



Release Notes for Cisco ONS 15200 SNM Software Release 1.1(2)

Release Notes address closed issues, caveats, and new features for the Cisco ONS 15200 SNM software. For detailed information regarding features, capabilities, and software introduced with this release, refer to the documents listed in the “[Related Documentation](#)” section on page 15. For the most current version of the Release Notes for Cisco ONS 15200 Release 1.1, visit the following URL:

<http://www.cisco.com/univercd/cc/td/doc/product/ong/15200/15200rnt/index.htm>

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Changes to the Release Notes

This section documents changes that have been added to the *Release Notes for Cisco ONS 15200 Release 1.1* since the production of the Cisco ONS 15200 System Software CD for Release 1.1.

This document details additions, changes, and removals since release 1.1(1)

New Features and Functionality

The following new features and functionality have been added to the ONS 15200 Software Release 1.1(2) software.

New Software Features

Equipment Missing Alarm on CLI, Web, and SNMP.

This alarm has a severity of Critical and is activated when the SNM loses contact with a CLIP that is software configured to be in use, i.e. the parameter in use is set to yes.

In Use Button in Web Interface

The Web browser interface has a button that enables an operator to set the **In Use** parameter for a CLIP to either yes or no.

Set the Ping Level in the CLI

The software enables the operator to set the ping level (1 to 4) for the CLI. The set value will survive a system power up or power down, provided the command **commit snm** is executed after **pinglevel** has been set.

Web Browser Back Button Logout

When logged on using the web interface, using the browser back button to return to the login screen will cause the user to be logged out. This will prevent the forward button from allowing the user to re-enter the web interface without entering a user ID and password.

Admin User Access to the Event Log

The software enables Administrative-level users access to the system event log.

The ldboot Command has a New Syntax

The ldboot command syntax has changed to ldboot 0 snm.out from the old syntax of ldboot 0 snm.out <nr-of-reboots>.

MCU Create Operation Changed

The create operation for an MCU no longer requires the rack ID input parameter.

Global Network Alarms Folder Moved

The global network alarms folder has been moved to the top of the navigation tree (over the path folder) in the Web interface.

Delete User Page Renamed

The Delete User page has been renamed to User Overview.

New CLI Command to Configure User Password Change

The CLI includes the new command, **pwd_set <yes|no>**. This command allows administrators to configure all users with the ability to change their own password. This command is only available to administrator-level users.

New SNM Unit ID Attribute

The SNM unit ID attribute can be set to **none**. This sets the SNM off line and disconnects any communication with CLIPS or other SNMs.

Alarm Severity Changes

The default severity of the **DWDM LossOfChannel** and **Received Client Power Low** alarms have been changed to Critical.

Data Rate Setting on the Path Level from CLI or Web Browser.

The data rate can now be set on both the path and CLIP level. Normally, it is recommended to set the data rate on the path level, but in SNM 1.1(2) a bug (CSCuk34902) is voiding the function.

Limitations and Restrictions

This section describes ONS 15200 system limitations.

Restricted Maintenance Manager Scope

Due to limited bandwidth in the internal data communication network, the Maintenance Manager (MM) is currently configured to manage only the CLIP modules on the local control area network (CAN) bus and CLIP modules connected directly to the local CLIP modules by QPP (i.e., a maximum distance of 1 CAN hop + 1 QPP hop).

Multiple Maintenance Manager Sessions in the Same Network

Restrictions on running multiple MM sessions in a subnetwork apply because the last MM session started will, by default, tell all CLIP modules within its “realm” (one CAN + one QPP) that the latest MM session receives all alarm subscriptions (as a maintenance subscriber). Because there is only one maintenance subscriber allowed, the old one becomes an ex-subscriber.

NEBS Testing

The MCU has been tested for compliance to New Equipment Building System (NEBS) level 3. Both ONS 15252 and ONS 15201 have passed environmental testing that complies with European Telecommunications Standards Institute (ETSI) and all NEBS level 2 requirements. A complete report summarizing the results of these tests, performed by the Swedish environmental lab, SEMKO, also exists.

