Release Notes for Cisco PDSN Release 5.5 in IOS Release 12.4(22)XR10

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Cisco IOS Release 12.4(22)XR10 is based on Cisco IOS Release 12.4, with enhancements to the Cisco Packet Data Serving Node (Cisco PDSN) feature. This Cisco PDSN Release 5.5 based on IOS Release 12.4(22)XR10 is optimized for the Cisco PDSN feature on the Cisco Service and Application Module for IP (SAMI) card on the Cisco 7600 Series Router.

Contents

These release notes include important information and caveats for the Cisco PDSN software feature provided by the Cisco IOS 12.4(22)XR10 for the Cisco 7600 Series Router platform.

This release note describes:

Introduction

Cisco PDSN is an IOS software feature that enables a SAMI card on a Cisco 7600 Series Router to function as a gateway between the wireless Radio Access Network (RAN) and the Internet. With Cisco PDSN enabled on a router, a stationary or roaming mobile user can access the Internet, a corporate intranet, or Wireless Application Protocol (WAP) services. Cisco PDSN supports both simple IP and mobile IP operations.

System Requirements

This section describes the system requirements for running Cisco IOS Release 12.4(22)XR10:

- Memory Requirements, page 2
- Hardware Supported, page 2
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- Cisco PDSN Software Features in Release 12.4(22)XR10

Memory Requirements

To install Cisco PDSN Release 5.5 that supports the SAMI card on the Cisco 7600 Series Router, ensure that you meet the following memory requirements:

- Platform: Cisco 7600 Series Router
- Software/Feature Set: PDSN
- Image Name: *12.4(22)XR10 – c7svcsami-c6ik9s-mz.124.22.XR* (This file is a bundled image.)
- Required Memory:
  - Flash: 256 MB
  - DRAM: 2048 MB
- Runs from: RAM

Hardware Supported

Cisco IOS Release 12.4(22)XR10 is optimized for the SAMI card on the Cisco 7600 Series Router.

You can use the Hardware-Software Compatibility Matrix tool to search for hardware components that are supported on a Cisco platform and an IOS release.

Note You must have a valid Cisco.com account to log in to this tool:
http://www.cisco.com/cgi-bin/front.x/Support/HWSWmatrix/hwswmatrix.cgi

Software Compatibility

Cisco IOS Release 12.4(22)XR10 is developed on Cisco IOS Release 12.4 and supports the features included in Cisco IOS Release 12.4, with the addition of the Cisco PDSN feature.

For information on the new and existing features, see Cisco PDSN Software Features in Release 12.4(22)XR10.

MIBs

Old Cisco MIBs will be replaced in a future release. Currently, OLD-CISCO-* MIBs have been converted to more scalable MIBs—without affecting existing Cisco IOS products or NMS applications. You can update deprecated MIBs, to the replacement MIBs as shown in Table 1.

Deprecated MIB	Replacement
OLD-CISCO-APPLETALK-MIB	RFC1243-MIB
OLD-CISCO-CHASSIS-MIB	ENTITY-MIB
OLD-CISCO-CPUK-MIB	To be decided
OLD-CISCO-DECNET-MIB	To be decided
OLD-CISCO-ENV-MIB	CISCO-ENVMON-MIB
OLD-CISCO-FLASH-MIB	CISCO-FLASH-MIB
OLD-CISCO-INTERFACES-MIB	IF-MIB CISCO-QUEUE-MIB
OLD-CISCO-IP-MIB	To be decided
OLD-CISCO-MEMORY-MIB	CISCO-MEMORY-POOL-MIB
OLD-CISCO-NOVELL-MIB	NOVELL-IPX-MIB
OLD-CISCO-SYS-MIB	(Compilation of other OLD-CISCO-* MIBs)
OLD-CISCO-SYSTEM-MIB	CISCO-CONFIG-COPY-MIB
OLD-CISCO-TCP-MIB	CISCO-TCP-MIB
OLD-CISCO-TS-MIB	To be decided
OLD-CISCO-VINES-MIB	CISCO-VINES-MIB
OLD-CISCO-XNS-MIB	To be decided

Migration to Cisco PDSN

This section describes the migration paths and scenarios for Cisco PDSN Release 5.5:

- Migration Path for Cisco PDSN, page 4
- Migration to Cisco PDSN
- Migration Steps, page 8

Migration Path for Cisco PDSN

Table 1 lists currently available Cisco PDSN releases and the migration path to the SAMI card.

