



Configuring Linecard Expansion Modules

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Information About Linecard Expansion Modules

The Linecard Expansion Module (LEM) is a field replaceable module. Each LEM has 12-40G ports that can break out into 48-10G ports per LEM. The module can be either in 10G mode or in 40G mode. A power-off followed by a power-on of the module is required to change the mode. The LEM occupies slot 1 to slot 8 on the Cisco Nexus 6004 chassis.

The Cisco Nexus 6004 chassis supports two types on LEMs:

- Fixed LEMs: Slot 1 to Slot 4.
- Hot-swappable LEMs: Slot 5 to Slot 8.

Information About Linecard Expansion Modules

The Linecard Expansion Module (LEM) is a field replaceable module. LEM is supported only on the Cisco Nexus 5696Q Series model. There are 8 LEM slots on the device and each LEM slot has 12-40G ports that can break out into 48-10G ports per LEM. The module can be either in 10G mode or in 40G mode. The Cisco Nexus 5696Q also supports a 100G LEM, but the 100G LEM does not support interface breakout. A power-off followed by a power-on of the module is required to change the mode.

Configuring the LEM in 10G Mode

Procedure

	Command or Action	Purpose
Step 1	<code>switch# configure terminal</code>	Enters global configuration mode.
Step 2	<code>switch(config)# interface breakout slot <i>slot</i> port <i>port-range</i> map 10g-4x</code>	Configures the breakout for an interface. <i>slot</i> —valid values are 1 to 8. <i>port-range</i> —valid values are 1-48. Note On Cisco Nexus 56128, you can configure group of two ports. For example, 49-50, 51-52, or 25-26. On Cisco Nexus 5672UP, you can configure groups of three ports. For example, 1-3, or 4-6. On Cisco Nexus 5624Q, you can enter groups of three beginning with 1-3, 4-6, 7-9, and 10-12. You can also enter a range that includes a group of three. For example, 1-6 or 4-12. You cannot enter a port-range of 2-4 or 8-10.
Step 3	<code>switch(config)# copy running-config startup-config</code>	(Optional) Saves the change persistently through reboots and restarts by copying the running configuration to the startup configuration.

This example shows how to configure a Linecard Expansion Module (LEM) on Cisco Nexus 5600 Series device in a 10G mode.

```
switch# configure terminal
switch(config)# interface breakout slot 1 port 1-48 map 10g-4x
switch(config)# copy running-config startup-config
```

Configuring the LEM in 40G Mode

Procedure

	Command or Action	Purpose
Step 1	<code>switch# configure terminal</code>	Enters global configuration mode.
Step 2	<code>switch(config)# no interface breakout slot <i>slot</i> port <i>port-range</i> map 10g-4x</code>	Configures the breakout for an interface. <i>slot</i> —valid values are 1 to 8. <i>port-range</i> —valid values are 1-48.

	Command or Action	Purpose
		<p>Note On Cisco Nexus 56128, you can configure group of two ports. For example, 49-50, 51-52, or 25-26.</p> <p>On Cisco Nexus 5672UP, you can configure groups of three ports. For example, 1-3, or 4-6.</p> <p>On Cisco Nexus 5624Q, you can enter groups of three beginning with 1-3, 4-6, 7-9, and 10-12. You can also enter a range that includes a group of three. For example, 1-6 or 4-12. You cannot enter a port-range of 2-4 or 8-10.</p>

This example shows how to configure a Linecard Expansion Module (LEM) on Cisco Nexus 5600 Series device in a 40G mode.

```
switch# configure terminal
switch(config)# no interface breakout slot 1 port 1-48 map 10g-4x
switch(config)# copy running-config startup-config
```

Selecting the Fabric Mode

Procedure

	Command or Action	Purpose
Step 1	switch# configure terminal	Enters global configuration mode.
Step 2	switch(config)# fabric-mode {10g 40g}	<p>Selects the fabric mode.</p> <p>10g—Runs the cross bar in 10G mode.</p> <p>40g—Runs the cross bar in 40G mode.</p>
Step 3	switch(config)# copy running-config startup-config	<p>(Optional)</p> <p>Saves the change persistently through reboots and restarts by copying the running configuration to the startup configuration.</p>

This example shows how to select a fabric mode of 10G.

```
switch# configure terminal
switch(config)# fabric-mode 10g
switch(config)# copy running-config startup-config
```

This example shows how to select a fabric mode of 40G.

```
switch# configure terminal
switch(config)# fabric-mode 40g
switch(config)# copy running-config startup-config
```

What to Do Next

When changing the fabric mode, the system must be rebooted for the new mode to take effect.

Verifying the LEM Mode Configuration

Use one of the following commands to verify the configuration:

Command	Purpose
show interface eth1/2 capabilities	Displays information about the interface configuration.
show interface brief	Displays a brief summary of the interface configuration.