



Release Notes for Cisco MGX 8240 Release 3.0.1.8 VCLI

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Introduction

Release 3.0.1.8 of the virtual command line interface (VCLI) Release Notes provide additional information to the Release 3.0 VCLI documentation.

This document is intended for customer functional and operational groups and engineers responsible for installing and provisioning Cisco MGX 8240 switches.

These release notes include a list of known caveats and those previous caveats that have been fixed.



System Requirements

This section lists the system requirements needed to deploy the VCLI.

Hardware Supported

Release 3.0.1.8 supports all hardware components of Release 3.0.

Software Compatibility

VCLI Release 3.0.1.8 has all the functionality of the previous VCLI software releases. The last official release of the VCLI was Release 3.0.0.9.

Release 3.0.1.8 supports all previous PSM (formally CES) and IMC card software versions. The VCLI also supports different software versions of the PSM cards in the same chassis.

Release 3.0.1.8 includes bug fixes to the previous 2.2.8.5 and 2.1.3 releases.

New and Changed Information

VCLI Release 3.0.1.8 manages an MGX 8240 (formally ULTIMATE 1600) switch with or without the presence of an IMC card. If the MGX 8240 is connected to a CIM, the VCLI also manages the CES cards.

The VCLI supports the In-Band or Out-Of-Band IP management route discovery for the PSM cards. When the In-Band route is up and operational, In-Band management is the preferred route of all management traffic between the VCLI and the PSM cards.

For a comprehensive list of VCLI features, refer to the *Cisco MGX 8240 VCLI User's Guide Release 3.0*.

New Features in MGX 8240 Release 3.0.1.8

The following command is added for usability:

- **quit**—Same as the **exit** command.

The following new commands support switch software 3.0.0.9:

- **change cescard linkinfo**—Replaces the **change system cescard** command.
- **change switch sntp**—Changes the synchronous network time protocol (SNTP) on a card.
- **change cescard selfcheck**—Changes the health monitoring attributes for a backup card.
- **show cescard linkinfo**—Replaces the **show system cescard** command.
- **show switch sntp config**—Shows SNTP configuration for one card or all cards in network.
- **show switch sntp status**—Shows SNTP status for one card or all cards in a network.
- **show cescard selfcheck**—Shows the health monitoring information for the backup card.
- **show switch summary**—Shows information about all of the cards in the switch.

The following commands reflect changes to the MIB since Release 2.2.8.5:

- **change physicalport ds1**
- **change physicalport ds3**
- **show cescard info**
- **show imccard info**
- **show physicalport ds1 config**
- **show physicalport ds3 config**
- **show blademon info**
- **add connection pl**
- **add system cescard**

The following commands are no longer supported by VCLI as of Release 3.0.0.9:

- **change system cescard**—Use the **change cescard linkinfo** command.
- **show system cescard**—Use the **show cescard linkinfo** command.

Upgrading to a New Software Release

Release 3.0.1.8 of VCLI software contains the upgrade capability from Release 2.X and 3.0 to Release 3.0.1.X. The software preserves configuration across the upgrade on deployed switches.



Note

Release 3.0 does not support the upgrade feature. Therefore, users running Release 2.2 must upgrade to 3.0.1.X.

Upgrading from Release 3.0 to Release 3.0.1.X

The VCLI upgrade file is found on the VCLI CD-ROM and is named RX.X.X.tar where X.X.X is the specific release number for version 3.0.1.X listed on the distribution media (for example, R3.0.1.X.tar).

To upgrade from Release 2.X or 3.0 to Release 3.0.1.X, complete the following steps:

-
- Step 1** Login as root user.
- Step 2** Change the directory to the installation directory:
cd /opt/Sentient/vcli

Step 3 Unarchive the upgrade file:

```
tar -xvf R3.0.1.X.tar
```

This command extracts three files:

1. vcli-install.txt
2. vcli-new-VERSION-3.0.1.X.tar.Z
3. vcli-upgrade-VERSION-3.0.1.X.tar.Z

Step 4 To complete the upgrade or install, follow the instructions in the vcli-install.txt file.

