



Catalyst 3900 Token Ring Switch Release 4.1(3) Release Note

April 20, 2001

This document describes the problems fixed in Catalyst 3900 switch main image Release 4.1(3) and in ATM firmware image Release 1.2(5). It also lists the known problems for these releases and contains information about the Catalyst 3900 and Catalyst 3920 Token Ring switches that was not included in the user guides. This document is available on the Cisco Connection Documentation CD-ROM or in print.

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Ordering the Catalyst 3900 Token Ring Switch User Guide

The Catalyst Token Ring switch Release 4.1(x) is a CCO only release. Therefore, to get a copy of the *Catalyst 3900 Token Ring Switch User Guide* that lists and describes each of the new features that are available in Release 4.1(x), you must either download the PDF files of the user guide from CCO or order a printed and bound copy of the manual through Cisco MarketPlace.



Note

To place an order for the user guide through Cisco MarketPlace, you must be a registered CCO user.

When ordering a printed and bound copy of the user guide through the Cisco MarketPlace, specify one of the following part numbers, depending on the manual you are ordering:

- To order the *Catalyst 3900 Token Ring Switch User Guide, Release 4.1(1)*, specify part number DOC-786491=.
- To order the *Catalyst 3920 Token Ring Switch User Guide, Release 4.1(1)*, specify part number DOC-786519=.

Problems Fixed in This Release

This section lists the problems that have been resolved in the Catalyst 3900 series main image Release 4.1(3) and in Release 1.2(5) of the ATM firmware image.

Problems Fixed in the Catalyst 3900 Series Main Image Release 4.1(3)

The following is a list of problems found in the Catalyst 3900 series main image that have been resolved in Release 4.1(3).

| Problem Identifier | Problem Description |
|--------------------|--|
| CSCdr24694 | When using long fiber cables, the Catalyst 3900 fiber Token Ring ports fail to connect. When this problem occurs, a “QMAC not responding” error message might display on the console. |
| CSCds10660 | In a Hot Standby Router Protocol (HSRP) environment, continuous pings to the IP address of a Catalyst 3900 will fail approximately every 10 minutes. These ping failures can last up to a minute and will automatically recover themselves. |
| CSCds28966 | Problems with the CAM table might be experienced. Rapidly moving a station from a high-numbered port (for example, port 20) to a low-numbered port (for example, port 1) might cause the original port number to become locked as the CAM entry. This problem causes traffic to be incorrectly switched. |
| CSCds54442 | Many receive frame errors are reported on ports that have redundant ring in/ring out (RI/RO) connections to a CAU. These errors might not have a noticeable impact on performance. |
| CSCdt56434 | A defect exists that allows SNMP objects to be viewed and modified without authorization using an undocumented and hidden ILMI community string. Affected devices might be vulnerable to an unauthorized configuration if they are not protected against unauthorized use of the ILMI community string. |

Problems Fixed in the ATM Firmware Image Release 1.2(5)

The following is a list of problems found in the Catalyst 3900 ATM firmware image that have been resolved in the Release 1.2(5).

| Problem Identifier | Problem Description |
|--------------------|---|
| CSCdk48384 | When defining a traffic profile to use for mapping outgoing traffic for an ATM connection, setting the VCC Type parameter on the Traffic Profile Mapping panel to Any does not use the profile for any VCC type. Instead, the default traffic profile is used by VCCs when the VCC Type parameter is set to Any. However, setting the VCC Type to DataDirect will apply the traffic profile map to any VCC type. |
| CSCdm01728 | In rare circumstances, the processing of Address Resolution Protocol (ARP) messages might cause a loss of service for the ATM module. This problem results connectivity loss across the ATM network. The local Token Ring network connectivity is not affected. |
| CSCdm47776 | After extended periods of uninterrupted operation, a Catalyst 3900 switch might begin to truncate (and therefore corrupt) frames that it receives from the ATM network that are to be forwarded to the local network. |
| CSCdm92419 | In large network configurations in which many TrCRFs are configured, assigning an ATM module to a TrCRF might result in the LEC associated with that TrCRF not connecting with LANE services. When this problem occurs, the Status field (located on the ATM LEC Setup panel) displays Going Up and never progresses to Up or Forwarding mode. Also, when this problem occurs, no traffic passes to the ATM network for that TrCRF. |
| CSCdm92420 | Under light traffic loads, the forwarding of a packet out of an ATM module might be delayed by a Catalyst 3900 switch until another packet is sent out of the module. This problem results in sporadic traffic flow and slow throughput for transport protocols that have long timeouts. |

Known Problems

This section lists the currently known problems in Release 4.1(2).

