New Features in Cisco IOS XE Release 2.5

The following features were introduced in Cisco IOS XE Release 2.5. 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://www.cisco.com/go/cfn. 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: 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 2.5

1-Port Clear Channel OC-12 ATM SPA (SPA-1XOC12-ATM-v2)

The 1-Port Clear Channel OC-12 ATM SPA is a single-height ATM SPA that can be installed into one SIP subslot.
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 XFP/SFPs Supported with SPAs and the Built-In Gigabit Ethernet Interface

- Cisco10GBASE-SR XFP transceiver module for MMF, 850-nm wavelength, dual LC connector (XFP-10G-MM-SR)—Supported with the 1-Port 10-Gigabit Ethernet SPA (SPA-1X10GE-L-V2) only on the Cisco ASR-1002, Cisco ASR-1004, and Cisco ASR-1006 routers.

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

- Cisco1000BASE-BX10 SFP module for single-strand SMF, 1490-nm TX/1310-nm RX wavelength (GLC-BX-D)—Supported with the following hardware:
  - 2-Port Gigabit Ethernet SPA (SPA-2X1GE-V2)
  - 5-Port Gigabit Ethernet SPA (SPA-5X1GE-V2)
  - 10-Port Gigabit Ethernet SPA (SPA-10X1GE-V2)
  - Built-in Gigabit Ethernet interface on the Cisco ASR-1002 router
- Cisco 1000BASE-BX10 SFP module for single-strand SMF, 1310-nm TX/1490-nm RX wavelength (GLC-BX-U)—Supported with the following hardware:
  - 2-Port Gigabit Ethernet SPA (SPA-2X1GE-V2)
  - 5-Port Gigabit Ethernet SPA (SPA-5X1GE-V2)
  - 10-Port Gigabit Ethernet SPA (SPA-10X1GE-V2)
  - Built-in Gigabit Ethernet interface on the Cisco ASR-1002 router

For more information, see the following publications:

- For information on optics module compatibility with SPAs on the Cisco ASR 1000 series routers, see the "Modular Optics Compatibility" section of the "SIP and SPA Overview" chapter in the Cisco ASR 1000 Series Aggregation Services Routers SIP and SPA Hardware Installation Guide at:

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

For more information about the built-in Gigabit Ethernet interface on the Cisco ASR-1002 routers and optics module compatibility, see the Cisco ASR 1000 Series Hardware Installation Guide at:

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

- For more information about a specific supported transceiver module and its installation and maintenance, find the corresponding documentation for the supported module at the Cisco Transceiver Modules site at:

  http://www.cisco.com/en/US/products/hw/modules/ps5455/prod_installation_guides_list.html

New Software Features in Cisco IOS XE Release 2.5

2547oDMVPN - Enabling Traffic Segmentation within DMVPN

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

AAA - Improvements for Broadband IPv6

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

ANCP - ATM Support

http://www.cisco.com/en/US/docs/ios/ios_xe/atm/configuration/guide/atm_cfg_atm_xe.html

ATM F4 Ping

The F4 Operations, Administration, and Maintenance (OAM) Ping without Virtual Path (VP) Creation feature enables you to determine problems at the virtual path (VP) level using the ping command. Using

this feature, you can create and remove virtual circuit identifiers (VCIs) that correspond to the VP segment and the VP end, in the absence of VP configuration. After creating the VCIs you can use the ping atm command to isolate connection problems.

ATM Sub-interface Multipoint

http://www.cisco.com/en/US/docs/ios/ios_xe/atm/configuration/guide/atm_cfg_atm_xe.html

ATM VC Ingress Policing

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

BGP Best External

http://www.cisco.com/en/US/docs/ios/ios_xe/iproute_bgp/configuration/guide/irg_best_external_xe.html

BGP Multicast Inter-AS (IAS) VPN

http://www.cisco.com/en/US/docs/ios/ios_xe/iproute_bgp/configuration/guide/irg_best_external_xe.html

BGP PIC Edge for IP/MPLS

http://www.cisco.com/en/US/docs/ios/ios_xe/iproute_bgp/configuration/guide/irg_best_external_xe.html

BGP VPLS Auto Discovery Support on Route Reflector

http://www.cisco.com/en/US/docs/ios/ios_xe/iproute_bgp/configuration/guide/irg_int_features_xe.html

Configurable Domain Name Prefix and Suffix Stripping

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

DHCP - DHCPv6 Prefix Delegation RADIUS VSA

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

DHCP Enhancements to Support IPv6 Broadband Deployments

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

DHCPv6 Repackaging

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

DMVPN Manageability Enhancements

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

DMVPN: Dynamic tunnels between spokes behind NAT

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

Dynamic Subscriber Bandwidth Selection

http://www.cisco.com/en/US/docs/ios/ios_xe/bbdsl/configuration/guide/bba_con_sub_bdwth_xe.html