Extracting Switch Software

This section provides the steps for extracting the switch software from Release 3.0 to Release 3.0.1.X.

Perform the upgrade in the image directory found in the VCLI installation directory. When the archive file extracts its contents, a subdirectory is created. This directory reflects the version of the switch software, for example **/opt/Sentient/vcli/image/R3o0o1oX**.

The upgrade files are on the MGX 8240 software CD-ROM or at ftp.sentientnet.com under the **/pub/williams/switch** directory. For PSM cards, use the file cpeR3.0.1.X.tar. For IMC cards, use the file imcR3.0.1.X.tar.

To extract the switch software, complete the following steps:

Step 1 Change to the installation directory.

```
cd /opt/Sentient/vcli
```

Step 2 If an image directory does not exist, create the directory.

```
mkdir image
```

Step 3 Change to the image directory.

```
cd image
```

Step 4 Verify that the current working directory is /opt/Sentient/vcli/image.

```
pwd
```

Step 5 Copy the switch upgrade file cpeR3.0.1.X.tar or imcR3.0.1.X.tar to the current directory.

Step 6 Unarchive the switch upgrade file:

```
tar -xvf cpeR3.0.1.X.tar (for PSM cards)
```

```
tar -xvf imcR3.0.1.X.tar (for IMC cards)
```

To upgrade PSM or IMC cards, follow the steps in the release notes listed in the [Related Documentation](#) section.

Caveats

This section contains the known caveats of Release 3.0.1.8 and fixed caveats of prior releases.

Open Caveats - Release 3.0.1.8

The following table lists the open caveats in VCLI Release 3.0.1.8.

| Bug ID | Severity | Functional Area | Description | Comments |
|------------|-------------|------------------|---|--|
| CSCdp39816 | High | Redundancy | When the primary card is not responding to SNMP PDUs, the VCLI is unable to communicate to switched-out primary and the switched-in backup. This non communication occurs when the primary card is pulled out of the switch. The work around to specify the switched-in backup card for all VCLI queries. | |
| CSCdm90826 | High | OC3 status | If the OC3 port is APS enabled and switches to the protection line, the VCLI reports an incorrect SONET path operational status of the Access side. | Not affected when the APS is disabled or the working line is active. |
| CSCsn05508 | Medium | APS | VCLI displays an error if default card is invalid for command change cescard aps . | Only occurs when help requested. |
| CSCdp35469 | Medium | IMC | VCLI does not report the software version of the backup IMC card from backup IMC. Instead, the VCLI displays the software version of the primary card. | |
| CSCsn05671 | Low | Performance | Request to increase VCLI performance by packaging more vars per PDU. | Not a bug. Performance is slow. |
| CSCsn05455 | Low | Show commands | Some show commands do not recognize invalid options. The VCLI ignores these invalid options because they are not needed rather than report them as illegal. | |
| CSCsn04479 | New feature | Usability | Need real terminal mode for line editing. An enhancement allows true cursor controlled line edits. | Use the built-in VCLI line editing. |
| CSCsn04947 | New feature | Config files | Add capability to backup and restore config files. | |
| CSCsn04974 | New feature | Software upgrade | Download related code should display information about the user, time downloaded, and the location of the download for record keeping. | |
| CSCsn05072 | Low | Switch database | Alphabetize switch names under Network Options. | |

