

New Features

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New Features for Cisco IOS XE 26.2.1

New features in this release are:

- Segment Routing over MPLS
- IKEv2 and IPsec PFS Post Quantum Cryptography
- Post Quantum Cryptography for SSHv2 sessions
- DHCP Option 82

New Features for Cisco IOS XE 26.1.2

New features in this release are:

- Support for P-5GS6-RC-GL PIM

New Features for Cisco IOS XE 26.1.1

New features in this release are:

- Segment Routing over IPv6
- GPS NMEA unique identifier
- Support for 20,000 Router Instances

New Features for Cisco IOS XE 17.18.2

New features in this release are:

- Cellular Network Slicing
- HVPLS N-PE Redundancy for MPLS Access
- Cisco ThousandEyes Enterprise Agent
- Common HSEC License

New Features for Cisco IOS XE 17.18.1a

New feature in this release are listed below:

- IRM-1100-4S8I Expansion Module
- Support for jumbo frames
- IP Device Tracking
- VRF for the P-LTE-450 module
- Inline Tagging on switch interfaces
- IRM-1100-4S8I Expansion Module
- Quantum-Safe Encryption using Postquantum Preshared Keys

New Features for Cisco IOS XE 17.17.1

New feature in this release is listed below:

- Multi-Homing Configuration in BGP EVPN VXLAN Fabric

New Features for Cisco IOS XE 17.16.1a

New features in this release are listed below:

- Monitoring Radio Signal Parameters and GPS Coordinates of Cellular Telemetry using Syslog Messages
- Enhancing P-LTE-450 Network Management Through SNMP MIB Objects
- mSATA LED Toggling
- Raw Socket Multi Host Capability

New Features for Cisco IOS XE 17.15.1a

New features in this release are listed below:

- Dying Gasp Support on Ethernet or GigEthernet and SFP Port on IR1101
- 2nd L3 WAN Port for IR1101

New Features for Cisco IOS XE 17.14.1a

New features in this release are listed below:

- Support for P-LTE-450 Pluggable Interface Module.
- Support for Class B End Devices in the LoRaWAN Network
- Support for MACsec and IPsec Encryption

New Features for Cisco IOS XE 17.13.1

This chapter contains the following sections:

- IOx Access to USB Storage
- P-LTE-450 Support on Autonomous Mode
- P-LTE-450 Support Over SDWAN/vManage
- Additional Modem Support for Cellular Pluggable Modules

- SD-WAN Remote Access (SD-WAN RA)
- Change in CLI Output for the FN980 5G Modem.

New Features for Cisco IOS XE 17.12.1a

New features in this release are listed below:

- Support for P-LTE-450
- HDLC Support for SCATS Overview
- Uncapped License Implementation

New Features for Cisco IOS XE 17.11.1a

New features in this release are listed below:

- Async Serial Port for Console
- Change to Smart Licensing Packaging
- Galileo Support on the LTE Pluggable Modules

New Features for Cisco IOS XE 17.10.1a

New features in this release are listed below:

- Software Supported MACsec
- High Security (HSEC) License
- Enable Secure Data Wipe Capabilities
- Rawsocket Keepalive Configuration CLI

New Features for Cisco IOS XE 17.9.1

New features in this release are listed below:

- Cellular Boot Time Improvements
- IOS XE Downgrade Warning
- SNMP Polling of Temperature OID
- GPS Mode Enabled By Default
- Install Mode Support

- Cisco WebUI Access Point Name (APN)

New Features for Cisco IOS XE 17.8.1

- Support for DSL Annex B
- Support for mSATA and IO Support for IRM-1100-SPMI in CM Side
- gRPC Network Operations Interface updates
- GNMI Broker update
- Raw socket feature enhancement
- SCADA enhancement for TNB

Cellular serviceability enhancements

Cellular serviceability enhancements are debugging features that:

- enable trigger points and debug code via controller cellular CLIs for automatic generation and trapping of debug data without manual intervention,
- provide context-based debug logs including tracebacks and GPS locations, and
- create well-formatted debug messages with vendor-specific debug data at a broader range.

Available CLI options

The following CLI options are available for cellular serviceability:

```
(config-controller)#lte modem serviceability ?
  gps               GPS debugging
  interface-resets  Interface resets/Bearer deletion
  modem-crash       Modem-crash debugging
  modem-resets      IOS initiated unknown modem-resets
```

The debug data includes:

- Context Based debug logs (tracebacks, and GPS locations).
- Well formatted debug messages.
- Vendor specific debug data at a broader range.

The debug logs are located in the following location of flash:

```
router#dir flash:servelogs
Directory of bootflash:/servelogs/

259340  -rw-              122   Sep 7 2021 17:40:44 +00:00  gpslog-slot5-20210907-174044
259339  -rw-             1734   Sep 7 2021 12:14:07 +00:00  celllog-slot5-20210905-164628
```

GPS and cellular log files are created separately with file names using the timestamp at the time of the creation. These files are created as follows:

- If the existing file has reached 10Mb, a new file will be created.

- A new file will be created if the feature (GPS, or cellular) is completely disabled, and then re-enabled.

