



Cisco IOS Software Release 12.2(4)BZ1

Release on Cisco 10000 Series

This product bulletin describes new features introduced in Cisco IOS software Release 12.2(4)BZ1 for the Cisco 10000 series next generation Internet Router.

Overview

The release of Cisco IOS software enhances the unified edge aggregation solution currently available on the Cisco 10000 series Internet Router by introducing Remote Access to MPLS VPNs for broadband access applications, PPPoE over Ethernet/802.1q VLANs for Metro Ethernet access applications, IP Multicast for packet replication at the network edge, and IP QoS for service differentiation. In addition, Managed LNS, which affords operating companies the ability to host multiple unique LNSs in a Cisco 10000 series Internet Router, is incorporated into the release as an enhancement to the product's previously introduced LNS/Home Gateway capability.

The introduction of Remote Access to MPLS VPNs and PPPoE over Ethernet/802.1q VLANs marks the Cisco 10000's initial introduction and support for broadband access wholesale service models. The former represents a generational and technological advancement in broadband aggregation wholesale services as it upgrades the previously deployed static L2TP Access Concentrator (LAC) service architecture to the more dynamic direct mapping of PPPoX based subscribers directly into MPLS VPNs. The latter

provides the Cisco 10000 the requisite functionality to address the rapidly emerging Metro Ethernet market.

Features in Cisco IOS Software Release 12.2(4)BZ1

The following features and improvements are supported in Cisco IOS software release 12.2(4)BZ1 to provide broadband aggregation:

Protocols

The standard protocols supported by the Cisco 10000 series plus the ones introduced in this IOS release supports the following protocols for edge aggregation:

- PPPoX Sessions Encapsulated in L2TP Tunnels
- PPPoX Sessions Encapsulated in MPLS VPNs (NEW)
- PPPoE Sessions Encapsulated in Ethernet/802.1q VLANs (NEW)
- PPPoX Termination
- Routing with Bridged Encapsulation (RBE)
- PPPoX and RBE Autosense for LLC/SNAP Encapsulation
- PPPoX Autosense for SNAP
- PPPoX Autosense for MUX Encapsulation



- PPPoE and RBE on a VC
- IP Multicast
- IP QoS

Scalability

Scalability for edge aggregation for the Cisco 10000 series includes support for the following:

- Up to 32,000 L2TP tunneled PPP sessions or PTA subscribers
- Up to 32,000 PPP sessions for MPLS VPNs (NEW)
- Up to 32,000 PPPoE sessions for Ethernet/802.1q VLANs (NEW)
- Up to 32,000 VCs (in High VC Count mode only)
- Up to 4000 VCs (in Low VC count mode with full functionality)
- Up to 3200 L2TP tunnels
- Up to 99 Managed LNSs each with independent AAA support (NEW)
- Up to 99 VRFs with independent AAA support
- Up to 99 VRFs (NEW)
- Up to 1024 Ethernet/802.1q VLANs (NEW)
- Up to 300 Multicast groups with up to 1000 streams (NEW)

AAA and Address Assignment

The following new AAA and address assignment features are supported in this release:

- PAP/CHAP authentication
- RADIUS based authentication
- IP address assignment from local pools (both configured via CLI and downloaded via RADIUS)
- IP Address assignment from RADIUS Servers (as part of AAA)
- DHCP relay agent support for unnumbered interfaces
- RADIUS request with VPI/VCI information
- RADIUS attribute screen/filter (NEW)
- RADIUS domain-name stripping per VRF (NEW)
- VPDN session limit per VRF (NEW)
- VRFs with independent AAA support (NEW)

Accounting, Network Management, and Configuration

New router accounting, management, and configuration features in this release include:

- Range based CLI
- Support for Cisco-VPDN-MGMT-MIB
- RADIUS interim accounting
- RADIUS VPI/VCI accounting
- Configuration via RADIUS AV pairs



Detailed Information

For more detailed information about the platforms and fixes being delivered in 12.2(4)BZ1, please refer to the following document:

http://www.cisco.com/univercd/cc/td/doc/product/aggr/10000/10krn/rn2_0bba.htm

Download Information

Customers can download Cisco IOS Release 12.2(4)BZ1 software from Cisco Connection Online (CCO) in the software Image library:

<http://www.cisco.com/cgi-bin/Software/Iosplanner/Planner-tool/iosplanner.cgi?majorRel=12.0>

Ordering Information

Platform	Product Description	Product Code	Image	Flash	DRAM
Cisco 10000	Cisco 10000 Series IOS Broadband 8K Users	S10KZ11A-1204BZ1	c10k-p11-mz	40 MB	512 MB
Cisco 10000	Cisco 10000 Series IOS Broadband 16K Users	S10KZ11B-1204BZ1	c10k-p11-mz	40 MB	512 MB
Cisco 10000	Cisco 10000 Series IOS Broadband 32K Users	S10KZ11C-1204BZ1	c10k-p11-mz	40 MB	512 MB
Cisco 10000	Cisco 10000 Series IOS Broadband 8K to 16K Users Upgrade	S10KZ11-1204BZ1-U16K=	c10k-p11-mz	40 MB	512 MB
Cisco 10000	Cisco 10000 Series IOS Broadband 8K to 32K Users Upgrade	S10KZ11-1204BZ1-U8-32K=	c10k-p11-mz	40 MB	512 MB
Cisco 10000	Cisco 10000 Series IOS Broadband 16K to 32K Users Upgrade	S10KZ11-1204BZ1-U32K=	c10k-p11-mz	40 MB	512 MB

Support

Cisco IOS Software Release 12.2(4)BZ1 follows the standard Cisco support policy as indicated in the following link:

<http://www.cisco.com/warp/public/437/27.html>

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