| Bug ID | Severity | Functional Area | Description | Comments |
|------------|-------------|-----------------|--|--|
| CSCsn05073 | New feature | Trap handling | To know when to switch between In-Band and Out-of-Band, integrate VCLI trap handling with redundancy related code. | |
| CSCdp08025 | Medium | Redundancy | When the PSM software has an incompatible I/O card, the PSM card reports a redundancy role value of 3. This value is not legal according to the SNMP definition of the redundancyRole. When the PSM card returns a value of 3, the VCLI displays a hyphen (-) for role. | When the I/O card is incompatible, a serious PSM problem has occurred. The VCLI display of a hyphen (-) is minor. |
| CSCdp40302 | Low | Output display | The q command to cease the output of data to the screen does not work the first time for the command show physical oc3 stat . | |
| CSCdp23296 | Low | Chassis command | When executing chassis commands, the VCLI prompts the user for either q (to quit) or cr (to continue). This constant querying hampers the switch level upgrade and unnecessarily expects user input. | |
| CSCsn05714 | Low | Change command | When a required command line argument is not given, the VCLI is not displaying the actual missing argument. Instead, the VCLI displays a generic message stating that an argument is missing. | |
| CSCdp33107 | Low | Download Help | Help for the command download -card ? does not display that the IMC is card 1, and the PSMs are cards 2–16. | |
| CSCdr35069 | Medium | Delete | Remote endpoint circuit through Ascend is not deleted by VCLI. VCLI command delete connection pl -epid xxx deletes one end in the switch database, but not the other end. The work around is to execute the delete connection pl -epid yyy command again to delete the whole circuit(s). The xxx or yyy can be either end point number or all. | |
| CSCds60487 | High | Delete | Database locks when executing delete connection for FE endpoint . | |
| CSCds74632 | High | Performance | Core dump occurs when modifying channelization on DS1. | |
| CSCds79867 | High | Save config | An SNMPSet error for Save Cfg File message occurred when unable to communicate with a PSM card. | |
| CSCds87884 | High | Save config | VCLI does not autosave for the PSM-2 back up card. | |
| CSCds68685 | High | Connections | After executing a force back command, the VCLI reported remote-pls instead of seg-pls. | |

| Bug ID | Severity | Functional Area | Description | Comments |
|------------|----------|------------------|---|---|
| CSCds70675 | High | Connections | The VCLI is unable to create circuits through a switched-in backup when the primary fails. | |
| CSCds27447 | Medium | Software upgrade | When VCLI executed the ch ces image command, an Error: Changing IP address for physical card - -2 message displayed. | |
| CSCds61267 | Medium | Show command | The show ces inb conf command fails. | |
| CSCds68646 | Medium | Delete command | When deleting a connection from a switched-in backup, an error message occurs. | |
| CSCds71410 | Medium | BERT | BERT direction should not be allowed to be set while test is running. | |
| CSCds73879 | Medium | Connections | When creating a circuit between two cards on two switches, an SNMPSet error for Save Cfg File --1 message occurs. This error occurs when creating circuits with switch software Releases 1.1.2.10 and 2.2.0.6. | |
| CSCds74641 | Medium | Show command | An error occurs when retrieving attributes. | |
| CSCds75179 | Medium | All commands | VCLI does not communicate with logical card when the physical card is not functioning. | |
| CSCds50326 | Medium | Delete command | The remote endpoint circuit through Ascend is not deleted by VCLI. | |
| CSCds74093 | Medium | Connections | Either VCLI or software Release 2.2.0.6 does not save on switched-out state. | |
| CSCds73971 | Medium | Connections | Autosave does not save the near endpoint for circuit creations. | |
| CSCds74843 | Low | Change command | Help line for OC3 4-port indicates support for 1–4, but only 1 and 2 are supported. | |
| CSCds74841 | Low | Show command | For queries, the VCLI q command does not terminate the query. The output continues. | |
| CSCdt31900 | Low | Connections | The add conn command reports an error when the near-end card is Release 2.X and the far-end card is Release 3.X. | Ignore the error. The connection is made correctly. |

Resolved Caveats - Release 3.0.1.8

The following table consists of the caveats fixed in Release 3.0.1.8.

| Bug ID | Severity | Functional Area | Description |
|------------|----------|------------------|--|
| CSCds25899 | High | Software upgrade | IMC upgrade/downgrade occasionally fails. |
| CSCds37710 | Medium | Performance | VCLI creates a defunct process at startup. |
| CSCds50506 | Medium | Card control | Reboot command does not function for blades with Release 2.2.0.6. |
| CSCds60290 | Medium | Software upgrade | An error message displays during an upgrade/downgrade of IMC software. |

