



Upgrade switches

Cluster and storage switches

NetApp

January 19, 2024

Table of Contents

- Upgrade switches 1
 - Overview of upgrade process for BES-53248 switches 1
 - Upgrade the BES-53248 cluster switch 1
 - Verify the configuration after a BES-53248 cluster switch upgrade 5

Upgrade switches

Overview of upgrade process for BES-53248 switches

Before configuring BES-53248 cluster switches for an upgrade, review the configuration overview.

To upgrade a BES-53248 cluster switch, follow these steps:

1. [Prepare the BES-53248 cluster switch for upgrade](#). Prepare the controller, and then install the EFOS software, licenses, and reference configuration file (RCF). Last, verify the configuration.
2. [Install the EFOS software](#). Download and install the Ethernet Fabric OS (EFOS) software on the BES-53248 cluster switch.
3. [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.
4. [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.
5. [Install the Cluster Switch Health Monitor \(CSHM\) configuration file](#). Install the applicable configuration file for cluster switch health monitoring.
6. [Enable SSH on BES-53248 cluster switches](#). If you use the Cluster Switch Health Monitor (CSHM) and log collection features, enable SSH on the switches.
7. [Enable the log collection feature](#). Use this feature to collect switch-related log files in ONTAP.
8. [Verify the configuration](#). Use the recommended commands to verify operations after a BES-53248 cluster switch upgrade.

Upgrade the BES-53248 cluster switch

Follow these steps to upgrade the BES-53248 cluster switch.

This procedure applies to a functioning cluster and allows for a nondisruptive upgrade (NDU) and nondisruptive operation (NDO) environment. See the Knowledge Base article [How to prepare ONTAP for a cluster switch upgrade](#).

Review requirements

Before you install the EFOS software, licenses, and the RCF file on an existing NetApp BES-53248 cluster switch, make sure that:

- The cluster is a fully functioning cluster (no error log messages or other issues).
- The cluster does not contain any defective cluster network interface cards (NICs).
- All connected ports on both cluster switches are functional.
- All cluster ports are up.
- All cluster LIFs are administratively and operationally up and on their home ports.
- The first two cluster LIFs on each node are configured on separate NICs and connected to separate cluster switch ports.

- The ONTAP `cluster ping-cluster -node node1` advanced privilege command indicates that larger than PMTU communication is successful on all paths.



There might be command dependencies between command syntax in the RCF and EFOS versions.



For switch compatibility, consult the compatibility table on the [Broadcom cluster switches](#) page for the supported EFOS, RCF, and ONTAP versions.

Prepare the controller

Follow this procedure to prepare the controller for a BES-53248 cluster switch upgrade.

Steps

1. Connect the cluster switch to the management network.
2. Use the ping command to verify connectivity to the server hosting EFOS, licenses, and the RCF.

If this is an issue, use a nonrouted network and configure the service port using IP address 192.168.x or 172.19.x. You can reconfigure the service port to the production management IP address later.

Show example

This example verifies that the switch is connected to the server at IP address 172.19.2.1:

```
(cs2)# ping 172.19.2.1
Pinging 172.19.2.1 with 0 bytes of data:

Reply From 172.19.2.1: icmp_seq = 0. time= 5910 usec.
```

3. Verify that the cluster ports are healthy and have a link using the command:

```
network port show -ipspace Cluster
```

Show example

The following example shows the type of output with all ports having a Link value of up and a Health Status of healthy:

```
cluster1::> network port show -ipspace Cluster
```

Node: node1

Ignore

						Speed (Mbps)	Health
Health	Port	IPspace	Broadcast Domain	Link	MTU	Admin/Oper	Status
Status							
-----	-----	-----	-----	----	----	-----	-----

	e0a	Cluster	Cluster	up	9000	auto/10000	healthy
false							
	e0b	Cluster	Cluster	up	9000	auto/10000	healthy
false							

Node: node2

Ignore

						Speed (Mbps)	Health
Health	Port	IPspace	Broadcast Domain	Link	MTU	Admin/Oper	Status
Status							
-----	-----	-----	-----	----	----	-----	-----

	e0a	Cluster	Cluster	up	9000	auto/10000	healthy
false							
	e0b	Cluster	Cluster	up	9000	auto/10000	healthy
false							

4. Verify that the cluster LIFs are administratively and operationally up and reside on their home ports, using the command:

```
network interface show -vserver Cluster
```

Show example

In this example, the `-vserver` parameter displays information about the LIFs that are associated with cluster ports. Status Admin/Oper must be up and Is Home must be true:

```
cluster1::> network interface show -vserver Cluster
```

	Logical	Status	Network	Current
Current Is				
Vserver	Interface	Admin/Oper	Address/Mask	Node
Port	Home			
-----	-----	-----	-----	-----
-----	-----			
Cluster				
	node1_clus1	up/up	169.254.217.125/16	node1
e0a	true			
	node1_clus2	up/up	169.254.205.88/16	node1
e0b	true			
	node2_clus1	up/up	169.254.252.125/16	node2
e0a	true			
	node2_clus2	up/up	169.254.110.131/16	node2
e0b	true			

Install software

Follow these instructions to install the software.

