



New Features

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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](#)

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](#)

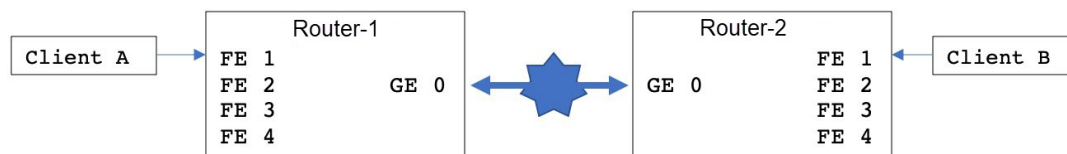
- DSL SFP Annex M support
- Support Four ADSL MIB Objects
- Digital IO Enhancement

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
<pre> 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 ! </pre>	<pre> 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 ! </pre>

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

