



# Release Notes for the Cisco 10000 ESR for Cisco IOS Release 12.0(10)SL

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**September 25, 2000**

These release notes provide information about Cisco IOS Release 12.0(10)SL, which runs on the Cisco 10000 Edge Services Router (ESR).

These release notes are updated as needed to describe new features, memory requirements, hardware support, software platform deferrals, and changes to the microcode and related documents.

Cisco IOS Release 12.0(10)SL is based on Cisco IOS Release 12.0(10.6)S. For a list of the software caveats that apply to Cisco IOS Release 12.0(10)SL, see the “Caveats” section on page 6 and the release notes for Cisco IOS Release 12.0(S). To review the release notes for Cisco IOS Release 12.0S, go to [www.cisco.com](http://www.cisco.com) and click Technical Documents > Cisco Product Documentation > Cisco IOS Software Configuration > Cisco IOS Release 12.0 > Release Notes > Cisco 12000 Series Router > *Cisco 7000 Family and 12000 Series – Release Notes for Release 12.0(S)*.

Use these release notes in conjunction with the cross-platform *Release Notes for Cisco IOS Release 12.0*.



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**Corporate Headquarters: Cisco Systems, Inc., 170 West Tasman Drive, San Jose, CA 95134-1706 USA**

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## Upgrading to a New Software Release

For specific information about upgrading your Cisco 10000 ESR to a new software release, see the *Cisco 10000 ESR Software Configuration Guide*.

For general information about upgrading to a new software release, see the product bulletin *Cisco IOS Upgrade Ordering Instructions* located at:

[http://www.cisco.com/warp/public/cc/pd/iosw/prodlit/957\\_pp.htm](http://www.cisco.com/warp/public/cc/pd/iosw/prodlit/957_pp.htm)

For additional information about ordering Cisco IOS software, refer to the Cisco IOS Software Releases URL:

<http://www.cisco.com/warp/public/cc/pd/iosw/iore/index.shtml>

## System Requirements

We recommend that you use 512 MB of memory on the Performance Routing Engine (PRE). New PREs are shipped with 512 MB of memory. In a redundant setup, both PREs should have the same amount of memory.

# Cisco 10000 ESR Software Features

The following features are supported in the Cisco 10000 ESR.

**Table 1**     *Principal Software Features*

<b>Administration</b>	Cisco Discovery Protocol (CDP) Simple Network Management Protocol (SNMP)
<b>Availability</b>	SONET 1+1 Automatic Protection Switching (APS)
<b>Encapsulations</b>	Ethernet High-Level Data Link Control (HDLC) Frame Relay Point-to-Point (PPP) Multilink Point-to-Point (MLP)
<b>Multiprotocol Label Switching</b>	Multiprotocol Label Switching (MPLS) edge services
<b>Multicast Features</b>	Multicast Static Routes Multicast Routing Monitor (MRM)
<b>Multicast Services</b>	Internet Group Management Protocol (IGMP) Protocol-Independent Multicast (PIM) Distance Vector Multicast Routing Protocol (DVMRP) Cisco Group Management Protocol (CGMP) Unidirectional Link Routing (UDLR) Session Directory Protocol (SDP) Multicast Source Discovery Protocol (MSDP) Border Gateway Protocol (BGP)
<b>Quality of Service</b>	Committed Access Rate (CAR) Weighted Random Early Detection (WRED) QoS Policy Propagation on BGP (QPPB) Marking packets by using IP header precedence and differentiated service code point (DSCP)

**Table 1** *Principal Software Features (continued)*

<b>Routing Protocols</b>	Border Gateway Protocol (BGP) Intermediate System-to-Intermediate System (IS-IS) Open Shortest Path First (OSPF) Interior Gateway Routing Protocol (IGRP) Enhanced Interior Gateway Routing Protocol (EIGRP) Routing Information Protocol (RIP)
<b>Security Features</b>	Standard and extended access lists Authentication, Authorization, and Accounting (AAA) Kerberos authentication and client support on Telnet Radius authentication Terminal Access Controller Access Control System Plus (TACACS+)

## Limitations and Restrictions

This section describes important limitations and restrictions that you should review before you use the Cisco 10000 ESR.

### ChOC-12 and OC-12 ATM Line Card Support

Software support is available for the Channelized OC-12 (ChOC-12) line card and the OC-12 ATM line card.

Be sure to review the caveats described in the “Channelized OC-12 Line Card Caveats” section on page 12 and the “OC-12 ATM Line Card Caveats” section on page 14.

## Automatic Protection Switching Support

Automatic protection switching is supported on the OC-12 POS line card, with the following limitation.

