



Release Notes for the Cisco 10000 ESR for Cisco IOS Release 12.0(9)SL2

July 31, 2000

These release notes provide information about Cisco IOS Release 12.0(9)SL2, 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(9)SL2 is based on Cisco IOS Release 12.0(9)S. For a list of the software caveats that apply to Cisco IOS Release 12.0(9)SL2, see the “Caveats” section on page 6 and the release notes for Cisco IOS Release 12.0S. To review the release notes for Cisco IOS Release 12.0S, go to 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 12.0S*.

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



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

Copyright © 2000, Cisco Systems, Inc. All rights reserved.

78-11302-01

Contents

- Upgrading to a New Software Release, page 2
- System Requirements, page 2
- Cisco 10000 ESR Software Features, page 3
- Limitations and Restrictions, page 4
- Important Notes, page 5
- Caveats, page 6
- Resolved Problems, page 18
- Obtaining Documentation, page 26
- Obtaining Technical Assistance, page 26

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

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.

Cisco 10000 ESR Software Features

The following features are supported in the Cisco 10000 ESR.

Table 1 *Principal Software Features*

Administration	Cisco Discovery Protocol (CDP) Simple Network Management Protocol (SNMP)
Availability	SONET 1+1 APS
Encapsulations	Ethernet High-Level Data Link Control (HDLC) Frame Relay Point-to-Point (PPP) Multilink Point-to-Point (MLP)
Multiprotocol Label Switching	Multiprotocol Label Switching (MPLS) edge services
Multicast Features	Multicast Static Routes Multicast Routing Monitor (MRM)
Multicast Services	Internet Group Management Protocol (IGMP) Protocol-Independent Multicast (PIM) Distance Vector Multicast Routing Protocol (DVMRP) Cisco Group Management Protocol (CGMP) Unidirectional Link Routing (URDL) Session Directory Protocol (SDP) Multicast Source Discovery Protocol (MSDP) Border Gateway Protocol (BGP)
Quality of Service	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)*

Routing Protocols	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)
Security Features	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 Line Card Support

Software support is available for the Channelized OC-12 (ChOC-12) line card. This version of the software does not support automatic protection switching (APS) on the ChOC-12 line card. Be sure to review the caveats described in the “Channelized OC-12 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, an OC-12 POS line card must be 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 datapath 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(9)SL2. Caveats for the ChOC-12 line card are described in the “Channelized OC-12 Line Card Caveats” section on page 14.

CSCdp86477	<p>A large configuration may require a lengthy startup time. A Cisco 10000 with a large configuration file may take up to 10 minutes to start up.</p> <p>Workaround: Keep configurations as short as possible. One way to reduce the size of your configurations is to exclude configuration lines that specify Cisco IOS default values. If possible, store the configuration in NVRAM rather than on a Flash disk, because access to NVRAM is faster than access to Flash.</p>
CSCdr19206	<p>If you preconfigure a line card using the card command, this significantly degrades PRE performance.</p> <p>Workaround: Do not use the card command to preconfigure line cards. Use the no card command to remove references to cards that are not in the chassis.</p>
CSCdr22964	<p>If you enter the dir slot n command in rommon after the network boot fails, a PCI master abort message may appear.</p> <p>Workaround: Reboot the Cisco 10000, either from the network or from the Flash or disk.</p>
CSCdr25441	<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>

