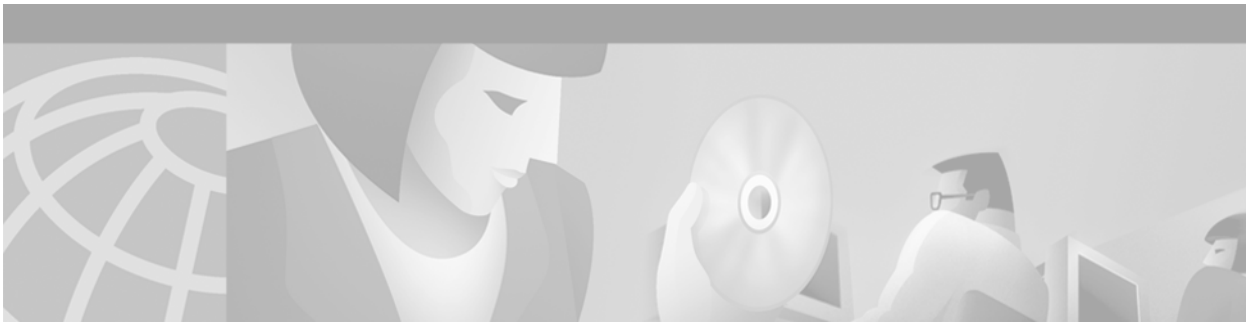

Release Notes for Cisco ONS 15327 Release 4.1

October, 2007

Note The terms "Unidirectional Path Switched Ring" and "UPSR" may appear in Cisco literature. These terms do not refer to using Cisco ONS 15xxx products in a unidirectional path switched ring configuration. Rather, these terms, as well as "Path Protected Mesh Network" and "PPMN," refer generally to Cisco's path protection feature, which may be used in any topological network configuration. Cisco does not recommend using its path protection feature in any particular topological network configuration.

Release notes address closed (maintenance) issues, caveats, and new features for the Cisco ONS 15327 SONET multiplexer. For detailed information regarding features, capabilities, hardware, and software introduced with this release, refer to Release 4.1 of the *Cisco ONS 15327 Installation and Operations Guide, Cisco ONS 15327 Troubleshooting and Reference Guide,* and *Cisco ONS 15454 and Cisco ONS 15327 TL1 Command Guide*. For the most current version of the *Release Notes for Cisco ONS 15327 Release 4.1*, visit the following URL:

http://www.cisco.com/univercd/cc/td/doc/product/ong/15327/rnotes/index.htm

Cisco also provides Bug Toolkit, a web resource for tracking defects. To access Bug Toolkit, visit the following URL:

http://www.cisco.com/cgi-bin/Support/Bugtool/launch_bugtool.pl

Contents

Corporate Headquarters:
Cisco Systems, Inc., 170 West Tasman Drive, San Jose, CA 95134-1706 USA

Changes to the Release Notes

This section documents supplemental changes that have been added to the *Release Notes for Cisco ONS 15327 Release 4.1* since the production of the Cisco ONS 15327 System Software CD for Release 4.1.

The following changes have been added to the release notes for Release 4.1

Changes to Caveats

The following caveat has been added to the release notes.

DDTS # CSCsh41324, page 9

Caveats

Review the notes listed below before deploying the ONS 15327. Caveats with DDTS tracking numbers are known system limitations that are scheduled to be addressed in a subsequent release. Caveats without DDTS tracking numbers are provided to point out procedural or situational considerations when deploying the product.

Hardware

CWDM and DWDM GBIC Compatibility with G1000-4 Cards and G1K-4 Cards

Existing G1000-4 cards are expected to support CWDM and DWDM GBICs, but final qualification testing was not complete at press time. The online version of the 4.1 user documentation and release notes will be updated to reflect the final qualification status of CWDM and DWDM GBICs on the G1000-4 card, when this information is available.

Existing G1K-4 cards do not support CWDM or DWDM GBICs.

G1K-4 cards with the CLEI code of WM5IRWPCAA (manufactured after August 2003) are expected to support CWDM and DWDM GBICs, but final qualification testing was not complete at press time. The online version of the 4.1 user documentation and release notes will be updated to reflect the final qualification status of CWDM and DWDM GBICs on the G1K-4 card with the CLEI code of WM5IRWPCAA, when this information is available.

Note Operating temperature of the DWDM GBICs is -5 degrees C to 40 degrees C.

Maintenance and Administration

Caution VxWorks is intended for qualified Cisco personnel only. Customer use of VxWorks is not recommended, nor is it supported by Cisco's Technical Assistance Center. Inappropriate use of VxWorks commands can have a negative and service affecting impact on your network. Please consult the troubleshooting guide for your release and platform for appropriate troubleshooting

procedures. To exit without logging in, enter a Control-D (hold down the Control and D keys at the same time) at the Username prompt. To exit after logging in, type “logout” at the VxWorks shell prompt.

DDTS # CSCeb63327

The High Temperature Alarm is raised at 50 degrees Celsius. This is, however, not optimal on an Itemp rated system, which can tolerate up to 65 degrees Celsius. To work around this issue, the alarm can be downgraded or suppressed, but note that this will result in no temperature alarm provided at all. Alternatively, Cisco TAC provides a method of retrieving the temperature from the node, which can thus be monitored periodically for temperature-related problems. This issue will be resolved in Release 4.6, and in a future maintenance release of Release 4.1.

DDTS # CSCeb12993

When you perform a database restore initiated while the database is being saved, a DBOSYNC or BKUPMEMP alarm may be raised, accompanied by a silent restore failure. To avoid this issue, ensure no provisioning was changed within past 2 minutes before initiating a restore. This issue will be resolved in Release 4.6.

DDTS # CSCeb09356

The CTC card level provisioning pane allows a different range of values for the PSC-W, PSC-S, and PSC-R thresholds from the range allowed in the defaults provisioning window. At the CTC card view for an OC-192 card, CTC will allow any values for the PSC-W, PSC-S, and PSC-R. When provisioning these same values using the CTC node view defaults pane, the range is restricted from 0 to 600. This issue will be resolved in Release 4.6.