New Features for Cisco IOS XE 17.7.1

- IRM-1100 Expansion Module on the Compute Side
- Support ADSL MIB Objects
- Support VDSL MIB Objects
- Support 1G SFPs

New Features for Cisco IOS-XE 17.6.1

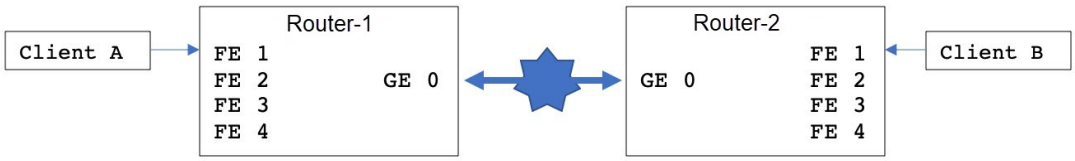
- Custom Controlled LED
- Support DSL SFP Firmware Signing and Signature Validation
- DSL SFP Annex M support
- Support Four ADSL MIB Objects
- Digital IO Enhancement

New Features for Cisco IOS-XE 17.5.1

- DSL SFP Annex J support
- Dying-Gasp SMS Notification for EM74XX Modems
- SNMP MIB for Digital I/O
- GPS access to IOx Apps
- Yang model for mSATA
- Guest Shell as IOx Container APP
- SNMP MIB supports the show power CLI
- Yang Model for DSL
- DNP3 Enhancement

VXLAN

VXLAN is a MAC in IP/UDP (MAC-in-UDP) encapsulation technique with a 24-bit segment identifier in the form of a VXLAN ID. The larger VXLAN ID allows LAN segments to scale to 16 million in a cloud network. In addition, the IP/UDP encapsulation allows each LAN segment to be extended across existing Layer 3 networks, making use of Layer 3 Equal-Cost Multi-Path (ECMP).



The configuration for the two devices is shown in the following table:

Router-1	Router-2
bridge-domain 1 member vni 6001 member Vlan100 service-instance 1 ! interface Loopback1 ip address 200.200.200.200 255.255.255.255 ! interface GigabitEthernet0/0/0 ip address 192.168.1.2 255.255.255.0 media-type rj45 ! interface FastEthernet0/0/1 switchport access vlan 100 ! interface Vlan100 no ip address service instance 1 ethernet encapsulation dot1q 100 //untag ! interface nve1 no ip address source-interface Loopback1 member vni 6001 ingress-replication 100.100.100.100 ! ip forward-protocol nd ip pim rp-address 200.200.200.200 ip http server ip http secure-server ip route 0.0.0.0 0.0.0.0 192.168.1.3 !	bridge-domain 1 member vni 6001 member Vlan100 service-instance 1 ! interface Loopback1 ip address 100.100.100.100 255.255.255.255 ! interface GigabitEthernet0/0/0 ip address 192.168.1.3 255.255.255.0 media-type rj45 ! interface FastEthernet0/0/1 switchport access vlan 100 ! interface Vlan100 no ip address service instance 1 ethernet encapsulation dot1q 100 //untag ! interface nve1 no ip address source-interface Loopback1 member vni 6001 ingress-replication 200.200.200.200 ! ip forward-protocol nd ip pim rp-address 100.100.100.100 no ip http server ip http secure-server ip route 0.0.0.0 0.0.0.0 192.168.1.2 !

ERSPAN Support Cellular Interface as Source Interface

Encapsulated Remote Switched Port Analyzer (ERSPAN) allows traffic from Cellular interfaces to be monitored. ERSPAN sends monitored traffic to a network analyzer.

The following is a sample configuration:

```
Router(config)#monitor session 1 type erspan-source
Router(config-mon-erspan-src)#no shut
Router(config-mon-erspan-src)#source interface Cellular0/1/0
Router(config-mon-erspan-src)#destination
Router(config-mon-erspan-src-dst)#erspan-id 1
Router(config-mon-erspan-src-dst)#mtu 146
Router(config-mon-erspan-src-dst)#ip address 169.254.1.2
```

```
Router(config-mon-erspan-src-dst)#origin ip address 169.254.1.1
Router#show monitor session erspan-source
Session 1
---------
Type : ERSPAN Source Session
Status : Admin Enabled
Source Ports :
Both : Ce0/1/0
Destination IP Address : 169.254.1.2
MTU : 1464
Destination ERSPAN ID : 1
Origin IP Address : 169.254.1.1
```

For detailed information on configuring ERSPAN, see Configuring ERSPAN.

New Features for Cisco IOS-XE 17.4.1

- Cyber Vision Support
- Installing CVC Sensor using LM GUI
- DSL using a SFP
- Out Of Band Management

New Features for Cisco IOS-XE 17.3.1

- Yang Support for IO Ports
- Support for Security-Enhanced Linux (SELinux)
- Initial Bootup Security Improvements

Support Added for the P-LTEAP18-GL Modem PID

- The P-LTEAP18-GL PID uses the Telit modem LM960 modem. Details about all of the IR1101 modems are documented in the Cisco Catalyst IR1101 Rugged Series Router Hardware Installation Guide

New Features for Cisco IOS-XE 17.2.1

- Native docker support
- Yang Data Model Support for Raw Socket Transport
- Digital IO for IOx container applications
- L2 Sticky Secure MAC Addresses
- Signed application support

New Features for Cisco IOS-XE 17.1.1

New features in this release are listed below:

- Support for the X25 over TCP (XOT)
- Support for YANG Data Models (Call-home)
- Yang Data Model Support for Scada
- Support for Model Driven support for GNMI Telemetry Dial-In
- Option to Enable or Disable USB Access
- Day 0 Web User Interface