SNMP Interface

The simple network management protocol (SNMP) interface is read-only. This will be amended in a future release of the ONS 15200 management software.

Alarm Cut-off Button

The alarm cut-off button on the Communication Interface Module (CIM) board currently has no function because the supporting software has not yet been implemented.

Performance Monitoring

Performance monitoring can only be enabled for ten CLIPs simultaneously. The current PM state is stored on the CLIP and is automatically detected by the subnetwork manager when the CLIP is found. Performance monitoring will only work for the first ten clips found with the PM state set to “on.”

Telnet Sessions

The ONS 15200 only allows 8 simultaneous telnet sessions.

FTP Sessions

The ONS 15200 only allows 8 simultaneous FTP sessions.

Caveats

Review the notes listed below before deploying the ONS 15200. Caveats with DDTS bug tracking numbers are known system limitations that are scheduled to be addressed in a subsequent release. Caveats without DDTS bug tracking numbers are provided to point out procedural or situational considerations when deploying the product.

Open Caveats – Software Release 1.1(2)

Bug CSCdw25115 – Data rate not configurable in MM

Component: MM

Detail: It is not currently possible to set the data rate for a path via MM.

Workaround: Set the data rate for each CLIP in the path.

Resolution: This issue will be resolved in a future release.

Bug CSCdw25210 – Default user level for command

Component: SNM, Web Interface, CLI

Detail: The CLI and Web interface command default user privilege levels should both be “guest.” However, currently the CLI default level is guest, while the web default level is administrator.

Workaround: None.

Resolution: This issue will be resolved in a future release.

Bug CSCdx11814 – SNM is sending DwdmLOC alarm with unknown severity

Component: SNM software

Detail: If you disconnect the DWDM-side fiber from a clip in the MCU where the NCB sending traps resides, the associated remote CLIP will generate a DwdmLOC alarm with a severity of Unknown. The alarm appears in the Alarm Log, but not in the Alarm Browser.

Workaround: Using CTM, mark the NE as Under Maintenance and click Save. Then, mark the NE as In Service and click Save.

Resolution: This issue will be resolved in a future release.

Bug CSCdx27119 – Documentation missing procedure to add SCUs or CLIPs

Component: Software documentation

Detail: The Release 1.1 documentation does not include a procedure describing how to add SCUs or CLIPs to an existing ring.

Workaround: Use the following Web interface procedure to add an SCU and CLIP to an existing ring.

1. Use the Web interface to login to the NCB.
2. Click on SCU.

You will see a table of all of the defined SCUs with the last line blank.

3. At the blank, last line of the table, enter the SCU name and NE ID and click **Submit**.

4. Click on the newly created SCU to view the SCU information. In the lower half of the screen you can insert a CLIP in the SCU.
5. Click **Insert**. A CLIP will appear in the lower half of the screen.
6. Select the new CLIP and click **Submit**.
7. Repeat steps 2 through 6 for each additional CLIP you wish to add to the SCU.

Resolution: This procedure will be added to the documentation in a future revision.

Bug CSCdx30478 – SNMP agent sending null values for Var Binds

Component: SNM software

Detail: When a CLIP is removed from an MCU or when the DWDM-side fiber is disconnected, the SNMP agent sends an OutOfService trap. When the CLIP is reinserted or the fiber is reconnected, the SNMP agent sends an InService trap. After receiving the trap, CTM tries to upload inventory and alarm information for the CLIP. Because the Var Binds are null, CTM cannot upload the information successfully.

Workaround: If the alarm information is incorrect, mark the NE as Under Maintenance and click Save. Then, mark it as In Service and click Save.

Resolution: This issue will be resolved in a future release.

Bug CSCdx30487 – SNMP agent sending clipDwdmRxPower-severity alarm for protected CLIP

Component: SNM software

Detail: A clipDwdmRxPower-Severity alarm is sent for a protected CLIP. A corresponding cease will never be sent for this alarm. This problem occurs if you disconnect the DWDM-side fiber for a protected CLIP. The SNMP agent sends a clipDwdmRxPower-Severity alarm for the associated SCU.

