



## New Features in Cisco IOS Release 12.2(33)SRE

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The following features were introduced in Cisco IOS Release 12.2(33)SRE. 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 at the following URL:

[http://www.cisco.com/en/US/products/ps6922/prod\\_release\\_notes\\_list.html](http://www.cisco.com/en/US/products/ps6922/prod_release_notes_list.html).

See the following sections for a list of features:

- [New Hardware Features in Cisco IOS Release 12.2\(33\)SRE, page 1](#)
- [New Software Features in Cisco IOS Release 12.2\(33\)SRE, page 2](#)

### New Hardware Features in Cisco IOS Release 12.2(33)SRE

#### Enable Support for DWDM SFPs

[http://www.cisco.com/en/US/docs/routers/7600/Hardware/12.2SR\\_supported\\_hw/7600\\_hwd.html](http://www.cisco.com/en/US/docs/routers/7600/Hardware/12.2SR_supported_hw/7600_hwd.html)

[http://www.cisco.com/en/US/docs/interfaces\\_modules/shared\\_port\\_adapters/configuration/7600series/sipspasw.html](http://www.cisco.com/en/US/docs/interfaces_modules/shared_port_adapters/configuration/7600series/sipspasw.html)

[http://www.cisco.com/en/US/docs/interfaces\\_modules/shared\\_port\\_adapters/install\\_upgrade/7600series/SIP-SSC-SPA-HW-Install.html](http://www.cisco.com/en/US/docs/interfaces_modules/shared_port_adapters/install_upgrade/7600series/SIP-SSC-SPA-HW-Install.html)

[http://www.cisco.com/en/US/docs/routers/7600/Hardware/Module\\_and\\_Line\\_Card\\_Installation\\_Guide/s/ES20\\_Line\\_Card\\_Installation\\_Guide/baldintr\\_ps368\\_TSD\\_Products\\_Module\\_Installation\\_Guide\\_Chapter.html](http://www.cisco.com/en/US/docs/routers/7600/Hardware/Module_and_Line_Card_Installation_Guide/s/ES20_Line_Card_Installation_Guide/baldintr_ps368_TSD_Products_Module_Installation_Guide_Chapter.html)

<http://www.cisco.com/en/US/docs/routers/7600/ios/12.2SR/configuration/guide/dynarp.html>



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**ES Line Cards for Cisco 7600**

[http://www.cisco.com/en/US/docs/routers/7600/Hardware/Module\\_and\\_Line\\_Card\\_Installation\\_Guide/s/ES40\\_Line\\_Card\\_Installation\\_Guide/es40\\_chap2.html](http://www.cisco.com/en/US/docs/routers/7600/Hardware/Module_and_Line_Card_Installation_Guide/s/ES40_Line_Card_Installation_Guide/es40_chap2.html)

**FWSM with RSP720-10GE**

<http://www.cisco.com/en/US/docs/security/fwsm/fwsm11/configuration/guide/fwsm112.html>

**Persistent Storage Device (PSD)**

[http://www.cisco.com/en/US/docs/ios/12\\_2sr/mw\\_psd/configuration/guide/mw\\_psd12233srd.html](http://www.cisco.com/en/US/docs/ios/12_2sr/mw_psd/configuration/guide/mw_psd12233srd.html)

**PWR-4500-DC Power Supply**

[http://www.cisco.com/en/US/docs/routers/7600/Hardware/Chassis\\_Installation/7600\\_Series\\_Router\\_Installation\\_Guide/cis\\_76xx.html](http://www.cisco.com/en/US/docs/routers/7600/Hardware/Chassis_Installation/7600_Series_Router_Installation_Guide/cis_76xx.html)

**SFP-GE-T/S/L/Z Support on X6724/X6748**

[http://www.cisco.com/en/US/docs/routers/7600/Hardware/12.2SR\\_supported\\_hw/7600\\_hwd.html#wp1266117](http://www.cisco.com/en/US/docs/routers/7600/Hardware/12.2SR_supported_hw/7600_hwd.html#wp1266117)

**STM1E-SFP Support**

[http://www.cisco.com/en/US/docs/interfaces\\_modules/shared\\_port\\_adapters/configuration/7600series/sipsasw.html](http://www.cisco.com/en/US/docs/interfaces_modules/shared_port_adapters/configuration/7600series/sipsasw.html)

[http://www.cisco.com/en/US/docs/interfaces\\_modules/shared\\_port\\_adapters/install\\_upgrade/7600series/SIP-SSC-SPA-HW-Install.html](http://www.cisco.com/en/US/docs/interfaces_modules/shared_port_adapters/install_upgrade/7600series/SIP-SSC-SPA-HW-Install.html)

**X2-DWDM and X2-10GB-LRM/ZR Support on Cisco 7600 Cards (RSP720-10GE and WS-X6708-10GE)**

[http://www.cisco.com/en/US/docs/interfaces\\_modules/shared\\_port\\_adapters/configuration/7600series/sipsasw.html](http://www.cisco.com/en/US/docs/interfaces_modules/shared_port_adapters/configuration/7600series/sipsasw.html)

[http://www.cisco.com/en/US/docs/interfaces\\_modules/shared\\_port\\_adapters/install\\_upgrade/7600series/SIP-SSC-SPA-HW-Install.html](http://www.cisco.com/en/US/docs/interfaces_modules/shared_port_adapters/install_upgrade/7600series/SIP-SSC-SPA-HW-Install.html)