CSCdr25487 (also CSCdr28094)	<p>A slow processor memory leak caused by Frame Relay config/unconfig loop may occur after you repeatedly perform config/unconfig cycles for a 10 to 15-hour period. To view the leak, look for a drop in the Processor Free(b) value in the output from the show memory free command.</p> <p>Workaround: To regain the leaked memory, reboot the router.</p>
CSCdr32717	<p>Frame Relay PVC statistics do not account for Frame Relay encapsulation bytes.</p> <p>Workaround: Multiply the inbound or outbound per-PVC packets by four. Add this number to the octets transmitted/received to produce the total number of bytes.</p>
CSCdr36564	<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. LMI autosense waits until the next scheduled interval to send the messages again. This problem primarily affects clear channel CT3 interfaces.</p> <p>Workaround: There is currently no workaround.</p>
CSCdr37273	<p>A reload causes the message “logging console debugging” to change to “logging console critical.” When you reload, system/controller/interface status messages may not appear, even if you save the logging console debugging configuration before you perform the reload.</p> <p>Workaround: Configure logging console debugging after you reload.</p>
CSCdr42060	<p>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.</p> <p>Workaround: There is currently no workaround.</p>
CSCdr43835	<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 at 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>
CSCdr47500	<p>Inconsistent performance may be observed between similar interfaces. 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>

<p>CSCdr50586</p>	<p>You cannot generate FDL Bellcore remote loopback requests. The bellcore keyword in the t1 <t1-number> loopback remote line fdl bellcore 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 t1 <t1-number> loopback remote line fdl ansi command to run a remote loopback.</p>
<p>CSCdr52081 (also CSCdj94209)</p>	<p>If you repeatedly change a port from channelized to unchannelized, and from unchannelized to channelized, this may cause the PRE to crash. After several 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, a PRE crash may occur.</p> <p>Workaround: Reload the PRE.</p>
<p>CSCdr52708</p>	<p>If you remove a line card during periods of heavy traffic and then reinsert it (or another card of the same type), on rare occasion the card fails to pass traffic.</p> <p>Workaround: Use the shutdown command to shut down interfaces and controllers before you remove the card. If a failure occurs, you can activate the card by entering the privileged EXEC mode microcode reload pxf command.</p>
<p>CSCdr62013</p>	<p>If large MLP configurations are in use, and you attempt to copy the configuration from a TFTP server directly into the running config, this copy may not succeed. Failures may include interfaces not appearing, or IPCP or LCP states not opening correctly. These failures are far less likely to occur if the configuration is copied to bootflash, and then from bootflash to the running config.</p> <p>Workaround: Copy the configuration file to the startup config and then reboot the router.</p>

CSCdr63819	<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 responding but the line protocol is not responding. As a result, the subinterfaces show interface-down and lineproto-down.</p> <p>Workaround: Use one of the following to clear the condition:</p> <ul style="list-style-type: none"> • Enter the hw-module reset command for the affected CT3 line card. • Enter the shutdown/no shutdown commands on an affected T3 controller. • Enter the no keepalive command on the main interface (not subinterface) for each affected channel on each router.
CSCdr63866	<p>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.</p> <p>Workaround: No workaround is required. After a few moments, the cards on the chassis return to an up state.</p>
CSCdr66940	<p>Under rare conditions, the removal or insertion of a line card produces slight inaccuracies in the transmitted packets and in the transmitted octets statistics. Specifically, the transmitted packet count and the transmitted octet count indicate that marginally fewer packets were transmitted than expected.</p> <p>Workaround: There is currently no workaround.</p>
CSCdr67603	<p>Echo requests (pings) to a Cisco 10000 always produce a display showing the source IP address of the sending interface instead of the original destination address. For example:</p> <pre> packet src -----> Omega -----> ip address interface addr interface addr 1.1.1.1 2.1.1.1 2.1.2.1 echo request from: 1.1.1.1 to: 2.1.2.1 expects a response of echo reply from: 2.1.2.1 to: 1.1.1.1 but instead will receive echo reply from: 2.1.1.1 to: 1.1.1.1 </pre> <p>Workaround: Avoid the problem by always pinging the nearside interface. In the example above, use</p> <pre> echo request from: 1.1.1.1 to: 2.1.1.1 to receive the expected reply: echo reply from: 2.1.1.1 to: 1.1.1.1 </pre>