Problem: Addresses across the stack are not distributed on TokenChannel ports (CSCdm32568)

Problem Description: In rare circumstances, in a stack configuration in which a TokenChannel has been configured, the address table entries for addresses learned via a TokenChannel port located on another switch in the stack are not correctly distributed across the TokenChannel.

Recommended Action: Ensure that TokenChannel traffic does not cross the stack.

Problem: Loss of power to a Catalyst Matrix causes STP to malfunction (CSCdm62365)

Problem Description: In a Catalyst Matrix stack configuration, in which multiple stacks are connected via redundant ISL uplinks and STP is enabled, the loss of power to a Catalyst Matrix in one of the connected stacks causes STP to malfunction. When this problem occurs, the information in the Spanning Tree statistics tables and the port states for the ISL port are incorrect.

Recommended Action: Reset the switches in the affected stack.

Problem: Powering off a Catalyst Matrix might cause the loss of VTP VLAN configuration information on secondary switches (CSCdm64562)

Problem Description: In a Catalyst Matrix stack configuration, the loss of power to the Catalyst Matrix might cause secondary Catalyst 3900s (which are configured as VTP clients and are not connected to the VTP server via ISL) to lose non-local VLAN information. When this problem occurs, VLANs will be missing from the VTP VLAN Configuration panel.

Recommended Action: Press the SYSREQ button on the Catalyst 3900 that is connected to the VTP Server via ISL to synchronize the VLAN information across the stack. Resetting the switches in the stack will also synchronize the VLAN information.

Problem: IP over ISL uses a ring number of zero if the ring number has not been manually configured (CSCdm67270)

Problem Description: If the ring number has not been configured for a TrCRF used for IP communication via an ISL uplink to a Catalyst 3900, the switch might generate RIFs that contain ring number zero. This problem can cause IP communication to the switch to fail because some network devices do not support a ring number of zero.

Recommended Action: Ensure that the proper ring number for the TrCRF is manually configured.

Problem: The status of a disabled ISL port might display as up and inserted (CSCdp78073)

Problem Description: A inserted link status might display on the Port Configuration panel (Inserted displays in the Status field) and Port Status panels (Yes displays in the Ins field) even when the ISL port is disabled. Switches on the other end of the ISL trunk link might also show this disabled link as up and inserted even though the port on the Catalyst 3900 switch is disabled. When the ISL port is disabled, there are no frames forwarded by the port.

Recommended Action: Remove the cable from the ISL port.

Problem: Cisco Discovery Protocol neighbors are not being discovered in Catalyst stacks (CSCdp88897)

Problem Description: CDP packets are not sent out of the ports located on secondary boxes (box number 2 or higher) in a stack when those ports have been blocked by spanning-tree. Ports that are in forwarding mode or ports located on box 1 of the stack are not affected by this problem. Affected Catalyst 3900s will not show up on the CDP Neighbor Display panel of a Catalyst switch that is connected to a blocked port on box 2 or higher of a stack.

Recommended Action: This problem is primarily a cosmetic problem and there is no workaround.

New Features in Release 4.1(x)

This section documents the features that have been added to Catalyst 3900 Token Ring software releases 4.1(x). This section contains the following information:

- [New Features in Release 4.1\(3\), page 5](#)
- [New Feature in Release 4.1\(2\), page 5](#)
- [New Features in Release 4.1\(1\), page 5](#)

New Features in Release 4.1(3)

There are no new features in the Catalyst 3900 Token Ring software Release 4.1(3).

New Feature in Release 4.1(2)

The following new feature has been added to the Catalyst 3900 Token Ring software Release 4.1(2).

Configuring Basic Switch and Stack Parameters

The option to configure the insert LED to blink on disabled ports has been added to the Switch Configuration panel. By configuring the insert LED to blink on ports that are disabled, you can visually identify which ports are currently disabled. When you configure the insert LEDs to blink on disabled ports, if the switch is part of a stack, the setting applies to all switches in the stack. If you enable and then disable this feature, the insert LEDs on the disabled ports will continue to blink until the switch is rebooted.

To configure the insert LED to blink on ports that are disabled, complete the following steps:

-
- Step 1** Select **Switch Configuration** on the Configuration menu. The Switch Configuration panel is displayed.
 - Step 2** Select the **Blink Disabled Port LEDs** option and press **Enter**.
 - Step 3** Select **Yes** if you want the insert LEDs to blink on disabled ports. Select **No** if you do not want the insert LEDs to blink on disabled ports. The default is **No**.
 - Step 4** Select **Return** to save your changes and to exit the Switch Configuration panel.
-

New Features in Release 4.1(1)

The following new features have been added to the Catalyst 3900 Token Ring software Release 4.1(1). For detailed information about each new feature, including how to configure them, refer to the Release 4.1(1) version of the appropriate user guide.