[http://www.cisco.com/en/US/docs/routers/7600/Hardware/Module\\_and\\_Line\\_Card\\_Installation\\_Guide/s/ES40\\_Line\\_Card\\_Installation\\_Guide/es40\\_hw\\_install\\_guide.html](http://www.cisco.com/en/US/docs/routers/7600/Hardware/Module_and_Line_Card_Installation_Guide/s/ES40_Line_Card_Installation_Guide/es40_hw_install_guide.html)

**New Software Features in Cisco IOS Release 12.2(33)SRE****7600 ISSU for IP Multicast**

<http://www.cisco.com/en/US/docs/routers/7600/ios/12.2SR/configuration/guide/mcastv4.html>

**802.1ah**

[http://www.cisco.com/en/US/docs/routers/7600/install\\_config/ES40\\_config\\_guide/es40\\_chap4.html](http://www.cisco.com/en/US/docs/routers/7600/install_config/ES40_config_guide/es40_chap4.html)

### **AAA Per VC QoS Policy Support**

[http://www.cisco.com/en/US/docs/ios/sec\\_user\\_services/configuration/guide/sec\\_aaa\\_vc\\_qos\\_ps.html](http://www.cisco.com/en/US/docs/ios/sec_user_services/configuration/guide/sec_aaa_vc_qos_ps.html)

### **AAA Support for Greater than 8 Login and EXEC Authentication List**

[http://www.cisco.com/en/US/docs/ios/12\\_2sr/release/notes/122SRrn.html#wp4786712](http://www.cisco.com/en/US/docs/ios/12_2sr/release/notes/122SRrn.html#wp4786712)

### **AAA-SERVER-MIB Set Operation**

[http://www.cisco.com/en/US/docs/ios/sec\\_user\\_services/configuration/guide/sec\\_aaa\\_serv\\_mib\\_op.html](http://www.cisco.com/en/US/docs/ios/sec_user_services/configuration/guide/sec_aaa_serv_mib_op.html)

### **Access Circuit Redundancy**

[http://www.cisco.com/en/US/docs/interfaces\\_modules/shared\\_port\\_adapters/configuration/7600series/sipspasw.html](http://www.cisco.com/en/US/docs/interfaces_modules/shared_port_adapters/configuration/7600series/sipspasw.html)

[http://www.cisco.com/en/US/products/hw/routers/ps368/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/hw/routers/ps368/products_installation_and_configuration_guides_list.html)

### **ATM In ARP Support for Different Subnet**

[http://www.cisco.com/en/US/docs/ios/atm/command/reference/atm\\_m1.html#wp1014484](http://www.cisco.com/en/US/docs/ios/atm/command/reference/atm_m1.html#wp1014484)

### **ATM VP Average Traffic Rate**

[http://www.cisco.com/en/US/docs/ios/atm/configuration/guide/atm\\_vp\\_avg\\_tfc\\_rate.html](http://www.cisco.com/en/US/docs/ios/atm/configuration/guide/atm_vp_avg_tfc_rate.html)

### **BFD IPv6 Encapsulation Support**

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

### **BGP Best External**

[http://www.cisco.com/en/US/docs/ios/iproute\\_bgp/configuration/guide/irg\\_best\\_external.html](http://www.cisco.com/en/US/docs/ios/iproute_bgp/configuration/guide/irg_best_external.html)

### **BGP Event-Based VPN Import**

[http://www.cisco.com/en/US/docs/ios/iproute\\_bgp/configuration/guide/irg\\_event\\_vpn\\_import.html](http://www.cisco.com/en/US/docs/ios/iproute_bgp/configuration/guide/irg_event_vpn_import.html)

### **BGP PIC Edge for IP/MPLS**

[http://www.cisco.com/en/US/docs/ios/iproute\\_bgp/configuration/guide/irg\\_bgp\\_mp\\_pic.html](http://www.cisco.com/en/US/docs/ios/iproute_bgp/configuration/guide/irg_bgp_mp_pic.html)

### **BGP RT Changes Without PE-CE Neighbor Impact**

[http://www.cisco.com/en/US/docs/ios/iproute\\_bgp/configuration/guide/irg\\_event\\_vpn\\_import.html](http://www.cisco.com/en/US/docs/ios/iproute_bgp/configuration/guide/irg_event_vpn_import.html)

### **BGP Support for 4-byte ASN**

[http://www.cisco.com/en/US/docs/ios/iproute\\_bgp/configuration/guide/irg\\_basic\\_net.html](http://www.cisco.com/en/US/docs/ios/iproute_bgp/configuration/guide/irg_basic_net.html)

**BGP VPLS Auto Discovery Support on Route Reflector**

[http://www.cisco.com/en/US/docs/ios/iproute\\_bgp/configuration/guide/irg\\_int\\_features.html](http://www.cisco.com/en/US/docs/ios/iproute_bgp/configuration/guide/irg_int_features.html)

[http://www.cisco.com/en/US/docs/ios/mppls/configuration/guide/mp\\_vpls\\_auto\\_bgp.html](http://www.cisco.com/en/US/docs/ios/mppls/configuration/guide/mp_vpls_auto_bgp.html)

**Bidirectional Forwarding Detection (BFD) MIB version 2**

[http://www.cisco.com/en/US/docs/ios/iproute\\_bfd/configuration/guide/irb\\_bfd\\_mib.html](http://www.cisco.com/en/US/docs/ios/iproute_bfd/configuration/guide/irb_bfd_mib.html)