<p>CSCdr74895</p>	<p>When you boot Cisco IOS software, the following lines appear on a terminal:</p> <pre>#### BEGIN PATCHES #### (DEVELOPERS: add patch info here: ./src-4k-c10k/c10k_patches.h::dump_c10k_patches()) CT3-Cobalt I/O ENABLED CHOC12-Cobalt I/O ENABLED POS-Cobalt I/O ENABLED XCM I/O ENABLED XCM accesses are not logged by default #### END PATCHES ####</pre> <p>Workaround: Ignore the display.</p>
<p>CSCdr75833</p>	<p>Packets may be dropped at a higher rate than normal due to leaked buffers. This occurs infrequently when there is heavy traffic.</p> <p>Workaround: There is currently no workaround</p>
<p>CSCdr81416</p>	<p>For detailed information, refer to the “Automatic Protection Switching Support” section on page 5.</p>
<p>CSCdr82406</p>	<p>Ping failure occurs when the encapsulation type is changed to HDLC on a serial interface. For example, two routers connected back-to-back by way of serial interfaces stop communicating for a period of about 5 minutes after encapsulation is changed from PPP to HDLC.</p> <p>Workaround: Wait for 5 minutes or enter the shutdown/no shutdown command for both interfaces.</p>
<p>CSCdr82656</p>	<p>T1 controllers using ESF framing sometimes report a yellow alarm when no alarm is present on the line. This occurs if the far end router's T1 Facilities Data Link protocol (FDL) does not conform to T1.403 1995 (it does not use the character 0x7e as its FDL idle code). Thus, when the far end stops sending a BOC code word (such as RAI or a remote loop up/down code), the T1 framer in the Cisco 10000 CT3 line card still operates as if the code is active.</p> <p>Workarounds:</p> <ul style="list-style-type: none"> • Configure the far end router to conform to T1.403 (1995), specifically by using 0x7e as its idle pattern. • If you cannot configure the far end to use the correct idle pattern, configure the T1 controller on the Cisco 10000 CT3 not to detect yellow alarms.

CSCdr83434	<p>On rare occasions, after you move a Gigabit Ethernet line card to a different slot in a Cisco 10000 and enter the show command, the system may report that the card is located in a different slot from either the original slot or the current slot.</p> <p>Workaround: There is currently no workaround.</p>
CSCdr84597	<p>When Weighted Random Early Detection (WRED) is enabled, random drops occur less often than they should. This problem affects each interface on which WRED is enabled. If:</p> <ul style="list-style-type: none"> • Only one interface has WRED enabled—The problem does not occur. • Multiple interfaces have WRED enabled—The problem occurs on the second interface, fourth interface, sixth interface, and so on. <p>Workaround: There is currently no workaround.</p>
CSCdr84791	<p>The Cisco 10000 may stop responding if you run two Cisco 10000s back-to-back with the following characteristics:</p> <ul style="list-style-type: none"> • Approximately 350 T1 and sub-T1 lines between them. • POS ports that bounce every 30 to 60 seconds. <p>Workaround: There is currently no workaround.</p>
CSCdr88694	<p>In some situations, the following error message appears while you are in the ROM monitor (rommon):</p> <pre> *** System Error Interrupt (IBIT5) *** int_stat0 register = 0x4 int_stat1 register = 0x0 *** GT64120 Error Interrupt, Cause(s): mask=0xed01f00, cause=0x100e483, real_cause=0x400 PCI Master abort bus_err_high=0x0, bus_err_low=0x0, addr_decode_err=0x70040000 PC = 0x800110a0, Cause = 0x2000, Status Reg = 0x3040f003 </pre> <p>When you use the rommon boot filename command, if the specified filename is not found, the netboot operation fails. After this failure, if you issue a dir command for a device such as bootflash: or slot0:, the preceding error message appears. The ROM monitor remains in this state indefinitely.</p> <p>Workaround: From the rommon prompt, issue the reset command to clear this error condition. You can then reissue the boot command using a valid filename to load an image file.</p>