Table 1   Migration Path for Cisco PDSN

	Cisco PDSN Release 3.0 or earlier	Cisco PDSN Release 3.5	Cisco PDSN Release 4.0	Cisco PDSN Release 5.0, 5.2, and 5.5
Platform	• 7200 NPE400/NPE-G1 • MWAM platform (5 processor only)	MWAM (5 processors only)	SAMI	SAMI
Chassis/Power Supply, Fan Trays	7200VXR	• 6500 chassis • 7600 chassis	7600 chassis	7600 chassis
Supervisor Engine	—	• SUP2 • SUP720	• SUP720 • RSP720 • SUP32	SUP720
Supervisor Engine	—	• SUP32 • SUP IOS SX-based	SUP IOS—SRC-based image (for example: *c7600s72033-advipservicesk9-mz.122-33.SRC.bin*)	SUP IOS—Latest SRE-based image (For example:c7600s72033-advipservices-mz.122-33.SRE)
—	—	SUP redundancy	SUP redundancy	SUP redundancy

Migration Scenarios for Cisco PDSN 5.5

Based on Table 1, there are many possible migration scenarios. This section focuses on those scenarios closest to existing customer deployments. You must determine the migration path based on your end-to-end deployment.

Note
- We recommend that you perform the migration during a maintenance window in your deployment.
- You can also use this window for the following network redesign activities:
  - Redesigning IP address scheme.
  - Configuring the routing protocols.
  - Configuring network connectivity between Cisco PDSN and the Home Agent (HA).
  - Configuring application connectivity between Cisco PDSN and AAA servers.
  - Configuring routing on the new SAMI Cisco PDSN or the HA.

Note For all these migration plans, both hardware and software configurations have significant changes. This requires prudent operation planning and network redesign. The Migration Steps section describes the possible migration steps to minimize both network reconfiguration and service disruption.

Table 2 lists the most common migration scenarios.

Table 2   Migrations Scenarios for Cisco PDSN Release 5.5

Scenario	Migration From	To	Remarks	Downtime
1	• Non-SR • Non-clustering • 7600 chassis • Each processor can act as an individual Cisco PDSN	• Non-SR • Non-clustering • 7600 chassis • One Cisco PDSN per blade (single IP architecture)	• Erase existing configuration in all processors. • After upgrading to Cisco PDSN Release 5.5, ensure that the configuration is done only on the PCOP (that is, processor 3). • IP address-pool requirements in Cisco PDSN Release 5.5 (at the blade level) are five times that configured in Cisco PDSN Release 4.0 (at the processor level).	Yes

