



Text Part Number: 78-5040-06 Rev. A0

Catalyst 5000 Series Token Ring Software Release 3.2(3) Release Note

November 25, 1998

This document describes the Catalyst 5000 series Token Ring software release 3.2(3), including a list of problems fixed in this release and a list of known (open) problems for this release. This document is available on the Cisco Connection Documentation CD-ROM or in print.

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Catalyst 5000 Documentation

The following documents are available for the Catalyst 5000 series switch:

- *Catalyst 5000 Series Quick Software Configuration*
- *Catalyst 5000 Series Installation Guide*
- *Catalyst 5000 Series Module Installation Guide*
- *Catalyst 5000 Series Software Configuration Guide*
- *Catalyst 5000 Series Switch Message and Recovery Guide*
- *Catalyst 5000 Series Release Notes*

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For quick software configuration procedures for the Catalyst 5000 series switches, refer to the *Catalyst 5000 Series Quick Software Configuration* publication. For detailed software configuration information and procedures, refer to the *Catalyst 5000 Series Software Configuration Guide*.

Cisco documentation and additional literature are available in a CD-ROM package, which ships with your product. The Documentation CD-ROM, a member of the Cisco Connection Family, is updated monthly. Therefore, it might be more current than printed documentation. To order additional copies of the Documentation CD-ROM, contact your local sales representative or call customer service. The CD-ROM package is available as a single package or as an annual subscription. You can also access Cisco documentation on the World Wide Web at <http://www.cisco.com>, <http://www-china.cisco.com>, or <http://www-europe.cisco.com>.

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Amendments to the Documentation

This section contains information that was not included in the configuration note that was shipped with the Token Ring module.

RMON Support

The description of the Token Ring ring station control table and Token Ring ring station order table are incorrect. The descriptions should read as follows:

- Token Ring ring station control table

The Catalyst 5000 series Token Ring module supports the ringStationControlTable portion of the Token Ring Ring Station Group. This support allows a Catalyst 5000 series Token Ring module 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.

- Token Ring ring station order table

An ordered list of the stations on the monitored rings.

Configuring the Port Priority

The *Catalyst 5000 Series Token Ring Module Configuration Note* documents that the possible priority range for physical and logical ports is 0 through 255 (decimal) and that the default is 128.

While this information is correct for the physical Token Ring ports, it is incorrect for the logical ports (the connection between the Token Ring Bridge Relay Function [TrBRF] and Token Ring Concentrator Relay Function [TrCRF]). The valid priority range for the logical Token Ring ports is 0 through 7. The default is 4.

Adding or Changing TrBRF Parameters

The Catalyst 5000 series Token Ring software release 3.2(1) and later supports MTUs of up to 17800 bytes. The initial release of the Catalyst 5000 series Token Ring software did not support MTUs greater than 4472. Release 3.2(1) and later supports MTUs of up to 17800.

When configuring larger MTUs for the ports or TrBRFs on a Token Ring module, remember the following:

- You cannot configure a port MTU that is greater than the MTU configured for the TrBRF to which the port belongs.
- You cannot configure an LAN Emulation Client (LEC) MTU that is greater than the MTU configured for the TrBRF to which the LEC belongs.

If you reduce the MTU for a TrBRF to a value that is less than the MTU currently configured for the individual ports or LECs in the TrBRF, the MTU for the ports or LECs is automatically reduced to a value (1500, 4472, 8144, or 17800) that is less than that specified for the TrBRF.

Adding or Changing TrBRF Parameters

The Catalyst 5000 series NMP software release 4.2 supports an additional **set vlan** command parameter, **decring**. The **decring** keyword enables you to specify a decimal logical ring number for TrCRFs. Previous releases of the NMP software allowed only hexadecimal ring numbers to be specified.

The syntax description for the **decring** keyword is as follows:

decring *decimal_ring_number* (Optional) Keyword to specify the logical ring number for Token Ring VLANs. Possible values are decimal numbers 1 to 4095. For Token Ring VLANs, this parameter is valid and required only when defining a TrCRF.

Monitoring Network Traffic

To aid in network management, the Catalyst 5000 series Token Ring module allows you to configure a Switched Port Analyzer (SPAN) port for monitoring port traffic. This SPAN support allows you to perform active monitoring on any of the Token Ring ports or TrCRFs. Active port monitoring allows you to copy the traffic being switched by a source port (Token Ring port or TrCRF) to a Token Ring destination port located in the same switch. Only the logical link control (LLC) traffic that is being switched by the source port is monitored when you configure active port monitoring. The MAC frames are not monitored.

