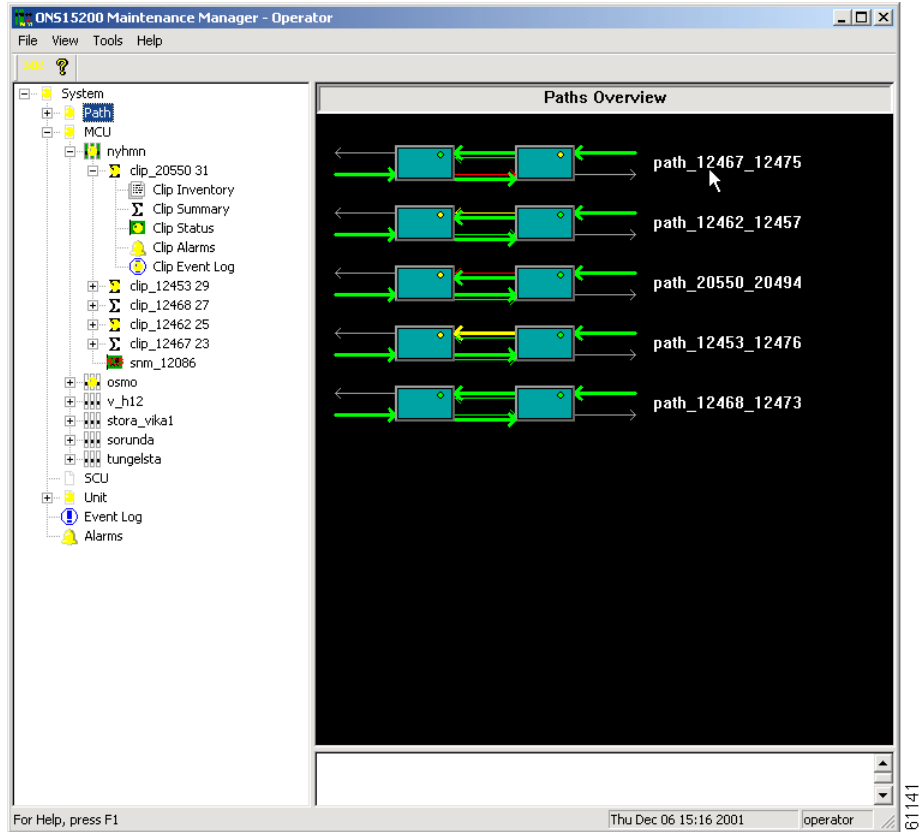
Table 3-14 Clip Status - Miscellaneous

Parameter	Definition
DAC alarm	A hardware fault relating to the digital/analog converter (DAC) has occurred.
Flash alarm	A hardware fault relating to the eeprom has occurred.
Instruction alarm	An entity is trying to write to an unavailable position.

3.4 Path Folder Overview

The Path Folder Overview screen provides a graphical representation of the optical paths configured for the ONS 15200 network (Figure 3-9). LEDs indicate active alarms on the NE. The signal direction is indicated by the lines entering or exiting the NE. Green lines indicate inbound signals and white lines indicate outbound signals. A red line indicates inbound signals that have alarms somewhere on the path.

Figure 3-9 Path Folder Overview screen





Alarms

This chapter describes how to view system-level alarms for the Cisco ONS 15200 network using the Maintenance Manager application, including alarms specific to the selected Client Layer Interface Port (CLIP) module, all alarms recorded by the system, and all events recorded by the system.

4.1 Clip Active Alarms Screen

The Clip Active Alarms screen provides a list of active alarms for the selected CLIP module (Figure 4-1). This screen has four columns: Area, Name, Status, and Description. Table 4-1 describes each of the columns on the Clip Active Alarms screen and lists the possible values.

