Catalyst 3900 Token Ring Switch Release 2.0(1) Release Note

December 15, 1997

This document describes what is new in this release, including a list of the new features and the fixed problems. It also lists the known (open) problems for this release. In addition, it contains information about the Catalyst 3900 Token Ring Switch that was not included in the *Catalyst 3900 Token Ring Switch User Guide*. This document is available on the Cisco Connection Documentation CD-ROM or in print.

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What's New in This Release

This release includes support for the Catalyst 3900 multimode fiber ATM expansion module, which is a single-port expansion module that provides high-speed connectivity between the Catalyst 3900 Token Ring switch and an ATM backbone network. For more information about the ATM expansion module, see the *Catalyst 3900 Multimode Fiber ATM Expansion Module Configuration Note* that is shipped with each ATM module.

Release 2.0(1) of the Cisco Catalyst 3900 software is supported by Version 2.0(1) of the Cisco Catalyst 3900 private MIB and Version 2.0(1) of the Cisco Catalyst 3900 ATM Uplink MIB. The CiscoView support for the Catalyst 3900 has been updated to support these MIBs and to include options for configuring and managing the Catalyst 3900 ATM module. To upgrade to the latest release of the CiscoView Catalyst 3900 device package, download the device package from the Cisco Connection Online (CCO).

Problems Fixed in This Release

The following is a list of problems that have been resolved in this release.

Problem Identifier	Problem Description
CSCdj22253	Spanning tree mode does not default to forwarding
CSCdj22268	Unable to exit Menu Busy message
CSCdj22543	Problems using the Esc key on the VLAN and VTP Configuration panel
CSCdj28191	Multiple prompts for box number when configuring filters
CSCdj28200	Problems using Olicom adapters at 4 Mbps
CSCdj38324	Hardware multicast problem impacting the stack
CSCdj39390 and CSCdj36498	Cannot reset password from System Request menu
CSCdj39692 and CSCdj47800	Speed error detected incorrectly
CSCdj39729	Status of inserted ports not accurately reflected in the software
CSCdj41972	TrBRF spanning tree does not use configured MAC address
CSCdj42346	Difficulty exiting the Port Spanning Tree Parameters panel
CSCdj42362	Tab key not working properly on certain panels
CSCdj43061	IP communications lost when spanning tree is modified via SNMP
CSCdj43063	Aging level set via SNMP not reflected correctly at console
CSCdj43079	Console allows configuration of MAC filters for non-existent ports
CSCdj47785 and CSCdj36485	Spanning tree loses a TrCRF in one of the TrBRFs
CSCdj50969	Catalyst 3900 stops forwarding traffic across TrCRFs
CSCdj50968	Changes to the trap receiver table not implemented properly
CSCdj52898	Frequency errors included with transmit abort errors
CSCdj52910	Unable to enable ports on expansion module
CSCdj53416	VLAN ports of entry not set correctly
CSCdj54655	Problem with TokenChannels with ten or more TrCRFs
CSCdj58083	TrBRF domains not being updated correctly
CSCdj58286	VTP Reports an Internal Error when Deleting a TrBRF or TrCRF
CSCdj58704	VTP detecting duplicate ring number when no duplicate ring number exists
CSCdj58714	Problems clearing address table under heavy unicast traffic

Problem Identifier	Problem Description
CSCdj59100	Problems with console panels when pressing ESC on the Select TrBRF panel
CSCdj59407	Ring number not set correctly when re-assigning a port to TrCRF in same TrBRF
CSCdj64643	TrBRF Spanning-Tree Protocol disabled inadvertently when TrCRF parameters are updated

Known Problems

This section lists the currently known problems.

Problems with Large Frames Destined for the Spanning Tree Functional Address

Problem Identifier: CSCdj23476

Problem Description: If a device attached to a port begins to flood a given port with large frames (over 4K) addressed to the spanning tree functional address, the message STP: Cpubuf_to_Netbuf No More Memory is displayed and a fatal error could occur.

Recommended Action: Identify the faulty device that is flooding the given port and remove it from the network.

Inconsistencies with the TrCRF Maximum Bridge Hop Count Parameters

Problem Identifier: CSCdj31691

Problem Description: The TrCRF hop counts for ARE and STE explorers displayed on the console can appear as 14, which is outside the valid range. This problem occurs if an SNMP manager is used to set the value to 14. This may cause explorers with 30 byte routing information fields to be dropped and not forwarded across a TrBRF.