DDTS # CSCeb06071

Rarely, in the detailed circuit view for some VT circuits, a question mark may appear in the center of a port graphic. Ignore the question mark: it would indicate a problem with path trace functionality, but VT circuits do not have that functionality. This issue will be resolved in a future release.

DDTS # CSCdz84149

If a user is logged into CTC as a superuser (or other higher level security type), and then another superuser changes the first user's security level to “retrieve” (or another lower level security type) without first logging the user out, the lower level user is then still able to perform some actions authorized only for the original login security level. For example, a “provisioning” level user demoted to “retrieve” level in this manner can still provision and edit MS-SPRings (BLSRs) while logged into the current session, though the same user may no longer provision DCCs. To ensure that a user's level is changed completely, the superuser must log the user out prior to changing the security level. This issue is under investigation.

DDTS # CSCdz90753

In the Maintenance > Cross Connect Resource Pane, the VT matrix port detail is inconsistent with the general VT matrix data. This can occur when a 1+1 protection scheme is in place. To avoid confusion, note that the VT matrix data counts the VTs for both the working and protect card, while the detail data counts the VTs only for the working card. This issue is under investigation.

DDTS # CSCdy10030

CVs are not positively adjusted after exiting a UAS state. When a transition has been made from counting UAS, at least 10 seconds of non-SES must be counted to exit UAS. When this event occurs, Telcordia GR-253 specifies that CVs that occurred during this time be counted, but they are not. There are no plans to resolve this issue at this time.

DDTS # CSCdy71653

A change of the alarm profile while alarms are present on a DS3 card is not correctly applied. The behavior is specific to DS3 ports on an ONS 15327 node. This issue will be resolved in a future release.

DDTS # CSCdy49608

A node connection might fail during bulk circuit creation, causing the circuit creation to also fail. For example, this has been seen while creating 224 VT 1.5 protected circuits, on a path protection consisting of eight ONS 15327 nodes. If you experience a bulk circuit creation failure of this type, cancel the circuit creation batch, then delete any incomplete circuits. Restart the batch from the last successful circuit. This issue will be resolved in a future release.

DDTS # CSCdx35561

CTC is unable to communicate with an ONS 15327 that is connected via an Ethernet craft port. CTC does, however, communicate over an SDCC link with an ONS 15327 that is Ethernet connected, yielding a slow connection. This situation occurs when multiple ONS 15327s are on a single Ethernet segment and the nodes have different values for any of the following features:

- Enable OSPF on the LAN
- Enable Firewall
- Craft Access Only

When any of these features are enabled, the proxy ARP service on the node is also disabled. The ONS 15327 proxy ARP service assumes that all nodes are participating in the service.

This situation can also occur immediately after the aforementioned features are enabled. Other hosts on the Ethernet segment (for example, the subnet router) may retain incorrect ARP settings for the ONS 15327s.

To avoid this issue, all nodes on the same Ethernet segment must have the same values for Enable OSPF on the LAN, Enable Firewall, and Craft Access Only. If any of these values have changed recently, it may be necessary to allow connected hosts (such as the subnet router) to expire their ARP entries.

You can avoid waiting for the ARP entries to expire on their own by removing the SDCC links from the affected ONS 15327 nodes. This will disconnect them for the purposes of the proxy ARP service and the nodes should become directly accessible over the Ethernet. Network settings on the nodes can then be provisioned as desired, after which the SDCC can be restored.

This issue will not be resolved.

DDTS # CSCdy11012

When the topology host is connected to multiple OSPF areas, but CTC is launched on a node that is connected to fewer areas, the topology host appears in CTC, and all nodes appear in the network view, but some nodes remain disconnected. This can occur when the CTC host does not have routing information to connect to the disconnected nodes. (This can happen, for example, if automatic host detection was used to connect the CTC workstation to the initial node.)

CTC will be able to contact the topology host to learn about all the nodes in all the OSPF areas, but will be unable to contact any nodes that are not in the OSPF areas used by the launch node. Therefore, some nodes will remain disconnected in the CTC network view.

To work around this issue, if no firewall enabled, then the network configuration of the CTC host can be changed to allow CTC to see all nodes in the network. The launch node must be on its own subnet to prevent network partitioning, and craft access must not be enabled. The CTC host must be provisioned with an address on the same subnet as the initial node (but this address must not conflict with any other node in the network), and with the default gateway of the initial node. CTC will now be able to contact all nodes in the network.

If a firewall is enabled on any node in the network, then CTC will be unable to contact nodes outside of the initial OSPF areas. This issue will not be resolved.

DDTS # CSCdy37198

On Cisco ONS 15327 platforms equipped with XTC cross-connect cards, Ethernet traffic may be lost during a BLSR protection switch, with no accompanying alarm or condition raised. Possible affected circuits will be between Ethernet cards (E100T-4) built over Protection Channel Access (PCA) bandwidth on BLSR spans. When BLSR issues the switch, the PCA bandwidth is preempted. Since there is no longer a connection between the ends of the Ethernet circuit, traffic is lost. Further, in nodes equipped with XTC cards, the E100T-4 cards do not raise an alarm or condition in CTC. This issue will be resolved in a future release.

DDTS # CSCdw43896

A software revert from Release 3.3 or 3.4 to 1.0.1 or 1.0.2 can cause a PDI-P alarm on intermediate nodes of a DS3 circuit after an XTC switch on the node terminating this circuit. This can occur when, after you revert all the nodes of a path protection from Release 3.3-4 to Release 1.0.1-2, then perform an XTC side switch on the node terminating the DS3 circuit. If this occurs, remove the active XTC (software reset will not work) on the node terminating the DS3 circuit. This issue is resolved for Releases 3.3 and later, but will still occur when you revert from one of these releases to Release 1.0.1-2. The issue cannot be resolved for these earlier releases.

Upgrades from Release 1.0

If you wish to upgrade from Release 1.0 to Release 4.1, you must first upgrade to maintenance Release 1.0.2. If you are already running maintenance Release 1.0.1 or better, you do not have to perform the intermediate upgrade.

