New Features

This chapter describes the new hardware and software features supported on the Cisco NCS 4200 Series in this release.

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New Software Features in Cisco IOS XE Gibraltar 16.12.8

There are no new software features introduced for Cisco IOS XE Release 16.12.8.

New Hardware Features in Cisco IOS XE Gibraltar 16.12.8

There are no new hardware features introduced for Cisco IOS XE Release 16.12.8.

New Software Features in Cisco IOS XE Gibraltar 16.12.7

There are no new software features introduced for Cisco IOS XE Release 16.12.7.

New Hardware Features in Cisco IOS XE Gibraltar 16.12.7

There are no new hardware features introduced for Cisco IOS XE Release 16.12.7.

New Software Features in Cisco IOS XE Gibraltar 16.12.6

There are no new software features introduced for Cisco IOS XE Release 16.12.6.

New Hardware Features in Cisco IOS XE Gibraltar 16.12.6

There are no new hardware features introduced for Cisco IOS XE Release 16.12.6.

New Software Features in Cisco IOS XE Gibraltar 16.12.5

There are no new software features introduced for Cisco IOS XE Release 16.12.5.

New Hardware Features in Cisco IOS XE Gibraltar 16.12.5

There are no new hardware features introduced for Cisco IOS XE Release 16.12.5.

New Hardware Features for NCS 4206 and NCS 4216 in Cisco IOS XE Gibraltar 16.12.4

There are no new features introduced for this release.

New Software Features for NCS 4206 and NCS 4216 in Cisco IOS XE Gibraltar 16.12.4

- **Configurable Y.1564 Service Activation Frame Sizes and EMIX Support**

  Enterprise traffic (EMIX) packet size (default abceg pattern) is supported. For EMIX traffic, ITU-T Rec. Y.1564 packet sizes of 64, 128, 256, 1024, and 1518 bytes are supported.

  For more information, see the IP SLAs Configuration Guide, Cisco IOS XE 17 (Cisco ASR 4200 Series).

- **OPTICS: ONS-SI-GE-EX and ONS-SI-GE-LX Support**

  The optics, ONS-SI-GE-EX and ONS-SI-GE-LX are supported on the Cisco NCS4200-1T16G-PS interface module.

  For more information, see the Optics Matrix for ASR 900.

New Hardware Features for NCS 4206 and NCS 4216 in Cisco IOS XE Gibraltar 16.12.3

There are no new features introduced for this release.

New Software Features for NCS 4206 and NCS 4216 in Cisco IOS XE Gibraltar 16.12.3

There are no new features introduced for this release.

New Hardware Features for NCS 4206 and NCS 4216 in Cisco IOS XE Gibraltar 16.12.2

There are no new features introduced for this release.

New Software Features for NCS 4206 and NCS 4216 in Cisco IOS XE Gibraltar 16.12.2

There are no new features introduced for this release.

New Hardware Features for NCS 4206 and NCS 4216 in Cisco IOS XE Gibraltar 16.12.1

- **NCS 4200 1x10 Gigabit MR + 8-Port Low Rate 20 Gigabit CEM, iMSG Interface Module (NCS4200-1T8S-20CS)**

  The 1-Port 10 Gigabit MR and 8-Port LR 20 Gigabit CEM and iMSG Interface Module is a cost-effective interface module (IM) that supports CEM features on the OCn interfaces. This interface module is supported on the Cisco NCS 4206 Router, Cisco NCS 4216 Router, and Cisco NCS 4216 F2B Router.

  For more information about this IM for any of the supported routers, see the NCS 4200 Series Aggregation Services Routers Hardware Installation Guides.

  For more information on Feature Optics Matrix, see the Cisco NCS 4206-16 Series Aggregation Services Routers Feature Optics Matrix.

