



What's New for Cisco IOS XE Bengaluru 17.4.x

This chapter describes the new hardware and software features supported on the Cisco ASR 900 Series routers in Cisco IOS XE Bengaluru 17.4.x.

For information on features supported for each release, see [Feature Compatibility Matrix](#).

- [What's New in Hardware for Cisco IOS XE Bengaluru 17.4.2, on page 1](#)
- [What's New in Software for Cisco IOS XE Bengaluru 17.4.2, on page 1](#)
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What's New in Hardware for Cisco IOS XE Bengaluru 17.4.2

There are no new hardware features for this release.

What's New in Software for Cisco IOS XE Bengaluru 17.4.2

There are no new software features for this release.

What's New in Hardware for Cisco IOS XE Bengaluru 17.4.1

The following optics are supported for the Cisco IOS XE Bengaluru 17.4.1 release:

- OPTICS - QSFP-100G-ER4L-S=
- OPTICS - ONS-SI-100-LX10=
- OPTICS - ONS-SE-100-BX10D=
- OPTICS - ONS-SE-100-BX10U=
- OPTICS - ONS-SI-100-FX=

For more information, see the [Cisco ASR 900 Series Aggregation Services Routers Feature Optics Matrix](#).

What's New in Software for Cisco IOS XE Bengaluru 17.4.1

Feature	Description
1-Port OC-192 or 8-Port Low Rate CEM Interface Module	
Support for all 0s and 1s BERT Patterns	Support for all 0s and 1s BERT patterns on the following Interface Modules: <ul style="list-style-type: none"> • 48-Port T1 or E1 CEM Interface Module • 48-Port T3 or E3 CEM Interface Module • 1 port OC-48/STM-16 or 4 port OC-12/OC-3 / STM-1/STM-4 + 12 port T1/E1 + 4 port T3/E3 CEM Interface Module • 1-Port OC-192 or 8-Port Low Rate CEM Interface Module • ASR 900 Combo 8-Port SFP GE and 1-Port 10 GE 20G Interface Module
CEM and IP IW Feature Parity for A900-IMA1Z8S-CXMS and A900-IMA3G-IMSG Interface Modules	<ul style="list-style-type: none"> • APS and non-APS support for SDH and SONET for iMSG IPv6 interworking • NxDS0 iMSG IPv4 and NxDS0 APS iMSG IPv4 • UPSR IPv6 • IPv4 and IPv6 with VLAN handoff for both cross connect and local connect
BERT Error Injection	BERT Error injection enables you to inject errors into the BERT stream on SONET and SDH controllers. You can introduce BERT errors in a range of 1 to 255. This feature is introduced on the following Interface Modules: <ul style="list-style-type: none"> • 1 port OC-48/STM-16 or 4 port OC-12/OC-3 / STM-1/STM-4 + 12 port T1/E1 + 4 port T3/E3 CEM Interface Module • 1-Port OC-192 or 8-Port Low Rate CEM Interface Module
DCC Termination	Support for DCC Termination on 1 port OC-48/STM-16 or 4 port OC-12/OC-3 / STM-1/STM-4 + 12 port T1/E1 + 4 port T3/E3 CEM Interface Module.
1 port OC-48/STM-16 or 4 port OC-12/OC-3 / STM-1/STM-4 + 12 port T1/E1 + 4 port T3/E3 CEM Interface Module	
IPv6 VLAN Handoff and 4k iMSG scale	VLAN handoff supports IPv4 and IPv6 local connect and cross connect.
STS1E Framed SAToP Support on IMA3G	Support on clock recovery on STS-1e controller for framed SAToP on the following modes: <ul style="list-style-type: none"> • T3 • CT3 • VT-15
IP Routing: Protocol-Independent	