**Bridge Domain MIB**

[http://www.cisco.com/en/US/docs/routers/7600/technical\\_references/7600\\_mib\\_guides/MIB\\_Guide\\_v er\\_6/7600mib3.html](http://www.cisco.com/en/US/docs/routers/7600/technical_references/7600_mib_guides/MIB_Guide_v er_6/7600mib3.html)

**Cisco 7600 ARP Scale**

[http://www.cisco.com/en/US/docs/ios/ipaddr/configuration/guide/iad\\_mon\\_main\\_arp.html](http://www.cisco.com/en/US/docs/ios/ipaddr/configuration/guide/iad_mon_main_arp.html)

**Commands for SNMP Diagnostics**

[http://www.cisco.com/en/US/docs/ios/netmgmt/configuration/guide/nm\\_cfg\\_snmp\\_sup.html](http://www.cisco.com/en/US/docs/ios/netmgmt/configuration/guide/nm_cfg_snmp_sup.html)

**Configurable Domain Name Prefix and Suffix Stripping**

[http://www.cisco.com/en/US/docs/ios/vpdn/configuration/guide/config\\_aaa\\_for\\_vpdn.html#wp1210170](http://www.cisco.com/en/US/docs/ios/vpdn/configuration/guide/config_aaa_for_vpdn.html#wp1210170)

**Configuring \_ITU-T Y.1731 Fault Management Functions**

[http://www.cisco.com/en/US/docs/ios/cether/configuration/guide/ce\\_cfm-ieee\\_y1731.html](http://www.cisco.com/en/US/docs/ios/cether/configuration/guide/ce_cfm-ieee_y1731.html)

**Custom Ethertype for EVC Port Channel**

[http://www.cisco.com/en/US/docs/routers/7600/install\\_config/ES40\\_config\\_guide/es40\\_chap4.html](http://www.cisco.com/en/US/docs/routers/7600/install_config/ES40_config_guide/es40_chap4.html)

**DHCP - DHCPv6 Relay SSO/ISSU**

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

**DHCP - Server User Authentication**

[http://www.cisco.com/en/US/docs/ios/isg/configuration/guide/isg\\_access\\_sub\\_sessns.html](http://www.cisco.com/en/US/docs/ios/isg/configuration/guide/isg_access_sub_sessns.html)

**DHCP Relay Server ID Override and Link Selection Option 82 Suboptions**

[http://www.cisco.com/en/US/docs/ios/ipaddr/configuration/guide/iad\\_dhcpserveridlink\\_mcp.html](http://www.cisco.com/en/US/docs/ios/ipaddr/configuration/guide/iad_dhcpserveridlink_mcp.html)

**DHCP Snooping with Option 82 on EVC Port Channel**

[http://www.cisco.com/en/US/docs/routers/7600/install\\_config/ES40\\_config\\_guide/es40\\_chap4.html](http://www.cisco.com/en/US/docs/routers/7600/install_config/ES40_config_guide/es40_chap4.html)

### **DHCPv6 Relay - Source Configuration**

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

### **DHCPv6 Repackaging**

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

### **Dynamic Layer-3 VPNs (RFC 2547) with Multipoint GRE (mGRE) Tunnel Support for SIP400 & ES40 on Cisco 7600 Platform**

[http://www.cisco.com/en/US/docs/ios/interface/configuration/guide/ir\\_greL3vpn.html](http://www.cisco.com/en/US/docs/ios/interface/configuration/guide/ir_greL3vpn.html)

### **Embedded Event Manager (EEM) 2.4**

[http://www.cisco.com/en/US/docs/ios/netmgmt/configuration/guide/nm\\_eem\\_overview.html](http://www.cisco.com/en/US/docs/ios/netmgmt/configuration/guide/nm_eem_overview.html)

### **Embedded Event Manager (EEM) 3.0**

[http://www.cisco.com/en/US/docs/ios/netmgmt/configuration/guide/nm\\_eem\\_overview.html](http://www.cisco.com/en/US/docs/ios/netmgmt/configuration/guide/nm_eem_overview.html)

### **Event MIB and Expression MIB Enhancements**

[http://www.cisco.com/en/US/docs/ios/netmgmt/configuration/guide/nm\\_cfg\\_snmp\\_sup.html](http://www.cisco.com/en/US/docs/ios/netmgmt/configuration/guide/nm_cfg_snmp_sup.html)

### **Flash MIB Enhancements**

[http://www.cisco.com/en/US/docs/switches/lan/catalyst6500/ios/12.2SX/release/notes/ol\\_14271.html](http://www.cisco.com/en/US/docs/switches/lan/catalyst6500/ios/12.2SX/release/notes/ol_14271.html)

### **Flexible NetFlow - Ingress VRF Support**

[http://www.cisco.com/en/US/docs/ios/fnetflow/configuration/guide/cust\\_fnflow\\_rec\\_mon.html](http://www.cisco.com/en/US/docs/ios/fnetflow/configuration/guide/cust_fnflow_rec_mon.html)

### **Flexible Netflow - IPv4 Multicast Statistics Support**

<http://www.cisco.com/en/US/docs/ios/fnetflow/configuration/guide/cfg-mcast.html>

### **Flexible NetFlow - IPv6 Unicast Flows**

[http://www.cisco.com/en/US/docs/ios/fnetflow/configuration/guide/cust\\_fnflow\\_rec\\_mon.html](http://www.cisco.com/en/US/docs/ios/fnetflow/configuration/guide/cust_fnflow_rec_mon.html)