DDTS # CSCds23552

You cannot delete the standby XTC once it is removed. If you have two XTC cards and then decide to operate with only one, you will get a standing minor alarm. The alarm cannot be removed by CTC. The XTC is a combo card, combining the functionality of the ONS 15454 TCC+, cross connect, DS1 and DS3 cards, with a protection group automatically provisioned. On the ONS 15454, similar behavior occurs for the TCC+ card. The cross connect card for the ONS 15454 can only be deleted if there are no circuits provisioned. DS1 and DS3 cards can only be deleted if they are not in a protection group. It is not known at this time when or if this issue will be resolved.

Line Cards

DDTS # CSCeb23183

On the ONS 15327 XTC, the j1 path trace values for the DS1 are incorrect. The table shows 28 entries, all with identical (but wrong) values, when an STS-1 (the only type that supports path trace on the XTC's DS1) only should have one entry. This can occur with an STS-1 circuit terminating at the XTC's DS1, in the DS1 maintenance card view of the XTC. To find the actual path trace values for the DS1 circuit, open the detailed circuit map for that circuit, right-click on the port image of the DS1, and select “j1 path trace.” This issue will be resolved in Release 4.6.

E Series and G Series Cards

DDTS # CSCdy41135

When using a G1000-2 card, TIM-P can be mistakenly raised on a PCA circuit after a protection switch. This occurs when path trace is enabled on a PCA circuit that is no longer in use after a protection switch. To work around this issue, either disable path trace or use alarm profiling to filter out the unwanted alarm. This issue is under investigation.

DDTS # CSCdy63172

With E100/E1000 cards, a CARLOSS alarm present, and port alarms suppressed from CTC, Manual Alarm Suppression does not correctly suppress CARLOSS alarms. This issue is under investigation.

DDTS # CSCdy47038

G1000-2 path alarm profiles applied on port 2 are not updated to reflect the correct alarm severities. This issue is under investigation.

DDTS # CSCdy13035

Excessive Ethernet traffic loss (greater than 60 ms) may occur when the active XTC is removed from the chassis while using the G1000-2. On rare occasions, permanent loss of traffic may occur. Do not remove the active XTC from the chassis to force a protection switch. Instead, perform a soft reset of the active XTC through the network management interface. Once the XTC is in standby mode, it can be removed

from the chassis without inducing excessive traffic loss. A future hardware release will incorporate improved hardware PLL circuitry on the G1000-2 line card to allow an active XTC removal without causing excessive traffic loss.

Path Protection Functionality

DDTS # CSCeb37707

With a VT path protection circuit, if you inject signals with a thru-mode test set into one path of the circuit in a particular order, you may not see the appropriate alarms. This can occur when you first inject LOP-P, then clear, then inject LOP-V. This issue will be resolved in Release 6.0.

DDTS # CSCea23862

After you perform a force switch on one of the spans of a DRI or IDRI topology with path protection-DRI circuits present, if you then apply a clear on the same span, the state will not show up immediately in CTC. This issue is under investigation.

BLSR Functionality

DDTS # CSCeb24331 and CSCeb40119

If you create a four-fiber BLSR with a VT circuit on it, then delete the circuit and the ring, then created a two-fiber BLSR on the same ports, you may see an unexpected AIS-V on the path, even before any additional circuit is created. A soft switch of the XTC will clear the AIS-V condition. This issue is under investigation.

DDTS # CSCdz35479

Rarely, CTC Network view can freeze following the deletion or addition of a node from or to a BLSR. This can result in the CTC Network view no longer updating correctly. If this occurs, restart CTC. This issue will be resolved in Release 5.0.

DDTS # CSCdy48872

Issuing a lockout span in one direction while a ring switch (SF-R) is active on the other direction may result in a failure to restore PCA circuits on the ring.

To see this issue, on a node participating in a two fiber BLSR with PCA circuits terminating at the node over the two fiber BLSR, cause an SF-R by failing the receive fiber in one direction (say, west). Then, issue a lockout span in the other direction (in our example, east). Since the lockout span has higher priority than the SF-R, the ring switch should clear and PCA traffic should be restored on spans without a fiber fault. The ring switch does clear, but PCA traffic does not restore. To correct this issue, clear the fiber fault. All traffic restores properly. This issue will be resolved in Release 5.0.

DDTS # CSCdw66416

Traffic along a running ring segment cannot be restored while a participating node is rebooting. To see this problem, in a two fiber BLSR with circuits created along a given ring segment, you must isolate that ring segment by powering down two or more nodes where one of the nodes powered down is at the edge of the segment and the others are outside of the segment. Then power up and reboot the node at the edge of the segment. The circuits along this segment will not be restored even though the nodes on the segment are both up and running. You must restore power to all nodes before the traffic is restored. This issue will be resolved in a future release.

BLSR Support for Mixed Node Networks

The ONS 15327 is supported for BLSR in combination with ONS 15454 nodes only if Release 3.3 or greater is installed and running on all BLSR nodes. If you wish to provision a BLSR on a combination of ONS 15327 and ONS 15454 nodes, you should upgrade to Release 3.3 or greater on all ONS 15454 and ONS 15327 nodes first.

TL1

Note To be compatible with TL1 and DNS, all nodes must have valid names. Node names should contain alphanumeric characters or hyphens, but no special characters or spaces.

DDTS # CSCsh41324

When running release 4.1.4, if a circuit is created within CTC and if that circuit is retrieved via TL1, all looks as expected. However, after the software is upgraded to release 6 and latter, the circuit retrive does not show the same value as was before. For example FAC-4-1 changes to FAC-4-0. Workaround is to delete and recreate the circuit within CTC.

DDTS # CSCdz79471

The default state, when no PST or SST inputs are given for The TL1 command, RMV-<MOD2_IO>, is OOS instead of OOS-MT. Thus, if you issue a RMV statement, followed by maintenance-state-only commands, such as OPR-LPBK, the maintenance state commands will not work, since the port will be in the out-of-service state (OOS), instead of the out-of-service maintenance state (OOS-MT). To work around this issue, place ports in the OOS-MT state, by specifying the primary state as OOS and a secondary state of MT in either the RMV-<MOD2_IO> command or the ED-<MOD2_IO> command.

Scripts that depend on the RMV-<MOD2_IO> command defaulting to OOS-MT without specifying the primary and secondary states should be updated to force the primary and secondary state inputs to be populated. This issue will be resolved in Release 5.0.

