



Release Notes for the Cisco 10000 ESR for Cisco IOS Release 12.0(9)SL1

June 22, 2000

These release notes provide information about Cisco IOS Release 12.0(9)SL1, 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)SL1 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)SL1, see the “Caveats” section on page 5 and the release notes for Cisco IOS Release 12.0 S.

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

Contents

- Upgrading to a New Software Release, page 2
- System Requirements, page 2
- Cisco 10000 ESR Software Features, page 3



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- Limitations and Restrictions, page 4
- Important Notes, page 4
- Caveats, page 5
- Resolved Problems, page 12
- Obtaining Documentation, page 16
- Obtaining Technical Assistance, page 17

Upgrading to a New Software Release

For specific information on 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/cisco/mkt/ios/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/cisco/mkt/ios/rel/>

System Requirements

You must have a minimum of 128 MB of memory on the Performance Routing Engine (PRE).

If your configuration file describes more than 500 complex interfaces, your Cisco 10000 ESR may require additional memory.

Cisco 10000 ESR Software Features

The following features are supported on 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*

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 Internet Key Exchange (IKE) Terminal Access Controller Access Control System Plus (TACACS+) Message Digest 5 (MD5) for use with SNMPv2 and SNMPv3

Limitations and Restrictions

The Channelized OC-12 (ChOC-12) line card, which is described in the Cisco 10000 ESR documentation, is not currently supported.

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) sessions.

**Note**

Each T1 interface in an MLP bundle represents a single PPP session. Thus, configuring 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 lists caveats for the Cisco 10000 ESR running under IOS Release 12.0(9)SL1.

CSCdr50586

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.

The software responds to FDL Bellcore remote loopback requests, but does not generate these requests.

Workaround: Use the **t1 <t1-number> loopback remote line fdl ansi** command to run a remote loopback.

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.

CSCdr19206

If you preconfigure a line card using the **card** command, this significantly degrades PRE performance.

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.

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.

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.

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."

Workaround: Boot from disk.

CSCdr25590

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

Workaround: There is currently no workaround.

CSCdr32717

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

Workaround: Multiply the inbound or outbound per-PVC packets by four. Add this number to the octets transmitted/received to produce the total number.

CSCdr05968

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

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

Workaround: Ignore the message.

CSCdr36564

When you use the Frame Relay autosense feature, the Cisco 10000 ESR sends out all three LMI status message types immediately after the interface starts responding. However, sometimes the switch at other end is not ready to receive the messages and, as a result, misses one or two messages. LMI autosense waits until the next scheduled interval to send out the messages again. This problem primarily affects clear channel CT3 interfaces.

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 crash.

Workaround: There is currently no workaround.

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.

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 is only seen after you reload the line card.

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

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.

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.

CSCdr25441

FastEthernet 0/0/0 is configured with static IP address, but still sends out DHCP packets. The router appears to be sending out DHCP packets with the backplane Ethernet MAC address and an IP address of 0.0.0.0.

Workaround: There is currently no workaround.

CSCdr37273

Reload causes “logging console debugging” to change to “logging console critical.” On reload, you may not see system/controller/interface status messages, despite having saved logging console debugging configuration before the reload.

Workaround: Configure logging console debugging on reload.

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.

Workaround: No workaround is required and you can ignore the error message. After the first autoboot failure, the system automatically boots the first image in bootflash again. The second boot is always successful and the system powers on properly.

CSCdp86477

Large configurations can lead to long boot times. A Cisco 10000 with a large configuration file may take up to 10 minutes to start up.

Workaround: Keep configurations as short as possible. One way to reduce the size of your configurations is to exclude configuration lines that specify 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.

CSCdr22964

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

Workaround: Reboot the Cisco 10000, either from the network or from the flash or disk.

CSCdr37190

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

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

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.

CSCdr43141

HDLC framer occasionally locks up during line card code initialization.

Workaround: Reset the line card.

CSCdr47500

Inconsistent performance is 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.

Workaround: There is currently no workaround.

CSCdr48784

Long delays occur when you remove a T1 cable and add it back to the MLP bundle. If you remove and reconnect a T1 cable on an active line, you may see a delay of more than 45 seconds before MLP traffic resumes its flow through the cable.

Workaround: Do not remove and reinsert the cable when traffic is flowing through the MLP bundle.