### **Flexible Netflow - Layer 2 Fields**

[http://www.cisco.com/en/US/docs/ios/fnetflow/configuration/guide/cust\\_fnflow\\_rec\\_mon.html](http://www.cisco.com/en/US/docs/ios/fnetflow/configuration/guide/cust_fnflow_rec_mon.html)

### **Flexible NetFlow - NetFlow v9 Export Format**

[http://www.cisco.com/en/US/docs/ios/fnetflow/configuration/guide/cfg\\_de\\_fnflow\\_exprts.html](http://www.cisco.com/en/US/docs/ios/fnetflow/configuration/guide/cfg_de_fnflow_exprts.html)

### **Flexible Netflow - Netflow v5 Export Protocol**

[http://www.cisco.com/en/US/docs/ios/fnetflow/configuration/guide/cfg\\_de\\_fnflow\\_exprts.html](http://www.cisco.com/en/US/docs/ios/fnetflow/configuration/guide/cfg_de_fnflow_exprts.html)

**Flexible Netflow - Top N Talkers Support**

<http://www.cisco.com/en/US/docs/ios/fnetflow/configuration/guide/cgf-topn.html>

**Flexible Service Mapping Based on CoS, Ethertype**

[http://www.cisco.com/en/US/docs/routers/7600/install\\_config/ES40\\_config\\_guide/es40\\_chap7.html](http://www.cisco.com/en/US/docs/routers/7600/install_config/ES40_config_guide/es40_chap7.html)

**HC-ALARM-MIB**

[http://www.cisco.com/en/US/docs/ios/netmgmt/configuration/guide/nm\\_cfg\\_rmon\\_sup.html](http://www.cisco.com/en/US/docs/ios/netmgmt/configuration/guide/nm_cfg_rmon_sup.html)

**H-VPLS with Port-Channel Core Interface**

[http://www.cisco.com/en/US/docs/routers/7600/install\\_config/ES20\\_config\\_guide/baldfc.html](http://www.cisco.com/en/US/docs/routers/7600/install_config/ES20_config_guide/baldfc.html)

**IEEE 802.1ag-2007 Compliant CFM - Bridge Domain Support**

[http://www.cisco.com/en/US/docs/routers/7600/install\\_config/ES40\\_config\\_guide/es40\\_chap4.html](http://www.cisco.com/en/US/docs/routers/7600/install_config/ES40_config_guide/es40_chap4.html)

[http://www.cisco.com/en/US/docs/ios/cether/configuration/guide/ce\\_cfm-ieee.html](http://www.cisco.com/en/US/docs/ios/cether/configuration/guide/ce_cfm-ieee.html)

**IGMP MIB Support Enhancements for SNMP**

<http://www.cisco.com/go/mibs> (Cisco.com login required).

**IGMP Static Group Range Support**

[http://www.cisco.com/en/US/docs/ios/ipmulti/configuration/guide/imc\\_igmp\\_static\\_rng.html](http://www.cisco.com/en/US/docs/ios/ipmulti/configuration/guide/imc_igmp_static_rng.html)

**IGMPv3 Host Stack**

[http://www.cisco.com/en/US/docs/ios/ipmulti/configuration/guide/imc\\_customize\\_igmp.html](http://www.cisco.com/en/US/docs/ios/ipmulti/configuration/guide/imc_customize_igmp.html)

**IP and PPPoE Session Coexistence with Multicast**

[http://www.cisco.com/en/US/docs/routers/7600/install\\_config/ES40\\_config\\_guide/es40\\_chap4.html](http://www.cisco.com/en/US/docs/routers/7600/install_config/ES40_config_guide/es40_chap4.html)

**IP Session Support on the Cisco 7600 ES+ Series Linecards**

[http://www.cisco.com/en/US/docs/ios/isg/configuration/guide/isg\\_sub\\_aware\\_enet.html](http://www.cisco.com/en/US/docs/ios/isg/configuration/guide/isg_sub_aware_enet.html)

**IP SLAs Metro-Ethernet 3.0 (CFM d8.1)**

[http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla\\_metro\\_ethernet.html](http://www.cisco.com/en/US/docs/ios/ipsla/configuration/guide/sla_metro_ethernet.html)

**IPv6 - Hop by Hop Rate Limiter on SIP200 and Enhanced FlexWAN**

[http://www.cisco.com/en/US/docs/interfaces\\_modules/shared\\_port\\_adapters/configuration/7600series/sipsasw.html](http://www.cisco.com/en/US/docs/interfaces_modules/shared_port_adapters/configuration/7600series/sipsasw.html)

[http://www.cisco.com/en/US/docs/routers/7600/install\\_config/ES40\\_config\\_guide/es40\\_chap7.html#wp1492073](http://www.cisco.com/en/US/docs/routers/7600/install_config/ES40_config_guide/es40_chap7.html#wp1492073)

[http://www.cisco.com/en/US/docs/routers/7600/install\\_config/flexwan\\_config/flexqos.html](http://www.cisco.com/en/US/docs/routers/7600/install_config/flexwan_config/flexqos.html)