Workaround: Using CTM, wait several minutes; then, mark the NE as Under Maintenance and click **Save**. Then, mark it as In Service and click **Save**.

Resolution: This issue will be resolved in a future release.

Bug CSCdx30943 – When changing client datarate, start at farthest CLIP from NCB

Component: Software documentation

Detail: When turning up a path between two CLIPs, it is possible that the clients may not be able to communicate with each other because of datarate mismatch.

Workaround: If you wish to change the CLIP datarate, always start with the CLIP that is the farthest away from the NCB.

It is preferable to remove the client input signal before changing data rate or to change the datarate on a path level rather than a CLIP level.

Resolution: This note will be added to the documentation in a future revision.

Bug CSCdx41420 – Users exist, but are not shown with the sh user command.

Component: CLI software

Detail: In the web browser all users are displayed, but in the CLI only 100 users are displayed. More than 100 users have been created. (This should actually be disallowed by the system, but is possible due to a bug.) Using the CLI command 'sh user' exactly 100 users are shown. The oldest users are not shown.

Workaround: Delete users. The system is not supposed to support more than 100 users!

Resolution: This issue will be resolved in a future release.

Bug CSCdx41423 – Objects belonging to different MCUs allowed to be inserted into one

Component: Web interface

Detail: The web browser gives you the choice to insert an NCB into an MCU, although the rack ID of the NCB does not match the rack ID of the MCU. After pressing the insert button for a slot in an MCU the pop-up showing the possible boards to insert in that slot is activated. The pop-up list gives alternatives, which should not be allowed as the corresponding boards have incorrect values for the rack ID attributes.

Workaround: None.

Resolution: This issue will be resolved in a future release.

Bug CSCdx47651 – Toggling QPP alarms with wrong datarate set

Component: NEC firmware

Detail: Some pairs of clips show toggling QPP alarms if the signal between them is Gigabit Ethernet, but datarate is set to STM-16/OC-48 in the management interface (CLI). When the expected datarate is set incorrectly, the clock and data recovery function will not work. It will transmit noise, which will modulate the DWDM signal and thus disturb the QPP signal directly.

Workaround: Be sure to always set the datarate correctly.

Resolution: None.

Bug CSCuk31979 – Alarms not cleared for values ~1.5 dB from thresholds

Component: NEC firmware

Detail: Alarms are not cleared in WEB and CLI for values that are around 1.5 dB from thresholds in normal operating range. To avoid flickering alarms, threshold hysteresis is implemented. The present value is fluctuating above and below the threshold during the time of the hysteresis, 2 seconds.

Workaround: None.

Resolution: This issue will be resolved in a future release.

Bug CSCuk32150 – SNMP malformed packets

Component: SNM software

Detail: Malformed SNMP traps can cause NCB resets. See PSIRT notification on SNMP vulnerabilities.

Workaround: Do not activate the SNMP interface i.e don't create any communities via the CLI interface.

Resolution: This issue will be resolved in a future release.

Bug CSCuk32585 – No manageability of protected channels with regeneration

Component: NEC firmware

Detail: The ONS 15200 system uses in-band signaling (QPP) for management communication. A protected CLIP transmits identical signals on both the alternative connections, including QPP. QPP is terminated/re-transmitted in each node, including the regenerator nodes. Unfortunately the QPP protocol

definition does not currently include information, identifying to which of the alternative paths a message was addressed. Thus there is a possible addressing conflict. A further problem is that a protected CLIP assumes that it receives identical QPP messages on both the incoming QPP links, which is not the case when there are regenerating CLIPs along the alternative paths. The CLIP will randomly pick packets from either of the incoming links. Due to the above described problems it is not currently possible to manage a network with regeneration in protected paths.

Workaround: None in SNM 1.1(1). In 1.1(2) it is possible to set pinglevel to one, thereby limiting management to one CAN bus. An NCB is required in each node.

