



Text Part Number: OL-6743-02 Rev. A0

Catalyst 3900 Token Ring Switch Release 4.1(2) Release Note

March 8, 2000

This document describes the problems fixed in Catalyst 3900 switch main image Release 4.1(2) 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.

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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(2) and in Release 1.2(5) of the ATM firmware image.

Problems Fixed in the Catalyst 3900 Series Main Image Release 4.1(2)

The following is a list of problems found in the Catalyst 3900 series main image that have been resolved in Release 4.1(2).

Problem Identifier	Problem Description
CSCdk46393	Executing a TFTP upload might fail with the message "Loading box aborted operation." This problem occurs when a TFTP failure has occurred (for example when the TFTP server is down). Once this problem occurs, all TFTP upload or download attempts fail with the same message.
CSCdm40526	If an explorer packet destined for an ISL-attached Catalyst 3900 is bridged between Token VLANs via a Catalyst 5000 RSM, the receiving Catalyst 3900 incorrectly caches the originator's RIF. This problem results in no IP connectivity and only occurs when VLAN bridging is configured between Token Ring VLANs via the RSM.
CSCdm88900	In a stack configuration, changing the port state of multiple ports on the same switch via the console might result in the port state reverting back to its original setting. This problem occurs when the port state is enabled or disabled for multiple ports within a 10-second time period.
CSCdm93977	Removing the primary cable of an ISL channel might cause the switch to reboot. This problem causes a temporary loss of service.
CSCdm93993	Deleting a VLAN that contains a port that is on an ATM uplink module causes the Catalyst 3900 switch to reboot. This problem causes a temporary loss of service.

Problem Identifier	Problem Description
CSCdp05226	<p>Allow destination MAC address filters work correctly for frames which are switched to other ports within the same TrCRF, however, frames which should be switched to ports in other TrCRFs in the same TrBRF are incorrectly dropped.</p> <p>With this problem, connectivity to stations in other TrCRFs that have allow destination MAC address filters configured is not possible.</p>
CSCdp05265	<p>In a back-to-back Catalyst stack consisting of two switches (box 1 and box 2), connectivity between stations connected to the ports on box 2 might be lost after box 1 is powered down. Sometimes, connectivity may also be lost after box 1 is powered down and then powered back on. This problem does not occur if the switches are connected to a Catalyst Matrix.</p>
CSCdp05944	<p>In a stand-alone switch or stack configuration in which an ISL uplink is configured, the Port Spanning Tree Parameters panel might display the incorrect STP mode for ISL ports. This problem occurs when one or more of the following events occur: a port cost is reconfigured, an ISL port is disconnected and reconnected, or an ISL port is reconfigured.</p>
CSCdp12173	<p>In a stack configuration in which a Catalyst 3900 with two or more ISL uplinks is stacked with a Catalyst 3920 or a Catalyst 3900 with a four-port Token Ring expansion module and a ring number has not been configured for the default TrBRF (1005), explorer frames received on one of the ISL ports on the default TrBRF are not forwarded out another ISL port. This problem might result in the loss of connectivity for source-route bridged stations.</p>
CSCdp14597	<p>In a Catalyst 3900 in which an ISL uplink is configured, assigning a port that belongs to an existing TrCRF to a new TrCRF might cause the port to become blocked (viewable on the Current Spanning Tree Information for a TrBRF and TrCRF panels). This problem causes a connectivity loss on the TrCRF.</p>
CSCdp33032	<p>Even when the backup TrCRF feature is working properly on the Catalyst 3900, the following message might display on the console:</p> <pre>DRIP: VLAN 603, Addr1=00-05-77-02-ce-00, Addr2=00-05-77-02-ba-00 - Active Conflict with VLAN</pre>
CSCdp54454	<p>Configuring redundant ISL Channels might cause an unrecoverable spanning-tree loop to occur.</p>
CSCdp56842	<p>ISL frames that are received with a destination VLAN of a TrBRF and a destination MAC address of the all F broadcast address or the Token Ring multicast address are not forwarded to ports on other switches if the ring number has not been configured.</p>
CSCdp93265	<p>Configuring an ISL Channel on a secondary switch in a stack configuration in which the primary switch contains ISL ports might cause the channel to operate incorrectly when the links in the channel fail. This problem might cause spanning tree loops in the network.</p>

Problems Fixed in This Release

Problem Identifier	Problem Description
CSCdp97143	In an environment in which a large number of VLANs exist and VTP pruning is enabled on a switch, a TrBRF on that switch might be incorrectly pruned even if there are local forwarding ports in the TrBRF. This problem causes stations on the switch to be unable to communicate with stations on other switches that are in the same TrBRF. To determine the pruning state of a TrBRF, access the VTP Pruning Status panel by selecting VTP Pruning VLAN Status on the Port <i>x</i> ISL Statistics panel.

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 Feature in Release 4.1(2), page 6
- New Features in Release 4.1(1), page 6

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.”

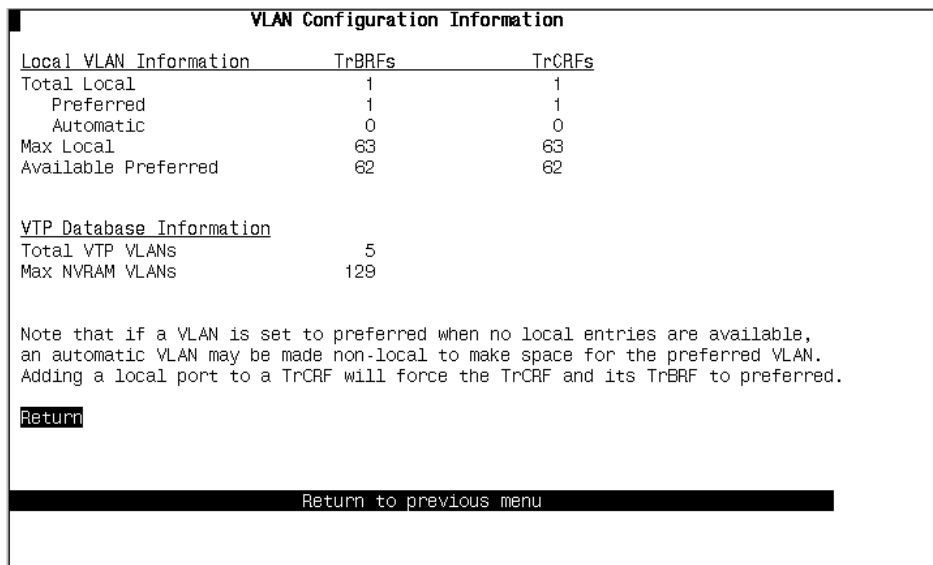
Also, the values 1200 and Autobaud are incorrectly documented as valid values for the Console Baud Rate parameter. The correct Console Baud Rate valid values are 2400, 4800, 9600, 38400, and 57600.

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



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 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

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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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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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