Table 2 ***Migrations Scenarios for Cisco PDSN Release 5.5 (continued)***

2	• Non-SR • Non-clustering • 7600 chassis • One blade with each processor acting as an individual Cisco PDSN	• SR enabled • Non-clustering • 7600 chassis • Two SAMI blades (in the same chassis) with a single Cisco PDSN at the blade level • Autosynchronization enabled	• Erase existing configuration in all processors on active and standby blades. • After upgrading to Cisco PDSN Release 5.5, ensure that the configuration is done only on an active blade PCOP (that is, processor 3). • Ensure that the standby SAMI blade is shut down while configuring the active blade. • IP address-pool requirements in Cisco PDSN Release 5.5 (at blade level) are five times that configured in Cisco PDSN Release 4.0 (at the processor level).	Yes
3	• SR-enabled • Non-clustering • 7600 chassis • Two SAMI blades (in the same chassis)	• SR-enabled • Non-clustering • 7600 chassis • Two SAMI blades (in the same chassis) • Autosynchronization enabled	• Erase existing configuration in all processors on active and standby blades. • After upgrading to Cisco PDSN Release 5.5, ensure that the configuration is done only on an active blade PCOP (that is, processor 3). • Ensure that the standby SAMI blade is shut down while configuring the active. • IP address-pool requirements in Cisco PDSN Release 5.5 (at the blade level) are five times that configured in Cisco PDSN Release 4.0 (at the processor level).	Yes
4	• Non-SR • Clustering enabled • 7600 chassis • One or more processors running a Cisco PDSN member	• Non-SR • Clustering enabled • 7600 chassis • One Cisco PDSN member per blade	• Erase existing configuration in all processors on active and standby blades. • After upgrading to Cisco PDSN Release 5.5, ensure that the configuration is done only on an active blade PCOP (that is, processor 3). • IP address-pool requirements in Cisco PDSN Release 5.5 (at the blade level) are five times that configured in Cisco PDSN Release 4.0 (at the processor level).	Yes

Table 2 **Migrations Scenarios for Cisco PDSN Release 5.5 (continued)**

5	• SR enabled (controller redundancy) • Clustering enabled • 7600 chassis • Running controller in one of the processors • Redundant SAMI blades (in the same chassis)	• SR enabled • Clustering enabled • 7600 chassis • Can run both controller and collocated member • Redundant SAMI blades (in the same chassis) • Autosynchronization enabled	• Erase existing configuration in all processors on active and standby blades. • After upgrading to Cisco PDSN Release 5.5, ensure that the configuration is done only on an active blade PCOP (that is, processor 3). • Ensure that the standby SAMI blade is shutdown while configuring the active blade. • If collocated member is configured, ensure that session redundancy is enabled. • IP address-pool requirements in Cisco PDSN Release 5.5 (at the blade level) are five times that configured in Cisco PDSN Release 4.0 (at the processor level).	Yes
6	• SR-enabled • Clustering-enabled • 7600 chassis • Redundant SAMI blades (in the dual chassis)	• SR-enabled • Clustering enabled • 7600 Chassis • Redundant SAMI blades (in the inter-chassis) • Autosynchronization disabled (default)	• Erase existing configuration in all processors on active and standby blades. • After upgrading to Cisco PDSN Release 5.5, ensure that the configuration is done only on an active blade PCOP (that is, processor 3). • If configured, Cisco PDSN acts as controller and collocated member. • IP address-pool requirements in Cisco PDSN Release 5.5 (at the blade level) are five times that configured in Cisco PDSN Release 4.0 (at the processor level).	Yes

Migration Steps

Migration to the Cisco PDSN Release 5.5 image is more than replacing Multi-processor WAN Application Module (MWAM) cards with SAMI modules. Ensure that you plan your migration such that migration activities have a minimal impact on an existing mobile subscriber's service connections.

Table 3 lists the migration tasks that are based on the scenarios established in Table 2.

Table 3   Migration Steps from Cisco PDSN 4.0 to 5.5

Scenario	Migration Steps
1	• In SAMI cards with the Cisco PDSN Release 4.0 image, erase configuration on all processors and reload Cisco PDSN. • Configure the I/O memory (IOMEM) on all processors as 256 MB and save the configuration to the NVRAM. ✎ **Note** If you have set the IOMEM size as 64 MB, ensure that you configure the **memory lite** command. The recommended memory size is, however, 256 MB. • Upgrade to Cisco PDSN Release 5.5 and reconfigure the Cisco PDSN configuration on processor 3. • Provision MS and PCFs to use the newly added Cisco PDSN Release 5.5-based PDSN IP. • Provision the newly added PDSN with the HA to service MIP calls. To minimize provisioning tasks, Cisco PDSN Release 5.5 reuses the IP address and routing scheme used in one of the Cisco PDSN Release 4.0 processors. 1. MS = Mobile Station. 2. PCF = Packet Control Function.