Resolution: This issue will be resolved in a future release.

Bug CSCuk34561 – CLEI code label missing

Component: Clip-board

Detail: No CLEI label on clip front. All current clips are affected.

Workaround: None.

Resolution: This issue will be resolved in a future release.

Bug CSCuk34598 – Multiple NCBs can take on identical unit ID

Component: SNM software

Detail: Several NCBs can be configured (configure snm snm_XXXX) with identical unit ID. No check or negotiation is done by the SNM software to verify that the unit ID is not already used.

Workaround: Make sure each unit ID is only used once.

Resolution: This issue will be resolved in a future release.

Bug CSCuk34607 – Datarate mismatch

Component: SNM software

Detail: CIM board LED does not exhibit expected red LED when the System has data rate mismatch alarm on a path.

Workaround: None.

Resolution: This issue will be resolved in a future release.

Bug CSCuk34609 – QPP is not reported when having QPPA and QPPB alarm

Component: MM software

Detail: MM doesn't report QPP when the system has QPPA and QPPB alarms.

Workaround: None.

Resolution: This issue will be resolved in a future release.

Bug CSCuk34861 – Inconsistency in Web interface

Component: SNM software

Detail: An NCB can be displayed with a red LED (on web), with only two minor alarms in the system (protected clip with loss of power on one side). The NCB (snm) itself is displayed with NE Status normal in the snm_name Summary page. Under some circumstances, the presented alarm level is too high and under others the level is too low.

Workaround: None.

Resolution: This issue will be resolved in a future release.

Bug CSCuk34864 – CLIP got red LED, CIM got yellow

Component: SNM software

Detail: With alarms client Rx power, client laserbias, dwdm loc, dwdm rxpower, dcn qpp and dcn qppb, the NAM under the clip exhibit red LED, but the CIM exhibit yellow LED.

Workaround: None.

Resolution: This issue will be resolved in a future release.

Bug CSCuk34868 – LED not lit on CIM

Component: SNM software

Detail: The CIM did not present the right status when Client Rx Power = High warning was created on a CLIP. Additionally, the Web interface presented the wrong CIM status as well.

Workaround: None.

Resolution: This issue will be resolved in a future release.

Bug CSCuk34902 – Datarate Gigabit Ethernet or STM-16/OC-48 not settable on path level

Component: SNM software

Detail: When setting the datarate on the path (i.e. any clip-clip connection) to Gigabit Ethernet or STM-16/OC-48 from the Web or CLI interfaces, the GUI shows that a change occurs. However, if an actual Gigabit Ethernet signal is applied, no traffic will pass through. All required actions in software have not been carried out properly.

Workaround: Set the datarate on the individual clips, starting with the clip farthest away from the NCB.

As an alternative for Gigabit Ethernet (not STM-16/OC-48), the 2R/3R boards can be set to operate in pass-through mode. For large systems where multiple regenerations are needed, this can not be done because only one regeneration is supported in 2R/3R mode.

Resolution: This issue will be resolved in a future release.

Bug CSCuk34916 – Parameter `pwd_set no` is not saved on reboot

Component: CLI software

Detail: When an administrative user sets the parameter `pwd_set no`, there is no change in the file where the information is stored (`snm.cfg`). If the parameter `pwd_set no` is implemented, it will only be effective as long as reboot or power cycling is avoided. Since the operator is allowed to reboot the system, an operator not allowed to change his/her password can do so by first rebooting and then, when the system has reverted to the default parameter `pwd_set yes`, the user can reset his/her password.

Workaround: Change and replace the `snm.cfg` file. To change the file: use the ftp command `get` to copy the `snm.cfg` file to a computer (requires admin privileges), replace the line `pwd_set yes` with the line `pwd_set no`, and replace the `snm.cfg` file on the NCB board (with the ftp command `put`). Doing so carries out the intended CLI function.

If it later is preferred to go back to the initial setting of `pwd_set yes`, the process above has to be performed to write `pwd_set yes` in the `snm.cfg` file and put the file back onto the NCB board.

