Bay Configuration

Bay configuration C8570-G2

On C8570-G2 there are three built-in EPAs that are configurable.

The following table describes the port details:

Bay Number	EPA	Port Configuration	Interface numbers
Bay 0 8xSFP+	1/10G EPA	Eight 1/10G interfaces - TE0 - TE7 Disabled when 100G port in used in Bay 1	0/0/0 0/0/1 0/0/2 0/0/3 0/0/4 0/0/5 0/0/6 0/0/7

Bay Number	EPA	Port Configuration	Interface numbers
Bay 1 4xSFP+/1xQSFP	1/10/40/100G EPA	Four 1/10G interfaces active - TE0 - TE3 (interfaces 0/1/0 … 0/1/3) The bay can be used in the following modes: • Four 1/10G interfaces • One 40G interface active • One 100G interface. This utilizes the eight 1/10G ports of Bay 0	0/1/0 0/1/1 0/1/1 0/1/3
Bay 2 3xQSFP	40/100G EPA	Three 40G interfaces (0/2/0, 0/2/4, 0/2/8) One 100G interface (0/2/0)	0/2/0 0/2/4 0/2/8

Note The speed of a 10G interface can be 1G or 10G based on the SFP transceiver plugged into to the port. Even when the speed changes the interface name is still indicated as TenGigabitEthernet.

By default , C8570-G2 operates Bay 1 in 10G mode and Bay 2 in 40G mode. The Bay 1 mode can be changed from 10G to 40G to 100G and vice versa. But if Bay 1 is set to 100G, all ports of Bay 0 move to *admin down* state and the ports are no longer functional.

The Bay 2 mode can be changed from 40G to 100G and vice versa. The mode change on Bay 2 does not impact traffic on Bay 1.

Use the **show platform** and **show ip interface** commands to view the bay and interface details:

```
Router#show platform
Chassis type: C8570-G2

Slot      Type                State                 Insert time (ago)
--------- ------------------- --------------------- -----------------
0         C8570-G2            ok                    2w6d
 0/0      8xSFP+              ok                    2w6d
 0/1      4xSFP+/1xQSFP       ok                    2w6d
 0/2      3xQSFP              ok                    2w6d
R0        C8570-G2            ok, active            2w6d
F0        C8570-G2            ok, active            2w6d
P0        PWR-CH1-750WACR     ok                    2w6d
P1        Unknown             empty                 never
P2        C8500-FAN-1R        ok                    2w6d

Slot      CPLD Version        Firmware Version
--------- ------------------- ------------------------------------
```

```
0          23122108            17.15(5r)
R0         23122108            17.15(5r)
F0         23122108            17.15(5r)


Router#show ip interface
Te0/0/0                unassigned      YES NVRAM  down                    down
Te0/0/1                unassigned      YES NVRAM  down                    down
Te0/0/2                unassigned      YES NVRAM  down                    down
Te0/0/3                unassigned      YES NVRAM  down                    down
Te0/0/4                unassigned      YES NVRAM  down                    down
Te0/0/5                unassigned      YES NVRAM  down                    down
Te0/0/6                unassigned      YES NVRAM  down                    down
Te0/0/7                unassigned      YES NVRAM  down                    down
Te0/1/0                unassigned      YES NVRAM  down                    down
Te0/1/1                unassigned      YES NVRAM  down                    down
Te0/1/2                unassigned      YES NVRAM  down                    down
Te0/1/3                unassigned      YES NVRAM  down                    down
Fo0/2/0                unassigned      YES unset  down                    down
Fo0/2/4                unassigned      YES unset  down                    down
Fo0/2/8                unassigned      YES unset  down                    down
GigabitEthernet0       10.104.33.213   YES NVRAM  up                      up
Router#
```

Bay configuration examples

The following examples show how mode can be changed on C8570-G2 to achieve different traffic speeds:

Examples

The following example shows how to change to 40G mode on Bay 1 of C8570-G2:

```
Router(config)# hw-module subslot 0/1 mode 40G
Present configuration of this subslot will be erased and will not be restored.
CLI will not be available until mode change is complete and EPA returns to OK state.
Do you want to proceed? [confirm]

*Jul  7 08:46:56.550: 4xSFP+/1xQSFP[0/1] : config for spa port 0 would be lost
*Jul  7 08:46:56.556: %SYS-5-CONFIG_P: Configured programmatically by process Exec from
console as console
*Jul  7 08:46:56.556: %SYS-5-CONFIG_P: Configured programmatically by process Exec from
console as console
*Jul  7 08:46:56.557: 4xSFP+/1xQSFP[0/1] : TenGigabitEthernet0/1/0 moved to default config
*Jul  7 08:46:56.557: 4xSFP+/1xQSFP[0/1] : config for spa port 1 would be lost
*Jul  7 08:46:56.561: %SYS-5-CONFIG_P: Configured programmatically by process Exec from
console as console
*Jul  7 08:46:56.562: %SYS-5-CONFIG_P: Configured programmatically by process Exec from
console as console
*Jul  7 08:46:56.562: 4xSFP+/1xQSFP[0/1] : TenGigabitEthernet0/1/1 moved to default config
*Jul  7 08:46:56.562: 4xSFP+/1xQSFP[0/1] : config for spa port 2 would be lost
*Jul  7 08:46:56.566: %SYS-5-CONFIG_P: Configured programmatically by process Exec from
console as console
*Jul  7 08:46:56.567: %SYS-5-CONFIG_P: Configured programmatically by process Exec from
console as console
*Jul  7 08:46:56.567: 4xSFP+/1xQSFP[0/1] : TenGigabitEthernet0/1/2 moved to default config
*Jul  7 08:46:56.567: 4xSFP+/1xQSFP[0/1] : config for spa port 3 would be lost
*Jul  7 08:46:56.571: %SYS-5-CONFIG_P: Configured programmatically by process Exec from
console as console
*Jul  7 08:46:56.572: %SYS-5-CONFIG_P: Configured programmatically by process Exec from
console as console
```

```
*Jul  7 08:46:56.572: 4xSFP+/1xQSFP[0/1] : TenGigabitEthernet0/1/3 moved to default config
*Jul  7 08:46:57.572: 4xSFP+/1xQSFP[0/1] : Received mode change request from 10G to 40G!
system_configured TRUE
*Jul  7 08:46:57.586: %IOSXE_OIR-6-SOFT_RELOADSPA: SPA(4xSFP+/1xQSFP) reloaded on subslot
0/1
*Jul  7 08:46:57.588: 4xSFP+/1xQSFP[0/1] : EPA moving from 10G mode to 40G mode
*Jul  7 08:46:57.588: 4xSFP+/1xQSFP[0/1] : config for spa port 0 would be lost
*Jul  7 08:46:57.589: 4xSFP+/1xQSFP[0/1] : config for spa port 1 would be lost
*Jul  7 08:46:57.589: 4xSFP+/1xQSFP[0/1] : config for spa port 2 would be lost
*Jul  7 08:46:57.590: 4xSFP+/1xQSFP[0/1] : config for spa port 3 would be lost
*Jul  7 08:46:57.590: 4xSFP+/1xQSFP[0/1] : Old mode cleanup done!
*Jul  7 08:46:57.593: %SPA_OIR-6-OFFLINECARD: SPA (4xSFP+/1xQSFP) offline in subslot 0/1
*Jul  7 08:47:02.828: 4xSFP+/1xQSFP[0/1] : Number of ports 1
Encore(config)#
*Jul  7 08:47:10.402: %SPA_OIR-6-ONLINECARD: SPA (4xSFP+/1xQSFP) online in subslot 0/1
```