**IPv6 BSR - Configure RP Mapping**

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

**IPv6 BSR Bidirectional Support**

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

**IPv6 Multicast: Bandwidth-Based Call Admission Control (CAC)**

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

**IPv6 Neighbor Discovery Non-Stop Forwarding (NSF)**

[http://www.cisco.com/en/US/docs/ios/ipv6/configuration/guide/ip6-addrg\\_bsc\\_con.html](http://www.cisco.com/en/US/docs/ios/ipv6/configuration/guide/ip6-addrg_bsc_con.html)

**IPv6 Source Specific Multicast (SSM) Mapping**

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

**IPv6: Multicast Address Group Range Support**

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

**IPv6: NSF & Graceful Restart for MP-BGP IPv6 Address Family**

[http://www.cisco.com/en/US/docs/ios/ipv6/configuration/guide/ip6-mptcl\\_bgp.html](http://www.cisco.com/en/US/docs/ios/ipv6/configuration/guide/ip6-mptcl_bgp.html)

**IPv6: RIPng Non-Stop Forwarding**

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

**ISG: Instrumentation: DHCP Lease Query Support**

<http://www.cisco.com/en/US/partner/docs/ios-xml/ios/isg/configuration/12-2sr/isg-access-ip-sess.html>

**ISG: Session: Multicast: Coexistence**

[http://www.cisco.com/en/US/docs/ios/ios\\_xe/isg/configuration/guide/isg\\_access\\_sub\\_sessns\\_xe.html](http://www.cisco.com/en/US/docs/ios/ios_xe/isg/configuration/guide/isg_access_sub_sessns_xe.html)

**ISG: Session: Static Session Creation**

[http://www.cisco.com/en/US/docs/ios/isg/configuration/guide/isg\\_access\\_sub\\_sessns.html](http://www.cisco.com/en/US/docs/ios/isg/configuration/guide/isg_access_sub_sessns.html)

**ISG:AAA Wireless Enhancements**

[http://www.cisco.com/en/US/docs/ios/isg/configuration/guide/isg\\_radius\\_proxy.html](http://www.cisco.com/en/US/docs/ios/isg/configuration/guide/isg_radius_proxy.html)

**ISG: Authentication: Radius Proxy WiMax Enhancements**

[http://www.cisco.com/en/US/docs/ios/isg/configuration/guide/isg\\_radius\\_proxy.html](http://www.cisco.com/en/US/docs/ios/isg/configuration/guide/isg_radius_proxy.html)

**ISG: Policy Control: Differentiated Initial Policy Control**

[http://www.cisco.com/en/US/docs/ios/isg/configuration/guide/isg\\_cntrl\\_policies.html](http://www.cisco.com/en/US/docs/ios/isg/configuration/guide/isg_cntrl_policies.html)

**IS-IS - MPLS LDP Autoconfiguration**

[http://www.cisco.com/en/US/docs/ios/mpls/configuration/guide/mp\\_ldp\\_autoconfig.html](http://www.cisco.com/en/US/docs/ios/mpls/configuration/guide/mp_ldp_autoconfig.html)

**IS-IS - MPLS LDP Synchronization**

[http://www.cisco.com/en/US/docs/ios/mpls/configuration/guide/mp\\_ldp\\_igp\\_synch.html](http://www.cisco.com/en/US/docs/ios/mpls/configuration/guide/mp_ldp_igp_synch.html)

**ISSU - IPv4 Multicast**

[http://www.cisco.com/en/US/docs/ios/ipmulti/configuration/guide/imc\\_high\\_availability.html](http://www.cisco.com/en/US/docs/ios/ipmulti/configuration/guide/imc_high_availability.html)

**L2VPN Interworking: VLAN Enable/Disable Option for AToM**

[http://www.cisco.com/en/US/docs/ios/mpls/configuration/guide/mp\\_l2vpn\\_intrntwkg.html](http://www.cisco.com/en/US/docs/ios/mpls/configuration/guide/mp_l2vpn_intrntwkg.html)

**L2VPN Pseudowire Control Word Configuration (enable/disable/autosense)**

[http://www.cisco.com/en/US/docs/ios/mpls/configuration/guide/mp\\_l2vpn\\_intrntwkg.html](http://www.cisco.com/en/US/docs/ios/mpls/configuration/guide/mp_l2vpn_intrntwkg.html)

**L2VPN Pseudowire Redundancy for L2TPv3**

[http://www.cisco.com/en/US/docs/ios/wan/configuration/guide/wan\\_l2vpn\\_pw\\_red.html](http://www.cisco.com/en/US/docs/ios/wan/configuration/guide/wan_l2vpn_pw_red.html)

**L2VPN Pseudowire Switching**

[http://www.cisco.com/en/US/docs/ios/mpls/configuration/guide/mp\\_l2vpn\\_pseudo\\_swit.html](http://www.cisco.com/en/US/docs/ios/mpls/configuration/guide/mp_l2vpn_pseudo_swit.html)

**L2VPN PW Preferential Forwarding (Active/Standby Status)**

[http://www.cisco.com/en/US/docs/ios/mpls/configuration/guide/l2vpn\\_pw\\_preferential\\_forwarding.html](http://www.cisco.com/en/US/docs/ios/mpls/configuration/guide/l2vpn_pw_preferential_forwarding.html)

**L2VPN Support for ATM Cell Packing on Static PW**

[http://www.cisco.com/en/US/docs/ios/mpls/configuration/guide/mp\\_atom\\_pseud\\_prov.html](http://www.cisco.com/en/US/docs/ios/mpls/configuration/guide/mp_atom_pseud_prov.html)