DDTS # CSCdz86121

In one rare case, the ONS 15454/15327 times out a user session without communicating the timeout to TL1. If this happens, the TL1 user remains logged in, although the session is actually timed out. This can occur when you log into the node with a timeout of X minutes. If the user session sits idle for all but 5 seconds of the X minutes, then you have only 5 seconds to type in a command to notify the node that

the session is active. If you try this, you will likely miss the five second window, in which case the node will respond as though the session is inactive and deny access. However, because you have typed a key, irrespective of the five second window, TL1 responds as though the session is active and does not log you out (time out). You will not have access to the node and will receive a "DENY" response to TL1 commands. The error message may vary depending on commands issued. To recover from this situation, log out and log back in to TL1. This issue will be resolved in Release 5.0.

DDTS # CSCdz26071

The TL1 COPY-RFILE command, used for SW download, database backup, and database restore, currently does not allow a user-selected port parameter to make connections to the host. The command expects the default parameter of Port 21 and will only allow that number. This issue will be resolved in Release 5.0

Performance Monitoring

DDTS # CSCdt10886

The far-end STS PM counts do not accumulate on an OC-48 linear 1+1 circuit even though the near-end STS PM counts on the other end are increasing. To see this issue, connect two nodes with an OC-12 or OC-48 linear 1+1 protected span. Place a piece of test equipment in the middle of the span and inject B3 errors. The near-end STS PM counts accumulate, but the far-end STS PM counts do not accumulate. To work around this issue, Use the near-end STS PM count from the adjacent node to see the far-end STS PM count for the current node. This issue will be resolved in a future release.

Documentation

G-Series Notes

The following two notes on page 5-30 of the Cisco ONS 15454 Reference Manual, R4.1 and R4.5 should be replaced.

Note G-Series cards manufactured before August 2003 do not support DWDM GBICs. G1000-4 cards compatible with DWDM GBICs have a CLEI code of SNP8KW0KAB. Compatible G1K-4 cards have a CLEI code of WM5IRWPCAA.

Note All versions of G1000-4 and G1K-4 cards support CWDM GBICs.

The replacement information is contained in CWDM and DWDM GBIC Compatibility with G1000-4 Cards and G1K-4 Cards, page 3.

Resolved Software Caveats for Release 4.1

The following items are resolved in Release 4.1.

Maintenance and Administration

DDTS # CSCdy38603

VT Cross-connects downstream from a DS1 can automatically transition from the OOS-AINS state to the IS state even though the DS1 signal is not clean (for example, when there is an LOS present). This can occur when you have created a VT circuit across multiple nodes with DS1s at each end, and you have not yet applied a signal to the DS1 ports, and then you place the DS1 ports in OOS-AINS, OOS-MT, or IS. When you then place the circuit in OOS-AINS, the circuit state changes to IS (within one minute). This issue is resolved in Release 4.1.

BLSR Functionality

DDTS # CSCdy65890

If you have PCA circuits over two-fiber or four-fiber BLSR protect channels, an incorrect auto-inservice transition occurs after traffic preemption. You may place the circuit back into the OOS-AINS state after the BLSR has returned to the unswitched mode, using the Circuit Editing pane of the CTC. This issue is resolved in Release 4.1.

TL1 Functionality

DDTS # CSCea03186

The TL1 command, INH-USER-SECU, does not disable the userid appropriately. The command should disable the userid until the corresponding ALW-USER-SECU command is issued; however, the userid is automatically re-enabled after the user lock-out period expires. The user lockout period is set from the CTC. This issue will be alleviated in Release 4.1 by removal of the ALW-USER-SECU and INH-USER-SECU commands. The commands are reinstated correctly in Release 4.1.

New Features and Functionality

This section highlights new features and functionality for Release 4.1. For detailed documentation of each of these features, consult the user documentation.

New Software Features and Functionality

ML-Series Resilient Packet Ring

RPR (Resilient Packet Ring) is a new protocol available on the ML-Series cards enabling you to use SONET bandwidth more efficiently, with 50 ms recovery times.

Basic Feature Description

RPR for the ML-Series line cards provides a set of enhancements to the performance of any such card running the Release 4.1. These improvements include:

RPR for the ML-Series line cards allows new deployment applications for all cards running Release 4.1. These improvements include:

- Better SONET bandwidth utilization compared to an STP controlled ring topology.
- Non-SONET fail-over mechanism with sub 50-millisecond convergence for fiber cuts, restores, node failures and inserting new nodes.
- Ability to perform ML-Series QOS (quality of service) features on all SONET traffic (pass-through, drop, and add).
- No hardware changes: Only requires ONS 15454 Release 4.1, which includes the new IOS configuration.
- Increased number of supportable VLANs and MAC addresses on the ring.
- A scalable, inter-ring protection mechanism for increased network resiliency.
- The addition of RPR does not remove any Release 4.0 functionality. RPR features are enabled via a new set of configuration commands.

For further details of RPR uses and features, consult the user documentation for Release 4.1.

Open Ended Path Protection

In previous releases, you could create an end-to-end path protection circuit on any Cisco ONS 15XXX network using A-Z provisioning of CTC/CTM. This feature requires you to specify one source node and one destination node of a path protection circuit. CTC/CTM requires these nodes to be part of the network that is discovered by CTC/CTM.

With Release 4.1 you can create an open ended path protection circuit in addition to a regular path protection. An open ended path protection circuit is a partial path protection circuit. This feature helps you create end-to-end path protection circuits where a part of the given path protection circuit is on a Cisco 15XXX network, while the other part of the circuit is on another vendor's equipment. The circuit may consist of one source point and two end points. There are two paths from the source; one path is from the source to one end point and the other path is from the source to the other end point. The source has a bridge that sends the traffic on both paths. The end points do not have any selectors and may hand off the traffic to another vendor's equipment. For bidirectional circuits, the source also contains a selector for the reverse traffic from end points to source. Alternatively, open ended path protection can be used to create a circuit with two sources and one destination. In the unidirectional case, the destination node has a selector, and the source nodes have one-way connections.

NE Defaults

The NE defaults pane user interface is changed in Release 4.1 as follows:

- The NE defaults pane now has a highlighted title at the top of the pane, indicating the last action taken by the user.
- If you import or export a file, the title shows the file name and the time of the action.
- If you load or apply a file to the node, the changes and the time of the action will be displayed.

