



Text Part Number: 78-6763-01 Rev. A0

# Catalyst 3900 Token Ring Switch Release 4.1(1) Release Note

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**October 1, 1999**

This document describes the problems fixed in Catalyst 3900 switch main image Release 4.1(1) and in ATM firmware image Release 1.2(4). 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.

Sections in this document include the following:

- Ordering the Catalyst 3900 Token Ring Switch User Guide, page 1
- Problems Fixed in This Release, page 2
- Known Problems, page 4
- New Features in This Release, page 6
- Amendments to the Documentation, page 8
- Availability of Catalyst 3900 Software Upgrades on CCO, page 9
- Obtaining Service and Support, page 9
- Cisco Connection Online, page 9
- Ordering Documentation, page 10

## Ordering the Catalyst 3900 Token Ring Switch User Guide

The Catalyst Token Ring switch Release 4.1(1) 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(1), 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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**Note** To place an order for the user guide through Cisco MarketPlace, you must be a registered CCO user.

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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(1) and in Release 1.2(4) of the ATM firmware image.

### Problems Fixed in the Catalyst 3900 Series Main Image Release 4.1(1)

The following is a list of problems found in the Catalyst 3900 series main image that have been resolved in Release 4.1(1).

Problem Identifier	Problem Description
CSCdj84516	When DRiP disables an ATM port because of a Backup TrCRF configuration or a distributed TrCRF configuration, the ATM port displays “Admin-down” rather than “Disabled by Drip.”
CSCdm26759	Creating a new TrCRF on a Catalyst 3900 that is configured as a VTP Server causes the Spanning-Tree Protocol (STP) to restart on all TrBRFs carried by an ISL port.  This problem results in a temporary loss of connectivity until STP reconverges.
CSCdm38782	In a network configuration in which multiple Catalyst 3900 switches connected via ISL exist, manually changing the VTP mode of the switch configured as a VTP server could cause one of the switches to reset.
CSCdm42272	In a stack of switches in which an ISL uplink is established, assigning a Token Ring port to a new TrCRF can cause previously learned directed frames to flood the network until the stack is rebooted.  This problem causes a heavier traffic load and a longer delay in receiving directed traffic.
CSCdm45443	In a Catalyst 3900 in which an ISL uplink is configured, the maximum hop count limits do not function properly when an explorer path includes a Catalyst 3900 switch on which a frame comes in one ISL port and exits through another ISL port in the same switch.  This problem causes explorer packets to be forwarded incorrectly.

Problem Identifier	Problem Description
CSCdm52123	In a two-switch stack configuration in which both switches are configured as VTP servers in the same administrative domain and on which both switches there are multiple TrBRFs with multiple TrCRFs for which STP is enabled, creating a new TrCRF without ports after STP has converged via the first switch in the stack and then deleting that TrCRF via the second switch in the stack causes the first switch to reset.
CSCdm57921	Some TFTP servers do not resend data packets if they do not receive an acknowledgment (ACK). If an ACK sent by a Catalyst 3900 was dropped because of congestion, TFTP operations could timeout.
CSCdm60268	In rare circumstances, the VTP database might contain invalid parent VLAN (TrBRF) IDs. If the parent VLAN ID of the default TrCRF is zero instead of 1005, the Catalyst 3900 accepts the VTP advertisement and then fails with an "ASSERT failed" error message.  This problem typically occurs right when the Catalyst 3900 VTP mode is changed from Transparent mode to Server or Client mode.
CSCdm61100	In a stack configuration, assigning a port to a new TrCRF causes the console to pause indefinitely.  This problem occurs with both Telnet and serial console connections.
CSCdm62665	In a stack configuration, in which redundant ISL uplinks are configured on different switches within the stack, rebooting or starting up the stack might cause an ISL spanning tree loop.
CSCdm71129	When using an application such as CiscoView to configure a Catalyst 3920 switch, you cannot assign or move ports 21 through 24 to a TrCRF. Also, you cannot assign another port to a TrCRF to which ports 21 through 24 are assigned.
CSCdm83220	In the configuration in which a two-switch stack is connected to another Catalyst 3900 or stack of Catalyst 3900 switches via an ISL uplink, rebooting all of the switches at approximately the same time might cause spanning tree to incorrectly block the ISL port even if there is no loop. When this problem occurs, the ISL Port Statistics panel indicates that the ISL port is inserted and active. The Current Spanning Tree Information for a TrCRF panel indicates that the ISL port is blocked (BLK) and the Current Spanning Tree Information for a TrBRF panel indicates that the ISL port is down (DWN).

## Problems Fixed in the ATM Firmware Image Release 1.2(4)

The following is a list of problems found in the Catalyst 3900 ATM firmware image that have been resolved in the Release 1.2(4).

Problem Identifier	Problem Description
CSCdk13983	Module timers run too fast. As a result, timeout periods are shorter than they are actually configured for.
CSCdk23442	MAC addresses and route descriptors are prematurely aged out. As a result, a Data Direct VCC might be torn down and reestablished.

## Known Problems

This section lists the currently known problems in Release 4.1(1).

**Problem:** SPAN port does not capture traffic transmitted by a full duplex (FDX) port (CSCdm12804)

**Problem Description:** When you configure a SPAN port to monitor a FDX port, only the receive side of the traffic is copied to the SPAN port. Frames transmitted by the FDX port are not copied to the SPAN port.

**Recommended Action:** Temporarily reconfigure the port being monitored to half-duplex (HDX) mode.

**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:** Catalyst 3900 does not expand the routing information fields (RIFs) for IP devices learned via ISL (CSCdm40526)

**Problem Description:** If an ARP 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 IP bridging is configured between Token Ring VLANs via the RSM.

**Recommended Action:** Enable IP routing on the RSM.

**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:** Allow destination MAC address filters do not properly filter source-route traffic to other TrCRFs (CSCdp05226)

**Problem Description:** Allow destination (the allow dest option on the Configure Filters panel) MAC address filters function correctly for frames being switched to other ports within the same TrCRF, however, frames that should be switched to ports assigned to other TrCRFs within the same TrBRF are incorrectly dropped. When this problem occurs, connectivity to stations in other TrCRFs which have allow destination MAC address filters configured is lost.

**Recommended Action:** Configure allow destination MAC address filters only for stations located within the same TrCRF. To prevent traffic from being switched to specific MAC addresses, configure block destination (the block dest option on the Configure Filters panel) MAC address filters.

**Problem:** Connectivity loss is occurring between the ports on box 2 of a two-switch stack configuration when box 1 is powered down (CSCdp05265)

**Problem Description:** 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.

**Recommended Action:** After box 1 is powered off, you can manually clear the address tables to restore connectivity between the ports on box 2.

**Problem:** The STP port mode status for TrCRFs is not being displayed correctly for ISL ports (CSCdp05944)

**Problem Description:** 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. For example, after reconfiguring a port cost, the ISL port STP mode is blocked but FWD displays for the port in the PSts column on the Current Spanning Tree Information for a TrCRF panel.

**Recommended Action:** This is a cosmetic problem and there is no workaround at this time.

**Problem:** Explorers frames received on an ISL port on the default TrBRF are not forwarded out another ISL port in certain configurations (CSCdp12173)

**Problem Description:** 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.

**Recommended Action:** Configure a ring number for the default TrBRF or configure traffic to flow across TrBRFs other than the default TrBRF.

## New Features in This Release

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 which 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.



## 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.

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**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.

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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](http://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](mailto:cco-help@cisco.com). For additional information, contact [cco-team@cisco.com](mailto:cco-team@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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