



# Configuring Linecard Expansion Modules

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## Configuring Linecard Expansion Modules

### 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.

### Configuring the LEM in 10G Mode

#### Procedure

	Command or Action	Purpose
<b>Step 1</b>	<code>switch# configure terminal</code>	Enters global configuration mode.
<b>Step 2</b>	<code>switch(config)# interface breakout slot slot port port-range 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 to 12.

	Command or Action	Purpose
		<b>Note</b> 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 <i>port-range</i> of 2-4 or 8-10.
<b>Step 3</b>	switch(config)# <b>copy running-config startup-config</b>	(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) in 10G mode.

```
switch# configure terminal
switch(config)# interface breakout slot 1 port 1-12 map 10g-4x
switch(config)# copy running-config startup-config
```

## Configuring the LEM in 40G Mode

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	switch# <b>configure terminal</b>	Enters global configuration mode.
<b>Step 2</b>	switch(config)# <b>no interface breakout slot slot# port port-range map 10g-4x</b>	Configures the breakout for an interface. <i>slot</i> —valid values are 1 to 8. <i>port-range</i> —valid values are 1 to 12. <b>Note</b> 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 <i>port-range</i> of 2-4 or 8-10.
<b>Step 3</b>	switch(config)# <b>copy running-config startup-config</b>	(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) in 40G mode.

```
switch# configure terminal
switch(config)# no interface breakout slot 1 port 1-12 map 10g-4x
switch(config)# copy running-config startup-config
```

## Selecting the Fabric Mode

### Procedure

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

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
<b>show interface eth1/2 capabilities</b>	Displays information about the interface configuration.
<b>show interface brief</b>	Displays a brief summary of the interface configuration.