User Privileges

As of Release 4.1, The following user privileges have changed:

- A Maintenance level user can back up the database and transfer a software package to the node.
- A Provisioning level user can delete and reset cards.

Protect Threshold Crossing Alarms

As of Release 4.1, BLSR/MS-SPR and path protection/SNCP protect thresholds at both the card and port level are inherited from the working card/port.

C-bit framing

To be compatible with certain legacy deployments, the DS3-12E card C bit detection algorithm has changed conjunction with Release 4.1 through an FPGA change in the DS3-12E modules.

Gigabit Ethernet Transponder

The Gigabit Ethernet Transponder is a software enhancement to existing G-series Ethernet cards that allows these cards to support transponder functionality.

The following features support Gigabit Ethernet Transponder functionality for Release 4.1.

Note In this section, unless otherwise mentioned, all items apply equally to both G1000-4 cards and G1K-4 cards. Some capabilities also apply to G1000-2 cards.

CWDM GBICs

Note This applies only to the ONS 15454-based G-series cards (G1000-4 and G1K-4).

CWDM GBICs correspond to the eight wavelengths supported by the Cisco CWDM GBIC solution on the ONS 15454: CWDM-GBIC-1470, CWDM-GBIC-1490, CWDM-GBIC-1510, CWDM-GBIC-1530, CWDM-GBIC-1550, CWDM-GBIC-1550, CWDM-GBIC-1570, CWDM-GBIC-1590.

DWDM GBICs

This applies only to the latest revision of the ONS 15454-based G-series cards (G1000-4 and G1K-4).

DWDM GBICs correspond to the 32 different ITU-100GHz wavelengths supported on the ONS 15454: 1530.33, 1531.12, 1531.90, 1532.68, 1534.25, 1535.04, 1535.82, 1536.61, 1538.19, 1538.98, 1539.77, 1540.56, 1542.14, 1542.94, 1543.73, 1544.53, 1546.12, 1546.92, 1547.72, 1548.51, 1550.12, 1550.92, 1551.72, 1552.52, 1554.13, 1554.94, 1555.75, 1556.55, 1558.17, 1558.98, 1559.79, and 1560.61. The ONS 15454 version DWDM GBICs are the only officially supported DWDM GBICs for the G-Series Ethernet cards. These GBICs have wideband reception capability and can receive with adequate sensitivity across the 1260-1620 nm range (refer to GBIC specs in the user documentation for details). This capability can be exploited in some of the transponder applications.

GBIC Notes

New GBICs are supported for only those vendors/brands that are officially certified for use on the ONS 15454.

GBIC inventorying functions are not currently supported. However, the type of GBIC plugged in and the wavelength used are displayed to CTC and TL1 users (as well as CTM users when CTM support is added).

Performance monitoring of optical parameters such as DWDM power levels per wavelength are not supported in Release 4.1.

The GBIC security feature is not supported in Release 4.1.

Three Transponder Modes of Operation

Release 4.1 supports three transponder modes of operation:

Bidirectional 2-port transponder

Bidirectional 1-port transponder

Unidirectional 2-port transponder

This applies only to the ONS 15454-based G-series cards (G1000-4 and G1K-4). This feature also includes the ability of the cards to operate (when in transponder mode) independent of the cross connect cards and even operate without any cross connect cards in the shelf.

When at least one port is provisioned in a transponder mode, the entire card will be in transponder mode. When SONET/SDH circuits are provisioned on a card, the card is said to be in normal/SONET mode.

Hybrid mode of operation is not supported in Release 4.1. At any given time, a card can be either in transponder mode (with one or more ports being provisioned to provide transponder capabilities) or in normal SONET mode. A mixed or hybrid mode (in which only some ports are performing transponder functions while others are switching traffic into the SONET/SDH network) is not supported and you will be prevented from provisioning such a combination. In order to move a card from SONET mode to transponder mode you must first delete all SONET/SDH circuits terminating on the card, after which ports will become provisionable as transponders. Similarly you must first turn off transponder mode on all ports before a card can become eligible for SONET/SDH circuits again.

Facility Loopback

Facility Loopback is supported for Release 4.1 transponder functionality.

This applies to all G-series cards (G1000-4 and G1K-4 on the ONS 15454 and G1000-2 on the ONS 15327).

Provisionable Flow Control Watermarks

Provisionable flow control watermarks are supported for Release 4.1. This capability enables the user to tune the flow control mechanism on the G-Series cards for some network applications.

This applies to all G-series cards (G1000-4 and G1K-4 on the ONS 15454 and G1000-2 on the ONS 15327).

Changed Alarms

The following alarms have changed as of Release 4.1

Note For SONET alarms that applet the ONS 15327, refer to the Alarm Troubleshooting chapter of the user documentation.

SONET CRITICAL Alarms

LOC is added in Release 4.1

SONET MAJOR Alarms

OTUK-IAE is dropped in Release 4.1

PLM-V is added in Release 4.1

SQUELCHED is MJ in Release 4.0 but changed to NA in Release 4.1

FEC-MISM is added in Release 4.1

SONET MINOR Alarms

OTUK-TIM is MN in Release 4.0 but changed to NA in Release 4.1

SONET NA/NR Conditions

ERFI-P-CONN is added in Release 4.1

ERFI-P-PAYLD is added in Release 4.1

ERFI-P-SRVR is added in Release 4.1

EXERCISE-RING-FAIL is added in Release 4.1

EXERCISE-SPAN-FAIL is added in Release 4.1

INTRUSION-PSWD is added in Release 4.1

LPBKFACILITY (G-Series) is added in Release 4.1

New TL1 Features

The following TL1 features are new for release 4.1. For detailed instructions on using TL1 commands, consult the TL1 Command Guide for Release 4.1.

Removed Commands

The following commands were dropped from Release 4.0.

REPT^ALM^SECU

ALW-USER-SECU

INH-USER-SECU

New Commands

The following command was added in Release 4.1.

CLR-COND-SECU

New Support

The following new support has been added for Release 4.1.

