



New Features in Cisco IOS XE Release 2.4

The following features were introduced in Cisco IOS XE Release 2.4. Links to feature documentation are also included.

Feature guides may contain information about more than one feature. To find information about a specific feature within a feature guide, see the Feature Information table at the end of the guide.

Feature guides document features that are supported on many different software releases and platforms. Your Cisco IOS software release or platform may not support all the features documented in a feature guide. See the Feature Information table at the end of the feature guide for information about which features in that guide are supported in your software release. Use Cisco Feature Navigator to find information about platform support and Cisco IOS and Catalyst OS software image support. To access Cisco Feature Navigator, go to <http://tools.cisco.com/ITDIT/CFN/jsp/index.jsp>. An account on Cisco.com is not required.

For the latest feature information and caveats, see the release notes for your platform and software release at the following URL:

http://www.cisco.com/en/US/docs/ios/ios_xe/2/release/notes/rnasr21.html

See the following sections for a list of features:

- [New Hardware Features in Cisco IOS Release 2.4, page 1](#)
- [New Software Features in Cisco IOS XE Release 2.4, page 2](#)

New Hardware Features in Cisco IOS Release 2.4

Cisco ASR 1002-Fixed Router

<http://www.cisco.com/en/US/docs/routers/asr1000/install/guide/asr1routers/asr1higV8.html>

Shared Port Adapters

POS SPAs

- 8-Port OC-3 POS SPA (SPA-8XOC3-POS)
- 2-Port, 4-Port, and 8-Port OC-12 POS SPAs (SPA-2XOC12-POS, SPA-4XOC12-POS, and SPA-8XOC12-POS)



Americas Headquarters:

Cisco Systems, Inc., 170 West Tasman Drive, San Jose, CA 95134-1706 USA

- 1-Port OC-48 POS SPA (SPA-1XOC48POS/RPR)
- 1-Port OC-192 POS SPA (SPA-OC192POS-XFP)

Services SPA

- Cisco WebEx Node for ASR 1000 Series (SPA-WMA-K9)

http://www.cisco.com/en/US/docs/interfaces_modules/shared_port_adapters/install_upgrade/ASR1000/asr_sip_spa_hw.html

http://www.cisco.com/en/US/docs/interfaces_modules/shared_port_adapters/configuration/ASR1000/ASRspasw.html

New Software Features in Cisco IOS XE Release 2.4

3 Level Egress QoS Policy

http://www.cisco.com/en/US/docs/ios/ios_xe/2/release/notes/rnasr21.html#wp1643282

802.1P CoS Bit Set for PPP and PPPoE Control Frames

http://www.cisco.com/en/US/docs/ios/ios_xe/bbds1/configuration/guide/bba_cos_ppp_pppoe_xe.html

AAA Interim Accounting

http://www.cisco.com/en/US/docs/ios/sec_user_services/configuration/guide/sec_cfg_accountg.html

ACL—Template ACL/12 Bit ACE

http://www.cisco.com/en/US/docs/ios/sec_data_plane/configuration/guide/sec_tmplacl.html

ANCP (Access Node Control Protocol)

http://www.cisco.com/en/US/docs/ios/ios_xe/ancp/configuration/guide/ancp_xe.html

ANCP Phase 2.5

http://www.cisco.com/en/US/docs/ios/ios_xe/ancp/configuration/guide/ancp_msad_coa_xe.html

Any Transport over MPLS (AToM): Ethernet over MPLS (EoMPLS)

http://www.cisco.com/en/US/docs/ios/ios_xe/mpls/configuration/guide/mp_any_transport_xe.html

Any Transport over MPLS (AToM): Ethernet over MPLS: Port Mode (EoMPLS)

http://www.cisco.com/en/US/docs/ios/ios_xe/mpls/configuration/guide/mp_any_transport_xe.html

Any Transport over MPLS (AToM): Remote Ethernet Port Shutdown

http://www.cisco.com/en/US/docs/ios/ios_xe/mpls/configuration/guide/mp_any_transport_xe.html

Any Transport over MPLS— Ethernet over MPLS Enhancements: Fast Reroute

http://www.cisco.com/en/US/docs/ios/ios_xe/mpls/configuration/guide/mp_any_transport_xe.html