The following example shows how to change to 40G mode to 100G on Bay 1 of C8570-G2:

```
Router(config)# hw-module subslot 0/1 mode 100G
Present configuration of this subslot will be erased and will not be restored.
CLI will not be available until mode change is complete and EPA returns to OK state.
Do you want to proceed? [confirm]

*Jul  7 08:39:21.152: 4xSFP+/1xQSFP[0/1] : config for spa port 0 would be lost
*Jul  7 08:39:21.165: %SYS-5-CONFIG_P: Configured programmatically by process Exec from
console as console
*Jul  7 08:39:21.165: %SYS-5-CONFIG_P: Configured programmatically by process Exec from
console as console
*Jul  7 08:39:21.166: 4xSFP+/1xQSFP[0/1] : FortyGigabitEthernet0/1/0 moved to default config
*Jul  7 08:39:22.165: 8xSFP+[0/0] : config for spa port 0 would be lost
*Jul  7 08:39:22.171: %SYS-5-CONFIG_P: Configured programmatically by process Exec from
console as console
*Jul  7 08:39:22.172: %SYS-5-CONFIG_P: Configured programmatically by process Exec from
console as console
*Jul  7 08:39:22.172: 8xSFP+[0/0] : TenGigabitEthernet0/0/0 moved to default config
*Jul  7 08:39:22.172: 8xSFP+[0/0] : config for spa port 1 would be lost
*Jul  7 08:39:22.176: %SYS-5-CONFIG_P: Configured programmatically by process Exec from
console as console
*Jul  7 08:39:22.177: %SYS-5-CONFIG_P: Configured programmatically by process Exec from
console as console
*Jul  7 08:39:22.177: 8xSFP+[0/0] : TenGigabitEthernet0/0/1 moved to default config
*Jul  7 08:39:22.177: 8xSFP+[0/0] : config for spa port 2 would be lost
*Jul  7 08:39:22.181: %SYS-5-CONFIG_P: Configured programmatically by process Exec from
console as console
*Jul  7 08:39:22.182: %SYS-5-CONFIG_P: Configured programmatically by process Exec from
console as console
*Jul  7 08:39:22.182: 8xSFP+[0/0] : TenGigabitEthernet0/0/2 moved to default config
*Jul  7 08:39:22.182: 8xSFP+[0/0] : config for spa port 3 would be lost
*Jul  7 08:39:22.186: %SYS-5-CONFIG_P: Configured programmatically by process Exec from
console as console
*Jul  7 08:39:22.186: %SYS-5-CONFIG_P: Configured programmatically by process Exec from
console as console
*Jul  7 08:39:22.187: 8xSFP+[0/0] : TenGigabitEthernet0/0/3 moved to default config
*Jul  7 08:39:22.187: 8xSFP+[0/0] : config for spa port 4 would be lost
*Jul  7 08:39:22.193: %SYS-5-CONFIG_P: Configured programmatically by process Exec from
console as console
*Jul  7 08:39:22.194: %SYS-5-CONFIG_P: Configured programmatically by process Exec from
console as console
*Jul  7 08:39:22.194: 8xSFP+[0/0] : TenGigabitEthernet0/0/4 moved to default config
*Jul  7 08:39:22.194: 8xSFP+[0/0] : config for spa port 5 would be lost
*Jul  7 08:39:22.199: %SYS-5-CONFIG_P: Configured programmatically by process Exec from
console as console
*Jul  7 08:39:22.199: %SYS-5-CONFIG_P: Configured programmatically by process Exec from
console as console
```

```
*Jul  7 08:39:22.200: 8xSFP+[0/0] : TenGigabitEthernet0/0/5 moved to default config
*Jul  7 08:39:22.200: 8xSFP+[0/0] : config for spa port 6 would be lost
*Jul  7 08:39:22.204: %SYS-5-CONFIG_P: Configured programmatically by process Exec from
console as console
*Jul  7 08:39:22.204: %SYS-5-CONFIG_P: Configured programmatically by process Exec from
console as console
*Jul  7 08:39:22.205: 8xSFP+[0/0] : TenGigabitEthernet0/0/6 moved to default config
*Jul  7 08:39:22.205: 8xSFP+[0/0] : config for spa port 7 would be lost
*Jul  7 08:39:22.209: %SYS-5-CONFIG_P: Configured programmatically by process Exec from
console as console
*Jul  7 08:39:22.209: %SYS-5-CONFIG_P: Configured programmatically by process Exec from
console as console
*Jul  7 08:39:22.210: 8xSFP+[0/0] : TenGigabitEthernet0/0/7 moved to default config
*Jul  7 08:39:23.210: 4xSFP+/1xQSFP[0/1] : Received mode change request from 40G to 100G!
system_configured TRUE
*Jul  7 08:39:23.210: %SPA_OIR-6-SHUTDOWN: subslot 0/0 is administratively shutdown; Use
'no hw-module  shutdown' to enable
*Jul  7 08:39:23.244: %SPA_OIR-6-OFFLINECARD: SPA (8xSFP+) offline in subslot 0/0
*Jul  7 08:39:23.250: %IOSXE_OIR-6-SOFT_RELOADSPA: SPA(4xSFP+/1xQSFP) reloaded on subslot
0/1
*Jul  7 08:39:23.251: 4xSFP+/1xQSFP[0/1] : EPA moving from 40G mode to 100G mode
*Jul  7 08:39:23.251: 4xSFP+/1xQSFP[0/1] : config for spa port 0 would be lost
*Jul  7 08:39:23.252: 4xSFP+/1xQSFP[0/1] : Old mode cleanup done!
*Jul  7 08:39:23.252: %SPA_OIR-6-OFFLINECARD: SPA (4xSFP+/1xQSFP) offline in subslot 0/1
*Jul  7 08:39:28.599: 4xSFP+/1xQSFP[0/1] : Number of ports 1
*Jul  7 08:39:38.023: %SPA_OIR-6-ONLINECARD: SPA (4xSFP+/1xQSFP) online in subslot 0/1
```