For APS to work properly, you must always have an OC-12 POS line card installed in the lower-numbered (odd) slot.

The system receives clocking information from the line card in the odd slot. If you remove the odd-numbered card (or if the clocking mechanism on that card fails), the clocking is lost and the data path is shut down. (Caveat no. CSCdr81416)

To manage this APS behavior, we recommend the following:

1. For the card pair, fully configure the lower-numbered card, and leave the higher-numbered card set to its default configuration.
2. Before you remove a card from the odd slot, run the **no associate** command and shut down the card. The following is an example of disabling APS for cards in slots 5 and 6:

```
Router(config)# redundancy
Router(config-r)# no associate 5 6
Router(config-r-a-sl)# exit
Router(config)# interface pos 5/0/0
Router(config-if)# shutdown
```

You can now remove the card in slot 5.

3. Move the card located in the even slot to the odd slot and enter the **no shutdown** command. Traffic flow resumes. Insert a new card into the even slot and reconfigure the pair for redundancy.

## Important Notes

You can run up to 2000 Frame Relay sessions or 1300 PPP sessions, and you can configure up to 300 BGP peers on the Cisco 10000 ESR. The router also supports up to 512 Multilink Point-to-Point (MLP) protocol sessions.



**Note**

Each T1 interface in an MLP bundle represents a single PPP session. Thus, if you configure 130 MLP bundles of 10 T1 interfaces, each results in 1300 PPP sessions (which is the maximum number of PPP sessions that are supported on the Cisco 10000 ESR).

## Caveats

This section describes the caveats for the Cisco 10000 ESR running under Cisco IOS software Release 12.0(10)SL. Additional caveats can be found in the “Channelized OC-12 Line Card Caveats” section on page 12 and the “OC-12 ATM Line Card Caveats” section on page 14.

<p><b>CSCdr19206</b></p>	<p>If you preconfigure a line card using the <b>card</b> command, this significantly degrades PRE performance.</p> <p>Workaround: Do not use the <b>card</b> command to preconfigure line cards. Instead, use the <b>no card</b> command to remove references to cards that are not in the chassis.</p>
<p><b>CSCdr25441</b></p>	<p>The router sends out DHCP INFORM and DISCOVER messages containing an incorrect Ethernet address.</p> <p>Workaround: No workaround is necessary. This caveat is harmless because these DHCP messages are not used to acquire IP addresses. They are used to gather environmental data such as the domain name server address.</p>
<p><b>CSCdr36564</b></p>	<p>When you use the Frame Relay autosense feature, the Cisco 10000 ESR sends all three LMI status message types immediately after the interface starts responding. However, sometimes the switch at the other end is not ready to receive messages and as a result, misses one or two messages that were sent. LMI autosense waits until the next scheduled interval (default is 1 minute) to send the messages again.</p> <p>This problem primarily affects clear channel CT3 interfaces.</p> <p>Workaround: There is currently no workaround.</p>
<p><b>CSCdr43835</b></p>	<p>When you send large numbers of packets from the Gigabit Ethernet line card to the PRE in the Cisco 10000 ESR, you may lose a small number of packets. This only occurs for some packet sizes at very high bandwidths, with loss rates of a few parts per million.</p> <p>Workaround: There is currently no workaround.</p>

<b>CSCdr47500</b>	<p>Inconsistent performance may be observed between similar interfaces.</p> <p>During periods of heavy traffic (approaching interface line rate), some interfaces may experience inconsistent performance between interfaces of the same type.</p> <p>Workaround: There is currently no workaround.</p>
<b>CSCdr50586</b>	<p>You cannot generate FDL Bellcore remote loopback requests.</p> <p>The Bellcore keyword in the <b>t1 &lt;t1-number&gt; loopback remote line fdl bellcore</b> command is not supported. Bellcore (Telcordia) began phasing out their standard in favor of the ANSI standard in the early 1990s.</p> <p>The software responds to FDL Bellcore remote loopback requests, but does not generate these requests.</p> <p>Workaround: Use the <b>t1 &lt;t1-number&gt; loopback remote line fdl ansi</b> command to run a remote loopback.</p>
<b>CSCdr52081 and CSCdj94209</b>	<p>The PRE may crash if you repeatedly change a port back and forth from channelized to unchannelized.</p> <p>Repeated conversions of a T3 port from channelized mode to unchannelized mode and back, with intervening assignments of IP addresses to the interfaces and ping testing, may cause the PRE crash.</p> <p>Workaround: Reload the PRE.</p>
<b>CSCdr52708</b>	<p>If you remove a line card during periods of heavy traffic and then reinsert it (or another line card of the same type), on rare occasion the card fails to pass traffic.</p> <p>Workaround: Use the <b>shutdown</b> command to shut down interfaces and controllers before you remove the line card. If a failure occurs, you can activate the card by entering the privileged EXEC mode <b>microcode reload pxf</b> command.</p>
<b>CSCdr62013</b>	<p>If large MLP configurations are in use, and you attempt to copy the configuration from a TFTP server directly into the running config, the copy may fail. Failures may include interfaces not appearing or IPCP or LCP states not opening correctly.</p> <p>Workaround: These failures are far less likely to occur if the configuration is copied to bootflash, and then from bootflash to the running config. Copy the configuration file to the startup config and then reboot the router.</p>