Asynchronous Rotary Line Queuing

http://www.cisco.com/en/US/docs/ios/dial/configuration/guide/dia_asyn_que_role.html

Byte-Based Weighted Random Early Detection

http://www.cisco.com/en/US/docs/ios/ios_xe/qos/configuration/guide/fsbyte_xe.html

Cache Control Enhancements for Certification Revocation Lists

http://www.cisco.com/en/US/docs/ios/sec_secure_connectivity/configuration/guide/sec_cfg_auth_rev_cert.html

Certificate—Complete Chain Validation

http://www.cisco.com/en/US/docs/ios/sec_secure_connectivity/configuration/guide/sec_cfg_auth_rev_cert.html

Cisco IOS SHA2 Support

http://www.cisco.com/en/US/docs/ios/ios_xe/2/release/notes/rnasr21.html#wp1656737

Cisco Unified Border Element (SP Edition)

http://www.cisco.com/en/US/docs/routers/asr1000/configuration/guide/sbcu/2_xe/sbcu_2_xe_book.html

Class-Based QoS MIB (CBQoS MIB) Enhancements

http://www.cisco.com/en/US/docs/ios/ios_xe/qos/configuration/guide/cbqos_mib_xe.html

CoA—Multi-Service Activation/Deactivation in Single mMessage

http://www.cisco.com/en/US/docs/ios/ios_xe/ancp/configuration/guide/ancp_msad_coa_xe.html

Connect-info RADIUS Attribute 77—Configurable ASCII String

http://www.cisco.com/en/US/docs/ios/ios_xe/sec_user_services/configuration/guide/sec_rad_77_connect_xe.html

DHCP Server Radius Proxy

http://www.cisco.com/en/US/docs/ios/ios_xe/ipaddr/configuration/guide/iad_dhcp_rad_proxy_xe.html

Enabling ISG to Interact with External Policy Servers

http://www.cisco.com/en/US/docs/ios/ios_xe/isg/configuration/guide/en_isg_ext_plcy_svrs_xe.html

Etherchannel Flow Based Limited 1:1 Redundancy

http://www.cisco.com/en/US/docs/ios/lanswitch/configuration/guide/lsw_cfg_flwbal.html

Ethernet Overhead Accounting

http://www.cisco.com/en/US/docs/ios/ios_xe/qos/configuration/guide/eth_overhead_acctng_xe.html

Firewall—NetMeeting Directory (LDAP) ALG Support

http://www.cisco.com/en/US/docs/ios/ios_xe/sec_data_plane/configuration/guide/sec_zone_polcy_firew_xe.html

Firewall—SIP ALG—Extended Methods

http://www.cisco.com/en/US/docs/ios/ios_xe/sec_data_plane/configuration/guide/sec_fw_sip_alg_xe.html

H.323 RAS Support in IOS Firewall

http://www.cisco.com/en/US/docs/ios/sec_data_plane/configuration/guide/sec_h323ras_firewall.html

IEEE 802.1Q Tunneling (QinQ) for ATOM

http://www.cisco.com/en/US/docs/ios/ios_xe/mps/configuration/guide/mp_qnq_tunneling_atom_xe.html

IEEE 802.3ad Link Aggregation (LACP)

http://www.cisco.com/en/US/docs/ios/ios_xe/cether/configuration/guide/ce_lnkbnld_xe.html

Integrated Session Border Controller

The product formerly known as Integrated Session Border Controller is now known as the Cisco Unified Border Element (SP Edition). For information about this feature, see [Cisco Unified Border Element \(SP Edition\)](#).