**L3 Classification and Marking on EVC on ES20**

[http://www.cisco.com/en/US/docs/routers/7600/install\\_config/ES20\\_config\\_guide/bald\\_qos.html](http://www.cisco.com/en/US/docs/routers/7600/install_config/ES20_config_guide/bald_qos.html)

**L3/L4 Security ACL on Service Instance**

[http://www.cisco.com/en/US/docs/routers/7600/install\\_config/ES20\\_config\\_guide/bald\\_qos.html](http://www.cisco.com/en/US/docs/routers/7600/install_config/ES20_config_guide/bald_qos.html)

**Login Password Retry Lockout**

[http://www.cisco.com/en/US/docs/ios/sec\\_user\\_services/configuration/guide/sec\\_login\\_pw\\_retry\\_ps6350\\_TSD\\_Products\\_Configuration\\_Guide\\_Chapter.html](http://www.cisco.com/en/US/docs/ios/sec_user_services/configuration/guide/sec_login_pw_retry_ps6350_TSD_Products_Configuration_Guide_Chapter.html)



### **Label Switched Multicast Point-to-Multipoint Traffic Engineering**

[http://www.cisco.com/en/US/docs/ios/mpls/configuration/guide/mp\\_te\\_p2mp.html](http://www.cisco.com/en/US/docs/ios/mpls/configuration/guide/mp_te_p2mp.html)

### **Manual Load Balancing for EVC over Port-Channel/LACP**

[http://www.cisco.com/en/US/docs/routers/7600/install\\_config/ES20\\_config\\_guide/baldfc.html](http://www.cisco.com/en/US/docs/routers/7600/install_config/ES20_config_guide/baldfc.html)  
[http://www.cisco.com/en/US/docs/routers/7600/install\\_config/ES40\\_config\\_guide/es40\\_chap4.html](http://www.cisco.com/en/US/docs/routers/7600/install_config/ES40_config_guide/es40_chap4.html)

### **MLD Group Limits**

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

### **MPLS Support for Multi-Segment PWs - MPLS OAM/VCCV**

<http://www.cisco.com/en/US/docs/ios/mpls/configuration/guide/multisegmentpseudowires.html>

### **MPLS TE - Autoroute Destinations**

[http://www.cisco.com/en/US/docs/ios/mpls/configuration/guide/mp\\_te\\_interarea\\_tun.html](http://www.cisco.com/en/US/docs/ios/mpls/configuration/guide/mp_te_interarea_tun.html)

### **MPLS TE - Autotunnel/Automesh SSO Coexistence**

[http://www.cisco.com/en/US/docs/ios/mpls/configuration/guide/mp\\_te\\_autotun\\_mesh.html](http://www.cisco.com/en/US/docs/ios/mpls/configuration/guide/mp_te_autotun_mesh.html)  
[http://www.cisco.com/en/US/docs/ios/mpls/configuration/guide/mp\\_te\\_autotunnel.html](http://www.cisco.com/en/US/docs/ios/mpls/configuration/guide/mp_te_autotunnel.html)  
[http://www.cisco.com/en/US/docs/ios/mpls/configuration/guide/mp\\_te\\_rsvp\\_grace.html](http://www.cisco.com/en/US/docs/ios/mpls/configuration/guide/mp_te_rsvp_grace.html)

### **MPLS TE - Enhanced Path Protection**

[http://www.cisco.com/en/US/docs/ios/mpls/configuration/guide/mp\\_te\\_path\\_prot.html](http://www.cisco.com/en/US/docs/ios/mpls/configuration/guide/mp_te_path_prot.html)

### **MPLS Point-to-Multipoint Traffic Engineering**

[http://www.cisco.com/en/US/docs/ios/mpls/configuration/guide/mp\\_te\\_p2mp.html](http://www.cisco.com/en/US/docs/ios/mpls/configuration/guide/mp_te_p2mp.html)

### **MPLS VPN - L3VPN Over GRE on Cisco 7600 ES+ Series Linecards**

[http://www.cisco.com/en/US/docs/ios/mpls/configuration/guide/mp\\_vpn\\_gre.html](http://www.cisco.com/en/US/docs/ios/mpls/configuration/guide/mp_vpn_gre.html)

### **MPLS VPN over mGRE**

[http://www.cisco.com/en/US/docs/ios/interface/configuration/guide/ir\\_mplsvpnomgre.html](http://www.cisco.com/en/US/docs/ios/interface/configuration/guide/ir_mplsvpnomgre.html)

### **MSDP MD5 Password Authentication**

[http://www.cisco.com/en/US/docs/ios/ipmulti/configuration/guide/imc\\_msdp\\_im\\_pim\\_sm.html](http://www.cisco.com/en/US/docs/ios/ipmulti/configuration/guide/imc_msdp_im_pim_sm.html)

### **Multicast Address Group Range Support**

[http://www.cisco.com/en/US/docs/ios/12\\_2sr/release/notes/122SRrn.html#wp4786712](http://www.cisco.com/en/US/docs/ios/12_2sr/release/notes/122SRrn.html#wp4786712)

**Multicast MIB VRF Support**

<http://www.cisco.com/go/mibs> (Cisco.com login required)

**Multi-chassis LACP (mLACP)**

[http://www.cisco.com/en/US/docs/ios/cether/configuration/guide/ce\\_mlacp.html](http://www.cisco.com/en/US/docs/ios/cether/configuration/guide/ce_mlacp.html)

