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Catalyst 3900 Series Token Ring Switch Release 3.0(7) Release Note

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This document describes the problems fixed in Catalyst 3900 switch main image Release 3.0(7) 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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Problems Fixed in This Release

This section lists problems that have been resolved in Release 3.0(7) of the Catalyst 3900 series main image and Release 1.2(5) of the ATM firmware image.

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Problems Fixed in the Catalyst 3900 Series Main Image Release 3.0(7)

The following is a list of problems found in the Catalyst 3900 series main image that have been resolved in Release 3.0(7).

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.
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.
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.
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 incorrectly forwarded.
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.

Problem Identifier	Problem Description
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.
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.
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.
CSCdp05226	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. With this problem, connectivity to stations in other TrCRFs that have allow destination MAC address filters configured is not possible.
CSCdp05265	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.
CSCdp33032	Even when the backup TrCRF feature working properly on the Catalyst 3900, the following message might display on the console: DRIP: VLAN 603, Addr1=00-05-77-02-ce-00, Addr2=00-05-77-02-ba-00 - Active Conflict with VLAN
CSCdp56842	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.

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.

Problem Identifier	Problem Description
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

There are no known problems in this release of the Catalyst 3900 series main image.

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.

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.

Bridging Modes

The Catalyst 3900 and 3920 Token Ring switches support source-route bridging (SRB), source-route transparent bridging (SRT), and source-route switching. You can enable either SRB or SRT for the logical connections between the TrCRF and the TrBRF. Source-route switching is used for frame forwarding within the TrCRF and is always enabled.

SNMP-Based Management

The list of MIBs documented in the "SNMP-Based Management" section of the user guide is not complete. In addition to the documented MIBs, the Catalyst 3900 also supports two additional standard MIBs and one additional private MIB.

The Catalyst 3900 supports the following additional standard MIBs:

- AToM MIB (RFC 1695)
- LAN Emulation Client MIB

The Catalyst 3900 also supports the following private MIB:

- Cisco LEC Data VCC MIB

RMON Support

The description of the Token Ring Ring Station Group is incorrect. This section should read as follows:

The Catalyst 3900 series Token Ring switches support the ringStationControlTable portion of the Token Ring Ring Station Group. This support allows a Catalyst 3900 series switch to gather segment information from each ring segment to which it is attached. This segment information includes Ring State, Beacon Sender, Beacon NAUN, and Active Monitor MAC Address, as well as Station Order Changes.

Interconnecting Catalyst 3900 Switches

If you plan to interconnect your Catalyst 3900 with a Catalyst 5000, your Catalyst 5000 should have Supervisor Card revision 2, or later, with NMP version 3.0(201), or later. Also, because VTP pruning is currently not supported by the Catalyst 3900, if you extend a TrBRF from a Catalyst 3900 to a Catalyst 5000 that is using VTP pruning, you must set the TrBRF to ineligible on the Catalyst 5000.

Configuring Basic Switch and Stack Parameters

CiscoView shows the burned-in MAC address and the configured locally administered address in non-canonical format. The Switch Configuration panel allows you to choose whether the MAC addresses displayed on the console panels are in canonical or non-canonical format. The default is non-canonical.

Viewing Module Information

The Hw Rev column on the Module Information panel has been updated to reflect the revision numbers of the module and the associated ASICs. For the base switch and the Token Ring fiber and copper expansion modules, the hardware revision is now displayed in the format *x.y.z*, where:

- *x* indicates the revision level of the module
- *y* indicates the revision level of the switching ASIC
- *z* indicates the revision level of the MAC Processor ASIC

Configuring VLANs and VTP

The two sentences at the end of the third paragraph in the "Configuring VLANs and VTP" section of the user guide are misleading.

The last sentence of the paragraph, "Likewise, a device may belong to multiple management domains if the VLANs defined for the device belong to different management domains" is not correct because a stack of Catalyst 3900 switches can only be part of one VTP management domain.

The second to last sentence of the paragraph, "Different devices may belong to the same management domain if the VLANs defined for the devices belong to the same management domain" is misleading because VTP would not be useful if multiple switches in the same domain were not supported. Therefore, multiple switches in the same domain is a supported function.