VTP Pruning

A feature of VTP, *VTP pruning* enhances the use of network bandwidth by reducing unnecessary flooded traffic (for example, broadcast and multicast traffic). VTP pruning increases the available bandwidth by restricting flooded traffic to only those ISL trunk links that the traffic must use to access the appropriate network devices. By default, VTP pruning is disabled on Catalyst 3900 switches.

Soft Error Monitoring and Remove Adapter Support

The Catalyst 3900 switch software Release 4.1(1) and later performs error detection and isolation by monitoring the Report Soft Error MAC frames generated by stations on each port. Soft errors occur during normal ring operation and do not typically disrupt traffic on the ring. However, soft errors can occur at a rate that could potentially degrade the performance of the ring.

Using the Catalyst 3900 or Catalyst 3920, you can configure soft error thresholds and sampling intervals for a port. During the interval you define, the Catalyst 3900 monitors the stations on the port and if the threshold is exceeded, the switch can be configured to generate a trap indicating the port number and station on which the threshold was exceeded. If necessary, you can issue a Remove Ring Station MAC frame to remove the station from the ring.

In summary, the Catalyst 3900 switch:

- Monitors the Report Soft Error MAC frames generated by stations on each port, collects the data from each soft error frame, and generates a trap containing the port number and station on which the user-defined soft error threshold is exceeded.
- Reports the soft error monitoring statistics via the console and SNMP.
- Provides the ability to issue a Remove Ring Station MAC frame to remove a station that is reporting a high level of errors or is not authorized to be on a ring.

ISL Channels

In addition to TokenChannels configurations, with Release 4.1(1) of the Catalyst 3900 you can configure ISL Channels.

An ISL Channel is two to four parallel connections treated as a single interface. ISL Channels provide Fast EtherChannel connectivity on the Catalyst 3900. You can configure an ISL Channel between two Catalyst 3900 switches or between a Catalyst 3900 switch and a Catalyst 5000, a Token Ring ISL-capable Cisco router, or a Token Ring ISL network adapter. All connections in an ISL Channel must be FDX.

The Catalyst 3900 ISL Channels provide the following benefits:

- Logical aggregation of bandwidth of up to 800 Mbps (400-Mbps full duplex)
- Load balancing
- Fault Tolerance

Fault Tolerant Channels

With Release 4.1(1), all channel configurations (TokenChannel and ISL Channel) are *fault-tolerant*.

The fault-tolerant feature enables TokenChannel and ISL Channel configurations to function as long as there is at least one port active in the channel. This capability ensures that large portions of a network are not disrupted in the event a port or cable fails within the channel by transferring the traffic to one or more of the remaining ports in the channel.

A channel displays in a reduced state on the Current Channel Information Panel when some, but not all of the ports assigned to the channel are up.

Spanning Tree Protocol Defaults

With Release 4.1(1), by default STP is enabled on all preferred VLANs. This default applies to those VLANs that are created after the Catalyst 3900 series switch is running software Release 4.1(1) or later. However, you can manually configure the TrBRF STP participation to no, IEEE, IBM and Base on Bridging Mode.

A new STP mode, Base on Bridging Mode, is available at the TrCRF level. Base on Bridging Mode enables the bridging mode of the TrCRF to determine the STP running at the TrCRF. TrCRFs with a bridging mode of SRB run the IEEE STP and TrCRFs with a bridging mode of SRT run the Cisco STP.

The default TrBRF STP is IBM. The default TrCRF STP is Base on Bridging Mode.

Amendments to the Documentation

This section contains information that was not included in the Catalyst 3900 or Catalyst 3920 User Guides. The headings in this section correspond with the applicable section titles in the documentation.

VTP and VTP Pruning

The following statement that appears in the VTP and VTP Pruning section is misleading:

“VLANs that are not configured to be eligible for pruning are always considered to be in a joining state on every trunk. VLAN 1, the default TrBRF (1005), and TrCRFs are not eligible for pruning.”

This statement should read as follows:

“VLANs that are not configured to be eligible for pruning are always considered to be in a joining state on every trunk. VLAN 1, the default TrBRF (1005), and the default TrCRF (1003) are not eligible for pruning. Pruning eligibility is configured on a TrBRF basis. Therefore, if you configure a TrBRF other than the default TrBRF to be pruning eligible, all TrCRFs associated with the TrBRF are pruning eligible as well.”

