

Configuring 5G Mode

Effective Cisco IOS XE Everest 16.5.1, 5G mode is supported on 1-Port OC-192/STM-64 or 8-Port OC-3/12/48/STM-1/-4/-16 Interface Module. Previously, only 10G mode was supported. 5G mode is supported on those interface module slots that do not support 10G mode.

On the NCS 4216 Routers, if the interface module is inserted in the slots 3, 4, 7, 8, 11, or 12, the interface module comes up in 10G mode by default. Use the mode conversion command to use the interface module in 5G mode. If the interface module is inserted in the slots 2, 5, 6, 9, 10, 13, 14, and 15, the interface module comes up in 5G mode by default. Hence, there is no need to apply the mode conversion command.

On the ASR 903 Routers, all interface module slots support 10G mode. Use the mode conversion command to change the interface module slots to 5G mode.

On the ASR 907 Routers, 10G mode is supported on slots 3,4,7,8, 11, 12 interface module slots. Use the mode conversion command to change the interface module slots to 5G mode. Other interface module slots support 5G traffic mode by default.

Note Slot 1 on the NCS 4216 Router is supported for the 5G mode for 1-Port OC-192/STM-64 or 8-Port OC-3/12/48/STM-1/-4/-16 Interface module on the chassis.

Note OC-192/STM-64 port is disabled in 5G mode.

Table 1: Default 5G Slots on NCS 4206 Routers

Bays	Interface Module Support	Default Mode	5G Mode Command Support
0	No	No	No
1	No	No	No
2	Yes	10G_CEM	Yes
3	Yes	10G_CEM	Yes
4	Yes	10G_CEM	Yes

Bays	Interface Module Support	Default Mode	5G Mode Command Support
5	Yes	10G_CEM	Yes

Table 2: Default 10G Slots on NCS 4216 Routers

Bays	Interface Module Support	Default Mode	5G Mode Command Support
0	No	No	No
1	No	No	No
2	Yes	5G_CEM	No need to use the command as the interface module is in 5G mode by default
3	Yes	10G_CEM	Yes
4	Yes	10G_CEM	Yes
5	Yes	5G_CEM	No need to use the command as the interface module is in 5G mode by default
6	Yes	5G_CEM	No need to use the command as the interface module is in 5G mode by default
7	Yes	10G_CEM	Yes
8	Yes	10G_CEM	Yes
9	Yes	5G_CEM	No need to use the command as the interface module is in 5G mode by default
10	Yes	5G_CEM	No need to use the command as the interface module is in 5G mode by default
11	Yes	10G_CEM	Yes
12	Yes	10G_CEM	Yes

Bays	Interface Module Support	Default Mode	5G Mode Command Support
13	Yes	5G_CEM	No need to use the command as the interface module is in 5G mode by default
14	Yes	5G_CEM	No need to use the command as the interface module is in 5G mode by default
15	Yes	5G_CEM	No need to use the command as the interface module is in 5G mode by default

Features of the Interface Module:

- This IM supports 8 ports with 5G CEM traffic.
- This IM supports a maximum of 5Gbps traffic throughput with the following services:
  - 5G HO CEP
  - 5G LO CES/CEP

- Supported Traffic Combinations, on page 3
- Restrictions for Configuring 1-Port OC-192/STM-64 or 8-Port OC-3/12/48/STM-1/-4/-16 Interface Module, on page 4
- Important Notes on Configuration, on page 4
- Configuring 5G Mode from 10G Mode, on page 4
- Configuring 10G Mode from 5G Mode, on page 5
- Verification of 5G Traffic Configuration, on page 5
- Associated Commands, on page 5

Supported Traffic Combinations

The following traffic combination is supported:

- **CEM Traffic - SONET**:

  Ports 0-7 are available as OC-48/OC-12/OC-3/1GE ports. To achieve 5G traffic on the card, four ports are grouped. For example, 0-3 and 4-7 can provide a maximum traffic of 2.5G. For example, OC-48 port is allocated in each group. Hence, if one of the ports is configured as OC-48, the other ports in the group cannot be configured. If OC-12 or OC-3 rate is configured in any of the port groups, OC-48 cannot be configured.

- **CEM Traffic - SDH**:

  Ports 0-7 are available as STM-16, STM-4, and STM-1 ports. To achieve 5G traffic on the card, four ports are grouped. For example, 0-3 and 4-7 can provide a maximum traffic of 2.5G. For example,

STM-16 port is allocated in each group. Hence, if one of the ports is configured as STM-16, the other ports in the group cannot be configured. If STM-4 or STM-1 rate is configured in any of the port groups, STM-16 cannot be configured.

Restrictions for Configuring 1-Port OC-192/STM-64 or 8-Port OC-3/12/48/STM-1/-4/-16 Interface Module

- There should not be any configuration before the mode conversion command is used.
- The IM reloads and becomes active only about 5 minutes after a mode conversion is complete.
- When the mode changing command is applied by copying from a file (from TFTP server), the IM reloads and as a result all subsequent configurations fail for that interface module. You must change the mode of the interface module to 5G mode or 10G before copying the configurations from the TFTP file.
- For 10G mode, port 8 is used to configure OC-192 or STM-64 rate. You cannot use port 8 in 5G mode.

Important Notes on Configuration

- There should not be any of the following configurations before the **mode conversion** command is used:
  - CEM configurations
  - Path configurations
  - Mode SONET configuration under controller Mediatype
  - Mode SDH configuration under controller Mediatype
- When the **mode conversion** command is applied, the interface module reloads and becomes active after 5 minutes after a mode conversion is complete.
- When mode changing command is applied by copying from a file (from TFTP server), the IM reloads and as a result subsequent configurations fail for that IM. hence, you should change the mode of the interface module to 5G mode or vice versa before copying the configurations from the TFTP file.
- The interface module must be in shutdown state while upgrading from XLAUI mode to XFI passthrough mode.

Configuring 5G Mode from 10G Mode

To configure 5G mode from 10G mode:

```
enable
configure terminal
platform hw-module configuration
hw-module <slot> / <subslot> <PID> mode 5G_CEM
end
```

Configuring 10G Mode from 5G Mode

To configure 10G mode from 5G mode:

```
enable
configure terminal
platform hw-module configuration
hw-module <slot> / <subslot> <PID>
end
```

Verification of 5G Traffic Configuration

Use the **show running configuration** command to verify 5G traffic configuration:

```
Router#show running-config  | include mode
hw-module 0/bay PID mode 5G_CEM
Router#
```

Associated Commands

The following table shows the associated commands for 5G traffic configuration:

Commands	Links
hw-module mode	http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/mcl/allreleasemcl/all-book/all-06.html
platform hw-module configuration	http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/mcl/allreleasemcl/all-book/all-10.html
show running configuration | include mode	http://www.cisco.com/c/en/us/td/docs/ios-xml/ios/mcl/allreleasemcl/all-book/all-14.html

Associated Commands