Recommended Action: Users should only set hop counts to the values 1 through 13.

Problems Inserting into the LAN Master TR 16 Retiming Hub

Problem Identifier: CSCdj33434

Problem Description: There are known problems associated with inserting Catalyst 3900 ports into the Transition Engineering, Inc. LAN Master TR 16 Retiming Hub.

Recommended Action: If you experience problems opening into this particular concentrator, do the following:

Step 1 Check the Operation Mode of the Catalyst 3900 port on the Port Configuration panel. If it is A-unknown, then configure it to be HDX station.

Step 2 Check the Media Speed of the Catalyst 3900 port on the Port Configuration panel. If it is A-unknown, then configure it to be the speed at which the Transition Engineering concentrator is currently running.

Step 3 Insert the Catalyst 3900 port into another MAU. Once the port opens, quickly move it out of that MAU and into the Transition Engineering hub.

Problem Pressing Esc During a TFTP Download

Problem Identifier: CSCdj34650

Problem Description: A TFTP code download fails when the user tries to clear a message from a telnet or console screen. This problem occurs if a TFTP code download is in progress and an event occurs that causes a message to be displayed on the screen. The user presses the Esc key to clear the message and the download is aborted.

Recommended Action: Do not press Esc to clear the message until after the code has been downloaded and written to flash. The user will see the prompt to press the Return key below the message box. This problem will be corrected in a future code release.

Cannot Terminate Telnet Session

Problem Identifier: CSCdj37544

Problem Description: The console cannot always be used to terminate telnet sessions to the switch.

Recommended Action: None

MIB Objects Return Incorrect Values

Problem Identifier: CSCdj37783

Problem Description: The following three MIB objects will return values with the incorrect magnitude. The values should be in 1/100's of a second, instead the values are actually in seconds.

- dtrCRFSpTreeMaxAge
- dtrCRFSpTreeHelloTime
- dtrCRFSpTreeForwardDelay

Recommended Action: Multiply the returned number by 100 to get the value in 1/100's of a second.

Authentication Trap not Being Sent

Problem Identifier: CSCdj42684

Problem Description: If you have a community string "private" defined on the switch and send an SNMP set with "pri" it will not result in an authentication trap. Instead a "No Such Name" error will be returned. If you send a completely different string, such as "xxx" in a SNMP set, then it will time-out and send a trap.

Recommended Action: None.

Conflict Between RMON and SNMP

Problem Identifier: CSCdj43071

Problem Description: Creating an entry in the unsupported RMON group alarm halts the SNMP agent in the box.

Recommended Action: Do not attempt to add entries to the RMON group alarms.

Incorrect Values in DTR-MAC MIB

Problem Identifier: CSCdj43075

Problem Description: The values for the access protocol, individual address count, and phantom drive support are not correct when read from an SNMP agent.

Recommended Action: Read the information from the switch console.

Current Spanning Tree Information May be Incorrect

Problem Identifier: CSCdj44177

Problem Description: After a period of time, the Current Spanning Tree Information panel may show incorrect information for the Root Port and for the Max Message Age. The display is wrong on both serial and Telnet consoles.

Recommended Action: None.

Selecting End does not Scroll to the End of the Message Log

Problem Identifier: CSCdj49835

Problem Description: In some situations, selecting **End** on the Message Log Information panel does not scroll the message log display entirely to the end of the messages.

Recommended Action: If selecting End does not scroll to the bottom of the message log, select **More**.

Ring Number not Learned when Learning is Reset to Auto

Problem Identifier: CSCdj50465

Problem Description: The switch will not learn a new ring number after the ring number has been set back to "auto". For example, assume that the ring number for a TrCRF has been configured for "auto". When the switch learns the ring number (for example, 0x123) for this TrCRF, it will correctly reflect this in the Ring Number field by displaying "A-0x123". If you attempt to reset the learned ring number by entering a null value for the Ring Number field, the switch will display "auto" for the ring number, but it will not learn a different ring number until the switch is rebooted.

Recommended Action: One option is to reboot the switch. Alternatively, you can do the following:

Step 1 On the VTP VLAN Configuration panel, select **Change** and specify the VLAN ID of the TrCRF.

Step 2 On the VTP VLAN Parameter Configuration for TrCRF panel, select the Ring Number field and temporarily configure the ring number using the value that should have been learned.