<p><b>CSCdr63819</b></p>	<p>After you reload a router in a configuration that includes back-to-back CT3 connections using Frame Relay subinterfaces, the system may report that, for some interfaces, the interface is up but the line protocol is down. As a result, the subinterfaces show interface-down and lineproto-down.</p> <p>Workaround: Use <i>one</i> of the following to clear the condition:</p> <ul style="list-style-type: none"> <li>• Enter the <b>hw-module reset</b> command for the affected CT3 line card.</li> <li>• Enter the <b>shutdown</b> or <b>no shutdown</b> commands on an affected T3 controller.</li> <li>• Enter the <b>no keepalive</b> command on the main interface (not subinterface) for each affected channel on each router.</li> </ul>
<p><b>CSCdr81416</b></p>	<p>Limited support for APS. For detailed information, refer to the “Automatic Protection Switching Support” section on page 5.</p>
<p><b>CSCdr84791 and CSCdr98217</b></p>	<p>The Cisco 10000 ESR console may stop responding if you run two Cisco 10000 ESRs back-to-back with the following characteristics:</p> <ul style="list-style-type: none"> <li>• Approximately 350 T1 and sub-T1 lines between them.</li> <li>• POS ports that bounce every 30 to 60 seconds.</li> </ul> <p>Workaround: There is currently no workaround.</p>
<p><b>CSCdr91687</b></p>	<p>In rare situations, the gigabit Ethernet port stops receiving packets, causing the input drop count to increment.</p> <p>Workaround: After the port stops receiving packets, you must reset the line card using the <b>hw-module slot <i>slot_number</i> reset</b> command.</p>
<p><b>CSCdr91975</b></p>	<p>If you ping a multicast group of more than 200 interfaces or bring up such a node in a live network, this may cause CT3 line card protocols to stop responding.</p> <p>Workaround: Do not configure more than 200 interfaces in one multicast group. If the problem occurs, issue the <b>controller</b> (or <b>interface</b>) <b>shutdown/no shutdown</b> commands to bring the protocols back up.</p>
<p><b>CSCdr92058 and CSCdr98370</b></p>	<p>Large multicast groups may cause CPU hog issues in the PIM process. The tested number of 500 destinations in one group caused CPU hog messages (max limit is unknown).</p> <p>Workaround: There is currently no workaround.</p>

<b>CSCdr93015</b>	<p>T1 frames remain in loopback mode on the Channelized OC-12 line card.</p> <p>This problem occurs when a path is configured for channelized T3 mode and at least one channel group is created under that channelized T3. This in turn creates the T1 that carries the channel group.</p> <p>If you place that T1 in any loopback mode, and then remove and reconfigure the path to generate the same T1, the T1 frames remain in loopback mode (even though there is no indication in the console output to that effect). This problem occurs even if the channel groups in that T1 are not the same.</p> <p>Workaround: Issue a <b>no loopback</b> command each time you recreate a T1 under the conditions described above. This action removes the local loopback mode.</p>
<b>CSCdr95685</b>	<p>Packet throughput may be less than optimal on all interfaces when a large number of MLP bundles are configured or during periods of heavy MLP traffic.</p> <p>Workaround: Limit the number of MLP bundles you configure.</p>
<b>CSCdr97304</b>	<p>Under rare conditions, it is possible to run a fully-booted IOS on both PRE modules at the same time. (At least one of the IOS images will be the "eboot" boothelper image.) In this situation, the console logs on both of the PREs may report that a duplicate address has been detected, with a message similar to:</p> <pre data-bbox="333 829 1123 878">%IP-4-DUPADDR: Duplicate address 127.0.0.254 on Ethernet0/0/0, sourced by 0200.0000.00a0</pre> <p>Workaround: This message is benign and may be ignored. However, it is not normal for the boothelper image to be running. Correct this problem by reloading the PRE running the boothelper image after ensuring that a real image is available (either through a valid <b>boot system</b> command or ensuring that the first file on <i>slot0/disk0</i> is a valid image).</p>
<b>CSCdr98341</b>	<p>The Flash disk can fall into the chassis when you insert the disk into the PRE flash assembly.</p> <p>Workaround: Pay extra attention when inserting in a flash disk into the PRE flash assembly. Do not insert the disk in the empty space to the right of the slot B—<i>if you insert a card in that space it will fall into the chassis.</i></p>