**Multi-Chassis Support for LACP**

[http://www.cisco.com/en/US/docs/routers/7600/install\\_config/ES40\\_config\\_guide/es40\\_chap4.html](http://www.cisco.com/en/US/docs/routers/7600/install_config/ES40_config_guide/es40_chap4.html)

**NSF/SSO - IPv4 Multicast**

[http://www.cisco.com/en/US/products/ps5845/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps5845/products_installation_and_configuration_guides_list.html)

**NSF/SSO - IPv6 Multicast**

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

**NSF/SSO and ISSU - MPLS VPN 6VPE and 6PE**

[http://www.cisco.com/en/US/docs/ios/mpls/configuration/guide/mp\\_6vpe\\_6pe\\_issu\\_sso.html](http://www.cisco.com/en/US/docs/ios/mpls/configuration/guide/mp_6vpe_6pe_issu_sso.html)

**NSSA-Only**

[http://www.cisco.com/en/US/docs/ios/iproute\\_pi/command/reference/iri\\_book.html](http://www.cisco.com/en/US/docs/ios/iproute_pi/command/reference/iri_book.html).

**OSPF Mechanism to Exclude Connected IP Prefixes from LSA Advertisements**

[http://www.cisco.com/en/US/docs/ios/iproute\\_ospf/configuration/guide/iro\\_ex\\_lsa.html](http://www.cisco.com/en/US/docs/ios/iproute_ospf/configuration/guide/iro_ex_lsa.html)

**OSPFv3 BFD**

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

**OSPFv3 Graceful Restart**

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

**Parser Concurrency and Locking Improvements**

[http://www.cisco.com/en/US/docs/ios/fundamentals/configuration/guide/cf\\_config-lock.html](http://www.cisco.com/en/US/docs/ios/fundamentals/configuration/guide/cf_config-lock.html)

**PfR EIGRP mGRE DMVPN Hub-and-Spoke Support**

<http://www.cisco.com/en/US/docs/ios/oer/configuration/guide/pfr-eigrp.html>

**PIM Stub**

[http://www.cisco.com/en/US/docs/ios/ipmulti/configuration/guide/imc\\_stub\\_routing.html](http://www.cisco.com/en/US/docs/ios/ipmulti/configuration/guide/imc_stub_routing.html)

### **PIM Triggered Joins**

[http://www.cisco.com/en/US/docs/ios/ipmulti/configuration/guide/imc\\_pim\\_triggered\\_joins.html](http://www.cisco.com/en/US/docs/ios/ipmulti/configuration/guide/imc_pim_triggered_joins.html)

### **Privilege Command Enhancements**

[http://www.cisco.com/en/US/docs/ios/12\\_0s/feature/guide/csprienh.html](http://www.cisco.com/en/US/docs/ios/12_0s/feature/guide/csprienh.html)

### **QoS - Per-VC QoS Classification for ATM VP Pseudowires**

[http://www.cisco.com/en/US/docs/ios/mpls/configuration/guide/qos\\_atm\\_vp\\_support.html](http://www.cisco.com/en/US/docs/ios/mpls/configuration/guide/qos_atm_vp_support.html)

### **QoS Support on Access Circuit Redundancy**

[http://www.cisco.com/en/US/docs/interfaces\\_modules/shared\\_port\\_adapters/configuration/7600series/sipspasw.html](http://www.cisco.com/en/US/docs/interfaces_modules/shared_port_adapters/configuration/7600series/sipspasw.html)

[http://www.cisco.com/en/US/products/hw/routers/ps368/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/hw/routers/ps368/products_installation_and_configuration_guides_list.html)

### **QoS: Service Group Support on 7600**

[http://www.cisco.com/en/US/docs/routers/7600/install\\_config/ES20\\_config\\_guide/bald\\_qos.html](http://www.cisco.com/en/US/docs/routers/7600/install_config/ES20_config_guide/bald_qos.html)

### **REP Integration with EVC and VPLS**

[http://www.cisco.com/en/US/docs/ios/lanswitch/configuration/guide/lsw\\_cfg\\_rep.html](http://www.cisco.com/en/US/docs/ios/lanswitch/configuration/guide/lsw_cfg_rep.html)

[http://www.cisco.com/en/US/docs/routers/7600/install\\_config/ES20\\_config\\_guide/baldfcg.html](http://www.cisco.com/en/US/docs/routers/7600/install_config/ES20_config_guide/baldfcg.html)

### **Reverse L2GP**

[http://www.cisco.com/en/US/docs/routers/7600/install\\_config/ES40\\_config\\_guide/es40\\_chap4.html](http://www.cisco.com/en/US/docs/routers/7600/install_config/ES40_config_guide/es40_chap4.html)

### **RMON MIB Enhancement to Support 64-bit Counters**

[http://www.cisco.com/en/US/docs/ios/netmgmt/configuration/guide/nm\\_cfg\\_rmon\\_sup.html](http://www.cisco.com/en/US/docs/ios/netmgmt/configuration/guide/nm_cfg_rmon_sup.html)

### **Server Load Balancing: BWG Sticky Support**

[http://www.cisco.com/en/US/docs/ios/ipapp/configuration/guide/12\\_2sr/iap\\_12\\_2sr\\_book.html](http://www.cisco.com/en/US/docs/ios/ipapp/configuration/guide/12_2sr/iap_12_2sr_book.html)