When configuring SPAN, you can configure for a single source, multiple source ports, or you can configure a TrCRF as a source port. However, when configuring SPAN, keep in mind the following:

- If the SPAN destination port is a Token Ring port, then the source port or ports must be Token Ring ports.
- If the SPAN destination port is a Token Ring port, then the source VLAN must be a TrCRF.
- If you are configuring a SPAN port to monitor information transmitted from a source port, you can configure only a single source port.
- Any interaction between two endstations on a shared segment that is attached to a switch port configured as a SPAN source port will not be monitored at the destination SPAN port.

Configuring SPAN

To configure a SPAN port, issue the following command in privileged mode, specifying the source port (only one source port if you are configuring the SPAN port to monitor information transmitted from a source port), the destination port, and the direction of traffic that you want to monitor that is being switched on the source port.

```
set span {src_mod/src_port | src_vlan} dest_mod/dest_port [rx | tx | both]
```

After entering the **set span** command and specifying a source port and destination port, you see a display similar to the following:

```
Console> (enable) set span 3/2 4/6 tx
Enabled monitoring of Port 3/2 transmit traffic by Port 4/6
Console> (enable)
```

Enabling and Disabling SPAN

After configuring a SPAN port, ensure that SPAN has been enabled on the switch. If SPAN is not enabled on the switch, you can enable it using the **set span** command.

To enable SPAN, issue the following command while in privileged mode:

```
set span enable
```

To disable SPAN, issue the following command while in privileged mode:

```
set span disable
```

Verifying the SPAN Configuration

To verify the SPAN configuration, issue the following command:

```
show span
```

After entering the **show span** command, you see a display similar to the following:

```
Console> (enable) show span
Status      : enabled
Admin Source: Port 3/2
Oper Source : Port 3/2
Destination : Port 4/6
Direction  : transmit
Console> (enable)
```

Table 1 describes the information returned by the **show span** command.

Table 1 Show span Command Field Descriptions

Field	Description
Status	Status of whether SPAN is enabled or disabled.
Admin Source	Source port or TrCRF whose traffic is being monitored.
Oper Source	Source port or the ports within a TrCRF whose traffic is being monitored.
Destination	Destination port to which the source port traffic is being copied.
Direction	Indicates whether transmit, receive, or transmit/receive information is being monitored.

Displaying Token Ring Statistics, Status, and Station Information

You can use the following commands to view statistics and status information associated with Token Ring stations that are located on monitored rings.

show station controltable

Use the **show station controltable** normal command to display a collection of statistics and status information associated with each Token Ring station on the local ring. In addition, this command provides status information for each ring being monitored.

show station controltable [*mod_num*[/*port_num*]]

Syntax Description

mod_num Number of the module.

port_num (Optional) Number of the port on the module.

Default

This command has no default setting.

Command Type

Switch command

Command Mode

Normal

Example

The following example shows how to display a collection of statistics and status information associated with each Token Ring station on Token Ring module 3:

```

Console> (enable) show station controltable 3
Port      TableSize      ActiveStation   RingState
-----
3/1       0                0                Normal Operation
3/2       0                0                Normal Operation
3/3       0                0                Normal Operation
3/4       0                0                Normal Operation
3/5       0                0                Normal Operation
3/6       0                0                Normal Operation
3/7       0                0                Normal Operation
3/8       0                0                Normal Operation
3/9       0                0                Normal Operation
3/10      0                0                Normal Operation
3/11      0                0                Normal Operation
3/12      0                0                Normal Operation
3/13      0                0                Normal Operation
3/14      0                0                Normal Operation
3/15      0                2                Normal Operation
3/16      0                0                Normal Operation
    
```

```

Port      BeaconSender      BeaconNAUN      OrderChanges
-----
3/1      00:00:00:00:00:00  00:00:00:00:00:00  0
3/2      00:00:00:00:00:00  00:00:00:00:00:00  0
3/3      00:00:00:00:00:00  00:00:00:00:00:00  0
3/4      00:00:00:00:00:00  00:00:00:00:00:00  0
3/5      00:00:00:00:00:00  00:00:00:00:00:00  0
3/6      00:00:00:00:00:00  00:00:00:00:00:00  0
3/7      00:00:00:00:00:00  00:00:00:00:00:00  0
3/8      00:00:00:00:00:00  00:00:00:00:00:00  0
3/9      00:00:00:00:00:00  00:00:00:00:00:00  0
3/10     00:00:00:00:00:00  00:00:00:00:00:00  0
3/11     00:00:00:00:00:00  00:00:00:00:00:00  0
3/12     00:00:00:00:00:00  00:00:00:00:00:00  0
3/13     00:00:00:00:00:00  00:00:00:00:00:00  0
3/14     00:00:00:00:00:00  00:00:00:00:00:00  0
3/15     00:00:00:00:00:00  00:00:00:00:00:00  1
3/16     00:00:00:00:00:00  00:00:00:00:00:00  0
Console> (enable)

```

Table 2 describes the fields shown in the **show station controltable** command output.