| Bug ID | Severity | Functional Area | Description |
|------------|----------|------------------|--|
| CSCds60303 | Medium | Software upgrade | The IMC upgrade error message should be a warning message. |
| CSCds72862 | High | Software upgrade | VCLI upgrades IMC backup despite executing a No command to the warning message. |
| CSCdt03689 | Medium | Software upgrade | VCLI does not detect a software image change failure on the IMC card. The IMC might have inconsistent images. |
| CSCdt07031 | Medium | Card control | The reboot command does not function for blades with Release 3.0.1.X. |
| CSCdt13064 | Medium | Software upgrade | VCLI downloads to the incorrect IMC directory. This situation occurs when the backup IMC is in the top slot, and the software directories for the primary and backup cards are different. The software downloads into the wrong directory on the primary card. |
| CSCdt13076 | Low | Software upgrade | If an error occurs during the change image command, a message appears asking to continue to the next switch. If no is entered, the VCLI still continues to next switch. |

Resolved Caveats - Release 3.0.0.9

The following table consists of the caveats fixed in Release 3.0.0.9.

| Bug ID | Severity | Functional Area | Description |
|------------|-------------|---------------------|--|
| CSCdm30982 | Medium | Background polling | When BladeMon process dies, the redundancy status of the 1600 cards in the network gets stale without the VCLI being aware of it. The workaround is to remove the file blade.pid and restart a VCLI. |
| CSCdm70079 | New feature | Show connections | Add feature to show the default physical ports when listing the connections on a cardFeature request. |
| CSCdm71570 | High | Redundancy | VCLI allows configuration change to cards while redundancy state is force back in progress (FBP). |
| CSCdm73811 | High | Connection creation | VCLI is unable to make connections between PSM cards running different software versions. |
| CSCdm88355 | Medium | Bert | The VCLI does not display digits after the decimal point for the attribute PercentErrorFreeSeconds when viewing Bert Status for DS1 or Circuit Bert tests. |
| CSCdp33137 | Low | Download command | In the download command, the VCLI does not give an informative error message when the card type argument does not match the slot of the card. |
| CSCdp34882 | Medium | Check BERT | VCLI cannot set the transmit and receive bit inversion attributes for PL and SegPL type circuit BERT tests. These attributes only apply to user data pattern configured BERT tests. |
| CSCdp35483 | Medium | IMC | The command show imc info does not check for the presence of a backup IMC in the switch. Consequently, if the backup card is not present, the command takes several seconds to complete. |

| Bug ID | Severity | Functional Area | Description |
|------------|----------|-----------------------|--|
| CSCdp35740 | Medium | Connection creation | VCLI cannot create a circuit from Release 2 to Release 1 on different switches. Function call used to pause the Blade Monitor process. |
| CSCdp37110 | Low | Connection creation | The VCLI creates a local PL type connection without having the second endpoint specified on the command line. Both endpoints should be specified on the command line for any type of PL circuit. |
| CSCdp40572 | Medium | SONET path thresholds | VCLI cannot change the error threshold values for the SONET Path level on the channelized access OC3 ports. |
| CSCsn05494 | Low | CES card addition | If two or more users make changes to the VCLI database (for example, add/delete cards or add/delete switches), the changes are overwritten in the VCLI database. Users should have a single user making database changes. |

Resolved Caveats - Release 2.2.8.5

The following table consists of the caveats fixed in Release 2.2.8.5.

| Bug ID | Severity | Functional Area | Description |
|------------|----------|------------------|--|
| CSCdp72169 | High | Blade Monitor | The Blade Monitor process stops polling the network. The fix is to change the UNIX function used to pause the Blade Monitor process. |
| CSCdp72170 | High | Software upgrade | The VCLI proceeds with a CES and IMC software upgrade even though the contents file is not found in the directory containing the new software images. The fix is that the VCLI stops the upgrade process if this file is not found. |

Resolved Caveats - Release 2.2.8.4

The following table consists of the caveats fixed in Release 2.2.8.4.