The following example shows how to change to 10G mode from 100G on Bay 1 of C8570-G2:

```
Router(config)# hw-module subslot 0/1 mode 10G
Present configuration of this subslot will be erased and will not be restored.
CLI will not be available until mode change is complete and EPA returns to OK state.
Do you want to proceed? [confirm]

*Jul  7 08:45:59.779: 4xSFP+/1xQSFP[0/1] : config for spa port 0 would be lost
*Jul  7 08:45:59.785: %SYS-5-CONFIG_P: Configured programmatically by process Exec from
console as console
*Jul  7 08:45:59.785: %SYS-5-CONFIG_P: Configured programmatically by process Exec from
console as console
*Jul  7 08:45:59.786: 4xSFP+/1xQSFP[0/1] : FortyGigabitEthernet0/1/0 moved to default config
*Jul  7 08:46:00.785: 4xSFP+/1xQSFP[0/1] : Received mode change request from 40G to 10G!
system_configured TRUE
*Jul  7 08:46:00.790: %IOSXE_OIR-6-SOFT_RELOADSPA: SPA(4xSFP+/1xQSFP) reloaded on subslot
0/1
*Jul  7 08:46:00.791: 4xSFP+/1xQSFP[0/1] : EPA moving from 40G mode to 10G mode
*Jul  7 08:46:00.791: 4xSFP+/1xQSFP[0/1] : config for spa port 0 would be lost
*Jul  7 08:46:00.791: 4xSFP+/1xQSFP[0/1] : Old mode cleanup done!
*Jul  7 08:46:00.792: %SPA_OIR-6-OFFLINECARD: SPA (4xSFP+/1xQSFP) offline in subslot 0/1
*Jul  7 08:46:06.025: 4xSFP+/1xQSFP[0/1] : Number of ports 4
Encore(config)#
*Jul  7 08:46:13.676:  Dot3 Stats : 0/3 not valid intf
*Jul  7 08:46:13.684: %SPA_OIR-6-ONLINECARD: SPA (4xSFP+/1xQSFP) online in subslot 0/1
*Jul  7 08:46:15.675: %LINK-3-UPDOWN: Interface TenGigabitEthernet0/1/0, changed state to
down
*Jul  7 08:46:15.676: %LINK-3-UPDOWN: Interface TenGigabitEthernet0/1/1, changed state to
down
*Jul  7 08:46:15.677: %LINK-3-UPDOWN: Interface TenGigabitEthernet0/1/2, changed state to
down
*Jul  7 08:46:15.678: %LINK-3-UPDOWN: Interface TenGigabitEthernet0/1/3, changed state to
down
*Jul  7 08:46:15.687: %LINK-3-UPDOWN: SIP0/1: Interface TenGigabitEthernet0/1/0, changed
state to down
*Jul  7 08:46:19.254: %LINK-3-UPDOWN: Interface TenGigabitEthernet0/1/0, changed state to
up
```

```
*Jul  7 08:46:20.254: %LINEPROTO-5-UPDOWN: Line protocol on Interface TenGigabitEthernet0/1/0,
 changed state to up
*Jul  7 08:46:19.254: %LINK-3-UPDOWN: SIP0/1: Interface TenGigabitEthernet0/1/0, changed
state to up
```