Feature	Description
On-Change Notifications for IS-IS State	This feature allows you to externalize the internal state of the router for the operational data and thus enables you to access the internal state of the router. It helps in sending on-change notifications to the receiver for any change of state, for example, when the adjacency goes up or down.
Segment Routing	
L2VPN over SR-TE Preferred Path	This feature allows you to configure an SR policy as the preferred path for a VPWS or VPLS pseudowire. VPWS or VPLS pseudowires between same PEs can be routed over different SR policies based on the requirements. Prior to this release, you could only steer the traffic using the SR policy for routing IPv4 traffic to a destination pseudowire (over IGP or BGP-LU).
PCE Initiated SR Policy with OSPF Autoroute Announce	This feature enables a steering mechanism in which IGPs automatically use the policy for destination's downstream of the policy end point.
Segment Routing Flexible Algorithm support for TI-LFA uLoop Avoidance, SID Leaking, and ODN with Auto-Steering	<p>This feature allows you to compute Loop Free Alternate (LFA) paths, TI-LFA backup paths, and Microloop Avoidance paths for a particular Flexible Algorithm using the same constraints as the calculation of the primary paths for such Flexible Algorithms, for IS-IS.</p> <p>Inter-area leaking of Flexible Algorithm SIDs and prefixes and selectively filtering the paths that are installed to the MFI are also supported.</p>
Telemetry (Model-Based Telemetry and Event-Based Telemetry) Support for Performance Measurement	<p>This feature enables Model-Based Telemetry (MDT) and Event-Based Telemetry (EDT) that allow the data to be directed to a configured receiver. This data can be used for analysis and troubleshooting purposes to maintain the health of the network.</p> <p>The <code>sr_5_label_push_enable</code> SDM template is mandatory for this feature to function.</p>
MPLS Basic	
Re-optimization with Tunnel Bandwidth Modification on Flex-LSP Protect Path	<p>This feature supports Make Before Break (MBB) functionality and thus ensures there is no traffic loss when a MPLS Flex LSP tunnel runs on protect LSP (if working LSP goes down) and the tunnel bandwidth is modified.</p> <p>When the working LSP comes up, use the following command to manually switch from the working to protect LSP: mpls traffic-eng switch tunnel <i>tunnel-ID</i>.</p>
IP Routing: BGP	
Convergence Enhancements for L3VPN Traffic over BGP PIC Edge	<p>The BGP PIC feature is enhanced to achieve the sub-second convergence for greater than 2000 VPNv4/v6 prefixes using the hardware assisted PIC Edge functionality. Prior to this release, the BGP PIC Edge convergence could only be observed in seconds.</p> <p>To enable the feature, use the following new command: platform l3vpn pic-enable</p>
IP Routing: BFD	

Feature	Description
BFD over G8032 and Multi EFP BDI	Scale numbers for BFD and hardware offload are enhanced for the Cisco RSP2 and Cisco RSP3 modules.
Cisco ASR 900 Router Series	
Increase Maximum MTU Size	Maximum Transmission Unit (MTU) is increased to a maximum of 9644 bytes on the Cisco RSP3 module. You can configure the MTU bytes using the mtu bytes command.
VLAN Translation for RSP3	VLAN translation provides flexibility in managing VLANs and Metro Ethernet-related services. You can configure 1:1 and 2:1 VLAN translations using the sdm prefer enable_vlan_translation command on the Cisco RSP3 module.
CCP User Secret and Enable Secret masking	To support Common Criteria Policy validation for the masked secret.
IP Multicast: Multicast	
Multicast SLA Measurement with MLDP	Display of aggregated egress multicast stats for BDI interfaces on Head node, which is part of the MLDP core is supported.
Upgrading the Software on the Cisco ASR 900 Series Routers	
Secondary ROMMON Partition Auto Upgrade	This feature supports secondary ROMMON partition auto upgrade after a successful primary ROMMON partition is complete.
IP SLAs	
Configurable User-Defined and EMIX Packet Size	This feature allows you to configure user-defined and Enterprise traffic (EMIX) packet sizes. Use the following commands to configure user-defined and EMIX packet sizes: <ul style="list-style-type: none"> • packet-size user-defined <i>packet size</i> • packet-size emix sequence <i>emix-sequence</i>[u-value <i>u-value</i> <i>value</i>]
IOT Interface Modules	
Support for A900-IMA6EM and A900-IMA4C3794 on A900-RSP3C-400-S and Cisco A900-RSP3C-200	This feature supports A900-IMA6EM and A900-IMA4C3794 interface modules on the Cisco A900-RSP3C-400, and on slot 4 on Cisco A900-RSP3C-200.

Other Supported Features in this Release

- **Programmability Features**

- Complete YANG Model for Ethernet EVC Configuration—An Ethernet Virtual Connection (EVC) is defined by the Metro-Ethernet Forum (MEF) as an association between two or more user network

interfaces that identifies a point-to-point or multipoint-to-multipoint path within the service provider network. An EVC is a conceptual service pipe within the service provider network.

- Complete YANG Model for CFM Configuration—Ethernet Connectivity Fault Management (CFM) is an end-to-end per-service-instance Ethernet layer operations, administration, and maintenance (OAM) protocol. It includes proactive connectivity monitoring, fault verification, and fault isolation for large Ethernet metropolitan-area networks (MANs) and WANs.

YANG Data Models—For the list of Cisco IOS XE YANG models available with this release, navigate to <https://github.com/YangModels/yang/tree/master/vendor/cisco/xe/1741>

Revision statements embedded in the YANG files indicate if there has been a model revision. The README.md file in the same GitHub location highlights changes that have been made in the release.

For more information, see *Programmability Configuration Guide, Cisco IOS XE Bengaluru 17.4.x*.