Step 3 Select **Return** to exit the VTP VLAN Parameter Configuration for TrCRF panel.

Step 4 On the VTP VLAN Configuration panel, select **Change** again and specify the VLAN ID of the TrCRF.

Step 5 On the VTP VLAN Parameter Configuration for TrCRF panel, select the Ring Number field and enter a null value to set the ring number back to auto, which will enable the switch to relearn a new ring number.

Switch Forwards STE Frames onto Rings Already in RIF

Problem Identifier: CSCdj53766

Problem Description: The current version of the switching ASIC in the Catalyst 3900 does not reduce STE frames. The ASIC could forward a frame back onto a ring that it has already traversed.

Recommended Action: To prevent this situation, do one of the following:

- Enable the IBM Spanning Tree.

- Do not allow source-route loops in the network.

- Do not allow a source-route loop between TrCRFs in a Catalyst 3900.

Problems Forming a Back-to-Back Stack with Standalone Switches

Problem Identifier: CSCdj64064

Problem Description: When joining standalone Catalyst 3900s in a back-to-back stack, the following warning message is displayed:

```
Units trying to form a stack have different configuration. Please select a unit as the
stack's configuration provider by briefly pushing the Sysreq button on that unit. Units
with matching configurations are: (1) (2).
```

This warning is misleading as the instructions do not work in a back-to-back stack configuration when the two Catalyst 3900s are already running.

Recommended Action: Do one of the following:

- Reboot both switches at the same time and connect the stack cable while they are booting but before they reach the point where the stack is forming.

- Upload the good configuration and download it to the other box before connecting the switches together.

Amendments to the Documentation

This section contains information that was not included in the *Catalyst 3900 Token Ring Switch User Guide*. The headings in this section correspond with the applicable section titles in the documentation.

Configuring Basic Switch and Stack Parameters

The Switch Information and Stack Information options have been renamed to Switch Configuration and Stack Configuration.

The MAC address (burned in or locally administered) displayed on the Switch Configuration panel is used as the basis for the MAC addresses of the ports and VLANs of the switch. For more information about how MAC addresses are assigned, refer to the "Codes and IDs" appendix.

Viewing Module Information

The Module Information panel has been enhanced. The Revision field as documented in the *Catalyst 3900 Token Ring Switch User Guide* has been replaced with two fields:

- HW Rev—Hardware revision level of the module.

- FW Rev—Firmware revision level of the module.

The module numbers displayed on the Module Information panel have the following meaning:

- 1—Base switch

- 2—Front, left expansion slot

- 3—Front, right expansion slot

- 4—Rear stack port slot

The possible statuses of a module are up, down, and empty. Up indicates that the module is properly installed. It does not imply that any ports on the module are connected and operational.

Configuring VLANs and VTP

The VLAN with the VLAN name of "default" is an Ethernet VLAN and is the VLAN that will be used to transmit information for Cisco proprietary protocols, such as VTP and CDP.

A *management domain* is a logical grouping of VLANs used by the VLAN Trunking Protocol (VTP) for the purpose of administration and management. VTP parameters are propagated throughout the VLANs within a single management domain. While you can have duplicate VLAN names in a network, each VLAN name within a management domain must be unique. A management domain is not device specific. Different devices may belong to the same management domain if the VLANs defined for the devices belong to the same management domain. Likewise, a device may belong to multiple management domains if the VLANs defined for the device belong to different management domains.

The possible values for the State of a VLAN are Operational and Suspended. By default, all VLANs are Operational. You can change the states for TrBRFs and TrCRFs only. Consider the following when changing the states of a TrBRF or TrCRF:

- If you change the state of a TrBRF to Suspended, the state of any associated TrCRFs will also be changed to Suspended.

- If you change the state of a TrCRF to Suspended or if the state is changed as a result of a change in the state of the parent TrBRF, any traffic (including BPDUs) that is received by ports assigned to the TrCRF will be discarded.

- If you change the state of a TrBRF to Operational, the state of any associated TrCRFs will also be changed to Operational. This will cause all the ports associated with the TrBRF to begin forwarding traffic.

- If you change the state of a TrCRF to Operational, the state of the parent TrBRF will automatically be changed to Operational as well. The state of any other TrCRFs associated with the parent TrBRFs will remain unchanged.

