Overview

Cluster and storage switches

NetApp
September 20, 2024

This PDF was generated from https://docs.netapp.com/us-en/ontap-systems-switches/switch-bes-53248/configure-new-switch-overview.html on September 20, 2024. Always check docs.netapp.com for the latest.

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Overview

Overview of installation and configuration for BES-53248 switches

The BES-53248 is a bare metal switch designed to work in ONTAP clusters ranging from two to 24 nodes.

Initial configuration overview

To initially configure a BES-53248 cluster switch on systems running ONTAP, follow these steps:

1. Install the hardware for the BES-53248 cluster switch.

   Instructions are available in the *Broadcom-supported BES-53248 Cluster Switch Installation Guide*.

2. Configure the BES-53248 cluster switch.

   Perform an initial setup of the BES-53248 cluster switch.

3. Install the EFOS software.

   Download and install the Ethernet Fabric OS (EFOS) software on the BES-53248 cluster switch.

4. Install licenses for BES-53248 cluster switches.

   Optionally, add new ports by purchasing and installing more licenses. The switch base model is licensed for 16 10GbE or 25GbE ports and two 100GbE ports.

5. Install the Reference Configuration File (RCF).

   Install or upgrade the RCF on the BES-53248 cluster switch, and then verify the ports for an additional license after the RCF is applied.

6. Enable SSH on BES-53248 cluster switches.

   If you use the Ethernet Switch Health Monitor (CSHM) and log collection features, enable SSH on the switches.

Additional information

Before you begin installation or maintenance, be sure to review the following:

- Configuration requirements
- Components and part numbers
- Required documentation

Configuration requirements for BES-53248 cluster switches

For BES-53248 switch installation and maintenance, be sure to review EFOS and ONTAP

support and configuration requirements.

EFOS and ONTAP support

See the NetApp Hardware Universe and Broadcom switches compatibility matrix for EFOS and ONTAP compatibility information with BES-53248 switches. EFOS and ONTAP support can vary by the specific machine type of the BES-53248 switch. For details of all BES-52348 switch machine types, see Components and part numbers for BES-53248 cluster switches.

Configuration requirements

To configure a cluster, you need the appropriate number and type of cables and cable connectors for the cluster switches. Depending on the type of cluster switch you are initially configuring, you need to connect to the switch console port with the included console cable.

Cluster switch port assignments

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

Switch ports	Ports usage
01-16	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.

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.

Additional requirements

- If you purchase additional licenses, see Activate newly licenses ports for details on how to activate them.
- If SSH is active, you must re-enable it manually after running the command `erase startup-config` and rebooting the switch.

Components and part numbers for BES-53248 cluster switches

For BES-53248 switch installation and maintenance, be sure to review the list of components and part numbers.

The following table lists the part number, description, and minimum EFOS and ONTAP versions for the BES-53248 cluster switch components, including rack-mount rail kit details.

A minimum EFOS version of **3.10.0.3** is required for part numbers **X190005-B** and **X190005R-B**.

Part number	Description	Minimum EFOS version	Minimum ONTAP version
X190005-B	BES-53248-B/IX8, CLSW, 16PT10/25GB, PTSX (PTSX = Port Side Exhaust)	3.10.0.3	9.8
X190005R-B	BES-53248-B/IX8, CLSW, 16PT10/25GB, PSIN (PSIN = Port Side Intake)	3.10.0.3	9.8
X190005	BES-53248, CLSW, 16Pt10/25GB, PTSX, BRDCM SUPP	3.4.4.6	9.5P8
X190005R	BES-53248, CLSW, 16Pt10/25GB, PSIN, BRDCM SUPP	3.4.4.6	9.5P8
X-RAIL-4POST-190005	Rack mount rail kit Ozeki 4 post 19"	N/A	N/A

Note the following information with regards to machine types:

Machine type	Minimum EFOS version
BES-53248A1	3.4.4.6
BES-53248A2	3.10.0.3
BES-53248A3	3.10.0.3

You can determine your specific machine type by using the command: `show version`

Show example

```
(cs1)# show version

Switch: cs1

System Description.............................. EFOS, 3.10.0.3, Linux
5.4.2-b4581018, 2016.05.00.07
Machine Type.................................... BES-53248A3
Machine Model................................... BES-53248
Serial Number................................... QTWCU225xxxxx
Part Number..................................... 1IX8BZxxxxx
Maintenance Level............................... a3a
Manufacturer.................................... QTMC
Burned In MAC Address........................... C0:18:50:F4:3x:xx
Software Version................................ 3.10.0.3
Operating System................................ Linux 5.4.2-b4581018
Network Processing Device....................... BCM56873_A0
.
.
.
```

Documentation requirements for BES-53248 cluster switches

For BES-53248 switch installation and maintenance, be sure to review the specific switch and controller documentation.

Broadcom documentation

To set up the BES-53248 cluster switch, you need the following documents available from the Broadcom Support Site: Broadcom Ethernet Switch Product Line

Document title	Description
EFOS Administrator's Guide v3.4.3	Provides examples of how to use the BES-53248 switch in a typical network.
EFOS CLI Command Reference v3.4.3	Describes the command-line interface (CLI) commands you use to view and configure the BES-53248 software.
EFOS Getting Started Guide v3.4.3	Provides detailed information about for the BES-53248 switch.

Document title	Description
EFOS SNMP Reference Guide v3.4.3	Provides examples of how to use the BES-53248 switch in a typical network.
EFOS Scaling Parameters and Values v3.4.3	Describes the default scaling parameters with which EFOS software is delivered and validated on the supported platforms.
EFOS Functional Specifications v3.4.3	Describes the specifications for the EFOS software on the supported platforms.
EFOS Release Notes v3.4.3	Provides release-specific information about BES-53248 software.
Cluster Network and Management Network Compatibility Matrix	Provides information on network compatibility. The matrix is available from the BES-53248 switch download site at Broadcom cluster switches.

ONTAP systems documentation and KB articles

To set up an ONTAP system, you need the following documents from the NetApp Support Site at mysupport.netapp.com or the Knowledgebase (KB) site at kb.netapp.com.

Name	Description
NetApp Hardware Universe	Describes the power and site requirements for all NetApp hardware, including system cabinets, and provides information on the relevant connectors and cable options to use along with their part numbers.
Controller-specific *Installation and Setup Instructions*	Describes how to install NetApp hardware.
ONTAP 9	Provides detailed information about all aspects of the ONTAP 9 release.
How to add additional port licensing for the Broadcom-supported BES-53248 switch	Provides detailed information on adding port licenses. Go to the KB article.

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