<p><b>CSCds01233</b></p>	<p>If you send a large number of small packets in large multicast groups, this may cause the following debug messages to appear on the console:</p> <pre> ### ASSERTION FAILURE in ./src-4k-cl0k/cl0k_isr_ct3.c, line 548 &lt;idb invalid on vc 0x624FA974, slot 12 port 0 chan 104 dh 05E0001F 680100FF&gt; 60044EB4 60016E48 60017238 601F2C9C 601D0404  ### ASSERTION FAILURE in ./src-4k-cl0k/cl0k_isr_ct3.c, line 535 &lt;port 7 invalid&gt; 60044CEC 60016E48 60017238 601F2C9C 601D0404 </pre> <p>Workaround: Decrease the number of small packets.</p>
<p><b>CSCds02306</b></p>	<p>When the Cisco 10000 gigabit Ethernet line card receives giant frames of 17000 to 18000 bytes, the gigabit Ethernet line card reloads.</p> <p>Workaround: There is currently no workaround except to wait for the line card to reload.</p>
<p><b>CSCds02514</b></p>	<p>SNAP and SAP/IP packets received on the gigabit Ethernet interface are dropped when parallel express forwarding is enabled. As a result, the system is unable to route SNAP or SNAP/IP encapsulated packets.</p> <p>Workaround: Disable express forwarding by using the <b>no service pxf</b> command.</p>
<p><b>CSCds04367</b></p>	<p>When older CT3 line cards are powered on with live DS3 signals present at the receive BNC connector, the receive line interface device on the board may lock up, preventing the controller from running. You can verify this symptom by using the <b>show controller t3</b> command, which shows that the controller is down, the Receiver has Loss of Frame, and the Line Code Violations counter is counting errors at a rapid rate.</p> <p>Workaround: Replace the CT3 line card with an upgraded line card. CT3 line cards with Version 800-05547-04 Revision A0 or later have a hardware design change to avoid this problem. On older cards, you can work around the problem by removing the receive signal momentarily after the line card is powered on. For example, remove and reinsert the coaxial cable on the associated RX BNC connector on the rear of the chassis.</p>
<p><b>CSCds07681</b></p>	<p>In rare cases, after extended use, the system does not allow you to access the nvram. In these situations, the show start command returns a "No such device" and the cd nvram command returns a "No memory available" message.</p> <p>Workaround: Free up memory by restarting the router.</p>

<b>CSCds12361</b>	<p>Some combinations of config register settings, <b>boot config</b> <i>flashdevice:filename</i> settings, and redundancy configurations may cause the system to report that there is not enough space to save the startup configuration. In particular, the CONFIG_FILE variable, which in normal usage should follow the value of the <b>boot config</b> command, may take on a value unexpectedly.</p> <p>Workaround: Use the <b>no boot config</b> command to remove the redirection of the startup configuration. As a safety measure, save a copy of the current configuration first.</p>
<b>CSCds14381</b>	<p>When two Cisco 10000s are connected back-to-back by CT3 links, if no CT3 framing is configured on either end of the link, the <b>show controller t3</b> command may report incorrect framing types. At worst, one controller reports framing as C-BIT parity (configured), while its link neighbor reports M23 (detected). This condition occurs after you perform multiple reloads of one or both chassis.</p> <p>Workaround: Configure at least one side of each link with a specific T3 framing. The other side should always detect that framing and set its own framing mode accordingly.</p>
<b>CSCds20932</b>	<p>When a Cisco 10000 is reloaded with a large number interfaces configured as Frame Relay DCE, line cards go up/down a few times before the chassis stabilizes.</p> <p>Workaround: Wait for couple of minutes until the chassis stabilizes.</p>
<b>CSCds25069</b>	<p>The default logging parameter—logging rate-limit console all 10 except critical—actually sets console logging to disabled.</p> <p>Workaround: Enter the <b>logging console critical</b> command to see the most important events such as card up/down and toaster failure events.</p>
<b>CSCds25781</b>	<p>The <b>show interface multilink</b> command generates two traceback messages.</p> <p>Workaround: Disregard the traceback messages.</p>