The following example shows how to change to 100G mode from 100G on Bay 2 of C8570-G2:

```
Router(config)# hw-module subslot 0/2 mode 100G
Present configuration of this subslot will be erased and will not be restored.
CLI will not be available until mode change is complete and EPA returns to OK state.
Do you want to proceed? [confirm]

*Jul  7 08:48:15.432: 3xQSFP[0/2] : config for spa port 0 would be lost
*Jul  7 08:48:15.462: %SYS-5-CONFIG_P: Configured programmatically by process Exec from
console as console
*Jul  7 08:48:15.463: %SYS-5-CONFIG_P: Configured programmatically by process Exec from
console as console
*Jul  7 08:48:15.463: 3xQSFP[0/2] : FortyGigabitEthernet0/2/0 moved to default config
*Jul  7 08:48:15.463: 3xQSFP[0/2] : config for spa port 1 would be lost
*Jul  7 08:48:15.469: %SYS-5-CONFIG_P: Configured programmatically by process Exec from
console as console
*Jul  7 08:48:15.470: %SYS-5-CONFIG_P: Configured programmatically by process Exec from
console as console
*Jul  7 08:48:15.470: 3xQSFP[0/2] : FortyGigabitEthernet0/2/4 moved to default config
*Jul  7 08:48:15.470: 3xQSFP[0/2] : config for spa port 2 would be lost
*Jul  7 08:48:15.475: %SYS-5-CONFIG_P: Configured programmatically by process Exec from
console as console
*Jul  7 08:48:15.476: %SYS-5-CONFIG_P: Configured programmatically by process Exec from
console as console
*Jul  7 08:48:15.476: 3xQSFP[0/2] : FortyGigabitEthernet0/2/8 moved to default config
*Jul  7 08:48:16.476: 3xQSFP[0/2] : Received mode change request from 40G to 100G!
system_configured TRUE
*Jul  7 08:48:16.487: %IOSXE_OIR-6-SOFT_RELOADSPA: SPA(3xQSFP) reloaded on subslot 0/2
*Jul  7 08:48:16.489: 3xQSFP[0/2] : EPA moving from 40G mode to 100G mode
*Jul  7 08:48:16.489: 3xQSFP[0/2] : config for spa port 0 would be lost
*Jul  7 08:48:16.490: 3xQSFP[0/2] : config for spa port 1 would be lost
*Jul  7 08:48:16.490: 3xQSFP[0/2] : config for spa port 2 would be lost
*Jul  7 08:48:16.491: 3xQSFP[0/2] : Old mode cleanup done!
*Jul  7 08:48:16.493: %SPA_OIR-6-OFFLINECARD: SPA (3xQSFP) offline in subslot 0/2
*Jul  7 08:48:21.731: 3xQSFP[0/2] : Number of ports 1
*Jul  7 08:48:21.733: 3xQSFP[0/2] : XCVR namestring create: Maximum number of XCVR = 1
Encore(config)#
Encore(config)#
*Jul  7 08:48:35.865: %SPA_OIR-6-ONLINECARD: SPA (3xQSFP) online in subslot 0/2
```