- The fact that a VLAN is operational does not mean that you can assign spanning-tree parameters to it. You can assign certain parameters, such as IP and spanning-tree parameters, to only those TrCRFs for which ports have been assigned. And you can assign ports to only those TrCRFs that have been configured for the local switch.
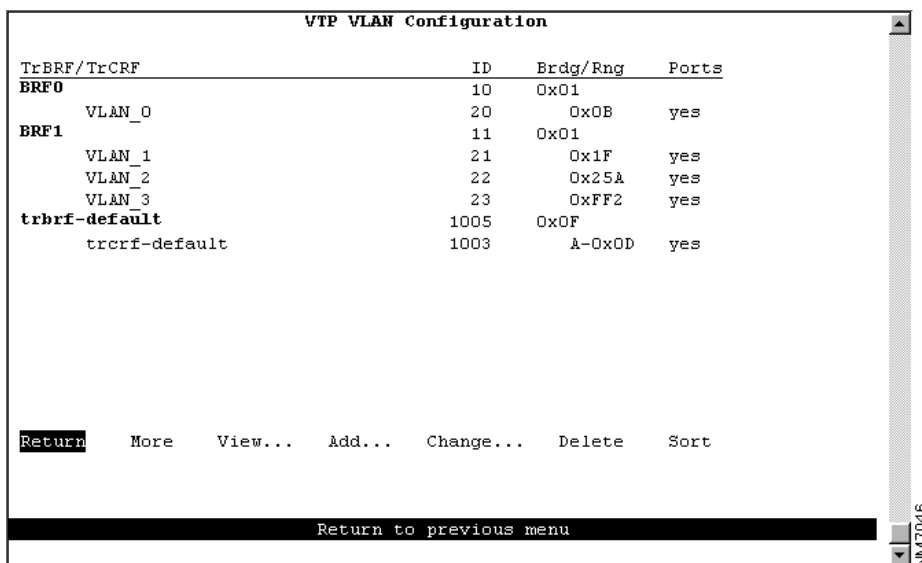
For TrCRFs, you can configure the ring number or allow the Catalyst 3900 to learn the ring number. To enable ring number learning, the Local Mode (on the VTP Administrative Configuration panel) must be set to Transparent (which is the default) and the Ring Number (on the VTP VLAN Parameter Configuration for the TrCRF) must be set to auto (which is the default). If you have set the Local Mode to Client or Server, you cannot set the Ring Number to auto. Also, if you have previously set the Local Mode to Transparent and the Ring Number to auto, you cannot change the Local Mode while ring number learning is in progress.

VTP VLAN Configuration Panel

The VTP VLAN Configuration panel (Figure 1) has been redesigned. The panel now lists the VLANs with respect to their parent-child relationships. Each TrBRF is followed by an indented list of the TrCRFs for which it is a parent. You can also sort the entries on the panel by VLAN ID. This is particularly useful when you are searching for a particular VLAN or when you want to add a VLAN and need to see the IDs that have already been assigned.

The panel also displays additional information about the VLANs.

Figure 1   VTP VLAN Configuration Panel

```
                        VTP VLAN Configuration                          ▲

TrBRF/TrCRF                          ID      Brdg/Rng    Ports
BRF0                                 10      0x01
        VLAN_0                       20        0x0B      yes
BRF1                                 11      0x01
        VLAN_1                       21        0x1F      yes
        VLAN_2                       22        0x25A     yes
        VLAN_3                       23        0xFF2     yes
trbrf-default                      1005      0x0F
        trcrf-default              1003        A-0x0D   yes




Return    More    View...   Add...   Change...   Delete   Sort



                       Return to previous menu                          ▼
```

The following information is displayed on this panel:

- TrBRF/TrCRF—ASCII name associated with the VLAN, which is synonymous with the VLAN's emulated LAN name on LANE trunks.

- ID—Numeric VTP ID, which is synonymous with the VLAN's ISL ID associated with the VLAN packets on ISL trunks.

- Brdg/Rng—Bridge number for TrBRFs or ring number for TrCRFs. The bridge and ring numbers are displayed in hexadecimal.

- Ports—For TrCRFs, whether or not ports have been associated.

To	Select	Then
View the current configuration of a VLAN, including a list of associated ports for a TrCRF...	**View**	Specify the VLAN ID.
Add a new TrBRF VLAN configuration...	**Add**	Specify the VLAN ID. Select **TrBRF**. Refer to the "Adding or Changing TrBRF VLAN Parameters" section of the *Catalyst 3900 Token Ring Switch User Guide*.

