



# Release Notes for Cisco IOS Release 15.1S

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**Release: Cisco IOS Release 15.1(3)S6**  
**Part Number: OL-23821-03 Rev. IP**

## Introduction

These release notes support Cisco IOS Release 15.1S up to and including Cisco IOS Release 15.1(3)S6. These release notes are updated as needed to describe new features, caveats, and related documents.

The latest release of Cisco IOS Release 15.1S supports the Cisco 7200 series and Cisco 7300 series routers in addition to the Cisco 7600 series routers. Cisco IOS Release 15.1(3)S is the fourth release from the new 15S release model, so it is a long lived release that will have six maintenance releases. It includes many solution-oriented features and features from all the previous Cisco IOS software releases.

The modular Cisco 7200 series routers and Cisco 7301 router support a wide range of density, performance, and service requirements. The Cisco 7200 series routers and Cisco 7301 router offer a wide range of connectivity options and numerous features including serviceability and manageability. The Cisco 7200 series routers and Cisco 7301 router provide:

- Broadband aggregation: Up to 16,000 PPP sessions per chassis
- Multiprotocol Label Switching (MPLS) for provider-edge deployments
- Modular design: 3RU footprint with broad range of flexible, modular interfaces (from DS0 to OC-3)
- Flexibility: Support for Fast Ethernet, Gigabit Ethernet, and Packet over SONET

The latest release of Cisco IOS software for the Cisco 7600 series routers introduces new features and provides continued operational benefits for service providers. The Cisco 7600 series routers offer advanced wireless and wireline services and transport capabilities enabling Fix Mobile Convergence. Over 100 new features have been added in 15.1S, including the following:

- Optimized Transport and High Availability enhancements, including support for: MPLS-TP for Ethernet Access Circuits (enabling end-end solutions including Cisco's new Carrier Packet Transport and Cisco Prime Network Management), Access Circuit Redundancy (ACR) for ATM/IMA and Circuit Emulation, ATM Routed Bridge Encapsulation over PVCs, EVC Port Channel per Flow Load Balancing, Hot Standby PW Support for ATM and TDM Access Circuits, MST on LAG, REP Edge No-Neighbor, IP Tunnels L3VPN over mGRE MPLS MTU support, ISIS



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IPv4 Loop-Free Alternate Fast Reroute, MST/MST-AG BPDU PW on LAG NNI, Multiple BPDU PW support for R-L2GP, OSPFv2 Loop Free Alternate Fast ReRoute, ICCP Multi-chassis VLAN Redundancy, Circuit Emulation Service over UDP, VPLS Inter-AS Option B, and many BFD enhancements.

- Multicast specific features including support for: Multicast Label Distribution Protocol-Based Multicast VPN (mLDP MVPN), mLDP MVPN Extranet, mLDP MVPN Filtering and High Availability, Multicast VLAN Registration (MVR), and MVPN Data MDT mapping options.
- Advanced IPv6 features including support for: IPv6 Rapid Deployment (6rd), BGP IPv6 PIC Edge and Core for IP/MPLS, EIGRP IPv6 VRF-Lite, DHCPv6 Relay for MPLS VPN, DHCPv6 Server VRF awareness, and IPv6 Route Health Injection (IPv6 RHI) on ACE30.
- OAM enhancements including support for: MPLS-TP OAM, IEEE 802.1ab LLDP (Link Layer Discovery Protocol), IP SLAs Metro-Ethernet 3.0 with ITU-T Y.1731, ITU-T Y.1731 Performance Monitoring, IPoDWDM Virtual Transponder, IPoDWDM Performance Monitoring, Metric Enhancements for RRI, and many new MIBs.
- Inline Video Monitoring enhancements: including support for: MPLS and PPPoE encapsulation, switchport interfaces, RFC4445 MDI monitoring for RTP encapsulated flows, RTP metric reporting, service availability reporting, and monitoring of SDI / HD-SDI flows common in video contribution networks.
- QoS enhancements including: Service Groups for Subinterfaces and Access Subinterfaces, Bandwidth Profile (Weight Assignment) sharing across Layer 3 and Layer 4 on Ethernet Services Plus (ES+) line cards, Layer 2 Access Control Lists (ACL) on EVCs, Layer 3/4 Access Control Lists (ACL) on Service Instance, Port-Level shaping concurrent with 4-Level Hierarchical QoS on ES+ line cards, Egress QoS scheduling for Port-Channel Interfaces, Layer 2 and Layer 3 QoS ACL Classification for EVC on ES+ line cards, and Layer 3 QoS support on CEoP SPAs.
- Synchronization features including: IEEE 1588v2 Feature Enhancements on the Metronome SPA, SSM support on SPA-1XCHOC12/DS0 and SPA-1XOC48POS/RPR, 1588v2 PTP Best Master Clock Algorithm (BMCA), and MIB Support for 1588v2 and SynchE.