Table 3   *Migration Steps from Cisco PDSN 4.0 to 5.5 (continued)*

2, 3	• Install the new SAMI card on 7600/720 that is to be used in a redundant configuration.
	• In the existing Cisco PDSN Release 4.0, erase the existing configuration on all processors and reload the Cisco PDSN.
	• Configure the IOMEM size on all processors as 256 MB and save the configuration to the NVRAM.
	✎ **Note** If you have set the IOMEM size as 64 MB, ensure that you configure the **memory lite** command. The recommended memory size is, however, 256 MB.
	• Upgrade both the SAMI blades to Cisco PDSN Release 5.5.
	• Shut down the blade for configuration as standby (unit2).
	• Enable autosynchronization on the active blade (unit1). Configure the PDSN on active blade on processor 3. Keep unit2 as a standby in a redundant configuration. When configuring redundancy, you must configure the Hot Standby Router Protocol (HSRP) main interface before configuring InterProcessor Communication (IPC).
	• Save the configuration on the active blade.
	• Bring up unit2 with Cisco PDSN Release 5.5 image. Configurations are autosynchronized from the active blade.
	• Verify the output of the **show redundancy state** and **show redundancy inter device** commands on both active and standby blades to confirm if redundancy is enabled. If the output for one of the blades requires a reload to enable redundancy, reload that blade.
	• Provision MS and PCFs to use the newly added Cisco PDSN Release 5.5-based PDSN IP.
	• Use the CDMA-1x IP address on the PDSN as controller or member IP when provisioning.
	• Provision the newly added PDSN with that of the HA to service MIP calls.
	To minimize provisioning tasks, Cisco PDSN Release 5.5 reuses the IP address and routing scheme used in one of the Cisco PDSN Release 4.0 processors.

Table 3   *Migration Steps from Cisco PDSN 4.0 to 5.5 (continued)*

4	• In SAMI cards with Cisco PDSN Release 4.0, erase the existing configuration on all processors and reload Cisco PDSN. If the blade includes Cisco PDSN members as part of the cluster, we recommend that you remove the PDSN member part before reloading.
	• Configure the IOMEM size on all processors as 256 MB and save the configuration to the NVRAM.
	✎ **Note** If you have set the IOMEM size as 64 MB, ensure that you configure the **memory lite** command. The recommended memory size is, however, 256 MB.
	• Upgrade to Cisco PDSN Release 5.5 and reconfigure the PDSN on processor 3.
	• You can configure the Cisco PDSN as both controller and collocated member. Cisco PDSN Release 5.5 interoperates with Cisco PDSN Release 3.0 or 4.0 controller or member.
	• Provision MS and PCFs to use the newly added Cisco PDSN Release 5.5-based PDSN IP.
	• Use the CDMA-1x IP address on the PDSN as controller or member IP when provisioning.
	• Provision newly added PDSN with that of the HA to service MIP calls.
	To minimize provisioning tasks, Cisco PDSN Release 5.5 reuses the IP address and routing scheme used in one of the Cisco PDSN Release 4.0 processors.

Table 3 **Migration Steps from Cisco PDSN 4.0 to 5.5 (continued)**

5	• Install the new SAMI card on 7600/720 that is to be used in redundant configuration.
	• In the existing Cisco PDSN Release 4.0, erase the existing configuration on all processors and reload the Cisco PDSN.
	• Configure the IOMEM size on all processors as 256 MB and save the configuration to the NVRAM.

> ✎
>
> **Note** If you have set the IOMEM size as 64 MB, ensure that you configure the **memory lite** command. The recommended memory size is, however, 256 MB.

