

Cisco IOS Software Release 11.1CC

New Features

This product bulletin describes new features introduced in Cisco IOS Software Release 11.1CC. [Release 11.1CC Overview](#)

Release 11.1CC Overview

Cisco IOS software Release 11.1CC is an early deployment release for Cisco 7200 and 7500/7000RSP series products. 11.1CC has been developed and maintained for more than 12 month and been in use in a limited number of customer networks. The first available release will be 11.1(17)CC.

Included in this release are the following:

- All hardware platform support introduced on the 11.1CA early deployment release.

Cisco IOS software Release 11.1CC will receive regular maintenance like all other major releases. Cisco IOS release 11.1CC is an early deployment release, and will receive regular maintenance for at least one year. Cisco IOS software Release 11.1CC is recommended for specific environments where its unique capabilities are required. Moreover, because Release 11.1CC will not be supported for a full two years, it should only be used in environments in which it is acceptable to move to a newer major release for maintenance updates.

The FCS dates for the first releases of Cisco IOS software Release 11.1CC are:

- 11.1(17)CC: 3/25/98 – Electronic transfer availability from CCO only
- 11.1(18)CC: 4/27/98 on CCO, 5/4/98 to manufacturing
- 11.1(19)CC: 5/25/98 on CCO, 6/1/98 to manufacturing

Cisco strongly recommends that customers select and deploy "General Deployment" release versions of software for fundamental network infrastructures. A software release reaches the "General Deployment" milestone when Cisco feels that it is suitable for General Deployment anywhere in a customer's network that the features and functionality of the release are required. Compared with newer releases, GD releases contain fewer unknowns and are more time-proven versions of software that can be deployed broadly across a production network. Software at FCS is focused on delivery of new features and has greater unknowns. As such, it should only be used for initial "point" use of new features. Any early release software should always be used in a test network before being fully deployed in a production network. Please refer to product bulletin 728, Cisco IOS Software Release 11.1CC(17) Ordering Procedures and Platform Hardware Support for an overview of the release offerings, including summaries of platforms and feature sets supported. Cisco IOS Software Release 11.1CC Ordering Procedures and Hardware Platform Support product bulletin 728 will be available upon CCO FCS of the Cisco IOS 11.1CC software release.

Additional Sources

For additional information on Cisco IOS software Release 11.1CC, please refer to the following sources:

- Cisco IOS Software Feature Matrices, Releases 10.3 through 11.2
See: http://www.cisco.com/cpropart/salestools/cc/cisco/mkt/ios/rel/113/prodlit/705_pp.htm

New features

Switching

Cisco Express Forwarding

Description: Cisco Express Forwarding (CEF) is an advanced Layer 3 IP forwarding technology. CEF optimizes network performance and scalability for networks with large and dynamic traffic patterns, such as the Internet or networks characterized by intensive Web-based applications, or interactive sessions. Although you can use CEF in any part of a network, it is designed for high-performance, highly resilient Layer 3 IP backbone switching.

Benefits:

- Improved Performance - CEF is less CPU-intensive than fast or optimum switching route-caching. More CPU processing power can be dedicated to Layer 3 services such as quality of service (QoS) and encryption.
- Scalability - CEF offers full switching capacity at each line card when distributed CEF (dCEF) mode is active.
- Resilience - CEF offers unprecedented level of switching consistency and stability in large dynamic networks. In dynamic networks, fast switching cache entries are frequently invalidated due to routing changes. These changes can cause traffic to be process switched using the routing table, rather than fast switched using the route cache. Because the Forwarding Information Base (FIB) lookup table contains all known routes that exist in the routing table, it eliminates route cache maintenance and the fast switch/process switch forwarding scenario. CEF can switch traffic more efficiently than typical demand caching schemes.

Optimized VIP local switching

Description: If is traffic coming in on an VIP2 interface configured for distributed forwarding and the outgoing interface resides on the same VIP2 the packet is switched directly to the outgoing interface without interrupting the RSP. Previously some resources on the RSP were used although the forwarding process was done by the VIP2.

Benefits: Reduces CyBus load and saves memory resources on the RSP.

Distributed Switching support for Fast EtherChannel (FEC)

Description: Support for distributed CEF switching for IP is added to Fast EtherChannel interfaces

Benefits: Distributed switching reduces the load on the RSP. Previously all IP traffic for Fast EtherChannel interfaces was forwarded by the RSP.

