



Release Notes for the Cisco 10000 Series Router for Cisco IOS Release 12.0(30)SZ6

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These release notes provide information about Cisco IOS Release 12.0(30)SZ6 for the Cisco 10000 Series Router. This release is a maintenance release and has no new features.

For a list of the software caveats that apply to Cisco IOS Release 12.0(30)SZ6, see the “[Caveats for Cisco IOS Release 12.0\(30\)SZ6](#)” section on page 5.

Cisco IOS Release 12.0(30)SZ6 is based on the following releases:

- Cisco IOS Release 12.0(30)S5
- Cisco IOS Release 12.0(30)SZ through Release 12.0(30)SZ5

To review the release notes for Cisco IOS Release 12.0 S, go to:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1829/prod_release_notes_list.html

We recommend that you view the field notices for this release to see if your software or hardware platforms are affected. If you have an account on Cisco.com, you can find field notices at http://www.cisco.com/warp/customer/tech_tips/index/fn.html. If you do not have a Cisco.com login account, you can find field notices at http://www.cisco.com/warp/public/tech_tips/index/fn.htm

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System Requirements

The following sections describe the system requirements for Cisco IOS Release 12.0(30)SZ6:

- [Memory Recommendations](#), page 2
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Memory Recommendations

Memory recommendations are available through Cisco Feature Navigator. This web-based tool enables you to determine which Cisco IOS and Catalyst OS software images support a specific set of features and which features are supported in a specific Cisco IOS image. You can search by feature or by feature set (software image). Under the release section, you can compare Cisco IOS software releases side by side to display both the features unique to each software release and the features that the releases have in common.

Cisco Feature Navigator is updated regularly when major Cisco IOS software releases and technology releases occur. For the most current information, go to the Cisco Feature Navigator home page:

<http://www.cisco.com/go/fn>

For frequently asked questions about Cisco Feature Navigator, see the FAQs:

<http://tools.cisco.com/ITDIT/CFN/jsp/help.jsp>

Determining Memory Recommendations for Software Images (Feature Sets)

To determine memory recommendations for software images (feature sets) in Cisco IOS Release 12.0S, go to the Cisco Feature Navigator home page and perform the following steps:

-
- Step 1** From the Cisco Feature Navigator home page, click **Search by Software/Image Name/Product Code/Platform**.
- Step 2** To find the memory recommendations for the latest Cisco IOS release, click the release under the Cisco IOS Quick Pick Latest Release area. For other releases, go to [Step 3](#).
- Choose **All Platforms** from the Platform drop-down list
 - Choose **All Feature Sets** from the Feature Set drop-down list.
- The search results list all of the software images (feature sets) that support the release that you chose, plus the DRAM and flash memory recommendations for each image.
- Step 3** If the release is not listed in the Cisco IOS Quick Pick Latest Release area, choose **IOS** from the Software drop-down list, and click **Continue**.
- Choose a release from the Major Release drop-down list, and click **Continue** again.
 - Choose a specific release from the Release drop-down list.
 - Choose **All Platforms** from the Platform drop-down list
 - Choose **All Feature Sets** from the Feature Set drop-down list.
- The search results list all of the software images (feature sets) that support the release that you chose, plus the DRAM and flash memory recommendations for each image.
-

Supported Hardware

For Cisco IOS Release 12.0(30)SZ6, you must have the performance routing engine (PRE), Part Number ESR-PRE1 installed in the Cisco 10000 series chassis. To verify which PRE is installed in the router, use the **show version** command.

For information about line cards supported by Cisco 10000 series routers, see the “[Supported Line Cards for the 10000 Series Routers](#)” section in the *Cross-Platform Release Notes for Cisco IOS Release 12.0 S, Part 1: System Requirements*, located at:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1829/prod_release_note09186a00803c2dcb.html

Feature Support

Cisco IOS software is packaged in feature sets, depending on the platform. Each feature set contains a specific set of Cisco IOS features.

Cisco IOS Release 12.0(30)SZ6 is based on Cisco IOS Release 12.0(30)S5 and subsequent Cisco IOS Release 12.0(30)SZx maintenance releases. All features supported by Cisco IOS Release 12.0S up to and including Release 12.0(30)S5 are supported by Cisco IOS Release 12.0(30)SZ6.