| Bug ID | Severity | Functional Area | Description |
|------------|----------|---------------------|---|
| CSCdp36225 | High | Ascend provisioning | The stored Ascend uplink string truncates if the U1600 slot is greater than 9. This truncation causes the Ascend provisioning server to fail creating the ATM connection in the Ascend cloud. |
| CSCdp38871 | Medium | Blade Monitor | The command show blademon info displays the In-Band communication state to a card twice if the Out-Of-Band and In-Band links are down. |

| Bug ID | Severity | Functional Area | Description |
|------------|----------|-----------------|--|
| CSCdp38890 | Medium | Blade Monitor | Blade Monitor reports that the Out-Of-Band link is down when the In-Band link is up. The Out-Of-Band link status should be reported regardless of the In-Band link state. |
| CSCdp38898 | High | Blade Monitor | Illegal characters in a switch name causes the Blade Monitor to cease working properly. The fix is that the VCLI checks for legal characters in switch name when users add new switches to the VCLI database. |

Resolved Caveats - Release 2.2.8.2

The following table consists of the caveats fixed in Release 2.2.8.2.

| Bug ID | Severity | Functional Area | Description |
|------------|----------|----------------------|--|
| CSCdp02650 | Medium | IMC redundancy | If the IMC card with a U1600 chassis is not available for IP communication, the VCLI command show switch redundancy displays that the chassis is available. All other IMC commands fail. Verified: Yes |
| CSCdp33191 | High | IMC software upgrade | During an upgrade, if the IMC backup returns an error to the SNMP_SET request, the VCLI does not cease the upgrade. The upgrade continues by attempting to upgrade the other IMC card in the chassis. |
| CSCdp33196 | High | IMC software upgrade | The VCLI is not waiting long enough for IMC redundancy after the backup IMC has rebooted and is ready to become primary. The VCLI is proceeding with the upgrade of the second IMC too soon. |

Resolved Caveats - Release 2.2.8.1

The following table consists of the caveats fixed in Release 2.2.8.1.

| Bug ID | Severity | Functional Area | Description |
|------------|------------------------|---------------------|---|
| CSCdm73051 | Medium | Connection deletion | <p>The VCLI does not delete far endpoint of a pl type connection when only the near endpoint of the connection is given.</p> <p>However, if the far endpoint is given on the command line, both endpoints are deleted.</p> <p>The work around is to delete the far endpoint, or to delete both endpoints separately.</p> <p>Verified: Yes</p> |
| CSCdm73801 | High, Status is Closed | M13 IP address | <p>The VCLI command change system cescard -m13?ip 0 does not work.</p> <p>This is not a bug. Changing IP addresses requires a few seconds for the CPE card to make the change visible to the VCLI. Setting 0.0.0.0 works.</p> <p>Verified: Yes</p> |
| CSCdp00218 | Low | CES redundancy | <p>When executing the show switch redundancy command, the VCLI does not differentiate between unreachable configured cards and empty slots. The VCLI shows a hyphen (-) in both these instances. The VCLI should display an unknown message for configured cards.</p> <p>Verified: Yes</p> |
| CSCdp00556 | Low | PL circuit config | <p>The loopback state of a PL type circuit is not shown anywhere in the VCLI. This state should be displayed in the output of the command show conn pl config.</p> |
| CSCdp01075 | Low | CES card addition | <p>When an existing CES card is added to a switch, the VCLI returns an uninformative error message.</p> <p>Verified: Yes</p> |
| CSCdp02650 | Medium | IMC redundancy | <p>If the IMC card is not available for IP communication, the VCLI command show switch redundancy shows that card is available. All other IMC commands fail.</p> |

Resolved Caveats - Release 2.2.8

The following table consists of the caveats fixed in Release 2.2.8.