- Facility loopbacks on G1000 are supported in Release 4.1.
- Escaped double quotes (\")" was introduced in Release 4.1 for Inner Strings (See Telcordia GR-831-CORE, Section 2.2.10) for GR compliance.
- In the command COPY-RFILE, DB backup and DB Download can be done by a MAINT user in Release 4.1 (in addition to SUPERUSER).
- Negative MonLevels are accepted in Release 4.1.
- The command RTRV-COND-SYNCN can be used with the ALL AID to suppress conditions with the same root cause. This behavior is enhanced in Release 4.1 to display all Synchronization related conditions.
- The ED-BITS and RTRV-BITS commands now support the AIDs SYNC-BITS1 and SYNC-BITS2 for setting and retrieving the BITS-OUT port state.
- The parameter VOATTN, in ED/RTRV-OCH, has a range of –40 to +30.

The following BLSR ringid alarms are changed in Release 4.1 to report on the OCn port.

- BLSROSYNC, MN, NSA, "BLSR Out Of Sync"—Always reported against the East working OCn facility of the BLSR.
- APSCNMIS, MN, NSA, "Node Id Mismatch"—Always reported against the working OCn facility that detects the mismatch.
- RING-MISMATCH, MN, NSA, "Far End Of Fiber Is Provisioned With Different Ring ID"—Always reported against the East working OCn facility of the BLSR.

Command Request changes

In the following command requests, the Release 4.0 request syntax appears first, followed by the new Release 4.1 syntax.

ED-G1000 In Release 4.0:

ED-G1000:[<TID>]:<aid>:<CTAG>:::[MFS=<mfs>,][FLOW=<flow>,]:[<pst>],[<sst>];

ED-G1000 In Release 4.1:

ED-G1000:[<TID>]:<aid>:<CTAG>:::[MFS=<mfs>,][FLOW=<flow>,][LOWMRK=<lowmrk>,][HIWMRK=<hiwmrk>]:[<pst>],[<sst>];

ED-T1 in Release 4.0:

ED-T1:[<TID>]:<aid>:<CTAG>:::[LINECDE=<linecde>,][FMT=<fmt>,][LBO=<lbo>,][TACC=<tacc>,][SOAK=<soak>,]:[<pst>],[<sst>];

ED-T1 in Release 4.1:

ED-T1:[<TID>]:<aid>:<CTAG>:::[LINECDE=<linecde>,][FMT=<fmt>,][LBO=<lbo>,][TACC=<tacc>,][SOAK=<soak>,][SFBER=<sfber>,][SDBER=<sdber>]:[<pst>],[<sst>];

ED-T3 in Release 4.0:

ED-T3:[<TID>]:<aid>:<CTAG>:::[LINECDE=<linecde>,][FMT=<fmt>,][LBO=<lbo>,][TACC=<tacc>,][SOAK=<soak>,]:[<pst>],[<sst>];

ED-T3 in Release 4.1:

ED-T3:[<TID>]:<aid>:<CTAG>:::[LINECDE=<linecde>,][FMT=<fmt>,][LBO=<lbo>,][TACC=<tacc>,][SOAK=<soak>,][SFBER=<sfber>,][SDBER=<sdber>]:[<pst>],[<sst>];

ED-EC1 in Release 4.0:

ED-EC1:[<TID>]:<aid>:<CTAG>:::[PJMON=<pjmon>,][LBO=<lbo>,][SOAK=<soak>,]:[<pst>],[<sst>];

ED-EC1 in Release 4.1:

ED-EC1:[<TID>]:<aid>:<CTAG>:::[PJMON=<pjmon>,][LBO=<lbo>,][SOAK=<soak>,][SFBER=<sfber>,][SDBER=<sdber>]:[<pst>],[<sst>];

Command Response changes

In the following command responses, the Release 4.0 response syntax appears first, followed by the new Release 4.1 syntax.

RTRV-USER-SECU response in Release 4.0:

“<uid>:,<uap>”

RTRV-USER-SECU response in Release 4.1:

“<uid>:,<uap>:LOGGEDIN=<loggedin>[,NUMSESSIONS=<numsess>],LOCKEDOUT=<lockedout>”

RTRV-G1000 response in Release 4.0:

“<aid>::[MFS=<mfs>,][FLOW=<flow>,][LAN=<lan>,][OPTICS=<optics>:[<pst>],[<sst>]”

RTRV-G1000 response in Release 4.1:

“<aid>::[MFS=<mfs>,][FLOW=<flow>,][LAN=<lan>,][OPTICS=<optics>,][TRANS=<trans>,][TPORT=<tport>,][LOWMRK=<lowmrk>,][HIWMRK=<hiwmrk>]:[<pst>],[<sst>]”

RTRV-T1 response in Release 4.0:

“<aid>::[LINECDE=<linecde>,][FMT=<fmt>,][LBO=<lbo>,][TACC=<tap>,][SOAK=<soak>,]:<pst>,[<sst>]”

RTRV-T1 response in Release 4.1:

“<aid>::[LINECDE=<linecde>,][FMT=<fmt>,][LBO=<lbo>,][TACC=<tap>,][SOAK=<soak>,][SOAKLEFT=<soakleft>,][SFBER=<sfber>,][SDBER=<sdber>]:<pst>,[<sst>]”

RTRV-T3 response in Release 4.0:

“<aid>::[LINECDE=<linecde>,][FMT=<fmt>,][LBO=<lbo>,][TACC=<tap>,][SOAK=<soak>,]:<pst>,[<sst>]”

RTRV-T3 response in Release 4.1:

“<aid>::[LINECDE=<linecde>,][FMT=<fmt>,][LBO=<lbo>,][TACC=<tap>,][SOAK=<soak>,][SOAKLEFT=<soakleft>,][SFBER=<sfber>,][SDBER=<sdber>]:<pst>,[<sst>]”

RTRV-OCH response in Release 4.0:

“<aid>:,,,[<status>]:[RDIRN=<rdirn>,][OPTYPE=<opticalPortType>,][OPWR=<power>,][EXPWLEN=<expWlen>,][ACTWLEN=<actWlen>,][ILOSS=<iloss>,][VOAMODE=<voamode>,][VOAATTN=<voaattn>,][VOAPWR=<voapwr>,][VOAREFATTN=<voarefattn>,][VOAREFPWR=<voarefpwr>,][REFOPWR=<refopwr>,][CALOPWR=<calopwr>,][NAME=<portname>,][SFBER=<sfber>,][SDBER=<sdber>,][ALSMODE=<alsmode>,][ALSRCINT=<alsrcint>,][ALSRCPW=<alsrcpw>,][COMM=<comm>,][GCCRATE=<gccrate>,][DWRAP=<dwrap>,][FEC=<fec>,][OSFBER=<osfber>,][OSDBER=<osdber>,][MACADDR=<macaddr>,][SYNCMSG=<syncmsg>,][SENDDUS=<senddus>,][LSRSTAT=<lsrstat>,][SOAK=<soak>,]:<pst>,[<sst>]”

RTRV-OCH response in Release 4.1:

“<aid>:,,,[<status>]:[RDIRN=<rdirn>,][OPTYPE=<opticalPortType>,][OPWR=<power>,][EXPWLEN=<expWlen>,][ACTWLEN=<actWlen>,][ILOSS=<iloss>,][VOAMODE=<voamode>,][VOAATTN=<voaattn>,][VOAPWR=<voapwr>,][VOAREFATTN=<voarefattn>,][VOAREFPWR=<voarefpwr>,][REFOPWR=<refopwr>,][CALOPWR=<calopwr>,][NAME=<portname>,][SFBER=<sfber>,][SDBER=<sdber>,][ALSMODE=<alsmode>,][ALSRCINT=<alsrcint>,][ALSRCPW=<alsrcpw>,][COMM=<comm>,][GCCRATE=<gccrate>,][DWRAP=<dwrap>,][FEC=<fec>,][OSFBER=<osfber>,][OSDBER=<osdber>,][MACADDR=<macaddr>,][SYNCMSG=<syncmsg>,][SENDDUS=<senddus>,][LSRSTAT=<lsrstat>,][SOAK=<soak>,][SOAKLEFT=<soakleft>]:<pst>,[<sst>]”

RTRV-CLNT response in Release 4.0:

“<aid>:,,[<role>],<status>:[NAME=<portname>,][COMM=<comm>,][SFBER=<sfber>,][SDBER=<sdber>,][ALSMODE=<alsmode>,][ALSRCINT=<alsrcint>,][ALSRCPW=<alsrcpw>,][SYNCMSG=<syncmsg>,][SENDDUS=<senddus>,][LSRSTAT=<lsrstat>,][CLEI=<clei>,][PN=<partnum>,][SN=<serialnum>,][VENDOR=<vendor>,][VENDORREV=<vendorrev>,][PLGTYPE=<plgtype>,][MACADDR=<macaddr>,][SOAK=<soak>,]:<pst>,[<sst>]”

RTRV-CLNT response in Release 4.1:

“<aid>:,,[<role>],<status>:[NAME=<portname>,][COMM=<comm>,][SFBER=<sfber>,][SDBER=<sdber>,][ALSMODE=<alsmode>,][ALSRCINT=<alsrcint>,][ALSRCPW=<alsrcpw>,][SYNCMSG=<syncmsg>,][SENDDUS=<senddus>,][LSRSTAT=<lsrstat>,][CLEI=<clei>,][PN=<partnum>,][SN=<serialnum>,][VENDOR=<vendor>,][VENDORREV=<vendorrev>,][PLGTYPE=<plgtype>,][MACADDR=<macaddr>,][SOAK=<soak>,][SOAKLEFT=<soakleft>]:<pst>,[<sst>]”

RTRV-OCN response in Release 4.0:

“<aid>:,,[<role>],[<status>]:[DCC=<dcc>,][TMGREF=<tmgref>,][SYNCMSG=<syncmsg>,][SENDDUS=<senddus>,][PJMON=<pjmon>,][SFBER=<sfber>,][SDBER=<sdber>,][MODE=<mode>,][WVLEN=<wvlen>,][RINGID=<ringid>,][BLSRTYPE=<blsrtype>,][MUX=<mux>,][UNIC=<unic>,][CCID=<ccid>,][NBRIX=<nbrix>,][SOAK=<soak>,]:<pst>,[<sst>]”

RTRV-OCN response in Release 4.1:

“<aid>:,,[<role>],[<status>]:[DCC=<dcc>,][TMGREF=<tmgref>,][SYNCMSG=<syncmsg>,][SENDDUS=<senddus>,][PJMON=<pjmon>,][SFBER=<sfber>,][SDBER=<sdber>,][MODE=<mode>,][WVLEN=<wvlen>,][RINGID=<ringid>,][BLSRTYPE=<blsrtype>,][MUX=<mux>,][UNIC=<unic>,][CCID=<ccid>,][NBRIX=<nbrix>,][SOAK=<soak>,][SOAKLEFT=<soakleft>]:<pst>,[<sst>]”

RTRV-EC1 response in Release 4.0:

“<aid>::[PJMON=<pjmon>,][LBO=<lbo>,][RXEQUAL=<rxequal>,][SOAK=<soak>,]:<pst>,[<sst>]”

RTRV-EC1 response in Release 4.1:

“<aid>::[PJMON=<pjmon>,][LBO=<lbo>,][RXEQUAL=<rxequal>,][SOAK=<soak>,][SOAKLEFT=<soakleft>,][SFBER=<sfber>,][SDBER=<sdber>]:<pst>,[<sst>]”

ENUM changes

The following enum items have changed for Release 4.1.