Breakout support

Understand breakout support

Breakout support for a port helps to split a higher density port to multiple independent and logical ports. Breakout support is introduced in Bay 2 of C8570-G2 that supports breakout capable 40G native ports. The breakout support is of 4X10G and uses a 3-tuple approach.

The table below explains the interface names when breakout is configured.

Table 1: Interface Names when Breakout is Configured

Sr. No	Interface names	Description
	Te0/2/0, Te0/2/1, Te0/2/2, Te0/2/3, Te0/2/4, Te0/2/5, Te0/2/6, Te0/2/7, Te0/2/8, Te0/2/9, Te0/2/10, Te0/2/11	All three 40 G native ports working in 10G breakout mode
	Fo0/2/0,Fo0/2/4, Te0/2/8, Te0/2/9, Te0/2/10, Te0/2/11	1st native port in 40G mode 2nd native port in 40G mode 3rd native port in 10G breakout mode
	Fo0/2/0, Te0/2/4, Te0/2/5, Te0/2/6, Te0/2/7 Fo0/2/8	1st native port in 40G mode 2nd native port 10G breakout mode 3rd native port in 40G mode
	Te0/2/0, Te0/2/1, Te0/2/2, Te0/2/3, Fo0/2/4, Fo0/2/8	1st native port in 10G breakout mode 2nd native port in 40G mode 3rd native port in 40G mode
	Fo0/2/0, Te0/2/4, Te0/2/5, Te0/2/6, Te0/2/7, Te0/2/8, Te0/2/9, Te0/2/10, Te0/2/11	1st native port in 40G mode 2nd native port in 10G breakout mode 3rd native port in 10G breakout mode
	Te0/2/0, Te0/2/1, Te0/2/2, Te0/2/3, Te0/2/4, Te0/2/5, Te0/2/6, Te0/2/7, Fo0/2/8	1st native port in 10G breakout mode 2nd native port in 10G breakout mode 3rd native port in 40G mode
	Te0/2/0, Te0/2/1, Te0/2/2, Te0/2/3, Fo0/2/4, Te0/2/8, Te0/2/9, Te0/2/10, Te0/2/11	1st native port in 10G breakout mode 2nd native port in 40G mode 3rd native port in 10G breakout mode

Breakout support

Note Before using the breakout capability, ensure that Bay 2 is configured in 40G mode

```
Router(config)#hw-module subslot 0/2 breakout 10G port ?

all                configure all native ports in breakout mode
native_port_0      configure native port 0 in breakout mode
native_port_4      configure native port 4 in breakout mode
native_port_8      configure native port 8 in breakout mode
```

Sample commands to configure breakout support

When native_port 0 and 8 are in 10G breakout and native_port 4 is running in 40G mode

```
hw-module subslot 0/2 breakout 10g port native_port_0
hw-module subslot 0/2 breakout 10g port native_port_8
```

When all three native 40G ports have same breakout config

```
hw-module subslot 0/2 breakout 10g port all
hw-module subslot 0/2 breakout none port all
```

When you want to remove breakout configuration from all ports

```
hw-module subslot 0/2 breakout none port all
```

Bay configuration C8550-G2

On C8550-G2 there is one built-in EPA that supports ports TE0 - TE11 for SFP/SFP+ transceivers.