Table 2 Show station controltable Command Field Descriptions

Field	Description
Port	Module and port number.
TableSize	Number of Token Ring station entries in the table associated with this port.
ActiveStation	Number of active Token Ring station entries in the table associated with this port.
RingState	Current status of the ring.
BeaconSender	Address of the sender of the last beacon frame received on this ring. If no beacon frames have been received, this object shall be equal to six octets of zero.
BeaconNAUN	Address of the nearest upstream neighbor in the last beacon frame received on this ring. If no beacon frames have been received, this object is equal to six octets of zero.
OrderChanges	Number of add and delete events in the table associated with this port.

Related Commands

show counters

show station ordertable

show station ordertable

Use the **show station ordertable** normal command to display a listing of the order of stations on the monitored rings.

show station ordertable [*mod_num*[/*port_num*]]

Syntax Description

mod_num Number of the module.

port_num (Optional) Number of the port on the module.

Default

This command has no default setting.

Command Type

Switch command

Command Mode

Normal

Example

The following example shows how to display:

```

Console> show station ordertable 3
Port      OrderIndex      Address
-----
3/15     1                00:05:77:05:40:63
          2                00:00:30:cf:a0:98
Console>

```

Table 3 describes the fields shown in the **show station ordertable** command output.

Table 3 **Show station ordertable Command Field Descriptions**

Field	Description
Port	Module and port number.
OrderIndex	Location of the station with respect to other stations on the ring.
Address	Physical address of the station.

Related Commands

show counters
show station ordertable

Configuring Filters

With the Catalyst 5000 supervisor engine module software releases 3.2(4) or 4.3(2) image used with the Catalyst 5000 Token Ring software release 3.2(3), two new parameters have been added to the **set port filter** command that provide the ability to configure a MAC address filter as both a source or a destination for a specified port.

The new syntax descriptions for configuring MAC address filters using the **set port filter** command are as follows:

```
set port filter <mod_num/port_num> <mac_addr> <permit|deny>  
set port filter <mod_num/port_num> <mac_addr> <permit_src|permit_dst>  
set port filter <mod_num/port_num> <mac_addr> <deny_src|deny_dst>
```

Syntax Description

<i>mod_num</i>	Number of the module.
<i>port_num</i>	(Optional) Number of the port on the module.
<i>mac_addr</i>	MAC address contained in the packets to be filtered. This address can be entered in canonical format (00-11-33-44-55) or in non-canonical (00:11:22:33:44:55) format.
permit	Keyword used to specify that the filter can permit packets with the specified MAC address or protocol type.
deny	Keyword used to specify that the filter can deny packets with the specified MAC address or protocol type.
permit_src	Keyword used to specify to allow any packet with the specified MAC address as the source address.
permit_dst	Keyword used to specify to allow any packet with the specified MAC address as the destination address.
deny_src	Keyword used to specify to block any packet with the specified MAC address as the source address.
deny_dst	Keyword used to specify to block any packet with the specified MAC address as the destination address.

For more information on the **set port filter** command, refer to the configuration note that shipped with your Token Ring module.

Fixing a Corrupted Flash

In the event of a corrupted Flash, a Catalyst 5000 series switch can operate in boot mode. However, when the switch is operating in boot mode, a version 3.1 boot ROM is required for the supervisor module to recognize the Token Ring module.

If the Flash becomes corrupted and the supervisor engine module is running a version 3.1 boot ROM, you can download a new image through a Token Ring module while the switch is in boot mode.

If the Flash becomes corrupted and the supervisor engine module is not running a version 3.1 boot ROM, you can download a new Flash image to the switch while in boot mode via either of the following methods:

- Kermit to the console port.
- Through an installed module that is supported by the boot ROM version running on the supervisor engine module.

If you do need to upgrade your boot ROM, please contact the Cisco TAC.

Problems Fixed in Token Ring Software Release 3.2(3)

The following is a list of problems that have been resolved in this release of the Token Ring software.