EtherChannel Min-Links

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

Firewall - VRF-aware ALG support

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

Flow Based Per Port Channel Load Balancing

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

IEEE 802.3ad - Faster Link Switchover Time

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

IEEE 802.3ad MIB

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

IPv6 Access Services: AAA Support for Cisco VSA IPv6 Attributes

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

IPv6 Access Services: AAA Support for RFC 3162 IPv6 RADIUS Attributes

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

IPv6 Access Services: PPPoA

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

IPv6 Access Services: PPPoE

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

IPv6 Access Services: Stateless DHCPv6

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

ISG:AAA Wireless Enhancements

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

ISG:Accounting: Prepaid

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

ISG:Authentication:Radius Proxy WiMax Enhancements

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

ISG:Instrumentation:DHCP Lease Query Support

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

ISG:Policy Control:Differentiated Initial Policy Control

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

ISG:Session: Creation: Interface IP Session: L2

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

ISG:Session: Creation: Interface IP Session: L3

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

ISG:Session:Multicast:Coexistance

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

ISG:Session:Static Session Creation

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

ISSU - Multicast MPLS VPN

http://www.cisco.com/en/US/docs/ios/ios_xe/ha/configuration/guide/ha-inserv_updg_xe.html

ISSU – PPPoEoA

http://www.cisco.com/en/US/docs/ios/ios_xe/bbdsl/configuration/guide/bba_ha_svc_sw_up_xe.html

Layer 2 Local Switching - Same-Port Switching for Ethernet VLAN

http://www.cisco.com/en/US/docs/ios/ios_xe/wan/configuration/guide/wan_l2_lcl_swng_xe.html

Layer 2 Local Switching: Ethernet to VLAN

http://www.cisco.com/en/US/docs/ios/ios_xe/wan/configuration/guide/wan_l2_lcl_swng_xe.html

Link Aggregation Control Protocol (LACP) (802.3ad) for Gigabit Interfaces

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

Local Template-Based ATM PVC Provisioning

http://www.cisco.com/en/US/docs/ios/ios_xe/atm/configuration/guide/atm_pvc_prov_xe.html

MPLS VPN Half Duplex VRF (HDVRF)

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

MSDP MD5 password authentication

http://www.cisco.com/en/US/docs/ios/ios_xe/ipmulti/configuration/guide/imc_msdp_im_pim_sm_xe.html

Multicast VPN Extranet Support

http://www.cisco.com/en/US/docs/ios/ios_xe/ipmulti/configuration/guide/imc_mc_vpn_extranet_xe.html

Multicast VPN Extranet VRF Select

http://www.cisco.com/en/US/docs/ios/ios_xe/ipmulti/configuration/guide/imc_mc_vpn_extranet_xe.html

Multicast VPN Inter-AS Support

http://www.cisco.com/en/US/docs/ios/ios_xe/ipmulti/configuration/guide/imc_cfg_mc_vpn_sup_xe.html

Multicast VPN MIB

http://www.cisco.com/en/US/docs/ios/ios_xe/ipmulti/configuration/guide/imc_vpn_mib_xe.html

Multicast-VPN: Multicast Support for MPLS VPN

http://www.cisco.com/en/US/docs/ios/ios_xe/ipmulti/configuration/guide/imc_cfg_mc_vpn_xe.html

NAT - VRF aware NAT for MPLS/VPN

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

NAT - VRF-aware ALG support

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

NBAR PDLM supported in ASR1000 Release 5

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

NHRP - CEF rewrite for DMVPN Phase 3 Networks

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

NHRP MIB for DMVPN Networks

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

NSF/SSO - Multicast MPLS VPN

http://www.cisco.com/en/US/docs/ios/ios_xe/ha/configuration/guide/ha-nonstp_fwdg_xe.html

http://www.cisco.com/en/US/docs/ios/ios_xe/ha/configuration/guide/ha-stfl_swovr_xe.html

PPP Enhancement for Broadband IPv6

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

PPP Session Queueing on ATM VC

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

PPPoE Connection Throttling

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

PPPoE on ATM

http://www.cisco.com/en/US/docs/ios/ios_xe/bbdsl/configuration/guide/bba_ppoe_atm_xe.html

PPPoE Session Count MIB

http://www.cisco.com/en/US/docs/ios/ios_xe/bbdsl/configuration/guide/bba_mon_pppoe_snmp_xe.html

QoS: QoS support for GRE/sVTI Tunnel

http://www.cisco.com/en/US/docs/ios/qos/command/reference/qos_a1.html

QoS: Shape Average Percent CLI

http://www.cisco.com/en/US/docs/ios/qos/command/reference/qos_a1.html

Service Advertisement Framework (SAF)

http://www.cisco.com/en/US/docs/ios/ios_xe/saf/configuration/guide/XE_saf_cg.html

