Install the hardware

Install and maintain

NetApp
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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**			
write	read		write	read		link status
	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			
write	read		write	read		link status
	requested_fec	negotiated_fec		Configured FEC Mode	Physical FEC Status	
fc	FC-FEC/BASE-R	none	No FEC	FEC Disabled	FEC Disabled	DOWN
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	DOWN
auto	RS-FEC	none	No FEC	FEC Disabled	FEC Disabled	DOWN
none	**none**	**none**	**No FEC**	**FEC Disabled**	**FEC Disabled**	**UP**
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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