Resolution: This issue will be resolved in a future release.

Resolved Caveats – Software Release 1.1(2)

CSCdw04649 – Cannot set SNM offline

Component: SNM software

Detail: After you have configured a unit ID to SNM_1 or SNM_2, it is not possible to set the SNM back to “offline” mode (“-”).

Workaround: FTP to the NCB and get the file snm.cfg. Open the file and remove the line defining the unit ID. Save the file to the NCB. Reboot the NCB.

Resolution: This issue is resolved in release 1.1(2).

Bug CSCdw08317 – CLI and Web interface fail to clear alarms

Component: SNM software, web interface, CLI software

Detail: CLI and WEB fail to clear alarms, though the present value is between lwt and hwt.

For example:

```
CLIP_348.dwdm.brxbpower :
Status                Lowalarm
value                   -23.2 dbm
hat                     -8.0 dbm
hwt                     -9.9 dbm
lwt                     -28.0 dbm
lat                     -30.0 dbm
unit                    dbm
pmvalue                 <uninitialized>
```

Workaround: Perform an upload.

Resolution: This issue is resolved in release 1.1(2).

Bug CSCdw08348 – CLIPs lose SCU/MCU membership

Component: SNM software

Detail: When CLIPs are “pinged out,” if you are primary or secondary manager of the CLIP, they are presented as not belonging to any SCU or MCU--they become “loose CLIPs.”

A CLIP can become pinged out when you remove CIM, when you remove the CLIP from the NCB, or when the SNM/MM loses contact with the CLIP due to CAN or QPP problems.

Workaround: None.

Resolution: This issue is resolved in release 1.1(2).

Bug CSCdw08354 – QPP alarm severity

Component: SNM software

Detail: Simultaneously occurring QPPA and QPPB alarms are not reported with a severity of Major.

Workaround: None.

Resolution: This issue is resolved in release 1.1(2).

Bug CSCdw08356 – MCU/SCU name conflict

Component: SNM software

Detail: In CLI, or in the web interface, you can create multiple MCUs or SCUs with the same name. When there are two or more MCUs with the same name, only one of these is configurable from the CLI.

Workaround: None.

Resolution: This issue is resolved in release 1.1(2).

Bug CSCdw23738 – Network status not displayed in MM

Component: MM software

Detail: MM does not display the current network status, as shown by the CIM alarm LEDs, in the graphical view of an MCU.

Workaround: None.

Resolution: This feature will not be implemented in a future release.

Bug CSCdw23748 – Web interface fails to notify on change password

Component: SNM software, Web Interface

Detail: After you have clicked the apply button in the web interface password changing page, there is no confirmation that the password has successfully been changed. The web interface does not appear to have processed the command, but in fact the password is changed.

Workaround: None.

Resolution: This issue is resolved in release 1.1(2).

Bug CSCdw23957 – SNM does not send datarate trap and environment power trap

Component: SNM software

Detail: SNM is not sending Datarate trap and Environment Power trap. The datarate trap and the environment power trap are not sent as specified in the CLIP MIB.

Workaround: None.

Resolution: This issue is resolved in release 1.1(2).

Bug CSCdw25101 – No automatic remote update after MCU or SCU name change

Component: SNM software

Detail: Changing the MCU or SCU name in CLI or Web interface will not automatically update remote NCBs.

Workaround: Reboot the remote NCBs.

Resolution: This issue is resolved in release 1.1(2).

Bug CSCdw25106 – Daylight Savings Time guiding format incorrect for Web interface

Component: SNM software, Web Interface

Detail: The Daylight Savings Time (DLST) guiding format (dd:mm) given in the web interface for setting DLST is incorrect. The correct DLST format is

dd:mm, tt:mm

Workaround: Use CLI to set the DLST.

Resolution: This issue is resolved in release 1.1(2).