Caution

Cisco IOS images with strong encryption (including, but not limited to, 168-bit Triple Data Encryption Standard [3DES] data encryption feature sets) are subject to United States government export controls and have limited distribution. Strong encryption images to be installed outside the United States are likely to require an export license. Customer orders may be denied or subject to delay because of United States government regulations. When applicable, purchaser and user must obtain local import and use authorizations for all encryption strengths. Contact your sales representative or distributor for more information, or send an e-mail to export@cisco.com.

Upgrading to a New Software Release

The following sections provide information about upgrading your Cisco 10000 series router to a new software release:

- [Before You Upgrade the Cisco IOS Software](#), page 3
- [Information About Upgrading to a New Software Release](#), page 4

Before You Upgrade the Cisco IOS Software

Before you upgrade (or downgrade) the Cisco IOS software running on the Cisco 10000 series router, save the running configuration file using the **copy** command. In route processor redundancy (RPR) mode, the router synchronizes only the startup configuration.

Information About Upgrading to a New Software Release

For specific information about upgrading your Cisco 10000 series router to a new software release, see the *Cisco 10000 Series Router Performance Routing Engine Installation*, located at:

http://www.cisco.com/en/US/products/hw/routers/ps133/prod_installation_guide09186a0080525aba.html

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#wp26467

For additional information about ordering Cisco IOS software, see the Products and Services Ordering web site, located at:

<http://www.cisco.com/en/US/ordering/index.shtml>

New and Changed Features

Cisco IOS Release 12.0(30)SZ6 is a maintenance release and has no new hardware or software features.

For information about new features supported on the Cisco 10000 series router in other releases, see the appropriate Release Notes, located at:

http://www.cisco.com/en/US/products/hw/routers/ps133/prod_release_notes_list.html

For information about Cisco IOS Release 12.0(30)S, see the appropriate document, located at:

http://www.cisco.com/en/US/products/sw/iosswrel/ps1829/prod_release_notes_list.html

Important Notes

The following sections provide important information:

- [Inserting a New Line Card](#), page 4
- [Deferral of Cisco IOS Software Images](#), page 4

Inserting a New Line Card

Unlike other Cisco routers, if you insert a new or different line card into a Cisco 10000 series chassis slot that previously had a line card installed, the line card initially reports that it is administratively up.

Deferral of Cisco IOS Software Images

Cisco IOS software images are subject to deferral. We recommend that you view the deferral notices located at the following URL to determine if your software release is affected:

<http://www.cisco.com/kobayashi/sw-center/sw-ios-advisories.shtml>

Caveats for Cisco IOS Release 12.0(30)SZ6

Caveats describe unexpected behavior in Cisco IOS software releases. Severity 1 caveats are the most serious caveats; severity 2 caveats are less serious. Severity 3 caveats are moderate caveats and only select severity 3 caveats are included in the caveats section of this document.

Cisco IOS Release 12.0(30)SZ6 is based on Cisco IOS Release 12.0(30)S5 and Releases 12.0(30)SZ through 12.0(30)SZ5, and contains all of the open and resolved caveats in these releases. For information on the caveats in these releases, see the following Release Notes documents:

- For Cisco IOS Release 12.0(30)S5, see the *Cross-Platform Release Notes for Cisco IOS Release 12.0 S, Part 3: Caveats for 12.0(30)S through 12.0(32)S6*, located at:
http://www.cisco.com/en/US/products/sw/iosswrel/ps1829/prod_release_note09186a00803c2609.html
- For other Cisco IOS Release 12.0(30)SZ releases, see the Cisco IOS 12.0SZ Release Notes section, located at:
http://www.cisco.com/en/US/products/hw/routers/ps133/prod_release_notes_list.html



Note If you have an account on Cisco.com, you can also use the Bug Toolkit to find select caveats of any severity. To reach the Bug Toolkit, log in to [Cisco.com](http://www.cisco.com) and click **Products and Services > Cisco IOS Software > Cisco IOS Software Releases 12.2 > Troubleshooting > Bug Toolkit**. Another option is to go to http://www.cisco.com/cgi-bin/Support/Bugtool/launch_bugtool.pl. (If the defect that you request is not displayed, it might be due to one or more of the following reasons: the defect number does not exist, the defect does not have a customer-visible description yet, or the defect has been marked Cisco Confidential.)