<p><b>CSCds27170</b></p>	<p>On rare occasion, when the local traffic load approaches maximum sustainable throughput while processing packets that are less than 512 bytes in length, the PRE may restart.</p> <p>If this error occurs, the event below appears in SysLog:</p> <pre>%C10KEVENTMGR-1-MAJOR_FAULT: PXF DMA TBB Length Error, Restarting PXF</pre> <p>Workaround: There is currently no workaround. The PRE is restarted by Cisco IOS software, and normal communications should resume. If the problem repeats (and forces the PRE to restart multiple times), disable the interfaces while the PRE is restarting, and then re-enable the interfaces after the PRE comes up and is stabilized.</p>
<p><b>CSCds28990</b></p>	<p>The <b>aps ber threshold</b> and the <b>pos threshold</b> commands modify <i>both</i> the interface threshold (which triggers the facility alarm on the PRE) and the APS threshold (which triggers linecard APS cutovers). The syntax for these commands is as follows:</p> <pre>(config-if)# <b>aps</b> [signal-degrade   signal-fail] <b>ber threshold</b> <i>number</i> (config-if)# <b>pos threshold</b> [<b>sd-ber</b>   <b>sf-ber</b>] <i>number</i></pre> <p>Workaround: There is currently no workaround.</p>

## Channelized OC-12 Line Card Caveats

This section describes the caveats for the Cisco 10000 ESR ChOC-12 line card.

<p><b>CSCdp96265</b></p>	<p>If you configure a DS3 BERT pattern 2^20-O153 on any unchannelized DS3 (by using the <b>bert pattern 2^20-O153 interval 1-14400</b> command), and you then connect the line card to T-Bird 310 test set, the pattern does not synchronize with T-Berd 310.</p> <p>Workaround: Use a different BERT pattern.</p>
<p><b>CSCdr32279</b></p>	<p>When you enter the <b>hw-module slot_number reset</b> command, the event sequence is displayed in a different order than that shown by the <b>reload</b> command if the logging console is configured to informational.</p> <p>Workaround: There is currently no workaround. You only encounter this problem if you change the default logging (critical) to informational.</p>

<b>CSCdr37991</b>	<p>If you configure an STS-1 on a ChOC-12 line card as unchannelized and then configure the remote side to send idle-character marks (namely, 0xFF), the T3 line stops responding and transmits a Remote Alarm Indication (RAI).</p> <p>Workaround: When you use unchannelized T3 mode, configure the remote side to send idle-character flags (0x7E). To set this value, use the interface configuration mode <b>idle-character</b> command.</p>
<b>CSCdr57030</b>	<p>If the ChOC-12 line card is rebooted, the SONET controller on the line card may not respond.</p> <p>Workaround: Enter either the <b>shutdown</b> or <b>no shutdown</b> commands for the SONET interface.</p>
<b>CSCdr59310</b>	<p>The <b>show hardware</b> command lists preconfigured cards (cards that are not physically located in the chassis).</p> <p>Workaround: There is currently no workaround.</p>
<b>CSCdr61927</b>	<p>The ChOC-12 line card CLI (and the printed version of the <i>Cisco 10000 ESR Software Configuration Guide</i>) list several T1 BERT tests that are not supported on the ChOC-12 line card. The following T1 BERT tests are not supported:</p> <ul style="list-style-type: none"> <li>• 0s—All 0s test pattern</li> <li>• 1s—All 1s test pattern</li> <li>• 2<sup>20</sup>-QRSS—2<sup>20</sup>-1 QRSS O.151 test pattern</li> <li>• 2<sup>23</sup>—2<sup>23</sup>-1 O.151 test pattern</li> <li>• alt-0-1—Alternating 0s and 1s test pattern</li> </ul> <p>Workaround: There is currently no workaround. Use only the 2<sup>11</sup>, 2<sup>15</sup>, and 2<sup>20</sup>-O153 BERT patterns.</p>
<b>CSCdr81671</b>	<p>On rare occasions, the system may not be able to retrieve remote performance data if you are using a ChOC-12 line card that has its T1s configured with ANSI FDL enabled.</p> <p>Workaround: There is currently no workaround.</p>
<b>CSCdr82363</b>	<p>When the encapsulation mode is changed from PPP to HDLC or vice-versa, the system drops about 3 of the next 10 packets transmitted. After that, the packets are transmitted normally.</p> <p>Workaround: When you change the configuration of a ChOC-12 line card, save the new configuration. Then, remove and reinsert the line card.</p>

<b>CSCdr82364</b>	<p>The output from the <b>show controller sonet</b> command always displays the STS Path Signal Label as 00.</p> <p>Workaround: There is currently no way of retrieving the correct Path Signal Label.</p>
<b>CSCdr82579</b>	<p>When a ChOC-12 line card is reconfigured from a channelized T3 configuration to an unchannelized T3 configuration or vice-versa, the initial packets are not forwarded.</p> <p>Workaround: Save the configuration and then remove and reinsert the ChOC-12 line card. When the card restarts, it does not drop the initial packets.</p>

## OC-12 ATM Line Card Caveats

This section describes the caveats for the Cisco 10000 ESR OC-12 ATM line card.