To	Select	Then
Add a new TrCRF VLAN configuration...	**Add**	Specify the VLAN ID. Select **TrCRF**. Refer to the "Adding or Changing TrCRF VLAN Parameters" section of the *Catalyst 3900 Token Ring Switch User Guide*.
Change an existing TrBRF VLAN configuration...	**Change**	Specify the VLAN ID and refer to the "Adding or Changing TrBRF VLAN Parameters" section of the *Catalyst 3900 Token Ring Switch User Guide*.
Change an existing TrCRF VLAN configuration...	**Change**	Specify the VLAN ID and refer to the "Adding or Changing TrCRF VLAN Parameters" section of the *Catalyst 3900 Token Ring Switch User Guide*.
Delete a VLAN...	**Delete**	Specify the VLAN ID.
Display a list of VLANs sorted by VLAN ID...	**Sort**	Select **Sort_by_VLAN_ID**.
Save your changes...	**Return**	

Configuring IP Information

The IP information that you can configure is associated with a TrBRF. Therefore, if the ports of the Catalyst 3900 are assigned to more than one TrBRF, when you select IP configuration you will be presented with a list of possible TrBRFs from which to choose.

Configuring SNMP Information

The SNMP Trap Receivers information that you can configure is associated with a TrBRF. Therefore, if the ports of the Catalyst 3900 are assigned to more than one TrBRF and you select **Trap Receivers** on the SNMP Configuration panel, you will be presented with a list of possible TrBRFs from which to choose.

Configuring Spanning-Tree Parameters

When you configure spanning-tree parameters for a TrBRF, you:

- Use the STP Participation field on the Spanning Tree for TrBRF panel to specify whether the TrBRF is to participate in a spanning tree and, if so, which Spanning-Tree Protocol is to be used.

- Use the STP Mode field on the Spanning Tree for TrCRF panel to specify the forwarding state of each logical port in the TrBRF. The forwarding state can be forwarding, blocked, or auto. For a mode of auto, the forwarding state is determined by the Spanning-Tree Protocol.

Likewise, when you configure the spanning-tree parameters for a TrCRF, you:

- Use the STP Participation field on the Spanning Tree for TrCRF panel to specify whether the TrCRF is to participate in a spanning tree and, if so, which Spanning-Tree Protocol is to be used.

- Use the STP Mode field on the Port Spanning Tree Parameters panel to specify the forwarding state of each physical port in the TrCRF. The forwarding state can be forwarding, blocked, or auto. For a mode of auto, the forwarding state is determined by the Spanning-Tree Protocol.

You can create your own spanning tree by setting the STP Participation to **No** and manually controlling the forwarding state of each logical and physical port using the STP Mode fields. However, if you then decide to use one of the standard Spanning-Tree Protocols and change the STP Participation to a value other than no, you must set the STP Mode for each port to auto. The Catalyst 3900 will not automatically change the forwarding mode of related ports when you change the STP Participation from **No** to one of the Spanning-Tree Protocols.

To further distinguish between the spanning-tree parameters configured at the TrBRF level from those configured at the TrCRF level, the following field labels have been changed on the Spanning Tree for TrBRF panel.

Old Field Label	New Field Label
Switch Priority	Bridge Priority
Switch Hello Time	Bridge Hello Time
Switch Maximum Message Age	Bridge Maximum Message Age
Switch Forward Delay	Bridge Forward Delay

Two fields on the Spanning Tree for TrCRF panel warrant further explanation.

- STP Priority—This is the port priority of the internal logical port that connects the TrBRF to its associated TrCRFs. This value is used by the TrBRF only except when the TrBRF and the TrCRF are both running the IEEE protocol.

- Switch Priority—This is the priority field of the Bridge ID used by the TrCRF in the Spanning Tree protocol at TrCRF level.

Configuring Port Parameters

If a port has been disabled by the Catalyst 3900 software, the Enabled field on the Port Configuration panel will display **No (auto-disabled)**. To manually enable the port, move to the Enabled field and select **Yes**.

Configuring the Cisco Discovery Protocol Parameters

On the CDP Configuration panel, the field labeled Trans Frequency Time has been renamed to Message Interval.