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.

CSCdr52708,

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.

Workaround: Use the **shutdown** command to shut down interfaces and controllers before removing the card. If failure occurs, you can activate the card by entering the **microcode reload pxf** command or reloading the IOS software.

CSCdr52875

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

Workaround: There is currently no workaround.

CSCdr53894

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

Workaround: Wait for 1 minute for the autosense feature to start.

CSCdr54819

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

Workaround: There is currently no workaround.

CSCdr55504

crashinfo logs written to bootflash may be corrupted.

The debugging information written to bootflash (particularly the files *crashinfo* and *pxf_crashinfo*) after some system failures may be partially corrupted.

Workaround: There is currently no workaround. Most of the content of these files is valid and an engineer can easily recognize the corrupted areas.

CSCdr57985

The **show facility-alarm status** command displays alarms for a card that is shut down. After you use the **shutdown** command for the OC12POS interface, the **show facility-alarm status** command continues to display OC12POS alarms. After a card is shut down, the alarms no longer display.

Workaround: There is currently no workaround.

CSCdr57987

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

Workaround: Set the **pos report alarm** for each alarm in the OC-12 POS interface configuration and use **show controller pos interface** or **show facility-alarm status** to see the current state of alarms.

CSCdr56247

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

Workaround: Do not delete and recreate more than 5374 interfaces or, if you experience this problem, reboot the router.

CSCdr42519

Passing PPP traffic at high sustained traffic load may cause the router to crash to rommon. If sustained high-packet PPP traffic is maintained for more than 12 hours, the router may suffer either a low memory bus error or a software forced watchdog. If this occurs, the router creates a crash dump file, and reverts to the rommon prompt.

Workaround: If the sustained flowrate remains very high for close to 12 hours, force a break in the traffic to avoid this problem.

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% theoretical packet rate causes this problem.

Workaround: Enter the **shutdown** and then the **no shutdown** command on the interface may clear up the problem. If the problem persists, reboot the router.

CSCdr50663

CT3 interfaces fail to come up. Occasionally, especially following a PRE reload, some interfaces fail to come up. Usually they are clustered either on an entire port or on an entire card.

Workaround: Reset the card using **hw-module sub slot/subslot reset** command.

CSCdr52081

Repeatedly changing a port between channelized and not channelized may cause the PRE to crash. After many 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.

Workaround: Reload the PRE.

CSCdr25487

Processor memory leak caused by FR config/unconfig loop. A slow processor memory leak may occur after repeatedly performing config/unconfig cycles for a 10 to 15 hour period. The leak can be seen by looking for a drop in the Processor Free(b) value in the output from the **show memory free** command.

Workaround: To regain the leaked memory, reboot the router.

Resolved Problems

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

CSCdr29208

BGP session fails to establish after matching BGP neighbor passwords.

CSCdp72872

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

CSCdr29231

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

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.

CSCdr34512

"MAJOR_FAULT:PXF DMA TBB Length Error" is posted to SysLog and the pxf microcode reloads with heavy traffic loads and with CAR enabled.

CSCdr36507

OC-12 POS interface status incorrect after IP configuration.

CSCdr33807

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

CSCdr33757

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

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.

CSCdr27159

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

CSCdr37212

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

CSCdr37280 (formerly CSCdr38365)

After deleting an interface containing a service policy, QoS show commands, such as **show policy-map interface** may crash or report stats of deleted interfaces.

CSCdr39827

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

CSCdp85092

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

CSCdr25503

The **show interface** and **show interface** stat commands occasionally report unreasonably large numbers.

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.

CSCdr37184

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

CSCdp97411

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

CSCdr24633

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

CSCdr38027

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.

CSCdr32160

The initial System Configuration dialog echoes characters slowly, at a rate of one character per 1/4 to 1/2 second.

CSCdr42618

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

CSCdr25709

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.

CSCdr25071

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

CSCdr38140

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

CSCdr44179

Clear counters does not clear all Sonet defect counters

CSCdr35518

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

CSCdr45485

The **shutdown** command does not shut down the OC12POS interface.

CSCdr45548

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

CSCdr07930

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

CSCdr34921

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

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.

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.

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.

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Obtaining Technical Assistance

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- 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.

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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.

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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>.

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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:

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Document Resource Connection
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate and value your comments.

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