<b>CSCdr69332</b>	<p>To use the <b>loopback diagnostic path</b> command, you need a loopback connector, or the loopback continuously cycles through the framer interrupt handler.</p> <p>Workaround: Ensure that there is a loopback connector in place before you enable a diagnostic path loopback.</p>
<b>CSCdr98087</b>	<p>When an access list is applied to the main interface of an ATM card that contains PVCs on subinterfaces, the access list does not apply to the subinterfaces. It is correctly expected that any access list applied to a main interface should affect the subinterfaces as long as they do not have access lists of their own.</p> <p>Workaround: If an access list needs to affect the subinterface, place it directly on the subinterface.</p>
<b>CSCds00101</b>	<p>The Cisco 10000 ESR may crash with a watchdog timeout after it dumps several individual CPUHOG messages (if CPUHOG checking is active). This bug occurs if you attempt to configure large numbers of PVCs on the main interface (or multipoint subinterfaces) with static maps on each VC.</p> <p>Workaround: Do not configure more than 500 PVCs on a single OC-12 ATM line card or more than 900 PVCs on a Cisco 10000 ESR.</p>
<b>CSCds04457</b>	<p>Sometimes, the <b>show interface</b> command output for the packets input and bytes input counters displays erroneous values of 4 trillion plus.</p> <p>Workaround: There is currently no workaround.</p>

<b>CSCds04605</b>	<p>In certain situations, the interface stops responding when a PVP is deleted. This occurs when the only VCs on the ATM interface are the two F4 OAM VCs associated with a PVP, and those VCs are in a down state. If the PVP is deleted at this point, the line protocol for the interface stops responding briefly and then returns to an up state.</p> <p>Workaround: If this momentary change in line protocol state is causing undesirable effects, make sure an additional VC is created on the interface before you delete the PVP.</p>
<b>CSCds07299</b>	<p>Pinging may fail when you attempt to ping through the ATM interface with a packet size that is greater than the MTU for the interface. The default MTU for the interface is 9180. For example, with the default interface MTU in place, if a ping attempt of 10,000 bytes is attempted, it fails.</p> <p>Workaround: Make sure ping packet size is less than the configured (or default) MTU for the interface.</p>
<b>CSCds09403</b>	<p>Under rare circumstances, closure of VBR-nrt VCs fails, leaving the associated VPI/VCI value unavailable for future use. This can occur for VCs with relatively small rates (such as PCR and SCR values under 1500 kbps) that are actively passing traffic at the time the VC is being closed. The symptoms are an IOS error message alerting the user to an Open_Channel failure with a status of 4 and an associated PVC that transitions to the inactive state.</p> <p>Workaround: Ensure that all traffic is stopped on a PVC before modification or deletion. If this situation is encountered, use the <b>hw-module slot slot_number</b> reset command to reload the line card.</p>

<p><b>CSCds15765</b></p>	<p>Under rare conditions, in which a large number of VCs are configured and receiving traffic simultaneously, and several end-of-packet cells line up (arrive at the reassembler at the same time), the reassembler is unable to keep up and applies back-pressure on the framer. This back-pressure can lead to framer input FIFO overflow that results in incomplete packets being presented to the reassembler. These incomplete packets are dropped by the reassembler and counted as input errors.</p> <p>Workaround: There is currently no workaround.</p>
<p><b>CSCds29346</b></p>	<p>On rare occasions, the host software loses management synchronization with the SAR firmware. This results in warning messages similar to the following:</p> <pre data-bbox="327 557 1201 602"> %C10K-4-LC_WARN: Slot[2/0] loc12atm-1 SAR: overflow (0, 1)                     while processing reassembly device indication queue                 </pre> <p>This has nothing to do with data reception or transmission. The messages are harmless and normally stop on their own.</p> <p>Workaround: There is currently no workaround.</p>

# Resolved Problems

This section lists resolved problems.

## Resolved in Cisco IOS Release 12.0(10)SL

This section lists problems that are resolved in Cisco IOS Release 12.0(10)SL. For a list of problems that were resolved in previous Cisco IOS Releases, refer to the release notes for those particular versions.

### **CSCdr22964**

If you enter the **dir slot *n*** command in rommon after the network boot fails, a PCI master abort message may appear.