Bug CSCdw25111 – Discrepancy listing contains anomalous data

Component: SNM software

Detail: When you issue the command “commit network” from the Configure Network level in CLI, then immediately issue the Exit command, and then Show Discrepancy, no inventory is expected to appear. However, some items, such as renamed CLIPs, renamed SNMs and the paths in which they appear, are displayed in the inventory.

Workaround: None.

Resolution: This issue is resolved in release 1.1(2).

Bug CSCdw25116 – Web interface fails to accept some input data

Component: SNM software, Web Interface

Detail: The month of October (10) is not accepted as a valid value in the web interface when setting the date and time. When you enter a “10” for the month you will receive an inappropriate error message.

Workaround: Use CLI to set the date and time.

Resolution: This issue is resolved in release 1.1(2).

Bug CSCdw25117 – Event Log fails to display records

Component: SNM software

Detail: No records are displayed in the CLI event log when you enter the Read command.

Workaround: Exit the event log (use the Exit command) and open a new event log by typing “open eventlog.” Enter the Read command again.

Resolution: This issue is resolved in release 1.1(2).

Bug CSCdw25162 – CLIP data display

Component: SNM software, Web Interface, CLI software

Detail: When you log into an NCB and configure a CLIP module where the primary manager is set to none and the secondary manager is an NCB that you aren't currently logged into, the CLI and Web Interface erroneously display data.

Workaround: None.

Resolution: This issue is resolved in release 1.1(2).

Bug CSCdw25222 – No login error message

Component: SNM software

Detail: When you log in to the NCB with a user name that is already in use, no error message is displayed. Instead, the NCB simply issues a new login-prompt, without explanation.

Workaround: None.

Resolution: This issue is resolved in release 1.1(2).

Bug CSCdw26396 – Duplicate paths displayed by CLI and Web interface

Component: SNM software, Web Interface, CLI software

Detail: Duplicate paths may be displayed by CLI and the web interface. Some paths are found and defined from both ends; for example:

```
path_506_519
```

```
path_519_506
```

Workaround: None.

Resolution: This issue is resolved in release 1.1(2).

CSCdw28855 – HTTP function disabled following Commit Network command

Component: CLI software

Detail: If you issue the command “commit network” in CLI while a user is simultaneously logged on via the web interface, the HTTP functionality of the NCB/SNM becomes disabled until the NCB is rebooted.

Workaround: Reboot the NCB.

Resolution: This issue is resolved in release 1.1(2).

Bug CSCdw30207 – Maintenance Manager on Windows 98 crashes

Component: MM software

Detail: A help window (QSMM) opens with the text: The program has executed an illegal operation and will be terminated. Please contact the supplier of the program if the problem persists.

Workaround: None.

Resolution: This issue is resolved in release 1.1(2).

Bug CSCdw59276 – Wrong active LED displayed on NAM for split ratio 0/100

Component: CLI software

Detail: Wrong active LED is displayed on the NAM for an unprotected Clip with optical power split ratio 0/100. The A-side is shown as active on the NAM when it should actually be the B-side.

Workaround: None.

Resolution: This issue is resolved in release 1.1(2).

Bug CSCdw70019 – DCN address not displayed in WEB for guest users

Component: Web interface

Detail: The DCN address isn't displayed in WEB browser under inventory when you are logged in as a 'guest' user. WEB displays it as unknown.

Workaround: None.

Resolution: This issue is resolved in release 1.1(2).

Bug CSCuk31973 – Users randomly logged out with Netscape 4.7 NT

Component: Web interface

Detail: Users are randomly logged out when using Netscape 4.7 on NT. This occurs under any of the following conditions:

- Randomly after reloading a clip or NCB.
- If you cycle through pages too quickly (not allowing a page to complete its loading before navigating to a new page).
- Consecutive modification of parameters (one change after another, probably related to a navigation issue).
- If you attempt to modify a parameter outside its spectrum of options.

Workaround: Avoid the above listed actions wherever possible when using Windows NT with Netscape 4.7.

Resolution: This issue is resolved in release 1.1(2).