<p>CSCdr89636</p>	<p>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. This may happen immediately after starting the Cisco 10000.</p> <p>Workaround: Ignore this value.</p>
<p>CSCdr89646</p>	<p>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. For example, if keepalives in the control plane between the PRE and line card time out, a cutover does not occur.</p> <p>Workaround: There is currently no workaround.</p>
<p>CSCdr89872</p>	<p>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. The command should indicate that a card is present in the higher-numbered slot.</p> <p>Workaround: Ignore this line of the show interfaces command output when you are using line card redundancy.</p>
<p>CSCdr91526</p>	<p>If you disable an access list using the no acl command, the Cisco 10000 no longer forwards traffic on interfaces using that access list.</p> <p>Workaround: Remove any associations to the deleted access list from the interfaces by using the no ip access-group command, or recreate the access list using a permit-any argument.</p>

CSCdr92086

If you enter the **show policy-map interface statistics command**, erroneous police data appears. This may also result in packets being classified as exceeding when they should be classified as conforming or vice-versa. This problem occurs when both the class-default class map and the previous class map in the same service policy both have police actions defined. For example:

```
policy-map CAR_ALL
class CLASS_1

policy 8000 32000 34000 conform-action transmit exceed-action drop
class class-default
policy 8000 32000 34000 conform-action transmit exceed-action drop
```

Workaround: Define an additional class map in the offending service policy between the class-default and the previous class map. Create a new class map that does nothing, as in the following example:

```
class-map match-all do_nothing
match ip precedence 1
match ip precedence 2

policy-map CAR_ALL
class CLASS_1
policy 8000 32000 34000 conform-action transmit exceed-action drop

class do_nothing
set ip precedence 1

class class-default
policy 8000 32000 34000 conform-action transmit exceed-action drop
```

CSCdr93731

If you use the **no ip pim rp-address *address*** command on the Cisco 10000 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.

Channelized OC-12 Line Card Caveats

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

CSCdp96265	<p>If you configure DS3 BERT pattern 2^20-O153 on any unchannelized DS3 (by using the bert pattern 2^20-O153 interval 1-14400 command), and you then connect the line card to T-Bird 310 test set, the pattern will not synchronize with T-Berd 310.</p> <p>Workaround: Use a different BERT pattern.</p>
CSCdr32279	<p>When you enter the hw-module reset command, the event sequence is displayed in a different order than that shown by the reload 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>
CSCdr37991	<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 idle-character command.</p>
CSCdr42326	<p>The show controller t3 command does not display DSU information.</p> <p>Workaround: There is currently no workaround.</p>
CSCdr43290	<p>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. If a cutover takes place, the ChOC-12 line card may either reset or operate incorrectly.</p> <p>Workaround: If a cutover takes place and the ChOC-12 line card does not reset, you should reset the card manually by removing and reinserting it.</p>
CSCdr54857	<p>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.</p> <p>Workaround: When you configure more than 300 Frame Relay DLCIs, disable keep-alives by entering the no keepalive command.</p>

CSCdr57030	<p>If the ChOC-12 line card is rebooted, the SONET controller on the line card may not respond.</p> <p>Workaround: Enter the shutdown/no shutdown commands for the SONET interface.</p>
CSCdr58160	<p>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. Caveat CSCdr58244 below describes a situation that can lead to this state. If the operator continues to enter commands while the system attempts to process a large block of commands, this problem can occur.</p> <p>Workaround: Avoid performing multiple memory-intensive tasks. If the system is paused, wait for the system to recover before performing additional configuration tasks.</p>
CSCdr58244	<p>Traffic may pause in some implementations that use multiple ChOC-12 line cards. 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. This happens if you simultaneously enter multiple configuration commands—for example, by cutting and pasting a block of commands into the Cisco IOS command line interface.</p> <p>Workaround: Enter commands one line at a time. If the problem occurs, wait about 60 seconds for the traffic flow to resume.</p>
CSCdr59310	<p>The show hardware command lists preconfigured cards (cards that are not physically located in the chassis).</p> <p>Workaround: There is currently no workaround.</p>
CSCdr61178	<p>Some channels may not come up if you configure PPP on 768 or more interfaces on a ChOC-12 line card.</p> <p>Workaround: The ChOC-12 line card should be configured with fewer than 768 PPP channels.</p>
CSCdr61712	<p>The current version of ChOC-12 code does not support FEBE (Foreign Block Error) statistics.</p> <p>Workaround: There is currently no workaround.</p>

