New Features

This chapter describes the new hardware and software features supported on the Cisco ASR 920 Series routers in the following releases:

New Hardware Features in Cisco IOS XE Gibraltar 16.11.1c

There are no new hardware features for this release.

New Software Features in Cisco IOS XE Gibraltar 16.11.1c

There are no new software features for this release.

New Hardware Features in Cisco IOS XE Gibraltar 16.11.1a

There are no new hardware features for this release.

New Software Features in Cisco IOS XE Gibraltar 16.11.1a

- **Alarm Profile and Auto In Service States**

  The Alarm Profiling feature enables you to create a unique alarm profiles for chassis, card or interface module and port. You can also enable Auto In Service (AINS) through the Alarm Profile by using the ains command. To configure the alarm profiles, you must create profiles either for the chassis, card or port and define the severities for each alarm and then attach the profile onto the corresponding chassis, card or port.

  The Cisco ASR920 Series Routers support Configuration of Interface modules in Administrative Configuration Mode according to the Telecordia GR-1093. For more information, see Auto-in-Service States, Cisco IOS XE Gibraltar 16.11.x (ASR20 Series)

- **Control Plane Policing Overview**

  The IPv4 control packets are punted into the respective CPU queues instead of host queues, if MPLS explicit NULL labels are tagged. Use the **platform qos-feature copp-mpls enable** command, to enable CoPP on the device for MPLS explicit null scenario.

  For more information, see the QoS: Policing and Shaping Configuration Guide, Cisco IOS XE Gibraltar 16.11.x (Cisco ASR 920 Series).

- **CoS Marking for Local Traffic on the RSP2 Module**

  CoS marking is supported on the following list of supported protocols for locally generated traffic:

  - SNMP
  - NTP
  - TELNET
  - SSH
  - TFTP
  - Syslog
  - FTP
  - DNS
  - TACACS
  - ICMP

  Use the platform **cos-mark protocol <protocol> cos-value <cos-value>** command to enable CoS marking on protocols.

  For more information on CoS marking, see Quality of Service Configuration Guidelines, Cisco IOS XE Gibraltar 16.11.x (Cisco ASR 920 Series).

- **IP SLA for Pseudowire on the RSP2 Module**

  The IP SLAs VCCV operation supports Virtual Circuit Connectivity Verification (VCCV) for Pseudo-Wire Emulation Edge-to-Edge (PWE3) services across MPLS networks.

  The IP SLAs VCCV operation type is based on the **ping mpls** pseudowire command, which checks MPLS LSP connectivity across an Any Transport over MPLS (AToM) virtual circuit (VC) by sending a series of pseudo-wire ping operations to the specified destination PE router.

  For more information on IP SLA for Pseudowire, see IP SLAs Configuration Guide, Cisco IOS XE Gibraltar 16.11.x (Cisco ASR 920 Series).

- **IPv4 Layer 3 Termination on HDLC or PPP Serial Interfaces**

  Starting with Cisco IOS XE 16.11.x release, you can perform IPv4 Layer 3 termination on HDLC or PPP serial interfaces for RSP3 module on the Cisco ASR 920 Series 4-Port OC3/STM-1 or 1-Port OC12/STM-4 Module.

  IPv4 routing can be performed using standard routing protocols such as OSPF, BGP, IS-IS, EIGRP, and RIP. For more information see the 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 Configuration Guide, Cisco IOS XE Fuji 16.11.x (ASR 920 Series Routers)

- **Interworking Multiservice Gateway Access Circuit Redundancy**

  Interworking Multiservice Gateway Access Circuit Redundancy (iMSG ACR) is supported on Cisco ASR 900 RSP2 and RSP3 modules. The iMSG ACR enables local switching for serial interfaces by creating a virtual serial-ACR interface. All configuration changes made on the virtual serial-ACR interface are applied automatically on both the working and protect interfaces.

  For more information, see the 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 Configuration Guide Cisco IOS XE Gibraltar 16.11.x (Cisco ASR 920 Series).

- **IPv4 Unicast Generic Routing Encapsulation Tunnel**

  IPv4 Unicast Generic Routing Encapsulation Tunnel is supported on ASR 900 RSP2 module.

  For more information, see the MPLS: Layer 3 VPNs Configuration Guide, Cisco IOS XE Fuji 16.11.x, (Cisco ASR 920 Series).