	• Upgrade both the SAMI blades to Cisco PDSN Release 5.5.
	• Shut down the blade for configuration as standby (unit2).
	• Enable autosynchronization on the active blade (unit1). Configure the PDSN on active blade on processor 3. Keep unit2 as a standby in a redundant configuration. When configuring redundancy, you must configure the Hot Standby Router Protocol (HSRP) main interface before configuring Interprocessor Communication (IPC).
	• Save the configuration on the active blade.
	• Bring up unit2 with Cisco PDSN Release 5.5 image. Configurations are autosynchronized from the active blade.
	• Verify the output of the **show redundancy state** and **show redundancy inter device** commands on both active and standby blades to confirm if redundancy is enabled. If the output for one of the blades requires a reload to enable redundancy, reload that blade.
	• Provision MS and PCFs to use the newly added Cisco PDSN Release 5.5-based PDSN IP.
	• Use the CDMA-1x IP address on the PDSN as controller or member IP when provisioning.
	• Provision the newly added PDSN with that of the HA to service MIP calls.
	• You can configure the Cisco PDSN to act as controller and collocated member.
	– In the case of a collocated member, ensure that you enable session redundancy, so that the standby is synchronized with sessions handled by the collocated member.
	– For an active controller to synchronize the information with the standby controller, ensure that all remote members connect to the HSRP main interface of the controller.
	– If the member IP is configured, ensure that it is the same as the CDMA -1x interface IP address.

Table 3   *Migration Steps from Cisco PDSN 4.0 to 5.5 (continued)*

6	• In the existing Cisco PDSN Release 4.0, erase the existing configuration on all processors and reload the Cisco PDSN.
	• Configure the IOMEM size on all processors to 256 MB and save the configuration to the NVRAM.
	✎ **Note** If you have set the IOMEM size as 64 MB, ensure that you configure the **memory lite** command. The recommended memory size is, however, 256 MB.
	• Upgrade both the SAMI blades to Cisco PDSN Release 5.5.
	• Reconfigure the Cisco PDSN and enable inter-chassis HSRP redundancy as in Cisco PDSN Release 4.0.
	• Provision MS and PCFs to use the newly added Cisco PDSN Release 5.5-based PDSN IP.
	• Use the CDMA-1x IP address on the PDSN as controller or member IP when provisioning.
	• Provision the newly added Cisco PDSN with the HA to service MIP calls.

Upgrading to New Software Release

The following sections describe how to determine the existing software version and how to upgrade your Cisco PDSN:

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

http://www.cisco.com/warp/public/cc/pd/iosw/prodlit/957_pp.htm

Determining the Software Version

To determine the version of Cisco IOS software running on your router, log in to the router and enter the **show version** command in the EXEC mode:

```
Router# show version
```

```
A summary of U.S. laws governing Cisco cryptographic products may be found at:
http://www.cisco.com/wwl/export/crypto/tool/stqrg.html
```

Upgrading the Supervisor Image

To upgrade the Supervisor image:

Step 1   Copy the SUP image to the disks (for example, disk0: / slavedisk0:).

Step 2   Add the following command to the running-configuration boot system disk0:*SUP-image-name*. For example:

```
boot system disk0:s72033-advipservicesk9_wan-mz.122-18.SXE3.bin
```

> ✎
>
> **Note**   To enable the image to reload, remove previously configured instances of this command.

Step 3   Run the **write memory** command to save the running-configuration on the active and standby SUP.

Step 4   Run the **reload** command on the active SUP.

Both active and standby SUP reload simultaneously and come up with the SXE3-based image.

> ✎
>
> **Note**   Running the **reload** command on the active SUP causes both the active and standby Supervisors to reload simultaneously, causing some downtime during the upgrade process.

Upgrading the SAMI Software

To upgrade an Cisco PDSN image on the SAMI card, follow the directions at:

http://www.cisco.com/en/US/docs/wireless/service_application_module/sami/user/guide/maintain.html#wp1047551

Changing Configuration on Cisco PDSN in a Live Network

To change the working configuration on a Cisco PDSN in a live environment:

Step 1   Bring the standby Cisco PDSN out of service.