The following sections describe open and resolved caveats for Cisco IOS Release 12.0(30)SZ6:

- [Open Caveats in Cisco IOS Release 12.0\(30\)SZ6, page 5](#)
- [Resolved Caveats in Cisco IOS Release 12.0\(30\)SZ6, page 7](#)

Open Caveats in Cisco IOS Release 12.0(30)SZ6

This section describes caveats that are open in Cisco IOS Release 12.0(30)SZ6.

CSCdy45049

During a lab stress test, line rate traffic sometimes does not achieve line rate when scaling to more than 3000 serial interfaces. This occurs only when thousands of serial interfaces with PPP or HDLC encapsulation are used on the port and line rate traffic is sent through all interfaces.

Workaround: No workaround is available.

CSCeh48414

While testing the high availability (HA) Stateful Switchover (SSO) feature, the traffic is not stable before or after the switchover occurs. This behavior occurs on a Cisco 10000 series router with 200 serial network interfaces, two channelized OC-12 interfaces, and one Ethernet interface. The problem is observed on the 200 interfaces and only when the router is running Cisco IOS Release 12.0(25)SX10.

Workaround: No workaround is available.

CSCeh73497

After a route processor (RP) switchover, the following message is sometimes observed. This occurs on the Cisco 10000 series router with redundant PRE1 cards and with RPR+ mode configured.

```
C10KEVENTMGR-1-IRONBUS_FAULT: Barium Error
```

The message results from an internal timing issue during the RP switchover. The affected line card recovers successfully and no performance impact is observed.

Workaround: No workaround is available.

CSCei93434

While configuring high availability (HA) Multilink, a slight buffer leak is observed after you issue the **show hardware pxf cpu buffers** command. As shown in the following sample output, for buffer pool 3 the total number of buffers (67666) does not equal the number of available buffers (67139). This occurs when the router is running Cisco IOS Release 12.0(28)S4.

pool	size	# buffer	available	allocate failures
0	9216	100	100	0
1	4672	500	500	0
2	1600	30000	30000	0
3	640	67666	67139	0
4	256	98165	98165	0
5	64	131000	131000	0

Workaround: No workaround is available.

CSCej89322

Spurious memory access is observed at fib_notify_interface_state_change after the secondary switchover in the primary router. This symptom occurs on the router when running Cisco IOS Release 12.0(30)S4 and Release 12.0(28)S5.

Workaround: No workaround is available.

CSCsg51693

A random ping failure occurs between two CE routers and is randomly observed across different virtual private networks (VPNs) for more than 300 VPNs. The number of ping failures across the VPNs varies randomly. The number of VPNs is set to 500 and the number of VPN routes is set to 136. Ping operations between two PE routers are successful. The ping failure is not observed when the number of VPN routes is set to 0 and the number of VPNs is set to 999. This symptom occurs when the router is running Cisco IOS Release 12.0(30)SZ and Release 12.0(30)SZ2.

Workaround: No workaround is available.

CSCsj14143

ifHCOctets and ifHCInOctets values retrieved from the IF-MIB are not correct.

Workaround: No workaround is available.

Resolved Caveats in Cisco IOS Release 12.0(30)SZ6

This section describes caveats that were fixed in Cisco IOS Release 12.0(30)SZ6.

CSCeb34310

While debugging SNMP, some information from restricted views were accessible. This occurred on a Cisco router that was configured for Lawful Intercept (LI). This has been fixed.

CSCee63182

When an interface with the **rate-limit** command configured was deleted by entering the **no interface** command, and then re-enabled by entering the **interface** command, the router sometimes failed or stopped responding. This has been fixed.

CSCeg01651

When the OC-3 PoS line card was configured for line clocking, the output of the **show controller** command indicated line clocking. However, internally the line card was incorrectly configured for internal clocking. This prevented the line card from becoming active. This has been fixed.

CSCeg10310

A DSX3 interface of an 8-port E3/DS3 line card was stuck in the initializing or down state. This occurred on a Cisco 10008 router after the router reloaded. This has been fixed.

CSCeg56821

When a link on a channelized STM-1 interface card was incorrectly configured so that one end of the link was configured for PCM31 frame format and the other end was configured for CRC4 frame format, the link was incorrectly reported as UP. However, it should have been reported to be in the DOWN state. This has been fixed.