ALS_RESTART enum items added to Release 4.1:

ALS_RESTART_AUTO => “AUTO-RESTART”

ALS_RESTART_MAN => “MAN-RESTART”

ALS_RESTART_MAN_TEST => “MAN-TEST-RESTART”

MOD2 enum items added to Release 4.1:

MOD2_M2_G1000 => “G1000”

OPTICS enum items dropped from Release 4.0:

OPTICS_OP_IR => “IR”

OPTICS_OP_LR => “LR”

OPTICS_OP_SR => “SR”

OPTICS_OP_VLR => “VLR”

OPTICS enum items added to Release 4.1:

OPTICS_OP_1000_BASE_CX => “1000_BASE_CX”

OPTICS_OP_CWDM_1470 => “CWDM_1470”

OPTICS_OP_CWDM_1490 => “CWDM_1490”

OPTICS_OP_CWDM_1510 => “CWDM_1510”

OPTICS_OP_CWDM_1530 => “CWDM_1530”

OPTICS_OP_CWDM_1550 => “CWDM_1550”

OPTICS_OP_CWDM_1570 => “CWDM_1570”

OPTICS_OP_CWDM_1590 => “CWDM_1590”

OPTICS_OP_CWDM_1610 => “CWDM_1610”

OPTICS_OP_ITU_100G_1530_33 => “ITU_100G_1530_33”

OPTICS_OP_ITU_100G_1531_12 => “ITU_100G_1531_12”

OPTICS_OP_ITU_100G_1531_90 => “ITU_100G_1531_90”

OPTICS_OP_ITU_100G_1532_68 => “ITU_100G_1532_68”

OPTICS_OP_ITU_100G_1534_25 => “ITU_100G_1534_25”

OPTICS_OP_ITU_100G_1535_04 => “ITU_100G_1535_04”

OPTICS_OP_ITU_100G_1535_82 => “ITU_100G_1535_82”

OPTICS_OP_ITU_100G_1536_61 => “ITU_100G_1536_61”

OPTICS_OP_ITU_100G_1538_19 => “ITU_100G_1538_19”

OPTICS_OP_ITU_100G_1538_98 => “ITU_100G_1538_98”

OPTICS_OP_ITU_100G_1539_77 => “ITU_100G_1539_77”

OPTICS_OP_ITU_100G_1540_56 => “ITU_100G_1540_56”

OPTICS_OP_ITU_100G_1542_14 => “ITU_100G_1542_14”

OPTICS_OP_ITU_100G_1542_94 => “ITU_100G_1542_94”

OPTICS_OP_ITU_100G_1543_73 => “ITU_100G_1543_73”

OPTICS_OP_ITU_100G_1544_53 => “ITU_100G_1544_53”

OPTICS_OP_ITU_100G_1546_12 => “ITU_100G_1546_12”

OPTICS_OP_ITU_100G_1546_92 => “ITU_100G_1546_92”

OPTICS_OP_ITU_100G_1547_72 => “ITU_100G_1547_72”

OPTICS_OP_ITU_100G_1548_51 => “ITU_100G_1548_51”

OPTICS_OP_ITU_100G_1550_12 => “ITU_100G_1550_12”

OPTICS_OP_ITU_100G_1550_92 => “ITU_100G_1550_92”

OPTICS_OP_ITU_100G_1551_72 => “ITU_100G_1551_72”

OPTICS_OP_ITU_100G_1552_52 => “ITU_100G_1552_52”

OPTICS_OP_ITU_100G_1554_13 => “ITU_100G_1554_13”

OPTICS_OP_ITU_100G_1554_94 => “ITU_100G_1554_94”

OPTICS_OP_ITU_100G_1555_75 => “ITU_100G_1555_75”

OPTICS_OP_ITU_100G_1556_55 => “ITU_100G_1556_55”

OPTICS_OP_ITU_100G_1558_17 => “ITU_100G_1558_17”

OPTICS_OP_ITU_100G_1558_98 => “ITU_100G_1558_98”

OPTICS_OP_ITU_100G_1559_79 => “ITU_100G_1559_79”

OPTICS_OP_ITU_100G_1560_61 => “ITU_100G_1560_61”

TRANS enum items added to Release 4.1:

TRANS_NONE => “NONE”

TRANS_ONE_PORT_BI => “ONE-PORT-BI”

TRANS_TWO_PORT_BI => “TWO-PORT-BI”

TRANS_TWO_PORT_RX_ONLY => “TWO-PORT-RX-ONLY”

TRANS_TWO_PORT_TX_ONLY => “TWO-PORT-TX-ONLY”

Alarms, Conditions, and Errors Changed in Release 4.1

The following conditions have been added for Release 4.1.

ERFI-P-CONN—Enhanced Remote Failure Indication, Path, Connectivity

ERFI-P-PAYLD—Enhanced Remote Failure Indication, Path, Payload

ERFI-P-SRVR—Enhanced Remote Failure Indication, Path, Server

The following error has changed for Release 4.1.

IDMS has changed from “Loopback Type Missing” to “Missing Internal Data.”

Related Documentation

Release-Specific Documents

- *Release Notes for the Cisco ONS 15327, Release 4.0*
- *Release Notes for the Cisco ONS 15454 SDH, Release 4.1 and 4.5*
- *Release Notes for the Cisco ONS 15454, Release 4.1 and 4.5*
- *Cisco ONS 15327 Software Upgrade Guide, Release 4.1*

Platform-Specific Documents

- *Cisco ONS 15327 Procedure Guide, Release 4.1*
- *Cisco ONS 15327 Reference Manual, Release 4.1*
- *Cisco ONS 15327 Troubleshooting Guide, Release 4.1*
- *Cisco ONS 15454 and Cisco ONS 15327 TL1 Command Guide, Release 4.1*
- *Cisco ONS 15327 Product Overview, Release 4.1*

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
- http://www-china.cisco.com
- http://www-europe.cisco.com

Documentation CD-ROM

Cisco documentation and additional literature are available in a CD-ROM package, which ships with your product. The Documentation CD-ROM is updated monthly and may be more current than printed documentation. The CD-ROM package is available as a single unit or as an annual subscription.

Ordering Documentation

Cisco documentation is available in the following ways:

- Registered Cisco Direct Customers can order Cisco Product documentation from the Networking Products MarketPlace:

http://www.cisco.com/cgi-bin/order/order_root.pl

- Registered Cisco.com users can order the Documentation CD-ROM through the online Subscription Store:

  http://www.cisco.com/go/subscription

- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco corporate headquarters (California, USA) at 408 526-7208 or, in North America, by calling 800 553-NETS(6387).

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Obtaining Technical Assistance

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Cisco.com

Cisco.com is the foundation of a suite of interactive, networked services that provides immediate, open access to Cisco information and resources at anytime, from anywhere in the world. This highly integrated Internet application is a powerful, easy-to-use tool for doing business with Cisco.

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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. To obtain a directory of toll-free numbers for your country, go to the following website:

http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml

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.