<p>CSCdr61927</p>	<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"> • 0s—All 0s test pattern • 1s—All 1s test pattern • 2^20-QRSS—2^20-1 QRSS O.151 test pattern • 2^23—2^23-1 O.151 test pattern • alt-0-1—Alternating 0s and 1s test pattern <p>Workaround: There is currently no workaround. Use only the 2^11, 2^15, and 2^20-O153 BERT patterns.</p>
<p>CSCdr74978</p>	<p>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%.</p> <p>Workaround: There is currently no known workaround.</p>
<p>CSCdr80393</p>	<p>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.</p> <p>Workaround: Do not forward traffic to an OC-12 T1 channel at a rate greater than a T1 rate; do not overdrive the channel. Resolve the problem by rebooting the router or removing and reinserting the line card.</p>
<p>CSCdr81477</p>	<p>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.</p> <p>Workaround: Remove and reinsert the card.</p>
<p>CSCdr81671</p>	<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>
<p>CSCdr82363</p>	<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>

CSCdr82364	<p>The STS Path Signal Label always displays 00.</p> <p>Workaround: There is currently no way of retrieving the correct Path Signal Label.</p>
CSCdr82371	<p>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.</p> <p>Workaround: Enter the shutdown command followed by the no shutdown command on the parent T3 controller of the flapping T1.</p>
CSCdr82579	<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>
CSCdr82666	<p>If you configure an STS-1 on a ChOC-12 line card as unchannelized T3 and then reconfigure it as channelized T3, the channel groups you create do not pass traffic.</p> <p>Workaround: Save the channelized configuration with its newly created T1s and channel groups; then, remove and reinsert the ChOC-12 line card.</p>
CSCdr85766	<p>In rare circumstances, if a ChOC-12 line card is reloaded immediately after the card was powered up, the SONET port flaps and the card eventually stops responding and repeatedly tries to reload itself.</p> <p>Workaround: Reboot the router.</p>
CSCdr85928	<p>In the following situation, T1 number 28 does not frame.</p> <ol style="list-style-type: none"> 1. Configure a ChOC-12 line card with one of its STS-1s in channelized T3 mode. 2. Configure channel groups in all 28 of the T1s associated with that T3. 3. Reconfigure the STS-1 in unchannelized T3 mode. 4. Reconfigure the unchannelized STS-1 to channelized T3 mode. <p>After you complete step 4, the last T1 (number 28) does not frame.</p> <p>Workaround: Save the configuration with the newly recreated T1s; then, remove and reinsert the ChOC-12 line card.</p>

CSCdr86778	<p>On a fully configured ChOC-12 line card (768 channel groups), about 2 percent of ping packets in several channels are sometimes dropped. This can happen on any of the channels and in no particular sequence or order.</p> <p>Workaround: There is currently no workaround.</p>
CSCdr87990	<p>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.</p> <p>Workaround: Do not send traffic to a ChOC-12 channel at a rate higher than the configured line rate.</p>

Resolved Problems

This section lists resolved problems.

Resolved in Cisco IOS Release 12.0(9)SL2

This section lists problems that are resolved in Cisco IOS Release 12.0(9)SL2. These caveats last appeared in the Caveats section of the release notes for Cisco IOS Release 12.0(9)SL1.

CSCdr05968

The following message may appear on the console output or the console log:

```
%CI-3-PSFAIL: Power entry module 0 failure.
```

CSCdr33757

Under some traffic conditions, no traffic is passed through the gigabit Ethernet interface.

CSCdr43138

The first autoboot fails if no boot image is specified in the configuration, or if all autoboots to the images specified in the configuration fail.

CSCdr43141

The HDLC framer occasionally locks up during line card code initialization.