For example, to isolate the standby Cisco PDSN from the session redundancy setup, you must run the **no cdma pdsn redundancy** command.

```
7600a-Stdy(config)# no cdma pdsn redundancy
```

Step 2   Run the **write memory** command to save the configuration.

Step 3   Make the necessary configuration changes on the standby Cisco PDSN, and save the configuration.

Step 4   Run the **cdma pdsn redundancy** command again and save the configuration.

Step 5   Issue the **reload** command to bring the standby Cisco PDSN back into the session redundancy setup with the changed configuration. Verify if the processor comes back in the SR setup using the following **show** commands:

```
7600a-Stdy# show standby brief
```

```
                         P indicates configured to preempt.
                       |
Interface   Grp Prio P State    Active         Standby        Virtual IP
Gi0/0.101   300 110   Standby  20.20.101.10   local          20.20.101.101


7600a-Stdy# show cdma pdsn redundancy
CDMA PDSN Redundancy is enabled

CDMA PDSN Session Redundancy system status
  PDSN state = STANDBY HOT
  PDSN-peer state = ACTIVE

CDMA PDSN Session Redundancy Statistics
  Last clearing of cumulative counters never
                     Total              Current
             Synced from active      Connected
  Sessions              15                  15
  SIP Flows             15                  15
  MIP Flows              0                   0
PMIP Flows               0                   0

7600a-Stdy# show redundancy inter-device
Redundancy inter-device state: RF_INTERDEV_STATE_STDBY
  Scheme: Standby
      Groupname: pdsn-rp-sr1 Group State: Standby
  Peer present: RF_INTERDEV_PEER_COMM
  Security: Not configured

7600a-Stdy# show redundancy states
my state = 8  -STANDBY HOT
    peer state = 13 -ACTIVE
          Mode = Duplex
       Unit ID = 0

    Split Mode = Disabled
   Manual Swact = Enabled
 Communications = Up

   client count = 9
 client_notification_TMR = 30000 milliseconds
         RF debug mask = 0x0

7600a-Stdy#
```

Step 6 Configure the standby Cisco PDSN to take over as active by reloading the current active Cisco PDSN.

⚠
Caution   Before proceeding with the configuration changes, we recommend that you disable the HSRP preemption configuration on the active and standby PDSN.
Because of a change of configuration following this step, an outage may occur on existing calls on the active PDSN (which is now being taken out of service) when synchronized with new active units.

Step 7 Configure the current standby Cisco PDSN using the procedures described from Step 1 to Step 5.

✎
Note   For Cisco PDSN SR to work properly, ensure that configurations on the active and standby Cisco PDSNs are identical.

Cisco PDSN Software Features in Release 12.4(22)XR10

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

⚠️

Caution Cisco IOS images with strong encryption (including, but not limited to 168-bit (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, the purchaser or user must obtain local import and use authorizations for all encryption strengths. Please contact your sales representative or distributor for more information, or send an e-mail to export@cisco.com.

Cisco IOS Release 12.4(22)XR10 supports the same feature sets as Cisco Release 12.4; additionally, it supports the Cisco PDSN feature. 12.4(22)XR10 does not add any new features.

Cisco PDSN Release 5.5 includes the following existing features:

- Robust Header Compression
- Lawful Intercept
- Base Station ID in MIP RRQ
- Service Option in MIP RRQ
- Counter for IPCP term request
- Simple IP Client IP Accounting Support
- SNMP New MIB Objects Per PCF
- Support for Common NAI
- Proxy MIP Changes for Latest IS-835
- Simple IPv6 Support
- Access-Request Attributes
- New PPP-per-PCF Counters
- VPDN Conditional Debugging
- GRE CVSE and MN NAI Extension in Revocation Message
- Single IP per Blade
- Osler Support
- Improved Throughput and Transaction Handling
- Cluster Controller Support in Single IP Blade
- IMSI and PCF Redirection
- Mobile IP and AAA Attributes for China Telecom
- Trap Generation for AAA Server Unresponsiveness
- Supervisor Support
- Data Over Signaling
- Differentiated Services Code Point Marking Support