### **CSCdr25487, CSCdr28094, and CSCdm57759**

A slow processor memory leak caused by a Frame Relay config/unconfig loop may occur after you repeatedly perform config/unconfig cycles for a 10 to 15-hour period.

### **CSCdr32717**

Frame Relay PVC statistics do not account for Frame Relay encapsulation bytes.

### **CSCdr37273**

A reload causes the logging configuration entry “logging console debugging” to change to “logging console critical.”

### **CSCdr42060**

If you enter the **show hardware pxf cpu stat** command, the system does not provide a separate entry for the number of multicast packets that are dropped. It incorporates this number into the total number of packets dropped.

### **CSCdr43290**

In a Cisco 10000 with redundant primary routing engines (PREs), line cards do not reset on a PRE cutover. Instead, after a brief pause, line cards continue to operate. The ChOC-12 line card does not currently support this functionality.

**CSCdr42326**

The **show controller t3** command does not display DSU information.

**CSCdr58244**

If two ChOC-12 line cards connected on back-to-back Cisco 10000s are passing traffic across all channels (across all 12 STS-1s) while a third ChOC-12 line card is being configured, the system with the line card that is being configured may stop forwarding packets for about 60 seconds while the configuration task takes place.

**CSCdr63866**

If 2000 Frame Relay connections are configured between back-to-back Cisco 10000 routers, and if you restart one chassis, this causes line cards on the other chassis to report a down state before returning to an up state.

**CSCdr66940**

Under rare conditions, the removal or insertion of a line card produces slight inaccuracies in the transmitted packets and in the transmitted octets statistics.

**CSCdr67603**

Echo requests (pings) to a Cisco 10000 ESR always produce a display showing the source IP address of the sending interface instead of the original destination address.

**CSCdr74895**

When you boot Cisco IOS software, some superfluous configuration commands appear on a terminal window.

**CSCdr74978**

If you operate a ChOC-12 line card at or above line rate, this may cause packet drops. The packet drop rate is about 1 percent.

**CSCdr75833**

Packets may be dropped at a higher rate than normal due to leaky buffers. This occurs infrequently when there is heavy traffic.

**CSCdr80393**

If traffic is routed to the T1 channels at a rate that exceeds the line rate of a T1, the ChOC-12 line card may stop passing traffic on one or more channels.

**CSCdr82406**

Ping failure occurs when you change the encapsulation to HDLC on a serial interface.

**CSCdr83434**

On rare occasions, if you move a Gigabit Ethernet line card to a different slot in the chassis and enter a **show** command, the system may report that the card is located in a different slot from either the original slot or the current slot.

**CSCdr84597**

When Weighted Random Early Detection (WRED) is enabled, random drops occur less often than they should.

**CSCdr85928**

In some situations, T1 number 28 does not frame.

**CSCdp86477**

A Cisco 10000 with a large configuration file may take up to 10 minutes to start up.

**CSCdr87990**

On occasion, when traffic is routed from a Gigabit Ethernet (GE) line card to a ChOC-12 line card that is configured with 12 T3 channels, the traffic from the GE card flows at a higher rate than a T3 channel supports. As a result, the twelfth channel on the ChOC-12 line card drops packets.

**CSCdr88694**

When you use the rommon **boot filename** command, if the specified filename is not found, the netboot operation fails.

**CSCdr89636**

On very rare occasions, the number of packet over SONET network interfaces reported by the **show version** command is one greater than the number of cards in the chassis.

**CSCdr89646**

The OC-12 POS line card does not perform an APS cutover if the line stops responding for reasons other than SONET alarms and some types of hardware failures.

**CSCdr89872**

If you remove the card in the lower slot of a redundant pair from the slot, the **show interfaces** command reports hardware is not present for both cards.

**CSCdr91526**

If you disable an access list using the **no acl** command, the Cisco 10000 no longer forwards traffic on interfaces using that access list.

**CSCdr92086**

If you enter the **show policy-map interface statistics** command, erroneous police data appears.

**CSCds06746/CSCds02271**

Access to web sites fails because of system errors when calculating IP MTU size.

**CSCds19278**

On system startup, some T1s in a T3 may not report as running. As a result, all interfaces on each affected T1 remain in a down state.

## Unreproducible Caveats

This section describes caveats that may have occurred one time, but have not been reproduced during testing. In the unlikely event you experience the problems described in this section, contact Cisco customer service.

**CSCdp87780**

Heavy, nonfast-switched traffic may cause line cards to reset. If a line card stops responding, all configured interfaces on that card are marked as nonfunctional and data flow ceases until communication with the PRE is reestablished. In addition, the log buffer shows OIR and channel events.