Problem Identifier	Problem Description
CSCdj78204	Heavy traffic passing through the ports on the Token Ring module can cause the Spanning-Tree Protocol state to become unstable.
CSCdj46233	When a switch port is in the Inactive state and a lobe cable is connected to the port, the show mac command will show that the InOctet counter is increasing.
CSCdk01642	On occasion, gratuitous padding might be attached to the end of Token Ring endstation management, Cisco Discovery Protocol (CDP) frames, and Spanning-Tree Bridge Protocol Data Units (BPDUs) frames.
CSCdk17303	The show station ordertable command output fails to display a ring station order table for exactly 40 endstations.
CSCdk32284	In a Catalyst 5000 in which a supervisor engine III module is installed, ports initializing on the Token Ring module while traffic is being passed by other ports on the same module can cause the Token Ring module to hang.
CSCdk34988 (duplicate of CSCdk46891)	ICMP echo request packets with packet sizes in the range of 47 to 52 bytes sent to the in-band (scO) interface to which a TrCRF has been configured via the ping command are not successfully returned.
CSCdk35341	The Spanning-Tree Protocol port cost for a 16-Mbps Token Ring port defaults to 80 instead of the intended default of 62.
CSCdk40166	During high utilization, a Catalyst 5500 in which a Token Ring module is installed might remove the LLC destination SAP when building the RIF for an explorer frame. This results in the explorer frame being dropped by the end device because of the invalid LLC header.
CSCdk45832	If a device (such as certain network analyzers) locally attached to a Token Ring module incorrectly transmits traffic using the same source MAC address as another device in a remote location in the network, subsequent traffic sent from the Token Ring port to the remote device is dropped.
CSCdk53090	50 or more Token Rings attached to two Catalyst 5500 switches in a parallel configuration can result in the IEEE Spanning-Tree on a TrCRF becoming hung in a "listening" state.

Known Problems in Token Ring Software Release 3.2(3)

This section lists the known problems for Catalyst 5000 series Token Ring software release 3.2(3).

Image Download Requires at Least One Enabled Port

Problem Identifier: CSCdj65766

Problem Description: Downloading an image to the Token Ring module via TFTP fails unless one port of the Token Ring module is enabled.

Recommended Action: Do not disable ports on the Token Ring module before starting a module download.

Auto Speed Detection Does Not Work at 4-Mbps On Fiber Token Ring Module

Problem Identifier: CSCdj87669

Problem Description: The automatic speed detection feature does not work at 4-Mbps on the fiber Token Ring module.

Recommended Action: If using 4-Mbps on the fiber Token Ring module, manually set the ring speed in the port configuration using the **set port speed** command.

Fiber Module Port Can Take Up to 20 Seconds to Recognize a Link is Down

Problem Identifier: CSCdj90107

Problem Description: A Catalyst 5000 series fiber Token Ring module port can take up to 20 seconds to recognize that a link between devices is down.

Recommended Action: None.

The “show counters” Command Displays Zero for Token Ring Explorer Counters

Problem Identifier: CSCdk19788

Problem Description: The **show counters** command and the associated SNMP queries for the following counters always return zero:

```
dot1dSrPortApeInFrames  
dot1dSrPortApeOutFrames  
dot1dSrPortSteInFrames  
dot1dSrPortSteOutFrames
```

Recommended Action: None.

BPDU Broadcast Storm May Occur on SPAN Port Upon Insertion Into the Ring

Problem Identifier: CSCdk30261

Problem Description: When configuring a Token Ring SPAN port to monitor another Token Ring port, a small broadcast storm of Cisco Spanning-Tree Protocol BPDUs might occur on the SPAN port immediately after the port inserts into the ring.

Recommended Action: None.

Fiber Module Port May Hang When Trying to Insert Into RIRO Port of a Hub

Problem Identifier: CSCdk30265

Problem Description: If the port transmission mode of a port on the fiber Token Ring module is set to auto, connecting via a Ring In/Ring Out (RIRO) port on a hub may cause the port to hang.

Recommended Action: Use the **set tokenring portmode** command to configure the port for RIRO *before* connecting to the hub. If the failure to insert has already caused the fiber Token Ring module to hang, disabling and enabling the port using the **set port disable** and **set port enable** commands will bring the port back online.

Availability of Catalyst 5000 Software Upgrades on CCO

When changes are made to the Catalyst 5000 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.

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Cisco Connection Online

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- WWW: <http://www-europe.cisco.com>
- WWW: <http://www-china.cisco.com>
- Telnet: [cco.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 documents listed in the "Catalyst 5000 Documentation" section.

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