1. [Install the EFOS software](#). Download and install the Ethernet Fabric OS (EFOS) software on the BES-53248 cluster switch.
2. [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.
3. [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.
4. [Install the Cluster Switch Health Monitor \(CSHM\) configuration file](#). Install the applicable configuration file for cluster switch health monitoring.
5. [Enable SSH on BES-53248 cluster switches](#). If you use the Cluster Switch Health Monitor (CSHM) and log collection features, enable SSH on the switches.
6. [Enable the log collection feature](#). Use this feature to collect switch-related log files in ONTAP.

Verify the configuration after a BES-53248 cluster switch upgrade

You can use recommended commands to verify operations after a BES-53248 cluster switch upgrade.

Steps

1. Display information about the network ports on the cluster using the command:

```
network port show -ipspace Cluster
```

Link must have the value up and Health Status must be healthy.

Show example

The following example shows the output from the command:

```
cluster1::> network port show -ipspace Cluster
```

Node: node1

Ignore

Speed (Mbps) Health

Health

Port	IPspace	Broadcast	Domain	Link	MTU	Admin/Oper	Status
------	---------	-----------	--------	------	-----	------------	--------

-----	-----	-----	----	----	-----	-----	-----

e0a	Cluster	Cluster		up	9000	auto/10000	healthy
false							

e0b	Cluster	Cluster		up	9000	auto/10000	healthy
false							

Node: node2

Ignore

Speed (Mbps) Health

Health

Port	IPspace	Broadcast	Domain	Link	MTU	Admin/Oper	Status
------	---------	-----------	--------	------	-----	------------	--------

-----	-----	-----	----	----	-----	-----	-----

e0a	Cluster	Cluster		up	9000	auto/10000	healthy
false							

e0b	Cluster	Cluster		up	9000	auto/10000	healthy
false							

2. For each LIF, verify that `Is Home` is true and `Status Admin/Oper` is up on both nodes, using the command:

```
network interface show -vserver Cluster
```


Show example

```
cluster1::> network interface show -vserver Cluster
```

	Logical	Status	Network	Current
Current Is				
Vserver	Interface	Admin/Oper	Address/Mask	Node
Port	Home			

Cluster				
	node1_clus1	up/up	169.254.217.125/16	node1
e0a	true			
	node1_clus2	up/up	169.254.205.88/16	node1
e0b	true			
	node2_clus1	up/up	169.254.252.125/16	node2
e0a	true			
	node2_clus2	up/up	169.254.110.131/16	node2
e0b	true			

3. Verify that the Health Status of each node is true using the command:

```
cluster show
```

Show example

```
cluster1::> cluster show
```

Node	Health	Eligibility	Epsilon

node1	true	true	false
node2	true	true	false

Copyright information

Copyright © 2024 NetApp, Inc. All Rights Reserved. Printed in the U.S. No part of this document covered by copyright may be reproduced in any form or by any means—graphic, electronic, or mechanical, including photocopying, recording, taping, or storage in an electronic retrieval system—without prior written permission of the copyright owner.

Software derived from copyrighted NetApp material is subject to the following license and disclaimer:

THIS SOFTWARE IS PROVIDED BY NETAPP “AS IS” AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL NETAPP BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

NetApp reserves the right to change any products described herein at any time, and without notice. NetApp assumes no responsibility or liability arising from the use of products described herein, except as expressly agreed to in writing by NetApp. The use or purchase of this product does not convey a license under any patent rights, trademark rights, or any other intellectual property rights of NetApp.

The product described in this manual may be protected by one or more U.S. patents, foreign patents, or pending applications.

LIMITED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (b)(3) of the Rights in Technical Data -Noncommercial Items at DFARS 252.227-7013 (FEB 2014) and FAR 52.227-19 (DEC 2007).

Data contained herein pertains to a commercial product and/or commercial service (as defined in FAR 2.101) and is proprietary to NetApp, Inc. All NetApp technical data and computer software provided under this Agreement is commercial in nature and developed solely at private expense. The U.S. Government has a non-exclusive, non-transferrable, nonsublicensable, worldwide, limited irrevocable license to use the Data only in connection with and in support of the U.S. Government contract under which the Data was delivered. Except as provided herein, the Data may not be used, disclosed, reproduced, modified, performed, or displayed without the prior written approval of NetApp, Inc. United States Government license rights for the Department of Defense are limited to those rights identified in DFARS clause 252.227-7015(b) (FEB 2014).

Trademark information

NETAPP, the NETAPP logo, and the marks listed at <http://www.netapp.com/TM> are trademarks of NetApp, Inc. Other company and product names may be trademarks of their respective owners.