### **Server Load Balancing: GTPv2 Load Balancing**

[http://www.cisco.com/en/US/docs/ios/ipapp/configuration/guide/12\\_2sr/iap\\_12\\_2sr\\_book.html](http://www.cisco.com/en/US/docs/ios/ipapp/configuration/guide/12_2sr/iap_12_2sr_book.html)

### **Server Load Balancing: Sub-Interface Support**

[http://www.cisco.com/en/US/partner/docs/ios/ipapp/configuration/guide/ipapp\\_slb.html](http://www.cisco.com/en/US/partner/docs/ios/ipapp/configuration/guide/ipapp_slb.html)

### **Service Advertisement Framework (SAF)**

[http://www.cisco.com/en/US/docs/ios/saf/configuration/guide/saf\\_cg.html](http://www.cisco.com/en/US/docs/ios/saf/configuration/guide/saf_cg.html)

[http://www.cisco.com/en/US/docs/ios/saf/command/reference/saf\\_book.html](http://www.cisco.com/en/US/docs/ios/saf/command/reference/saf_book.html)

**Service Groups**

[http://www.cisco.com/en/US/docs/ios/qos/configuration/guide/service\\_groups.html](http://www.cisco.com/en/US/docs/ios/qos/configuration/guide/service_groups.html)

**Show Command for Interface Trap Status**

[http://www.cisco.com/en/US/docs/ios/netmgmt/command/reference/nm\\_book.html](http://www.cisco.com/en/US/docs/ios/netmgmt/command/reference/nm_book.html)

[http://www.cisco.com/en/US/docs/ios/netmgmt/configuration/guide/12\\_2sr/nm\\_12\\_2sr\\_book.html](http://www.cisco.com/en/US/docs/ios/netmgmt/configuration/guide/12_2sr/nm_12_2sr_book.html)

**SNMP Trap Simulation**

[http://www.cisco.com/en/US/docs/ios/netmgmt/configuration/guide/nm\\_cfg\\_snmp\\_sup.html](http://www.cisco.com/en/US/docs/ios/netmgmt/configuration/guide/nm_cfg_snmp_sup.html)

**SSO BFD**

[http://www.cisco.com/en/US/docs/ios/iproute\\_bfd/configuration/guide/irb\\_bfd.html](http://www.cisco.com/en/US/docs/ios/iproute_bfd/configuration/guide/irb_bfd.html)

**Static MAC Binding to EVCs and Pseudowires**

[http://www.cisco.com/en/US/docs/routers/7600/install\\_config/ES20\\_config\\_guide/baldcfg.html](http://www.cisco.com/en/US/docs/routers/7600/install_config/ES20_config_guide/baldcfg.html)

[http://www.cisco.com/en/US/docs/routers/7600/install\\_config/ES40\\_config\\_guide/es40\\_chap4.html](http://www.cisco.com/en/US/docs/routers/7600/install_config/ES40_config_guide/es40_chap4.html)

[http://www.cisco.com/en/US/products/ps5845/products\\_installation\\_and\\_configuration\\_guides\\_list.html](http://www.cisco.com/en/US/products/ps5845/products_installation_and_configuration_guides_list.html)

**Suppressing EXEC Accounting Record**

[http://www.cisco.com/en/US/docs/ios/vpdn/configuration/guide/config\\_aaa\\_for\\_vpdn.html](http://www.cisco.com/en/US/docs/ios/vpdn/configuration/guide/config_aaa_for_vpdn.html)

**Synchronous Ethernet Support**

[http://www.cisco.com/en/US/docs/routers/7600/install\\_config/ES40\\_config\\_guide/es40\\_sw\\_config.html](http://www.cisco.com/en/US/docs/routers/7600/install_config/ES40_config_guide/es40_sw_config.html)

**System Accounting Record Generation for Server Addition/Deletion Made VRF Aware**

[http://www.cisco.com/en/US/docs/ios/security/command/reference/sec\\_a2.html](http://www.cisco.com/en/US/docs/ios/security/command/reference/sec_a2.html)

**Triple Nesting QoS Support on SIP400**

[http://www.cisco.com/en/US/docs/interfaces\\_modules/shared\\_port\\_adapters/configuration/7600series/sipsasw.html](http://www.cisco.com/en/US/docs/interfaces_modules/shared_port_adapters/configuration/7600series/sipsasw.html)

**VP & VC Mode Cell Packing Support on Cisco 7600/SIP400**

[http://www.cisco.com/en/US/docs/interfaces\\_modules/shared\\_port\\_adapters/configuration/7600series/sipsasw.html](http://www.cisco.com/en/US/docs/interfaces_modules/shared_port_adapters/configuration/7600series/sipsasw.html)

**VPDN Extended Fail-Over**

[http://www.cisco.com/en/US/docs/ios/vpdn/configuration/guide/vpdn\\_tunnel\\_mgmt.html](http://www.cisco.com/en/US/docs/ios/vpdn/configuration/guide/vpdn_tunnel_mgmt.html)

## WCCP: VRF Support

[http://www.cisco.com/en/US/docs/ios/ipapp/configuration/guide/ipapp\\_wccp.html](http://www.cisco.com/en/US/docs/ios/ipapp/configuration/guide/ipapp_wccp.html)

## XML-PI

[http://www.cisco.com/en/US/docs/ios/netmgmt/configuration/guide/nm\\_xmlpi\\_v1.html](http://www.cisco.com/en/US/docs/ios/netmgmt/configuration/guide/nm_xmlpi_v1.html)

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