Bug CSCuk32057 – Zero is a valid value for timeout

Component: SNM software

Detail: Zero is a valid value for the user timeout property. Zero timeout value means infinite login time, so this should not be allowed.

Workaround: None.

Resolution: This issue is resolved in release 1.1(2).

Bug CSCuk32711 – Trap Var Bindings are not sent in the order specified by the MIB

Component: SNM software

Detail: The variable bindings in SNMP traps are sent out in a different order than the MIB specifies. This applies to all traps defined in CLIP.my.

This is what a trap in the MIB currently looks like:

```
clipClientRxPower-Trap NOTIFICATION-TYPE
    OBJECTS      {clipTrapTimeStamp,
                  clipTrapNotificationNumber,
                  clipClientRxPower-Severity,
                  clipClientRxPower-Alarm}

    STATUS       current
    DESCRIPTION  "This trap is generated by the SNMP agent when the
                  variable 'clipClientRxPower-Severity' changes value."
    ::= {clipNotifications 3}
```

The agent sends out the trap var bind in the following order:

1. clipClientRxPower-Severity,
2. clipClientRxPower-Alarm,
3. clipTrapTimeStamp,
4. clipTrapNotificationNumber

It depends on the trap receiver if the erroneous order of the variables is handled correctly. Some trap receivers cannot sort out the situation.

Workaround: None.

Resolution: This issue is resolved in release 1.1(2).

Related Documentation

For additional information on the Cisco ONS 15200, refer to the following documents.

Cisco ONS 15200 Product Description

Cisco ONS 15200 Module Handbook

Cisco ONS 15200 Installation, Setup, and Test Manual

Cisco ONS 15200 Maintenance Manager Installation and Operations Guide

Cisco ONS 15200 Web Interface Software User Manual

Cisco ONS 15200 Command Line Interface Manual

Obtaining Documentation

The following sections provide sources for obtaining documentation from Cisco Systems.

World Wide Web

You can access the most current Cisco documentation on the World Wide Web at the following sites:

- <http://www.cisco.com>
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Optical Networking Product Documentation CD-ROM

Optical networking-related documentation, including the *Cisco ONS 15200 Release Notes*, is available in a CD-ROM package that ships with your product. The Optical Networking Product Documentation CD-ROM, a member of the Cisco Connection Family, is updated as required. Therefore, it might be more current than printed documentation. To order additional copies of the Optical Networking Product Documentation CD-ROM, contact your local sales representative or call customer service. The CD-ROM package is available as a single package or as an annual subscription. You can also access Cisco documentation on the World Wide Web at <http://www.cisco.com>, <http://www-china.cisco.com>, or <http://www-europe.cisco.com>.

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To access Cisco.com, go to the following website:

<http://www.cisco.com>

Technical Assistance Center

The Cisco TAC website is available to all customers who need technical assistance with a Cisco product or technology that is under warranty or covered by a maintenance contract.

Contacting TAC by Using the Cisco TAC Website

If you have a priority level 3 (P3) or priority level 4 (P4) problem, contact TAC by going to the TAC website:

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

P3 and P4 level problems are defined as follows:

- P3—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- P4—You need information or assistance on Cisco product capabilities, product installation, or basic product configuration.

In each of the above cases, use the Cisco TAC website to quickly find answers to your questions.

To register for Cisco.com, go to the following website:

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

If you cannot resolve your technical issue by using the TAC online resources, Cisco.com registered users can open a case online by using the TAC Case Open tool at the following website:

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

Contacting TAC by Telephone

If you have a priority level 1 (P1) or priority level 2 (P2) problem, contact TAC by telephone and immediately open a case. The toll-free Optical Networking Assistance number is 1 877 323-7368.

P1 and P2 level problems are defined as follows:

- P1—Your production network is down, causing a critical impact to business operations if service is not restored quickly. No workaround is available.
- P2—Your production network is severely degraded, affecting significant aspects of your business operations. No workaround is available.

This document is to be used in conjunction with the documents listed in the “[Related Documentation](#)” section.

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