CSCdr48784

Long delays occur if you remove a T1 cable and add it back to the MLP bundle.

CSCdr50663

CT3 interfaces fail to respond. Occasionally, especially following a PRE reload, some interfaces fail to appear.

CSCdr52313

The system displays the error message: timeout while trying to clear wqb (work queue block). The system may display this error message if the **shutdown** command is entered on an MLP interface while heavy traffic passes through the interface.

Workaround: No workaround is required.

CSCdr52875

The Discarded and Lost received counters may not reset after you enter the **shutdown** and **no shutdown** commands for an MLP interface.

CSCdr53894

After you change encapsulation to frame relay, the Frame Relay Autosense feature does not start immediately. In some cases, the Frame Relay autosense feature takes about 1 minute to start.

CSCdr54819

After you use the **no pos report alarm** command, the **show facility-alarm status** command continues to display OC-12 POS alarms.

CSCdr55504

crashinfo logs written to bootflash may be corrupted.

CSCdr56247

When you delete and recreate interfaces on a Cisco 10000 router, eventually the creation of an interface fails. This problem may occur after 5374 interfaces are removed and recreated.

CSCdr57985

The **show facility-alarm status** command displays alarms for a card that is shut down. After you use the **shutdown** command for the OC-12POS interface, the **show facility-alarm status** command continues to display OC-12POS alarms. After a card is shut down, the alarms no longer appear.

CSCdr57987

Only SLOS and SLOF alarms are capable of sounding an externally connected audible alarm.

CSCdp72872

Traffic does not pass on PVCs statically configured on that interface.

Resolved in Cisco IOS Release 12.0(9)SL1

This section lists problems that are resolved in Cisco IOS Release 12.0(9)SL1. These caveats last appeared in the Caveats section of the release notes for Cisco IOS Release 12.0(9)SL.

CSCdp62083

If you enable HSRP on a gigabit Ethernet interface, the standby state remains at Init and does not change to Standby or Active. In addition, the timer values remain at 0.

CSCdp82038

On some occasions, virtual links that are created on OC-12 POS interfaces report that they are running, but no routing information traverses them.

CSCdp85092

Static arps on the backplane Ethernet are listed in the default configuration.

CSCdp97411

Channelized CT3 controllers log incorrect up/down messages for clear channels.

CSCdp91459

When you create clear-channel interfaces on a CT3 line card, the interfaces are listed out of order in the startup and running configurations.

CSCdr07930

If you issue the **ip host-routing** command, this resets the FastEthernet interface.

CSCdr21897

In some cases, both the multilink interfaces and T1 member links are responding, but the IPCP state on the multilink interface stays in a down or listen state.

CSCdr24633

Multicast traffic through a bouncing interface may cause the PRE to stop responding.

CSCdr25071

In some cases, the **show interface** command reports that hardware was removed even if the interfaces continue to pass traffic.

CSCdr25503

The **show interface** and **show interface** stat commands occasionally report unreasonably large numbers in the input errors, frame, and Chars In fields.

CSCdr25709

A spurious FBB line card events message may appear on the console after a reset or reload of the line card, microcode, or after a PRE cutover. Data flow is not affected.

CSCdr27159

The **mdl string** command does not work and may cause a reset.

CSCdr29208

A BGP session fails to establish after matching BGP neighbor passwords.

CSCdr29231

After you execute the **neighbor default originate** command, the default route may not be listed in BGP table of peered routers.

CSCdr32160

The initial System Configuration dialog echoes characters slowly, at a rate of one character per ¼ to ½-second.

CSCdr33807

QPPB may overwrite the qos-group value settings that are input using QoS configuration mode (also called modular CLI) commands.

CSCdr34482

Netboot may fail if a large number of channels is configured. When tested with 1000 channels configured, the system displays the error message: No usable interfaces.

CSCdr34512

The message MAJOR_FAULT:PXFDMA TBB Length Error is posted to SysLog and the pxf microcode reloads with heavy traffic loads and with CAR enabled.