Monitoring Port Traffic

A Switched Port Analyzer (SPAN) port performs the function of port mirroring. Traffic on the monitored port is copied to the monitoring port.

Before you use a SPAN port to monitor traffic, make sure that the SPAN port is isolated by assigning it to its own TrCRF and TrBRF. See "Configuring VLANs and VTP" for more information about how to define a TrBRF and a TrCRF, and how to assign a port to a TrCRF.

You cannot specify a port that is a member of a TokenChannel as a monitoring port. Likewise, you cannot add a port that has been specified as a monitoring port to a TokenChannel.

Using TokenChannels

The Running TokenChannel Information option has been renamed to Current Token Channel Information.

Limiting Scope and Access

The *Catalyst 3900 Token Ring Switch User Guide* incorrectly states that you can change the names assigned to protocol classes. You cannot change the names.

When configuring MAC address filters for a port, you cannot configure multiple filters for a port that include the same MAC address. For example, you cannot specify the same MAC address in both a 'Block Destination Address' filter and a 'Block Source Address' filter for the same port. Also, you cannot specify the same MAC address in both an 'Allow Destination Address' filter and an 'Allow Source Address' filter for the same port.

Viewing the Message Log

The Message Log Information panel has been enhanced. The log can now maintain a list of up to 200 messages. Once 200 messages have been logged, new messages received will be added to the end of the log and the oldest message will be deleted from the panel. The log entry numbers continue to increment, indicating the total number of messages received.

To view the message log, select **Message Log Information** from the Statistics panel. The first (oldest) seven messages are displayed. You can use the options at the bottom of the panel to move through the message log.

- To page forward in the log, select **More**.

- To move to the end of the message log, select **End**. The latest seven messages are displayed.

- To return to the beginning of the message log, select **Start**.

To delete all messages from the message log, select **Clear**. You will be prompted to confirm your request to clear the log.

Availability of Catalyst 3900 Software Upgrades on CCO

When changes are made to the Catalyst 3900 software, the new image is posted to CCO. You can then obtain a copy of the image and download it to your switch.

Obtaining Service and Support

For service and support for a product purchased from a reseller, contact the reseller. Resellers offer a wide variety of Cisco service and support programs, which are described in the section "Service and Support" in the information packet that shipped with your product.

Note If you purchased your product from a reseller, you can access Cisco Connection Online (CCO) as a guest. CCO is Cisco Systems' primary, real-time support channel. Your reseller offers programs that include direct access to CCO's services.

For service and support for a product purchased directly from Cisco, use CCO.

Cisco Connection Online

Cisco Connection Online (CCO) is Cisco Systems' primary, real-time support channel. Maintenance customers and partners can self-register on CCO to obtain additional information and services.

Available 24 hours a day, 7 days a week, CCO provides a wealth of standard and value-added services to Cisco's customers and business partners. CCO services include product information, product documentation, software updates, release notes, technical tips, the Bug Navigator, configuration notes, brochures, descriptions of service offerings, and download access to public and authorized files.

CCO serves a wide variety of users through two interfaces that are updated and enhanced simultaneously: a character-based version and a multimedia version that resides on the World Wide Web (WWW). The character-based CCO supports Zmodem, Kermit, Xmodem, FTP, and Internet e-mail, and it is excellent for quick access to information over lower bandwidths. The WWW version of CCO provides richly formatted documents with photographs, figures, graphics, and video, as well as hyperlinks to related information.

You can access CCO in the following ways:

- WWW: http://www.cisco.com
- WWW: http://www-europe.cisco.com
- WWW: http://www-china.cisco.com
- Telnet: cco.cisco.com
- Modem: From North America, 408 526-8070; from Europe, 33 1 64 46 40 82. Use the following terminal settings: VT100 emulation; databits: 8; parity: none; stop bits: 1; and connection rates up to 28.8 kbps.

For a copy of CCO's Frequently Asked Questions (FAQ), contact cco-help@cisco.com. For additional information, contact cco-team@cisco.com.

Note If you are a network administrator and need personal technical assistance with a Cisco product that is under warranty or covered by a maintenance contract, contact Cisco's Technical Assistance Center (TAC) at 800 553-2447, 408 526-7209, or tac@cisco.com. To obtain general information about Cisco Systems, Cisco products, or upgrades, contact 800 553-6387, 408 526-7208, or cs-rep@cisco.com.

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