



# Install the hardware

## Install and maintain

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# Install the hardware

## Hardware install workflow for BES-53248 switches

To install and configure the hardware for a BES-53248 cluster switch, follow these steps:

1

### Install the switch hardware

Install and configure the BES-53248 switch hardware.

2

### Review cabling and configuration

Review the cabling and configuration considerations for the BES-53248 cluster switch.

## Install the hardware for the BES-53248 cluster switch

To install the BES-53248 hardware, refer to Broadcom's documentation.

### Steps

1. Review the [configuration requirements](#).
2. Follow the instructions in the [Broadcom-supported BES-53248 Cluster Switch Installation Guide](#).

### What's next?

After you've installed the hardware for the switch, you can [review cabling and configuration](#) requirements.

## Review cabling and configuration considerations

Before configuring your Broadcom BES-53248 switch, review the following considerations.

### Cluster port switch assignments

You can use the Broadcom-supported BES-53248 cluster switch port assignments table as a guide to configure your cluster.

Switch ports	Ports usage
0-16	10/25GbE cluster port nodes, base configuration
17-48	10/25GbE cluster port nodes, with licenses
49-54	40/100GbE cluster port nodes, with licenses, added right to left
55-56	100GbE cluster Inter-Switch Link (ISL) ports, base configuration

See the [Hardware Universe](#) for more information on switch ports. See [What additional information do I need to install my equipment that is not in HWU?](#) for more information about switch installation requirements.

## Port group speed constraint

- On BES-53248 cluster switches, the 48 10/25GbE (SFP28/SFP+) ports are combined into 12 x 4-port groups as follows: Ports 1-4, 5-8, 9-12, 13-16, 17-20, 21-24, 25-28, 29-32, 33-36, 37-40, 41-44, and 45-48.
- The SFP28/SFP+ port speed must be the same (10GbE or 25GbE) across all ports in the 4-port group.
- If speeds in a 4-port group are different, the switch ports will not operate correctly.

## FEC requirements

- For 25G ports with copper cables, see the following table for details.

If the Controller side is `auto`, the switch side is set to FEC 25G.

FAS2820 FEC			Switch FEC			link status
write	read		write	read		
	requested_fec	negotiated_fec		Configured FEC Mode	Physical FEC Status	
fc	FC-FEC/BASE-R	none	No FEC	FEC Disabled	FEC Disabled	UP
fc	FC-FEC/BASE-R	FC-FEC/BASE-R	FEC 25G	FEC 25G	CL-74	UP
auto	RS-FEC	none	FEC 25G	FEC 25G	CL74	UP
auto	RS-FEC	none	No FEC	FEC Disabled	FEC Disabled	UP
none	none	none	No FEC	FEC Disabled	FEC Disabled	UP
none	none	none	FEC 25G	FEC 25G	CL74	UP
rs	RS-FEC	none	FEC 25G	FEC 25G	CL74	UP
rs	RS-FEC	none	No FEC	FEC Disabled	FEC Disabled	UP

- For 25G ports with Fiber/Optical cables, see the following table for details:

FAS2820 FEC			Switch FEC			link status
write	read		write	read		
	requested_fec	negotiated_fec		Configured FEC Mode	Physical FEC Status	
fc	FC-FEC/BASE-R	none	No FEC	FEC Disabled	FEC Disabled	DOWN
<b>fc</b>	<b>FC-FEC/BASE-R</b>	<b>FC-FEC/BASE-R</b>	<b>FEC 25G</b>	<b>FEC 25G</b>	<b>CL-74</b>	<b>UP</b>
auto	RS-FEC	none	FEC 25G	FEC 25G	CL74	DOWN
auto	RS-FEC	none	No FEC	FEC Disabled	FEC Disabled	DOWN
<b>none</b>	<b>none</b>	<b>none</b>	<b>No FEC</b>	<b>FEC Disabled</b>	<b>FEC Disabled</b>	<b>UP</b>
none	none	none	FEC 25G	FEC 25G	CL74	DOWN
rs	RS-FEC	none	FEC 25G	FEC 25G	CL74	DOWN
rs	RS-FEC	none	No FEC	FEC Disabled	FEC Disabled	DOWN

## Bootarg implementation

Use the following command to set the 25G port FEC to either `auto` or `fc`, as required:

```
systemshell -node <node> -command sudo sysctl
dev.ice.<X>.requested_fec=<auto/fc>
```

- When set to **auto**:
  - The `auto` setting propagates the setting to hardware immediately and no reboot is required.
  - If `bootarg.cpk_fec_fc_eXx` already exists, it is deleted from the bootarg storage.
  - After a reboot, the `auto` setting remains in place since `auto` is the default FEC setting.
- When set to **fc**:
  - The `FC-FEC` setting propagates the setting to the hardware immediately and no reboot is required.
  - A new `bootarg.cpk_fec_fc_eXx` is created with the value set to "true".
  - After a reboot, `FC-FEC` setting remains in place for the driver code to use.

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