CSCdr34921

If you display interface statistics, the output queue drops counter is always 0, even if packet drops should be displayed.

CSCdr35518

When you change a clear channel interface that is running to channelized on a CT3 card, an “Assertion Failure” message may appear.

CSCdr36507

OC-12 POS interface status is incorrect after IP configuration.

CSCdr37184

The current eboot image, if booted by itself from rommon, reverts back to rommon.

CSCdr37212

Alarm messages for a secondary (redundant) line card do not appear.

CSCdr37280 (formerly CSCdr38365)

After you delete an interface containing a service policy, a QoS show command such as **show policy-map interface** may not respond or report stats of deleted interfaces.

CSCdr38027

The multiple **card/no card** command sequences for the same card type in the same slot removes the interface configuration information when you execute a **show running-config** command.

CSCdr38123

If you send packets with an MTU size of more than 4470 bytes, ping failure messages may appear. In addition, assertion failures may be listed in the log file.

CSCdr38140

When you display interface statistics using the **show interface** command, the packets input and byte fields may display numbers greater than expected.

CSCdr39827

The OC-12 POS line card keeps reloading under traffic at startup.

CSCdr42618

The **show controller pos x/0/0 detail** command shows the same data as the **show controller pos x/0/0** command.

CSCdr44179

Clear counters does not clear all SONET defect counters

CSCdr45485

The **shutdown** command does not shut down the OC-12POS interface.

CSCdr45548

The **ip load-sharing per-packet** command is not supported.

Unreproducible Caveats

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

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 **sdebug 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 goes 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. The error only occurs after you reload the line card.

Workaround: Reload the line card using **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 line cards 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 crash 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: Enter the **shutdown** and then the **no shutdown** command on the interface may resolve the problem. If the problem persists, reboot the router.

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.

Obtaining Documentation

World Wide Web

You can access the most current Cisco documentation on the World Wide Web at <http://www.cisco.com>, <http://www-china.cisco.com>, or <http://www-europe.cisco.com>.

Documentation CD-ROM

Cisco documentation and additional literature are available in a CD-ROM package, which ships with your product. The Documentation CD-ROM is updated monthly. Therefore, it is probably more current than printed documentation. The CD-ROM package is available as a single unit or as an annual subscription.

Ordering Documentation

Registered CCO users can order the Documentation CD-ROM and other Cisco Product documentation through our online Subscription Services at <http://www.cisco.com/cgi-bin/subcat/kaojump.cgi>.

Nonregistered CCO users can order documentation through a local account representative by calling Cisco corporate headquarters (California, USA) at 408 526-4000 or, in North America, call 800 553-NETS (6387).

Obtaining Technical Assistance

Cisco provides Cisco Connection Online (CCO) as a starting point for all technical assistance. Warranty or maintenance contract customers can use the Technical Assistance Center. All customers can submit technical feedback on Cisco documentation using the web, e-mail, a self-addressed stamped response card included in many printed docs, or by sending mail to Cisco.

Cisco Connection Online

Cisco continues to revolutionize how business is done on the Internet. Cisco Connection Online is the foundation of a suite of interactive, networked services that provides immediate, open access to Cisco information and resources at anytime, from anywhere in the world. This highly integrated Internet application is a powerful, easy-to-use tool for doing business with Cisco.

CCO's broad range of features and services helps customers and partners to streamline business processes and improve productivity. Through CCO, you will find information about Cisco and our networking solutions, services, and programs. In addition, you can resolve technical issues with online support services, download and test software packages, and order Cisco learning materials and merchandise. Valuable online skill assessment, training, and certification programs are also available.

Customers and partners can self-register on CCO to obtain additional personalized information and services. Registered users may order products, check on the status of an order and view benefits specific to their relationships with Cisco.

You can access CCO in the following ways:

- WWW: www.cisco.com
- Telnet: [cco.cisco.com](telnet://cco.cisco.com)
- Modem using standard connection rates and the following terminal settings: VT100 emulation; 8 data bits; no parity; and 1 stop bit.
 - From North America, call 408 526-8070
 - From Europe, call 33 1 64 46 40 82

You can e-mail questions about using CCO to cco-team@cisco.com.