- Nortel Aux A10 Support
- Masking Off IMSI Prefix
- Persistent TFT Support
- Conserve Unique IP-ID for FA-HA IP-in-IP Tunnel
- GRE CVSE Support in FA-HA Tunnel
- Remote Address Accounting
- Default Service Option Implementation
- Configurable Per-Flow Accounting Options
- IP Flow Discriminator Support for PCF Backward Compatibility
- Support for Remark DSCP to Max-class Value
- Command Support for Fragmentation Size
- New Statistics Counters for China Telecom
- Attribute Support
    - Served MDN
    - Framed Pool
    - 3GPP2 DNS Server IP
- Virtual Route Forwarding with Sub-interfaces
- Conditional Debugging Enhancements (for Cisco PDSN Release 4.1)
- Multiple Service Connections
- Data Plane
- Subscriber QoS Policy (both downloading per-user profile from the AAA server and configuring a local profile)
- QoS Signaling
- Traffic Flow Templates
- Per-flow Accounting
- Call Admission Control
- PDSN MIB Enhancements (for Cisco PDSN Release 4.0)
- PDSN on SAMI
- Inter-user Priority
- Roamer Identification
- Bandwidth Policing
- Packet Data Service Access—Simple IPv6 Access
- Session Redundancy Infrastructure
- RADIUS Server Load Balancing
- Subscriber Authorization Based on Domain
- PDSN MIB Enhancements
    - PPP Counters in Cisco PDSN Release 3.0
    - RP Counters in Cisco PDSN Release 3.0

- Conditional Debugging Enhancements—Trace Functionality in Cisco PDSN Release 3.0
- Randomized IMSI Handling
- Protocol Layering and RP Connections
- PPPoGRE RP Interface
- A11 Session Update
- SDB Indicator Marking
- Resource Revocation for Mobile IP
- Packet of Disconnect
- IS-835 Prepaid Support
- Prepaid Billing
- Mobile IP Call Processing per Second Improvements
- Always-On Feature
- PDSN MIB Enhancements
- Conditional Debugging Enhancements
- Cisco Proprietary Prepaid Billing
- 3DES Encryption
- Mobile IP IPSec
- Hardware IPSec Acceleration Using IPSec Acceleration Module—Static IPSec
- 1xEV-DO Support
- Integrated Foreign Agent
- AAA Server Support
- Packet Transport for VPDN
- Proxy Mobile IP
- Multiple Mobile IP Flows
- PDSN Cluster Controller / Member Architecture

Caveats

Caveats describe unexpected behavior in Cisco IOS software releases. Severity 1 caveats are the most serious caveats; severity 2 caveats are less serious.

Caveats for Cisco IOS Releases 12.4 are available on Cisco.com at:
http://www.cisco.com/en/US/docs/ios/12_4t/release/notes/124TCAVS.html

The "Caveats" section lists open caveats that apply to the current release; they may also apply to previous releases.

The "Resolved Caveats in Cisco IOS Release 12.4(22)XR10" section lists caveats resolved in a particular release that may have been open in previous releases.

The "" section describes the product documentation that is available.

✎

Note If you have an account with Cisco.com, you can use Bug Navigator II to find caveats of any severity for any release. You can access Bug Navigator II on Cisco.com at **Software Center**: **Cisco IOS Software**: **Cisco Bug Toolkit**: **Cisco Bugtool Navigator II**, or at http://www.cisco.com/support/bugtools.

Caveats

The following are the caveats in Cisco IOS Release 12.4(22)XR10.

Unresolved Caveats in Cisco IOS Release 12.4(22)XR10

Table 4 lists the unresolved caveats in Cisco IOS Release 12.4(22)XR10.