Configuring VTP Parameters

Changing the Local Mode field on the VTP Administrative Configuration panel from Client to Transparent or Server generates the following message when the number of defined VLANs is greater than the amount that can be stored in NVRAM:

```
Mode must be Client. There are too many VLANs to store on local device.
```

Performing the same procedure via an SNMP manager generates the following message:

```
WRONG_VALUE_ERROR.
```

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		
<u>Local VLAN Information</u>		
Total Local	TrCRFs	TrBRFs
Preferred	1	1
Automatic	0	0
Max Local	63	63
Available Preferred	62	62
<u>VTP Database Information</u>		
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>		
Return		
Return to previous menu		

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.

Adding or Changing TrBRF VLAN Parameters

The VLAN Parameter Configuration panel for a TrBRF has been changed to prevent you from configuring an MTU size larger than 4472 for a TrBRF that contains an ATM port. This change has been made because the Catalyst 3900 ATM module does not support MTUs greater than 4472.

With the Catalyst 3900 main image Release 3.0(3) or later, if you specify an MTU greater than 4472 for a TrBRF that contains an ATM port, the ATM port is removed from the TrBRF and the following message is displayed:

```
ATM Port removed from TrBRF since BRF MTU > 4K
port=25, crf=1003, brf=1005, vlanmtu=8144
```

Note Upgrading the Catalyst 3900 main image to Release 3.0(3) or later on a switch on which an MTU greater than 4472 was configured for a TrBRF that contains an ATM port results in the same action.

Adding Changing TrCRF VLAN Parameters

As stated in the “Adding or Changing TrCRF VLAN Parameters” section of the User Guide, to enable ring number learning, you must set the Local Mode (on the VTP Administrative Configuration panel) to Transparent (which is the default) and the ring number 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.

With Release 3.0(3) or later of the Catalyst 3900 main image, if you have previously set the Local Mode of the default TrCRF (1003) to Transparent and the ring number to auto, you can now change the Local Mode while ring number learning is in progress.

If the default TrCRF(1003) is the only TrCRF for which the ring number is set to auto, the ring number is automatically be set to the learned ring number or, if the ring number has not been learned, it is set to 0xCCC.

Displaying VLAN Port Assignment

If you attempt to assign a port to a TrCRF to which remote ports have already been assigned, the following message is generated:

```
Error - TrCRF has remote ports assigned
```

If you attempt the same procedure via an SNMP manager, the following message is generated:

```
WRONG_VALUE_ERROR
```

Configuring SNMP Parameters

An additional option, Management VLAN, has been added to the SNMP Configuration panel. This option enables you to select the VLAN that has the IP address you want to use for the following:

- To be passed to ATM switches via Interim Local Management (ILMI) protocol implementation as the IP address of the management VLAN (for switch or stack configurations that include ATM modules)
- To be used in Cisco Discovery Protocol (CDP) messages

CDP is used with Cisco IOS software to establish communication between different models of Cisco equipment (for example between a Catalyst 3000 and Catalyst 5000 series switch). Formerly, the Catalyst 3900 sent the IP address of the default TrBRF (1005) in the CDP messages as the address to which it could receive SNMP messages. However, sometimes the default TrBRF was not configured to receive traffic. In this situation an SNMP manager such as CiscoWorks for Switched Internetworks reads the CDP cache of an adjacent Catalyst 5000 and does not know how to manage the Catalyst 3900. Using the Management VLAN option on the SNMP Configuration panel, you can specify the TrBRF VLAN that has the IP address you want to be used in CDP message.

Adding or Changing Spanning-Tree Parameters for a TrCRF

With Catalyst 3900 Token Ring software Release 3.0(6) and later, an additional TrCRF STP mode is available. When configuring the STP mode of a TrCRF via the Spanning Tree for a TrCRF panel, you can now select **auto-fast** mode in addition to **auto**, **blocked**, or **forwarding** mode.

When the STP mode of a TrCRF is auto (the default), a Token Ring port state change (coming up or going down) causes the TrCRF-to-TrBRF link to cycle through spanning tree states. Until the spanning tree state returns to forwarding, stations in the TrCRF lose connectivity with stations in other TrCRFs associated with the same TrBRF.

However, when the TrCRF STP mode is auto-fast, Token Ring port state changes do not impact the spanning tree state of the TrCRF-to-TrBRF link unless the port happens to be the first active port in the TrCRF.

Configuring Port Parameters

When configuring a port to operate in adaptive cut-through, you can specify a threshold for errored frames. If this threshold is exceeded, the port transitions from cut-through to store-and-forward mode. Errored frames include frames with CRC errors, aborted frames, and frames that are considered too short.