Technical Assistance Center

The Cisco Technical Assistance Center (TAC) is available to warranty or maintenance contract customers who need technical assistance with a Cisco product that is under warranty or covered by a maintenance contract.

To display the TAC web site that includes links to technical support information and software upgrades and for requesting TAC support, use www.cisco.com/techsupport.

To contact by e-mail, use one of the following:

Language	E-mail Address
English	tac@cisco.com
Hanzi (Chinese)	chinese-tac@cisco.com
Kanji (Japanese)	japan-tac@cisco.com
Hangul (Korean)	korea-tac@cisco.com
Spanish	tac@cisco.com
Thai	thai-tac@cisco.com

In North America, TAC can be reached at 800 553-2447 or 408 526-7209. For other telephone numbers and TAC e-mail addresses worldwide, consult the following web site:
<http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml>.

Documentation Feedback

If you are reading Cisco product documentation on the World Wide Web, you can submit technical comments electronically. Click **Feedback** in the toolbar and select **Documentation**. After you complete the form, click **Submit** to send it to Cisco.

You can e-mail your comments to bug-doc@cisco.com.

To submit your comments by mail, for your convenience many documents contain a response card behind the front cover. Otherwise, you can mail your comments to the following address:

Cisco Systems, Inc.
 Document Resource Connection
 170 West Tasman Drive
 San Jose, CA 95134-9883

We appreciate and value your comments.

This document is to be used in conjunction with the Cisco 10000 ESR documentation.

Access Registrar, AccessPath, Any to Any, Are You Ready, AtmDirector, Browse with Me, CCDA, CCDE, CCDP, CCIE, CCNA, CCNP, CCSI, CD-PAC, the Cisco logo, Cisco Certified Internetwork Expert logo, *CiscoLink*, the Cisco Management Connection logo, the Cisco NetWorks logo, the Cisco Powered Network logo, Cisco Systems Capital, the Cisco Systems Capital logo, Cisco Systems Networking Academy, the Cisco Systems Networking Academy logo, the Cisco Technologies logo, Fast Step, FireRunner, Follow Me Browsing, FormShare, GigaStack, IGX, Intelligence in the Optical Core, Internet Quotient, IP/VC, IQ Breakthrough, IQ Expertise, IQ FastTrack, IQ Readiness Scorecard, The IQ Logo, Kernel Proxy, MGX, Natural Network Viewer, NetSonar, Network Registrar, the Networkers logo, *Packet*, PIX, Point and Click Internetworking, Policy Builder, Precept, RateMux, ReyMaster, ReyView, ScriptShare, Secure Script, Shop with Me, SlideCast, SMARTnet, SVX, *The Cell*, TrafficDirector, TransPath, VlanDirector, Voice LAN, Wavelength Router, Workgroup Director, and Workgroup Stack are trademarks; Changing the Way We Work, Live, Play, and Learn, Empowering the Internet Generation, The Internet Economy, and The New Internet Economy are service marks; and Aironet, ASIST, BPX, Catalyst, Cisco, Cisco IOS, the Cisco IOS logo, Cisco Systems, the Cisco Systems logo, the Cisco Systems Cisco Press logo, CollisionFree, Enterprise/Solver, EtherChannel, EtherSwitch, FastHub, FastLink, FastPAD, FastSwitch, GeoTel, IOS, IP/TV, IPX, LightStream, LightSwitch, MICA, NetRanger, Post-Routing, Pre-Routing, Registrar, StrataView Plus, Stratm, TeleRouter, and VCO are registered trademarks of Cisco Systems, Inc. or its affiliates in the U.S. and certain other countries. All other trademarks mentioned in this document are the property of their respective owners. The use of the word partner does not imply a partnership relationship between Cisco and any other company. (0005R)

Copyright © 2000, Cisco Systems, Inc.
All rights reserved.

