



## New Features for Cisco IOS XE 17.8.1

---

This chapter contains the following sections:

- [Support for DSL Annex B, on page 1](#)
- [Support for mSATA and IO Support for IRM-1100-SPMI in CM Side, on page 1](#)
- [Cellular Serviceability Enhancements, on page 2](#)
- [GNMI Broker \(GNMIB\) Update, on page 2](#)
- [gRPC Network Operations Interface Update, on page 3](#)
- [Raw Socket Feature Enhancement, on page 3](#)
- [SCADA Enhancement for TNB, on page 3](#)

### Support for DSL Annex B

For the 17.8.1 release, ADSL2+ Annex B will be supported.

Annex B is not configured by default. To enable Annex B, the following command will be used.

```
controller VDSL 0/0/0  
  capability annex-b
```

### Support for mSATA and IO Support for IRM-1100-SPMI in CM Side

With previous software releases, the mSATA and Digital I/O on the IRM-1100-SPMI were only supported on the Expansion Module side of the IR1101. With 17.8.1, support is available on the Compute Module (CM) side with the following restrictions:

IRM-1100-SPMI installed on both sides:

- This combination is not supported.
- Only the mSATA and Digital I/O from the EM side will work.
- The Digital I/O from the CM side will NOT work.

IRM-1100-SPMI installed on the CM side:

- The mSATA and Digital I/O will work.

- The Digital I/O instances will be numbered 1-4.

## Cellular Serviceability Enhancements

Enhancements have been made for cellular and GPS features as follows:

Trigger points and debug code can be enabled via controller cellular CLIs for generating and trap the debug data automatically without manual intervention. The following CLI options are available:

```
(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 the following:

- 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.

## GNMI Broker (GNMIB) Update

The GNMI Broker (GNMIB) has been extended to support the gRPC Network Operations Interface (gNOI) reset.proto service. This service provides functionality for restoring the device to its factory defaults via gRPC.

When the service is executed, it behaves similarly to the 'factory-reset all' command, and subsequently triggering a reload. Additionally, the service will maintain the current booted image. The additional steps below will be taken to comply with the reset.proto service:

- Set the rommon BOOT variable to the current booted image and maintain it through reload following factory-reset
- Enable autoboot to bring the device up on the current booted image following factory-reset.

## gRPC Network Operations Interface Update

gNOI is the gRPC Network Operations Interface. gNOI defines a set of gRPC-based microservices for executing operational commands and procedure on network devices, such as OS Install, Activate, and Verification.

Through gNOI os.proto will be possible to perform operating system related tasks such as OS activation, install, detailed overview, internal OS commands, and finally to output a summary of OS operations.

Furthermore, gNOI os.proto can also be used to display the gnmib detailed state, check the gnmib operational statistics, and also to output modifiers.

## Raw Socket Feature Enhancement

This enhancement allows the user to input the maximum number of retries available to the write socket. The range of the number of retries goes from 1 to 1000. The default number of retries is 10. To accommodate this feature, a new CLI has been created, **raw-socket tcp max-retries <1-1000>**. <1-1000> is the maximum number of retries.

## SCADA Enhancement for TNB

This enhancement provides compatibility with TNB's WG RTUs, including the following:

- TNB RTUs require Reset-Link message to be sent out along with Link-Status message to ensure correct initialization of the serial. The feature can be selectively turned on using the new configuration CLI **scada-gw protocol force reset-link**.
- When clock passthru is enabled and if the router hasn't received the timestamp from the DNP3-IP master, the router's hardware time will be sent downstream to RTU. Upon receiving a new timestamp from DNP3-IP master, the router will start sending the new timestamp sourced from DNP3-IP master to RTU.
- The number of bufferable DNP3 events in memory will be increased from 600 to 10000.
- The **scada-gw protocol interlock** command will be supported for DNP3. Previously, the support only existed for T101/T104. With this new enhancement, the router will disconnect Serial link if the DNP3-IP master is down or unreachable. Similarly, when the Serial link to RTU is down, the TCP connection to DNP3-IP master will be untethered.
- Custom "requests" will be automatically ordered based on priority so that the user can specify them in any order that they would like to.