CSCeh03271

Frame Relay high availability features on 1-port channelized OC-12 and 4-port channelized STM-1 line cards did not always work correctly after a switchover operation because the links did not always reconverge as expected. This has been fixed.

CSCeh13518

A small memory leak occurred on a Cisco 10000 series router when an access control list (ACL) was created and deleted without being attached to an interface for security purposes. This has been fixed.

CSCeh14826

An OC-3 line card may have become unresponsive and down, and stuck in the initialization state. This may have occurred when a performance routing engine (PRE) switchover was done. This has been fixed.

CSCeh22765

An ATM interface may not have come up with no alarms present after the router was reloaded and if the **no shutdown** command was configured on the interface. The interface did remain DOWN. If the slot was reset, then the interface would come back up. This has been fixed.

CSCeh31740

The Cisco 10000 series router sometimes reloaded when you issued the **no card** command for a line card configured with FRF.12 and with a service policy. This has been fixed.

CSCeh89346

Ping traffic failed for 30 seconds after a stateful switchover (SSO). This occurred when using Frame Relay on an 8-port E3/DS3 line card. The line protocol for the Frame Relay interface started a new session after the SSO operation and considered the line protocol down, instead of realizing that the line protocol was up. It took several LMI messages to bring up the line protocol so that ping traffic could resume again. This has been fixed.

CSCei04553

The router may have reloaded during extensive access control list (ACL) processing, such as when ACLs were being deleted or modified within several seconds of the ACLs being attached to interfaces. This has been fixed.

CSCei12320

When configured as a PE with mVPN support, the Cisco 10000 series router sometimes experienced high CPU utilization and performance issues because packets with the DF bit set in the outer header were sent to the CPU. Because vendors' devices set the DF bit in the outer header, this could result in interoperability issues. This has been fixed.

CSCei17730

When using the 4-port channelized OC-3 line card and the channelized OC-12 line card, stateful switchover (SSO) took longer than expected. This occurred for any encapsulation type and did not necessarily occur every time as it appeared to be timing dependent. This has been fixed.

CSCei77227

In a multicast VPN environment, a Cisco router sometimes failed when checking the unicast connectivity and then unconfiguring a VRF instance. This has been fixed.

CSCek12203

When you entered the **copy ftp disk** command, the copy operation sometimes failed and could not be terminated. Entering additional **copy** commands failed and a TCP VTY session used to troubleshoot this problem also failed and could not be terminated. Reloading the router enabled the router to recover from the symptoms. This has been fixed.

CSCek40699

After a stateful switchover (SSO), BGP peers may have been lost and needed to be reestablished. This has been fixed.

CSCsb60206

When a stateful switchover (SSO) operation occurred, the newly active route processor (RP) generated traceback messages and a series of CPU Hog messages in the PIM process, and then failed because the watchdog timer expired. This occurred on a Cisco router with redundant RPs and auto-RP configured, and when regular multicast traffic ran for a few hundred multicast routes. This has been fixed.

CSCsb69773

A Cisco router that was configured for BGP and non-stop forwarding (NSF) sometimes failed during the redistribution of OSPF, EIGRP, RIP, and static routes. This occurred on a Cisco router after a switchover operation from the primary route processor (RP) to the secondary RP had occurred. This has been fixed.

CSCsc67367

The set `ip next-hop in-vrf vrf-name` command did not work with import maps. This occurred on a Cisco router with BGP configured. This has been fixed.

CSCsd01698

The following types of error messages may have appeared when there were large numbers of interfaces with ACLs configured and there were a large number of them being created and deleted rapidly. This has been fixed.

```
Dec 27 12:46:09.884: %SCHED-3-SEMLOCKED: TurboACL attempted to lock a semaphore, already
locked by itself
-Traceback= 60530010 6061B3C4 61030AFC 603E658C 603E946C 603E9594
Dec 27 12:46:09.888: %SCHED-3-SEMLOCKED: TurboACL attempted to lock a semaphore, already
locked by itself
-Traceback= 60530010 6061B3C4 61030AFC 603E658C 603E946C 603E9594
Dec 27 12:46:09.888: %SCHED-3-SEMLOCKED: TurboACL attempted to lock a semaphore, already
locked by itself
-Traceback= 60530010 6061B3C4 61030AFC 603E658C 603E946C 603E9594
Dec 27 12:46:15.076: %SCHED-3-SEMLOCKED: TurboACL attempted to lock a semaphore, already
locked by itself
-Traceback= 60530010 6061B3C4 61030AFC 603E658C 603E946C 603E9594
Dec 27 12:46:15.088: %SCHED-3-SEMLOCKED: TurboACL attempted to lock a semaphore, already
locked by itself
-Traceback= 60530010 6061B3C4 61030AFC 603E658C 603E946C 603E9594
```