Table 1   Unresolved Caveats in Cisco IOS Release 12.4(22)XR10

CDETS Number	Description	Workaround/Additional Information
CSCtc92933	When an IP packet of size 1,500 bytes with the DF-bit set is sent to a mobile, Cisco PDSN Release 5.2 routes the packet incorrectly.This behavior occurs for mobiles that negotiate ACCM as zero and IXP does the AHDLC encoding. When the IP packet is encapsulated with PPP and IP/GRE, the packet exceeds 1,500 egress MTU size and fragments at the A10 level in PPC.	Configuring the MTU to 1,600 bytes ensures that the packet (after A10 encapsulation) does not fragment and is forwarded to the IXP.
CSCtj89971	PDSN may reload with traceback when the Cisco IOS CLI **show cdma pdsn pcf brief	inc** *<ip address>* is issued.	**show cdma pdsn pcf** *<ip address>* instead of **show cdma pdsn pcf brief	i A.B.C.D**

Resolved Caveats in Cisco IOS Release 12.4(22)XR10

Table 5 lists the resolved caveats in Cisco IOS Release 12.4(22)XR10.

Table 6   Resolved Caveats in Cisco IOS Release 12.4(22)XR10

CDETS Number	Description	Workaround/Additional Information
CSCtj91874	When IMSI based conditional debugging is enabled on a co-located controller/member, PDSN may crash.	Use NAI based conditional debugging instead of IMSI based condition.
CSCtj49129	Users are unable to setup session when subscriber count reaching almost near to the max configured pool range due to address allocation or address distribution limitation in single ip . With the present single-ip ip pool distribution logic, 2 out of 7 parts(total pool / 7) are held with Pcop, and remaining 5 are distributed such that one to each Tcop. Due to this there are so many IPCs, and due to IPC failures, some time Tcop may not get the IP address though there is enough free chunk of pool range with the Pcop.	1. Configure extra IPs, if possible. 2. Less idle-timeout value also frees the aged users, and that way more IPs with the Tcops.
CSCtk77037	Whenever the port range is configured in the packet filter the PDSN RTP data is not flowing through the A10 auxiliary connections.	Configure the port number in the mobile node rather than the port ranges in the packet filter.

Product Documentation

Table 7 describes the most current product documentation that is available.

Table 7   Product Documentation

Document Title	Available Formats
Release Notes for Cisco PDSN Release 5.5 in IOS Release 12.4(22)XR10	• On Cisco.com at: http://www.cisco.com/en/US/products/ps6706/prod_release_notes_list.html

Table 7 **Product Documentation**

Document Title	Available Formats
Command Reference for Cisco PDSN Release 5.5 in IOS Release 12.4(22)XR9	• On Cisco.com at: http://www.cisco.com/en/US/products/ps6706/prod_command_reference_list.html
Cisco Packet Data Serving Node Release 5.5 for Cisco IOS Release 12.4(22)XR9	• On Cisco.com at: http://www.cisco.com/en/US/products/ps6706/products_feature_guides_list.html

Related Documentation

Table 8 describes the related documentation that is available:

Table 8 **Related Documentation**

Document Title	Available Formats
Cisco IOS Mobile Wireless Packet Data Serving Node Configuration Guide, Release 12.4T	• On Cisco.com at: http://www.cisco.com/en/US/docs/ios/mwpdsn/configuration/guide/12_4t/mwp_12_4t_book.html
Documentation on Cisco 7600 Series Router	• On Cisco.com at: http://www.cisco.com/en/US/products/hw/routers/ps368/tsd_products_support_series_home.html
Documentation on Cisco Catalyst 6500 Series Switch	• On Cisco.com at: http://www.cisco.com/en/US/products/hw/switches/ps708/tsd_products_support_series_home.html
Documentation on Caveats for Cisco IOS Release 12.4	• On Cisco.com at: http://www.cisco.com/en/US/products/ps6350/prod_release_notes_list.html

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