Table 4-1 *Clip Active Alarms Screen Columns*

Parameter	Definition
Area	Displays the label under which the alarm occurs. In most cases this is the name of the parameter that generated the alarm.
Name	Displays the type of alarm.
Status	Displays the severity of the alarm: <ul style="list-style-type: none"> • Yellow—Warning • Red—Critical or major alarm
Description	Displays the system descriptor for the alarm: <ul style="list-style-type: none"> • lowwarning • highwarning • lowalarm • highalarm • minor • major • critical • alarm • raised • power1_fail • power2_fail • uninit • warning • unidentified • incomplete

Figure 4-1 Clip Active Alarms screen

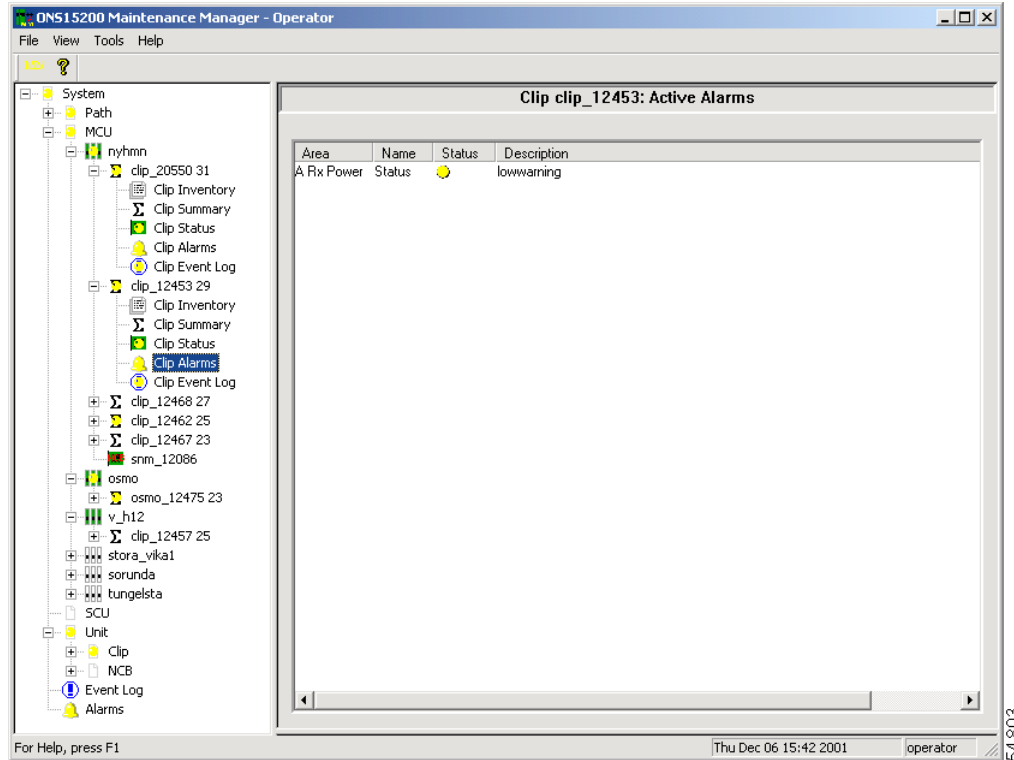


Table 4-2 describes the alarms that could appear in the Name column.

Table 4-2 Environment Parameter Definitions

Alarm Name (Area)	Definition	Alarm Type (Name)
DWDM_ARXPOWER (protected channels only)	Indicates that the power input from the A side of the ONS 15200 network is outside the acceptable power range.	Status
DWDM_BRXPOWER (protected channels only)	Indicates that the power input from the B side of the ONS 15200 network is outside the acceptable power range.	Status
DWDM_RXPOWER (non-protected channels only)	Indicates that the power input from the ONS 15200 network is outside the acceptable power range.	Status
DWDM_PELTIERCURRENT	Indicates that the Peltier current of the selected CLIP module is outside the acceptable power range.	Status
DWDM_FDI	Indicates that the selected CLIP module has received an FDI alarm from the NE upstream.	—
DWDM_LOC	If the selected CLIP module is protected, it indicates that the CLIP has lost input power on the A and B sides. If the selected CLIP module is unprotected, it indicates that the CLIP has lost input power.	—

Table 4-2 Environment Parameter Definitions (continued)