Workaround: Avoid using nonfast-switched traffic.

**CSCdr25590**

In some cases, redundancy events are not logged with buffered logging turned on.

Workaround: There is currently no workaround.

**CSCdr32795**

A service policy that contains a set action might get removed from the interface upon router reload. This problem is seen on gigabit Ethernet interfaces.

Workaround: After reload, reapply the service policy again.

**CSCdr37185**

On occasion, an interface that was responding before a PRE cutover no longer responds after the cutover. Look at the display from the **show interface** command to view the interface status.

Workaround: Execute the **shutdown** command, followed by the **no shutdown** command on the failing interface.

**CSCdr37190**

The **debug fr lmi** command may cause the system to stop responding.

Workaround: Run the command only on specific interfaces by using the **debug frame-relay lmi interface** command.

**CSCdr37995**

Data flow from the gigabit Ethernet line card stops. No error messages are reported.

Workaround: If this event occurs, reset the line card. In addition, you may need to reduce the amount of traffic that passes through the card.

**CSCdr38148**

When the CT3 line card pings a series of 100 byte packets followed by a series of 1000 bytes packets, the CT3 line card may experience a ping failure.

Workaround: Reload the line card using the **hw-module slot reset** command.

**CSCdr38232**

POS and GE line cards cannot pass data even though the system indicates the line is running. This problem rarely occurs.

Workaround: Reset the interface using **shutdown** command and **no shutdown** command.

#### **CSCdr38258**

The number of gigabit Ethernet interfaces may be incorrectly reported by the **show version** and **show hardware** commands. The reported number should match the number of gigabit Ethernet line cards that are inserted and have booted successfully in the chassis.

Workaround: There is currently no workaround.

#### **CSCdr38267**

If you copy the configuration file from PRE-A to NVRAM in a system with redundant PREs, the secondary PRE may stop responding.

Workaround: There is currently no workaround.

#### **CSCdr42519 (formerly CSCdr38210)**

The router may stop responding if traffic is sent at no\_drop rate on more than 1000 PPP connections.

Workaround: Reduce the traffic rate on the PPP connections.

#### **CSCdr46404**

Sustained high rate traffic may trigger spontaneous card up/down events. With the console set to record critical events, you may see continuous card up/down events. Only traffic that is flowing at near 100 percent theoretical packet rate causes this problem.

Workaround: If you enter the **shutdown** and then the **no shutdown** command on the interface, this may resolve the problem. If the problem persists, reboot the router.

#### **CSCdr54857**

With two ChOC-12 line cards connected back-to-back, where one is configured as a Frame Relay switch and the second is configured as a Frame Relay DTE, you cannot configure a large number of DLCIs if keep-alives are enabled.

Workaround: When you configure more than 300 Frame Relay DLCIs, disable keep-alives by entering the **no keepalive** command.

**CSCdr58160**

If the Cisco 10000 runs out of memory and you continue to perform configuration tasks on a ChOC-12 line card, the system may stop responding.

Workaround: Avoid performing multiple memory-intensive tasks. If the system is paused, wait for the system to recover before you perform additional configuration tasks.

**CSCdr61178**

Some channels may not respond if you configure PPP on 768 or more interfaces on a ChOC-12 line card.

Workaround: Configure the ChOC-12 line card with fewer than 768 PPP channels.

**CSCdr81477**

Very rarely, an idle and fully configured ChOC-12 line card stops responding as if it were removed from the chassis. To show the state of the card as removed, issue a **show controller sonet** command.

Workaround: Remove and reinsert the card.

**CSCdr82371**

Occasionally, you may experience a flapping T1 on a ChOC-12 line card that is fully configured with 336 channel groups (each consisting of 24 DS0 slots) and that is using its full bandwidth on all channels. If you reboot the line card, for example, by removing it and reinserting it, one T1 flaps.

Workaround: Enter the **shutdown** command followed by the **no shutdown** command on the parent T3 controller of the flapping T1.

**CSCdr85766**

In rare circumstances, if a ChOC-12 line card is reloaded immediately after the card was powered on, the SONET port flaps and the card eventually stops responding and repeatedly tries to reload itself.

Workaround: Reboot the router.

### **CSCdr93731**

If you use the **no ip pim rp-address** *address* command on the Cisco 10000 ESR after you previously forwarded some multicast traffic, the system may stop responding.

Workaround: Avoid using the **no** form of this command. Instead, overwrite a new address by using the **ip pim rp-address** *address* form of the command.

### **CSCds14167**

Upon power cycling the Cisco 10000, CT3 line cards may enter a state in which they continually reload.

Workaround: Reset the line card.

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