Note: This feature will be available in maintenance release 11.1(19)CC

Quality of Service

Quality of Service support

Description: For implementation of network wide Quality of Service support multiple functions within the network are needed. Committed Access Rate (CAR) provides traffic classification and rate limiting in devices located towards the edge of network. Distributed Weighted Fair Queueing (dWFQ) and Distributed Weighted Random Early Detection (dWRED) ensure that the service guarantees are met with intelligent queuing and intelligent packet discard. Distributed WFQ and distributed WRED are only supported on VIP2-40/50 based interfaces.

Note: These class-based implementations of WFQ and WRED are different from the implementations that are already available in IOS software releases 11.0 (WFQ) and 11.2(WRED). This new implementation is using TOS information in the IP header and provides support for high speed interfaces.

Benefits: IP Service Providers are enabled to offer differentiated services at different tariffs. In Enterprise networks these features allow for prioritization of business critical applications.

BGP Policy Propagation

Description: This feature provides a mechanism to distribute destination-based precedence settings via BGP community strings. The precedence value can be conveyed with either the community or AS-path attribute.

Benefits: Provides a scalable way to define destination-based precedence settings.

IP Precedence Accounting

Description: Provides switching statistics per IP precedence level.

Benefits: Provides a metering mechanism for traffic with different QoS classes.

Note: This feature will be available in maintenance release 11.1(19)CC

IP MAC Accounting

Description: Provides switching statistics per MAC address for IP hosts.

Benefits: Provides accounting for IP hosts on a per MAC address basis and

Note: This feature will be available in maintenance release 11.1(19)CC

Reliability

Hot Standby Router Protocol (HSRP) support on Fast EtherChannel (FEC)

Description: Support for Hot Standby Router Protocol (HSRP) is added to Fast EtherChannel interfaces. This feature is only available on the Cisco 7500 and 7000/RSP.

Benefits: HSRP increases network availability by providing protection against router failures.

Note: This feature will be available in maintenance release 11.1(19)CC

Automatic Protection Switching for POS interfaces

Description: The automatic protection switching (APS) feature is supported on Cisco 7500 series routers. This feature allows switchover of Packet-Over-SONET (POS) circuits between cards or systems and is often required when connecting SONET equipment to Telco equipment. APS refers to the mechanism of bringing a "protected" POS interface into the SONET network as the "working" POS interface on a circuit from the intervening SONET equipment.

Benefits: Increased resilience against failures within the Sonet/SDH infrastructure or failure of a POS interface or router.

Hardware Support

PA-A3-DS3/E3 support

Description: Support for the PA-A3-DS/E3 port adapters is added. These high performance PAs support traffic shaping and ABR.

Benefits: Granular traffic shaping and Available Bitrate support allow effective use of available bandwidth in the ATM network.

Note: This feature will be available in maintenance release 11.1(18)CC

PA-A3-OC3 support

Description: Support for the PA-A3-OC3 port adapters is added. This high performance PA supports traffic shaping and ABR.

Benefits: Granular traffic shaping and Available Bitrate support allow effective use of available bandwidth in the ATM network.

Note: This feature will be available in maintenance release 11.1(19)CC

PA-MC-E3 support

Description: Support for the PA-MC-E3 port adapters is added. These PAs support multilevel channelization of a channelized E3 connection, providing access to 2.048 Mbps E1 and further down 64 kbps DS0 connections.



Benefits: This port adapter provides high density connectivity for up to 128 remote sites in a single-wide form factor.

Note: This feature will be available in maintenance release 11.1(18)CC

PA-MC-T3 support

Description: Support for the PA-MC-T3 port adapters is added. This PA supports multilevel channelization of a channelized T3 connection, providing access to 1.544 Mbps T1 and further down 64 kbps DS0 connections.

Benefits: This port adapter provides high density connectivity for up to 128 remote sites in a single-wide form factor.

Note: This feature will be available in maintenance release 11.1(19)CC

PA-MC-8T1, PA-MC-4T1, PA-MC-8DSX1, PA-MC-8E1/120 support

Description: Support for the 4/8 port Multichannel T1/E1 port adapters is added. These PAs support T1, T1DSX and E1 channelized connections. Up to 128 connections can be defined being either full or fractional E1/T1 or carrying multiple nx64 kbps connections.

Benefits: This port adapter provides high density connectivity for up to 128 remote sites in a single-wide form factor at lower speed links up to T1/E1.

Note: This feature will be available in maintenance release 11.1(18)CC

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