Interactive OAM and Scaling Improvements

http://www.cisco.com/en/US/docs/ios/ios_xe/ancp/configuration/guide/ancp_xe.html

IP over IPv6 Tunnels

http://www.cisco.com/en/US/docs/ios/ios_xe/ipv6/configuration/guide/ip6-tunnel_xe.html

http://www.cisco.com/en/US/docs/ios/ios_xe/interface/configuration/guide/ir_impl_tun_xe.html

IPsec Usability Enhancements

http://www.cisco.com/en/US/docs/ios/sec_secure_connectivity/configuration/guide/sec_ipsec_vpn_status_monitoring.html

IPv6 Multicast

http://www.cisco.com/en/US/docs/ios/ios_xe/ipv6/configuration/guide/ip6-multicast_xe.html

IPv6 Multicast: Bootstrap Router (BSR)

http://www.cisco.com/en/US/docs/ios/ios_xe/ipv6/configuration/guide/ip6-multicast_xe.html

IPv6 Multicast: IPv6 BSR—Ability to Configure RP Mapping

http://www.cisco.com/en/US/docs/ios/ios_xe/ipv6/configuration/guide/ip6-multicast_xe.html

IPv6 Multicast: IPv6 BSR Bidirectional Support

http://www.cisco.com/en/US/docs/ios/ios_xe/ipv6/configuration/guide/ip6-multicast_xe.html

IPv6 Multicast: PIM Sparse Mode (PIM-SM)

http://www.cisco.com/en/US/docs/ios/ios_xe/ipv6/configuration/guide/ip6-multicast_xe.html

IPv6 Multicast: Routable Address Hello Option

http://www.cisco.com/en/US/docs/ios/ios_xe/ipv6/configuration/guide/ip6-multicast_xe.html

ISG: Accounting: Per-Service Accounting

http://www.cisco.com/en/US/docs/ios/ios_xe/isg/configuration/guide/cfg_isg_acctng_xe.html

ISG: Policy Control: Policy Server: Multi-Service Activation in access-accept Message

http://www.cisco.com/en/US/docs/ios/ios_xe/ancp/configuration/guide/ancp_msa_acc_xe.html

ISG: Policy Control: Policy Server: RADIUS-Based Policing

http://www.cisco.com/en/US/docs/ios/ios_xe/isg/configuration/guide/isg_rabapol_xe.html

L2TP Forwarding of PPPoE Tag Information

http://www.cisco.com/en/US/docs/ios/ios_xe/vpdn/configuration/guide/config_aaa_for_vpdn_xe.html

L2VPN Interworking—Ethernet to VLAN Interworking

http://www.cisco.com/en/US/docs/ios/ios_xe/mps/configuration/guide/mp_l2vpn_intrntwkg_xe.html

L2VPN Pseudowire Redundancy: Multiple Backup Pseudowires

http://www.cisco.com/en/US/docs/ios/ios_xe/mps/configuration/guide/wan_l2vpn_pw_red_xe.html

L2VPN Pseudowire Switching

http://www.cisco.com/en/US/docs/ios/ios_xe/mps/configuration/guide/mp_l2vpn_pseudo_swit_xe.html

Lawful Intercept

http://www.cisco.com/en/US/docs/ios/sec_user_services/configuration/guide/sec_lawful_intercept.html

Layer 2 VPN (L2 VPN): Syslog, SNMP Trap, and show Command Enhancements for AToM and L2TPv3

http://www.cisco.com/en/US/docs/ios/wan/configuration/guide/wan_l2_tun_pro_v3.html

MCP GEC with QoS on memberlink

http://www.cisco.com/en/US/docs/ios/lanswitch/configuration/guide/lsw_cfg_gecqos.html

Modified LNS Dead-Cache Handling

http://www.cisco.com/en/US/docs/ios/ios_xe/vpdn/configuration/guide/config_aaa_for_vpdn_xe.html

MQC—Traffic Shaping Overhead Accounting for ATM

http://www.cisco.com/en/US/docs/ios/ios_xe/qos/configuration/guide/overhead_acctng_xe.html

NAT—NetMeeting Directory (LDAP) ALG Support

http://www.cisco.com/en/US/docs/ios/ios_xe/ipaddr/configuration/guide/iadnat_applvlgw_xe.html

NAT SCCP Video Support

http://www.cisco.com/en/US/docs/ios/ios_xe/ipaddr/configuration/guide/iadnat_applvlgw_xe.html

NAT—SIP ALG - Extended Methods

http://www.cisco.com/en/US/docs/ios/ios_xe/ipaddr/configuration/guide/iadnat_applvlgw_xe.html