Alarm Name (Area)	Definition	Alarm Type (Name)
DWDM_LASERTEMP	Indicates that the temperature of the laser transmitting to the ONS 15200 network is outside the acceptable temperature range.	Status
CLIENT_RXPOWER	Indicates that the power input from the client equipment is outside the acceptable power range.	Status
CLIENT_LASERTEMP	Indicates that the temperature of the laser transmitting to the client equipment is outside the acceptable temperature range.	Status
CLIENT_LASERBIAS	Displays the value of the current component added to the modulation current in order to obtain a proper operating point for the laser.	—
DWDM_LASERBIAS	Displays the value of the current component added to the modulation current in order to obtain a proper operating point for the laser.	—
BOARD_TEMP	Indicates that the temperature on the surface of the CLIP module circuit board is outside the acceptable temperature range.	Status
BOARD_POWER	Indicates that the power of the CLIP module circuit board is outside the acceptable range.	Status
DCN_QPPA (protected channels only)	Indicates an error on the internal datacom link on the A side of the network.	—
DCN_QPPB (protected channels only)	Indicates an error on the internal datacom link on the B side of the network.	—
DCN_QPP (non-protected channels only)	Indicates an error on the network's internal datacom link.	—
DCN_CAN	Indicates an error on the Control Area Network (CAN) bus.	—
POWER1	Indicates that the primary power input is outside the acceptable range.	Status
POWER2	Indicates that the secondary power input is outside the acceptable range.	Status
MISC_DAC	Indicates a hardware fault relating to the digital/analog converter (DAC) has occurred.	—
MISC_FLASH	Indicates a hardware fault relating to the eeprom has occurred.	—
MISC_INSTRUCTION	Indicates an entity is trying to write to an unavailable position.	—

4.2 System Active Alarms Screen

The System Active Alarms screen (Figure 4-2) displays alarms recorded for all modules installed on the network. The System Active Alarms screen has five columns: CLIP, Area, Name, Status, and Description. Table 4-3 describes the columns on the System Active Alarms screen and lists the possible values.

Figure 4-2 System Active Alarms screen

The screenshot shows the 'System Active Alarms' screen in the ONS 15200 Maintenance Manager - Operator interface. The interface includes a menu bar (File, View, Tools, Help) and a toolbar. The left pane displays a tree view of the system hierarchy, with 'Alarms' selected under 'Event Log'. The right pane displays a table of active alarms.

CLIP	Area	Name	Status	Description
clip_20550	A Rx Power	Status	Red	lowalarm
clip_12453	A Rx Power	Status	Yellow	lowwarning
clip_12462	A Rx Power	Status	Yellow	lowwarning
osmo_12475	A Rx Power	Status	Red	lowalarm

or Help, press F1 Fri Dec 07 16:16 2001 operator

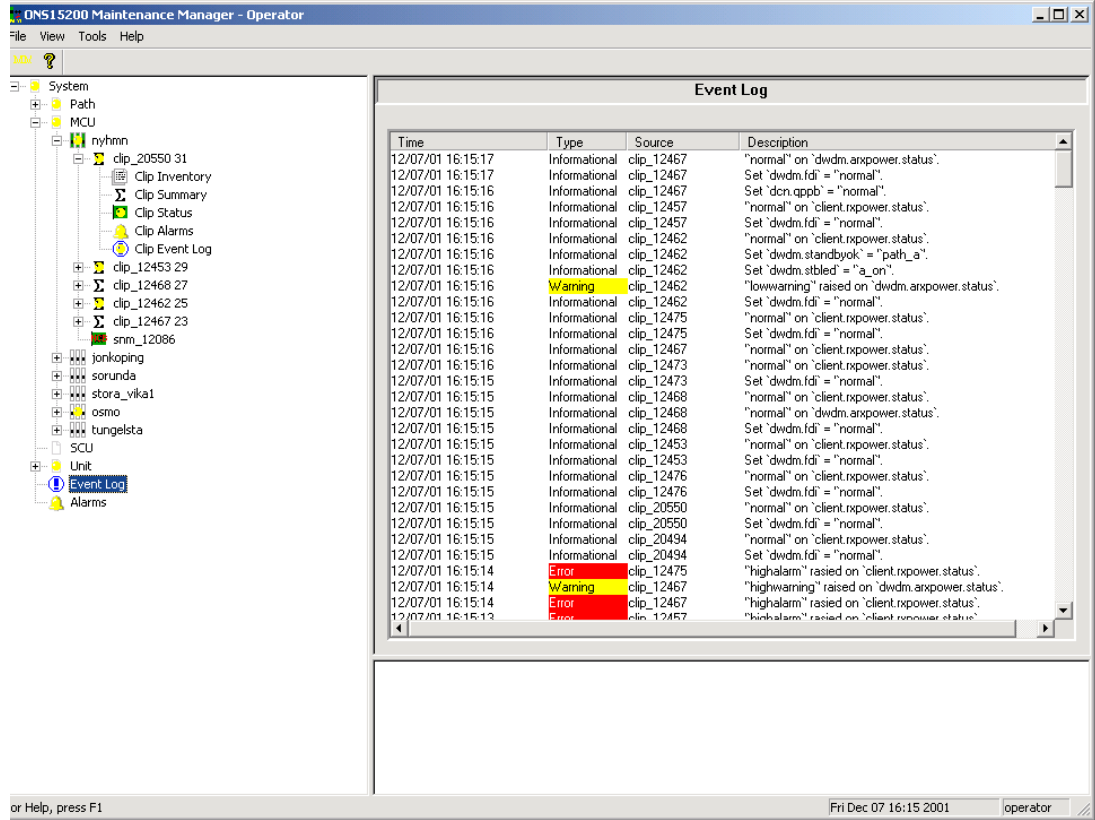
Table 4-3 System Active Alarms Screen Parameters