CSCsd66372

A Cisco 10000 series router may have restarted with error and traceback messages similar to the following displayed. This has been fixed.

```
*Dec 31 14:53:04.667 EST: %SYS-5-CONFIG_I: Configured from memory by console
*Dec 31 14:53:05.163 EST: %SYS-5-RESTART: System restarted
```

```
Unexpected exception to CPUvector 300, PC = 98AFEC
-Traceback= 98AFEC 98AB18 1203EA0 98C3C0 98C678 98D20C 2CE86C
```

CSCsh18345

When you reconfigured a multilink Frame Relay (MLFR) bundle and then forced multiple switchover operations with RPR+, the following traceback message displayed and you could not make additional changes to the MLFR interface. The MLFR interface went down after the switchover and it never recovered due to a missing configuration. This has been fixed.

```
%FIB-2-HW_IF_INDEX_ILLEGAL: Attempt to create CEF interface for MFR32562 with illegal
index: -1
-Traceback= 202ED8 202FE0 1748D0 176698 176D08 177424 27DEE8 238138 24D730 12FB7C0 12FBE44
2EB3CC
```

CSCsh58729

When running MPLS fast reroute (FRR), the router sometimes failed. This has been fixed.

CSCsi02671

During basic operation, the gateway router generated the following traceback and error messages. This has been fixed.

```
Mar 2 19:00:30.550: %FIB-4-FIBBADSNMPPREFIX: Invalid prefix passed to
> CEF SNMP walker (0.0.0.1/0). -Traceback= 0x412DD26C 0x416495B4
```

CSCsi03359

A PIM hello message sometimes did not reach the neighbor router. This occurred on a Cisco router when an interface started and a PIM hello message was triggered. The symptom occurred because the PIM hello message was sent before the port could actually forward IP packets. IGP managed to establish its neighborhood, but PIM did not. This caused reverse path forwarding (RPF) to change to the new neighbor and caused packets to be lost for up to 30 seconds. This has been fixed.

CSCsj89636

ISIS convergence time may have been delayed after a switchover if there were parallel links existing between routers and they were connected through switches. For example, if a neighbor router shut down its Ethernet interface, ISIS routes in the routing table that used that interface as the next hop were not deleted. This occurred even after the router received a new link state advertisement (LSA) from the neighbor that reflected the topology change. This problem continued until adjacency timed out, creating a temporary loss of packets and thereby delaying convergence. This has been fixed.

CSCsk19572

When creating subinterfaces, if you did not complete a subinterface configuration before creating additional interfaces, and then you returned to the first subinterface to complete the configuration, the router sometimes did not apply a Frame Relay class map to the subinterface, even though the subinterface configuration had a class map applied. This occurred when creating subinterfaces using the following command sequence. This has been fixed.

```
int s6/0/3
encap frame
int s6/0/3.1 p
int s6/0/3.2 p
no int s6/0/3.1
int s6/0/3.1 p
frame class 1
!
do show run int s6/0/3.1
!
int s6/0/3.2 p
frame class 2
do show run int s6/0/3.2
```

CSCsk33476

On a Cisco 10000 series router, when line or path triggers were enabled on a 1-port OC-12 PoS line card, 6-port OC-3 PoS line card, or 1-port OC48 SRP PoS line card, and a LOF, LAIS, LRDI (for line triggers), or PAIS, PRDI (for path triggers) condition occurred on the interface. The PoS interface took an additional 50 msec more than the line or path trigger value configured to declare the alarm. This occurred on a Cisco 10000 series router that was running either a performance routing engine 2 (PRE2) or a PRE3. The Cisco 10000 series router had a 1-port OC-12 PoS, 6-port OC-3 PoS, or a 1-port OC-48SRP PoS line card. This has been fixed.

Obtaining Documentation, Obtaining Support, and Security Guidelines

For information on obtaining documentation, obtaining support, providing documentation feedback, security guidelines, and also recommended aliases and general Cisco documents, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

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