RMON Support

The list of the supported groups of the Token Ring extensions to the Remote Network Monitoring MIB (RFC 1513) is incomplete.

In addition to the MAC-layer statistics group, promiscuous statistics group, Token Ring ring station group, and the Token Ring ring station order group, the following two Token Ring extensions are also supported with Release 4.1(1):

- Token Ring ring station table

A list of ring station entries. An entry exists for each station that is currently or has previously been detected as being physically present on the ring.

- Token Ring ring station config control table

A list of ring station configuration control entries. Each entry controls the management of stations by a probe. One entry exists in this table for each active station in the ring station table.

Customizing the Serial Link

The following Autobaud upon Break parameter description is incorrect:

“Indicates whether the baud rate is reset when a Break key sequence (pressing Enter rapidly for five seconds) is sent or received.”

Regardless of the Autobaud upon Break parameter setting, the baud rate is reset when a break sequence is sent or received. The correct description for the Autobaud upon Break parameter is as follows:

“Indicates whether the baud rate is reset after disconnecting and reconnecting the serial cable.”

Also, the values 1200 and Autobaud are incorrectly documented as valid values for the Console Baud Rate parameter. The correct Console Baud Rate valid values are 2400, 4800, 9600, 38400, and 57600.

Viewing VLAN Configuration Information

An information panel, the VTP Configuration Information panel, has been added that displays how many local VLANs are currently defined and how many preferred VLANs are currently available.

To access the VTP Configuration panel, select **Info** on the VTP VLAN Configuration panel. The VLAN Configuration Information panel ([Figure 1](#)) is displayed.

Figure 1 VLAN Configuration Information panel

| VLAN Configuration Information | | |
|---|--------|--------|
| Local VLAN Information | TrBRFs | TrCRFs |
| Total Local | 1 | 1 |
| Preferred | 1 | 1 |
| Automatic | 0 | 0 |
| Max Local | 63 | 63 |
| Available Preferred | 62 | 62 |
| | | |
| VTP Database Information | | |
| Total VTP VLANs | 5 | |
| Max NVRAM VLANs | 129 | |
| <p>Note that if a VLAN is set to preferred when no local entries are available, an automatic VLAN may be made non-local to make space for the preferred VLAN. Adding a local port to a TrCRF will force the TrCRF and its TrBRF to preferred.</p> | | |
| <p>Return</p> | | |
| Return to previous menu | | |

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The following information is displayed on this panel:

- Local VLAN Information
 - Total Local—Total number of VLANs that will carry traffic in the local switch and stack. Local VLANs consist of both preferred and automatic VLANs.
 - Preferred—Number of currently preferred VLANs in the switch or stack. When a VLAN is preferred, it is guaranteed access on the switch and to have an entry in the local table. Any TrCRF to which ports on the local switch are assigned is designated as preferred. In addition, you can designate other TrCRFs and TrBRFs as preferred using the Change_Local_State option on the VTP VLAN Configuration panel.
 - Automatic—Number of VLANs that have been automatically added to the list of local VLANs. A TrCRF is automatically made local if the TrCRF is a member of a preferred TrBRF and if there are available local entries. TrBRFs cannot be automatically made local. An automatic VLAN is not guaranteed access on the switch. Automatic VLANs are given access as space is available (if less than 63 VLANs have been designated as preferred).
 - Max Local—Maximum number of VLANs which may carry traffic on the local switch.
 - Available Preferred—Number of available entries in the local table for adding new preferred VLANs. When local entries are full (more than 63 VLANs have been designated as preferred), adding a new preferred TrCRF will cause an automatic VLAN (if defined) to be removed from the local tables.
- VTP Database Information
 - Total VTP VLANs—Total number of VLANs defined on the switch or stack. This number includes all local and non-local Token Ring VLANs as well as FDDI and Ethernet VLANs.
 - Max NVRAM VLANs—Maximum number of VLANs that can be stored in NVRAM on the local switch or stack.

Specifying Trap Receivers

With Release 4.1(1), the maximum number of entries in the Trap Receivers list (viewable on the Trap Receivers panel) is 10. If you have more than 10 entries defined before upgrading to Release 4.1(1), the entries beyond the tenth entry are deleted when you upgrade to Release 4.1(1).

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 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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- Registered Cisco Direct Customers can order Cisco Product documentation from the Networking Products MarketPlace:
http://www.cisco.com/cgi-bin/order/order_root.pl
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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 *Catalyst 3900 Token Ring Switch User Guide* and the *Catalyst 3920 Token Ring Switch User Guide* publications.

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