NAT Support of H.323v2 RAS

http://www.cisco.com/en/US/docs/ios/ios_xe/ipaddr/configuration/guide/iadnat_applvlgw_xe.html

NSF/SSO—Ethernet to Ethernet VLAN Interworking

http://www.cisco.com/en/US/docs/ios/ios_xe/mppls/configuration/guide/mp_trnsprt_mlps_atom_xe.html

OCSP—Server Certification from Alternate Hierarchy

http://www.cisco.com/en/US/docs/ios/sec_secure_connectivity/configuration/guide/sec_cfg_auth_rev_cert.html

Parameterization for ACL and Layer 4 Redirect

http://www.cisco.com/en/US/docs/ios/ios_xe/isg/configuration/guide/isg_l4_redirect_xe.html

Parameterization of QoS ACL

http://www.cisco.com/en/US/docs/ios/ios_xe/isg/configuration/guide/isg_rabapol_xe.html

Per Subinterface MTU for Ethernet over MPLS (EoMPLS)

http://www.cisco.com/en/US/docs/ios/ios_xe/mppls/configuration/guide/mp_any_transport_xe.html

PKI—CLI to Control Certificate Revocation List (CRL) Cache

http://www.cisco.com/en/US/docs/ios/ios_xe/2/release/notes/rnasr21.html#wp1752993

PPPoE Service Selection

http://www.cisco.com/en/US/docs/ios/ios_xe/bbds1/configuration/guide/bba_pppoe_baa_xe.html

PPPoE Session Limit

http://www.cisco.com/en/US/docs/ios/ios_xe/bbds1/configuration/guide/bba_limit_legcfg_xe.html

PPPoE Smart Server Selection

http://www.cisco.com/en/US/docs/ios/ios_xe/bbds1/configuration/guide/bba_pppoe_sss_xe.html

PPPoE VLAN Session Throttling

http://www.cisco.com/en/US/docs/ios/ios_xe/bbds1/configuration/guide/bba_pppoe_baa_xe.html

Pseudowire Emulation Edge-to-Edge MIBs for Ethernet, Frame Relay, and ATM Services

http://www.cisco.com/en/US/docs/ios/ios_xe/mp1s/configuration/guide/mp_edge2edge_mibs_xe.html

QoS: CBQoS MIB Index Enhancements

http://www.cisco.com/en/US/docs/ios/ios_xe/qos/configuration/guide/cbqos_mib_xe.html

RADIUS-Based Lawful Intercept

http://www.cisco.com/en/US/docs/ios/sec_user_services/configuration/guide/sec_lawful_intercept.html

RADIUS-Based Policing Attribute Modifications

http://www.cisco.com/en/US/docs/ios/ios_xe/isg/configuration/guide/isg_rabapol_xe.html

RADIUS—CLI to Prevent Sending of Access Request with Blank Username

http://www.cisco.com/en/US/docs/ios/sec_user_services/configuration/guide/sec_cfg_authentifcn.html

RSA 4096-Bit Key Generation in Software Crypto Engine Support

http://www.cisco.com/en/US/docs/ios/ios_xe/2/release/notes/rnasr21.html#wp1873950

SCCP for Video

http://www.cisco.com/en/US/docs/ios/ios_xe/sec_data_plane/configuration/guide/sec_zone_policy_firew_xe.html

SSHv2 Enhancements

http://www.cisco.com/en/US/docs/ios/sec_user_services/configuration/guide/sec_secure_shell_v2.html

VLAN ID Rewrite

http://www.cisco.com/en/US/docs/ios/ios_xe/mps/configuration/guide/mp_any_transport_xe.html

VPDN LNS Address Checking

http://www.cisco.com/en/US/docs/ios/ios_xe/vpdn/configuration/guide/config_aaa_for_vpdn_xe.html

VPN Routing Forwarding (VRF) Framed Route (Pool) Assignment via PPP

http://www.cisco.com/en/US/docs/ios/sec_user_services/configuration/guide/sec_per_vrf_aaa.html

VRF Aware LI (Lawful Intercept)

http://www.cisco.com/en/US/docs/ios/sec_user_services/configuration/guide/sec_lawful_intercept.htm

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