Sharing IPSec with Tunnel Protection

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

SSO - LACP

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

SSO - PPPoE IPv6

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

SSO - PPPoEoA

http://www.cisco.com/en/US/docs/ios/ios_xe/bbdsl/configuration/guide/bba_ha_stfl_swovr_xe.html

VRF Aware Cisco IOS Firewall

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

Cisco Unified Border Element (Enterprise)

- Configurable SIP Parameter Modification
- DTMF Events Through SIP Signaling
- Enhanced SIP REFER
- H.323 to SIP Supplementary Feature Interworking for Session Border Controller (SBC)
- iLBC Support for SIP and H.323
- IP-IP Gateway for H323 Call Manager to H323 Service Provider Connectivity
- IP-to-IP Gateway: SIP-SIP Basic Functionality
- SIP - Ability to Send a SIP Registration Message on a Border Element
- SIP - Configurable Hostname in Locally Generated SIP Headers
- SIP - Core SIP Technology Enhancements
- SIP - DNS SRV RFC2782 Compliance
- SIP - Enhanced 180 Provisional Response Handling
- SIP - Gateway Support for the Bind Command
- SIP - INFO Method for DTMF Tone Generation
- SIP - Session Initiation Protocol for VoIP
- SIP - Session Timer Support
- SIP - SIP Basic Feature Functionality for Session Border Controller (SBC)
- SIP - SIP Extended Feature Functionality for Session Border Controller (SBC)
- SIP - SIP GW Session Timer Support
- SIP - Stack Support of TLS
- SIP - Support for SESSION REFRESH with reINVITEs
- SIP and TEL URL Support
- SIP to SIP Supplementary Services for Session Border Controller (SBC)
- SIP:SIP Support for Options
- Support for negotiation of an audio codec from a list of codecs on each leg of a SIP-SIP call on the Cisco Unified Border Element
- Transparent Tunneling of QSIG and Q.931 over SIP-SIP Cisco Unified Border Element

http://www.cisco.com/en/US/docs/ios/ios_xe/voice_cube_-_ent/configuration/guide/2_xe/vb_book_xe.html

Cisco Unified Border Element (SP Edition)

- Call duration monitoring
- CDR:Support for CDR Media information
- CDR:Granular Timestamp Support
- H323:H.245 address in Call PROC
- H323:H.323 Registration with Multiple Gatekeepers
- H323:H.323 Slow start to H.323 Fast start Interop
- H323:H.323 Video codec support (H.261, H.263, H.264)
- H.323:In call facility pass through
- H323:Interop with Cisco H.323 gatekeeper
- H323:ITU H.323v4: Packet-Based Multimedia Communications System
- H323:Multiple TCP for H.323
- IMS:Support for Authentication via AKA
- Interop:Support interworking like CCM-SBC-CME topology
- Interworking:CCM-H.323 Slow-start to Fast-start
- Interworking:H.323 - SIP Cause code Mapping
- Interworking:H.323 and SIP interop services
- Interworking:H.323 and SIP message translation
- Interworking:H.323 fast start call to SIP call
- Interworking:H.323 Slow start calls to SIP calls
- Interworking:H.323 to SIP support for Emergency calls
- Interworking:H.323/SIP call routing
- Interworking:H.323-H.323 Interworking -basic calls
- Interworking:SIP to H.323 Fast Start
- Interworking:T.38 with H.323-H.323 and SIP-H.323 transcoding.
- Media:Fax/Modem upspeed support
- Media:SBC will support Pass through Codec Types
- Media:Transcoding:For external media-server SBC shall work with MGX 8880 Media server.
- Media:Transcoding:SBC shall support external Media Server
- Signaling congestion handling enhancement
- SIP: Ability to Insert Firewall Parameter in SIP Contact Header
- SIP:Ability to adjust "b="""command in SIP INVITE"
- SIP:Call forking
- SIP:Call Park
- SIP:Contact username passthrough (non-IMS case)

- SIP:Customizable Late to Early Offer
- SIP:Find Me
- SIP:Instant Messaging and SIMPLE
- SIP:Interoperability for INVITE authentication
- SIP:IP - FQDN URI translation
- SIP:regular expression based routing
- SIP:SDP media line removal
- SIP:SIP - Specific Event Notification
- SIP:SIP header manipulation with regular expression/privacy
- SIP:SIP trunk-group ID routing
- SIP:Support for “Supported: Path” under REGISTER request
- SIP:Support for IP Realm
- SIP:Support for P-KT-UE-IP support
- SIP:Support for PRACK/100rel interworking
- SIP:Support for Softswitch registration timer shielding
- Support for P-called party identifier, P-Associated URI (RFC3445)
- Support for Subscriber Policy

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