Configuring LEC Parameters

The ATM LEC Setup panel has been modified to indicate that the Catalyst 3900 ATM module supports MTUs up to 4472.

In the User Guide, the possible values listed for the MTU field are 1500, 4472, 8144, and 17800. With this release of the Catalyst 3900 main image, the possible values for the MTU field on the ATM LEC Setup panel are 1500 and 4472.

Configuring the ISL Port

The Port Configuration panel for an ISL port has been updated to reflect the operation mode of the port. This new field, labeled Operation Mode, read-only and the only possible value is FDX trunking.

Filtering Data Based on Protocol

You can now define filters based on the DSAP values 0x00 and 0xAA. If you include a DSAP of 0xAA in a protocol filter, all SNAP frames will be filtered regardless of any EtherType currently specified.

If you attempt to define a filter based on both an EtherType and the DSAP value 0xAA the following message is generated:

Warning - Ethertype filtering will be ignored while filtering with DSAP 0xAA.

For a list of additional SAP values on which you can base filters, refer to the “Service Access Points” section of the “Codes and IDs” appendix of the User Guide.

Additional changes to the Protocol Class Assignment panel include the following:

- Hexadecimal values that displayed as “a” through “f” now display as “A” through “F”.
- Ethertype values for classes 9 through 15 that displayed as “None” now do not display at all because EtherType is not valid for any of those classes.

Monitoring Port Traffic

Because the required hardware has not become available in the marketplace to support passive monitoring of network traffic, the Catalyst 3900 no longer allows the configuration of passive SPAN.

As mentioned in the User Guide, you must place your SPAN port in a separate TrCRF (and TrBRF) that contains no other ports. If you plan to use SPAN, we recommend that you create a TrCRF and TrBRF upon initial configuration just for this purpose. It is also a good idea to leave a port on the switch assigned to this TrCRF for the purposes of future SPAN use.

Limiting Scope and Access

The Filters & Port Security panel has been changed to make it easier for you to configure MAC address and protocol filters. As a result a new panel, the MAC Address Filters panel, has been added. The new options available on the Filters & Port Security panel are:

- **MAC Address Filters**—Select this option to configure MAC address filters, block communication at selected ports, or to view currently defined filters.
- **Protocol Filters**—Select this option to define protocol classes and to define the behavior attributes for a protocol filter.

You can now find the following options that were displayed on the Filter & Port Security panel on the MAC Address Filters panel:

- **Configure Filters**—Select this option to configure MAC address filters.
- **Configure Port Security Mode**—Select this option to block communication at selected ports.
- **View Port Filters**—Select this option to view the currently defined filters.

For more information about these options, refer to the “Limiting Scope and Access” section of the User Guide.

Viewing General Port Statistics

Two fields on the General Statistics panel for a port have been changed to clarify the information the counters are reflecting. The Frames Filtered - Addr and Frames Filtered DSAP fields in the left-hand column have been changed to the following:

- **Frames Filtered - MAC Addr**—Number of frames filtered by the MAC address filters.
- **Frames Filtered - Protocol**—Number of frames filtered by the protocol filters.

Viewing Frame Forwarding Statistics

Two fields on the Frame Forwarding Statistics panel for an ATM port have been changed to clarify the information the counters are reflecting. The Frames Filtered - Addr and Frames Filtered - DSAP fields in the left-hand column have been changed to the following:

- Frames Filtered - MAC—Number of frames filtered by the MAC address filters.
- Frames Filtered - Prot—Number of frames filtered by the protocol filters.

Viewing ISL Port Statistics

The Invalid ISL VLAN error counter that was available on the ISL Port Error Statistics panel has been moved to the ISL Port General Statistics panel and renamed to Non-Local VLAN Frames Received.

The Non-Local VLAN Frames Received field displays the number of frames received that contained a source VLAN ID that was unknown (based on the current configuration of the switch).

Viewing Spanning-Tree Information for a VLAN

Fields that identify the Spanning-Tree Protocol running at the TrBRF and TrCRF levels have been added to the Current Spanning Tree Information panel.

When viewing the Spanning-Tree parameters for a TrBRF, the protocol running per TrCRF displays in the Pctl column. Possible values are IBM, IEEE, or blank.

When viewing the Spanning-Tree parameters for a TrCRF, the protocol running on that TrCRF displays in the Protocol field. Possible values for the Protocol field are Cisco and IEEE.

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.

Ordering Documentation

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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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