| Bug ID | Severity | Functional Area | Description |
|------------|----------|----------------------|---|
| CSCdm73146 | Medium | Change BERT | Unable to invert the transmit patten while running a BERT. The command is change connection segpl –txpattinv on –epid <endPointid> . |
| CSCdm75085 | High | Show OC3 summary | The VCLI shows the operational state of the SONET path layer on the Access OC3 to be up when either the SONET section or SONET line layers are down. Verified: Yes |
| CSCdm77686 | Medium | Show physical DS1 | The row label for DS1 frame errors does not say that frame errors are measured as any second that contains a frame error. Instead, the label implies that the count displayed is the actual number of frame errors. |
| CSCdm77694 | High | Show CES information | In release 2.1.X of the VCLI, the manufacturing related information attributes are incorrect for the command show cescard info on the CES cards. Verified: Yes |
| CSCdm77832 | High | ATM port stats | The VCLI returned an error when trying to retrieve the statistics with the command show logicalport atm stat . Verified: Yes |
| CSCdm82392 | Medium | Change system switch | Executing the command change system switch –sname <new_name> does not update the VCLI database files. Verified: Yes |
| CSCsn05541 | Medium | Blade Monitor | The VCLI takes a long time to establish communication with CES card after the card reboots. The fix is that the VCLI communicates within seconds after the CES card is available for communication. |
| CSCsn05684 | Medium | Blade Monitor | Duplicate problem of CSCsn05541 |
| CSCsn05736 | Low | Blade Monitor | Blade Monitor must be a standalone application. |
| CSCsn05781 | Low | Blade Monitor | Exit and restart of VCLI causes delay in communicating with the CES cards in the network. The fix is that the Blade Monitor process keeps in contact for the VCLI. |
| CSCsn05790 | High | Redundancy | In certain situations the VCLI gives an error when an CES card changes from a role of None to the primary role. Switching the role again clears this error. Verified: Yes |
| CSCsn05808 | Medium | Show connection | The VCLI command show conn all sum displays the incorrect circuit type on a backup CES card when a backup is switched-in for a primary. |

Resolved Caveats - Release 2.1.3

The following table consists of the caveats fixed in Release 2.1.3.

| Bug ID | Severity | Functional Area | Description |
|------------|----------|---------------------|---|
| CSCsn05743 | High | Connection creation | Connection created on switched-out primary card shows type Remote-Pl. |
| CSCsn05744 | High | Show command | The VCLI displays inconsistent or misleading information with the show cescard info command. |
| CSCsn04734 | High | Connection deletion | When the VCLI is unable to delete a connection, the endpoint ID is not displayed. |
| CSCdm60856 | Medium | Switch names | The underline character cannot be used in switch names. |
| CSCdm59553 | High | Change OC3 | A feature to change the AIS to RDI flag is missing. |
| CSCsn05811 | High | Switch names | Only three characters of a switch name are displayed on error. |
| CSCsn05846 | High | DS3 summary | Missing check for container down state in command show phy ds3 summary . |
| CSCsn05864 | High | Connection deletion | The VCLI is unable to always delete partially created circuits. |
| CSCsn05771 | High | Redundancy | Loss of communication when redundancy state of the CES cards is unknown. |
| CSCsn05715 | Medium | Connection creation | The VCLI cannot delete an invalid connection. |
| CSCdm72267 | Medium | Connection creation | The VCLI does not show the name of the cktid when a connection is created. |
| CSCsn05815 | Medium | User response | When asking for a user response, acceptance of Y/y and N/n instead of the complete yes/no word is required. |

Related Documentation

This section provides the documentation related to MGX 8240 Release 3.0.1.

Release-Specific Documents

The following release notes are related to this documentation:

- *Release Notes for Cisco MGX 8240 Release 3.0.1 PSM Switch Software*, DOC-7811171=
- *Release Notes for Cisco MGX 8240 Release 3.0.1 IMC Software*, DOC-7810801=

Hardware Document

The VCLI Release Notes support the *Cisco MGX 8240 Hardware User's Guide Release 3.0*, DOC-7810728=. This manual provides a physical description of the 8240 and includes instructions on installation, logical connectivity, cabling, traffic management, and statistics.

Software Document

The VCLI Release Notes support the *Cisco MGX 8240 VCLI User's Guide Release 3.0*, DOC-7810727=. This manual provides the VCLI installation and provisioning procedures, and includes the specific VCLI commands.

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.

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Customers and partners can self-register on Cisco.com to obtain additional personalized information and services. Registered users can order products, check on the status of an order, access technical support, and view benefits specific to their relationships with Cisco.

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<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.

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