Parameter	Definition
CLIP	Displays the number of the CLIP module that generated the alarm.
Area	Displays the label where the alarm occurs. In most cases this is the name of the parameter that generated the alarm.
Name	Displays the type of alarm.
Status	Displays the severity of the alarm: <ul style="list-style-type: none"> • Yellow—Minor alarm or warning • Red—Critical or major alarm
Description	Displays the system descriptor for the alarm: <ul style="list-style-type: none"> • lowwarning • highwarning • lowalarm • highalarm • alarm • major • critical • alarm • raised • power1_fail • power2_fail • uninit • warning • unidentified • incomplete

4.3 System Event Log

The system Event Log displays a list of events that have occurred in all modules included in the system (Figure 4-3).

Figure 4-3 System Event Log screen





Acronyms

This Appendix defines acronyms and other abbreviations used in the *Cisco ONS 15200 Maintenance Manager Installation and Operation Guide*.

Numerics

3R

retime, reshape, regenerate

A

ADP

application distribution protocol

B

BIOS

basic input/output system

C

CL

class

CLEI

common language equipment identifier code

CLIENT_LASERTEMP

laser temperature alarm for the laser transmitting to client equipment

CLIENT_RXPOWER

receive power alarm from client equipment

CLIP

Client Layer Interface Port module

D**DCN**

data control network

DLC

data link control

DNS

domain name server

DWDM_ARXPOWER

receive power from the A-side CLIP module alarm

DWDM_BRXPOWER

receive power from the B-side CLIP module alarm

DWDM_RXPOWER

receive power from the CLIP module alarm

DWDM_LASERTEMP

laser temperature alarm for the laser transmitting to another CLIP module

DWDM_PELTIERCURRENT

Peltier current for the selected CLIP module

E**ENVIRON_BOARDTEMP**

temperature alarm at the surface of the CLIP main circuit board

Ether

Ethernet

IP

Internet protocol

ITU

International Telecommunications Union

L

LAN

local area network

LAT

lower alarm threshold

LED

light emitting diode

LWT

lower warning threshold

M

MCU

Multichannel Unit

N

NCB

Network Control Board module

NE

network element

NEC

Network Equipment Controller

NetBEUI

NetBIOS extended user interface

O

ONG

Optical Networking Group

ONS

Optical Networking System

Q**QDBS**

internal database

QPPA

internal datacom link A-side

QPPB

internal datacom link B-side

QPP

internal datacom link

R**RX**

receive

S**SCU**

Single-Channel Unit

SNMP

Simple Network Management Protocol

Suppr

Suppressed

T**TAC**

Cisco Technical Assistance Center

TCP/IP

Transmit Control Protocol/Internet Protocol

TX

transmit

U

UAT

upper alarm threshold

UTP

unshielded twisted pair

UWT

upper warning threshold

W

WAN

wide area network

WINS

Windows Internet naming service