New Software Features for NCS 4206 and NCS 4216 in Cisco IOS XE Gibraltar 16.12.1

- **1-Port 10 Gigabit MR and 8-Port LR 20 Gigabit CEM and iMSG Interface Module Support**

  The 1-Port 10 Gigabit MR and 8-Port LR 20 Gigabit CEM and iMSG interface module (NCS4200-1T8S-20CS) is supported on the Cisco RSP3 module and has the capability for SONET or SDH termination, SAToP, CESoP, and CEP.

  For more information on configuring theNCS4200-1T8S-20CS interface module, see the 1-Port OC-192 or 8-Port Low Rate CEM Interface Module Configuration Guide, Cisco IOS XE Gibraltar 16.12.x (Cisco NCS 4200 Series).

Note The Multiservice Gateway features are not supported on this IM for Cisco IOS XE Release 16.12.1.

- **Five-Tupple Hash Load Balancing Support**

  The router supports different load balancing hash algorithms with combinations of MAC (Layer 2) or IP (Layer 3) headers on the RSP3 platform to find the hash key. The five-Tupple hash algorithm on RSP3 includes protocol field and Layer 4 port numbers while calculating the hash key.

  For more information, see the Ethernet Channel Configuration Guide Cisco IOS XE Gibraltar 16.12.x (Cisco NCS 4200 Series).

- **Generic Routing Encapsulation (GRE) Feature Updates**

  Generic Routing Encapsulation (GRE) tunneling protocol provides a simple generic approach to transport packets of one protocol over another protocol by means of encapsulation.

  GRE supports the following features:

  - IPv4 or IPv6 Global over GRE (IPv4 Core)
  - VRF Lite over GRE

  For more information on GRE, see the MPLS: Layer 3 VPNs Configuration Guide, Cisco IOS XE Gibraltar 16.12.x (Cisco NCS 4200 Series)

- **Maximum Transmission Unit Support on Bridge Domain Interface**

  On the Cisco RSP3 module, filtering of IP packets and MPLS-IP packets that egress out Bridge Domain Interface (BDI) is performed based on the Maximum Transmission Unit (MTU) value of the physical interface. The constraint where the BDI inherits the physical interface's MTU causes a limitation, for example, fragmentation or dropping of packets, during network deployments. To avoid such limitation, ensure that you configure BDI MTU.

  For more information on BDI MTU support, see the Carrier Ethernet Configuration Guide, Cisco IOS XE Gibraltar 16.12.x (Cisco NCS 4200 Series).

- **MPLS Layer 3 VPN Conditional Marking**

The MPLS Layer 3 conditional marking feature marks the traffic with appropriate QoS group and sets policer to mark the color (discard class) based on Committed Information Rate (CIR) and Peak Information Rate (PIR) values. You can use the QoS group to create ingress policy map.

For more information to configure MPLS Layer 3 VPN conditional marking, see the Quality of Service Configuration Guidelines, Cisco IOS XE Gibraltar 16.12.x (Cisco NCS4200 Series).

- **Psuedowire Scale Support**

  Effective from the Cisco IOS XE 16.12.x release, CEM scale of 21504 psuedowires is supported on the Cisco routers.

  For more information on the pseudowire scale support, see the 1-Port OC-192 or 8-Port Low Rate CEM Interface Module Configuration Guide, Cisco IOS XE Gibraltar 16.12.x (Cisco NCS 4200 Series).

- **QoS Short-pipe Mode**

  QoS short-pipe mode is supported on the RSP3 module. You can enable this feature using the SDM template.

  You can identify the egress traffic on an interface or on EVC and classify based on DSCP, mark qos-group, and color using the **platform table-map** command.

  For more information on how to enable short-pipe mode, see the Quality of Service Configuration Guidelines, Cisco IOS XE Gibraltar 16.12.x (Cisco NCS 4200 Series).

- **Segment Routing uLoop Avoidance**

  The Segment Routing uLoop Avoidance feature prevents the occurrences of microloops during network convergence after a link-down event or link-up event.

  For more information, see the Segment Routing Configuration Guide, Cisco IOS XE Gibraltar 16.12.x (Cisco NCS 4200 Series).