- **MPLS TE: Newer SR-TE Policy Command, SR-TE: Affinity constraints for ODN, SR-TE ODN Color Extended Community (L3VPN)**

  Effective Cisco IOS XE Gibraltar 16.11.1, the Cisco ASR 920 Series routers support:

  - MPLS TE New SR-TE Policy command:

    Effective 16.11, there is a new command (**segment-routing traffic-eng)** to configure the SR policy under segment routing.

  - Color-extended community:

    Effective Cisco IOS XE Gibraltar 16.11.1, ‘color extended’ community is added as follows:

    - An egress router adds the ‘color extended’ community to the BGP updates that require a Traffic-Engineered path
    - A segment routed Traffic Engineering (SR-TE) policy is created on the ingress router for the Color-Endpoint pair

  - Affinity constraints:

    Affinity is a 32-bit constraint used by the PCE and PCALC for calculating paths that take the ‘affinity constraint’ into account. Affinity constraints let you assign, or map, color names for path affinities. After mappings are defined, the attributes can be referred to by the corresponding color name

  - Disjointness constraints:

    Disjointness describes two or more services that must be completely disjoint of each other. Disjointness is useful for providing traffic flow redundancy in the network.

  For more information, see the Segment Routing Configuration Guide, Cisco IOS XE Gibraltar 16.11.x (Cisco ASR 920 Series Routers).

- **Micro BFD**

  The BFD feature on ASR 920 supports micro BFD sessions on individual port channel member links to monitor Layer 3 connectivity on those links. With micro BFD feature, BFD is able to verify the ability of each member link to be able to forward Layer 3 packets and appropriately update the load balance.

  For more information, see the IP Routing: BFD Configuration Guide, Cisco IOS XE Gibraltar 16.11.x (Cisco ASR 920 Series).

- **Policer Adjustment in QoS Policy Map**

  Policers are configured usually at a value range of 64,000–10 G whereas the hardware policer is programmed only to discrete value. The policer rate received is less than that of the configured CIR and PIR values. The policer adjustment feature is added to adjust the CIR and PIR values of hardware policer either to match the configured value or to the next higher value available in hardware.

  The policer adjustment feature is supported on the RSP2 module. For more information see the QoS: Policing and Shaping Configuration Guide, Cisco IOS XE Gibraltar 16.11.x (Cisco ASR 920 Series)

- **PTP Asymmetry Readjustment**

  Effective Cisco IOS XE Gibraltar 16.11.1, PTP asymmetry readjustment can be performed on each PTP node to compensate for the delay in the network.

  For more information, see Timing and Synchronization Configuration Guide, Cisco IOS XE Gibraltar 16.11.x (Cisco ASR 900 Series).

- **QoS Overhead Accounting Overview**

  Overhead accounting enables the router to account for packet overhead when shaping traffic to a specific rate.

  This accounting ensures that the router executes quality of service (QoS) features on the actual bandwidth used by subscriber traffic.

  The overhead accounting feature enables the router to account for downstream Ethernet frame headers when applying shaping to packets. The traffic scheduler allows a minimum amount of value more than the configured rate at the port, in addition to the excess bytes configured on that port.

  For more information, see the QoS: Policing and Shaping Configuration Guide, Cisco IOS XE Gibraltar 16.11.x (Cisco ASR 920 Series)

- **Seven Segment Routing-Traffic Engineering Label Support**

  Effective Cisco IOS XE Gibraltar 16.11.1, the Cisco ASR 920 router supports more than one SR-TE label in both, the primary and backup paths. This increase in number of labels is achieved by recirculating the FRR backup path.

  For more information, see Segment Routing, Cisco IOS XE Gibraltar 16.11.x (Cisco ASR 920 Routers).

- **Unidirectional Path Switching Ring Over HDLC**

  A Unidirectional Path Switching Ring (UPSR) over HDLC is supported on Cisco ASR 920.

  In an access network, the UPSR serial traffic is processed with an HDLC encapsulation protocol. UPSR is supported on modes such as VT 1.5, STS 3c, and T3.

  For more information, see the 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 Configuration Guide Cisco IOS XE Gibraltar 16.11.x (Cisco ASR 920 Series).

- **Video Template - IPv4 QoS classifications**

  The max-qos-video template supports increased QoS support to 4000 and decreases IPv4 ACL to 2000.

  For more information, see the Cisco ASR 920 Router Series Configuration Guide, Cisco IOS XE Gibraltar 16.11.x.