

# Replace switches

Cluster and storage switches

NetApp May 08, 2024

This PDF was generated from https://docs.netapp.com/us-en/ontap-systems-switches/switch-bes-53248/replace-switch-reqs.html on May 08, 2024. Always check docs.netapp.com for the latest.

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# Replace switches

# Replacement requirements

Before replacing the switch, make sure the following conditions are met in the current environment and on the replacement switch.

# **Existing cluster and network infrastructure**

Make sure that:

- The existing cluster is verified as completely functional, with at least one fully connected cluster switch.
- All cluster ports are **up**.
- All cluster logical interfaces (LIFs) are administratively and operationally **up** and on their home ports.
- The ONTAP cluster ping-cluster -node node1 command must indicate that the settings, basic connectivity and larger than PMTU communication, are successful on all paths.

# BES-53248 replacement cluster switch

Make sure that:

- · Management network connectivity on the replacement switch is functional.
- · Console access to the replacement switch is in place.
- The node connections are ports 0/1 through 0/16 with default licensing.
- All Inter-Switch Link (ISL) ports are disabled on ports 0/55 and 0/56.
- The desired reference configuration file (RCF) and EFOS operating system switch image are loaded onto the switch.
- Initial customization of the switch is complete, as detailed in Configure the BES-53248 cluster switch.

Any previous site customizations, such as STP, SNMP, and SSH, are copied to the new switch.

# For more information

- NetApp Support Site
- NetApp Hardware Universe

# Replace a Broadcom-supported BES-53248 cluster switch

Follow these steps to replace a defective Broadcom-supported BES-53248 cluster switch in a cluster network. This is a nondisruptive procedure (NDU).

### About the examples

The examples in this procedure use the following switch and node nomenclature:

• The names of the existing BES-53248 switches are cs1 and cs2.

- The name of the new BES-53248 switch is newcs2.
- The node names are node1 and node2.
- The cluster ports on each node are named e0a and e0b.
- The cluster LIF names are node1\_clus1 and node1\_clus2 for node1, and node2\_clus1 and node2\_clus2 for node2.
- The prompt for changes to all cluster nodes is cluster1::>

# About the topology

This procedure is based on the following cluster network topology:

|                               | _            | _            | _       |        |            |              |         |
|-------------------------------|--------------|--------------|---------|--------|------------|--------------|---------|
| Node: node                    | 1            |              |         |        |            |              |         |
| Ignore                        |              |              |         |        |            |              |         |
| Health                        |              |              |         |        |            | Speed (Mbps) | Health  |
|                               | IPspace      | Broadcast    | Domain  | Link   | MTU        | Admin/Oper   | Status  |
|                               |              |              |         |        |            |              |         |
| e0a<br>false                  | Cluster      | Cluster      |         | up     | 9000       | auto/10000   | healthy |
| e0b<br>false                  | Cluster      | Cluster      |         | up     | 9000       | auto/10000   | healthy |
| Node: node                    | 2            |              |         |        |            |              |         |
| Ignore                        |              |              |         |        |            | Speed(Mbps)  | Health  |
| Health<br>Port                | IPspace      | Broadcast 1  | Domain  | Link   | MTU        | Admin/Oper   | Status  |
| Status                        |              |              |         |        |            |              |         |
|                               |              |              |         |        |            |              |         |
| e0a<br>false                  | Cluster      | Cluster      |         | up     | 9000       | auto/10000   | healthy |
| e0b<br>false                  | Cluster      | Cluster      |         | up     | 9000       | auto/10000   | healthy |
| cluster1::                    | > network in | terface show | w -vsei | ver (  | Cluste     | er           |         |
| Current I-                    | -            | Status       | Netwo   | î k    |            | Current      |         |
| Current Is<br>Vserver<br>Home | Interface    | Admin/Oper   | Addres  | ss/Mas | зk         | Node         | Por     |
|                               |              |              |         |        |            |              |         |
| Cluster                       |              | 1 /          | 160 25  | 54 200 | 9 69/1     | l6 node1     | e0a     |
|                               | node1_clus   | ı up/up      | 109.2   | 14.20  | ). 0 ) / . | ro moder     | Coa     |

|             | node2_   | clus1  | up/up     | 169.254.47   | 1.194/16 | node2 | e0a      |
|-------------|----------|--------|-----------|--------------|----------|-------|----------|
| true        | node2_   | clus2  | up/up     | 169.254.19   | .183/16  | node2 | e0b      |
| true        |          |        |           |              |          |       |          |
|             |          |        |           |              |          |       |          |
| cluster1::> | > networ | k devi | ce-discov | very show -p | rotocol  | cdp   |          |
| Node/       | Local    | Disco  | vered     |              |          |       |          |
| Protocol    | Port     | Devic  | e (LLDP:  | ChassisID)   | Interfa  | се    | Platform |
|             |          |        |           |              |          |       |          |
|             |          |        |           |              |          |       |          |
| node2       | /cdp     |        |           |              |          |       |          |
|             | e0a      | cs1    |           |              | 0/2      |       | BES-     |
| 53248       |          |        |           |              |          |       |          |
|             | e0b      | cs2    |           |              | 0/2      |       | BES-     |
| 53248       |          |        |           |              |          |       |          |
| node1       | /cdp     |        |           |              |          |       |          |
|             | e0a      | cs1    |           |              | 0/1      |       | BES-     |
| 53248       |          |        |           |              |          |       |          |
|             | e0b      | cs2    |           |              | 0/1      |       | BES-     |
| 53248       |          |        |           |              |          |       |          |

|   | eighbors                             |                         |                           |                          |
|---|--------------------------------------|-------------------------|---------------------------|--------------------------|
| Capability Codes: 1<br>Bridge,                                  | R - Router, T                        | - Trans Brid            | lge, B - Sou              | rce Route                |
|   | S - Switch, H                        | - Host, I -             | IGMP, r - Re              | epeater                  |
| Device ID Port ID   |                                      | Holdtime                |                           | Platform                 |
| node1   |                                      | 175                     | Н                         | FAS2750                  |
| e0a<br>node2<br>e0a   | 0/2                                  | 152                     | Н                         | FAS2750                  |
| cs2<br>0/55   | 0/55                                 | 179                     | R                         | BES-53248                |
| cs2<br>0/56   | 0/56                                 | 179                     | R                         | BES-53248                |
| (cs2)# show isdp ne   | eighbors                             |                         |                           |                          |
| Capability Codes: 1 Bridge,                                     | R - Router, T                        |                         |                           |                          |
| Capability Codes: Device ID Port ID                             | R - Router, T · S - Switch, H ·      | - Host, I -<br>Holdtime | IGMP, r - Re              | epeater                  |
| Capability Codes: 1 Bridge,  Device ID Port ID                  | R - Router, T · S - Switch, H · Intf | - Host, I -<br>Holdtime | IGMP, r - Re              | epeater                  |
| Capability Codes: 1 Bridge,  Device ID Port ID  node1 e0b node2 | R - Router, T · S - Switch, H · Intf | - Host, I -<br>Holdtime | IGMP, r - Re              | epeater<br>Platform      |
| Capability Codes: 1 Bridge,  Device ID Port ID                  | R - Router, T · S - Switch, H · Intf | - Host, I -  Holdtime   | IGMP, r - Re Capability H | epeater Platform FAS2750 |

# Steps

- 1. Review the Replacement requirements.
- 2. If AutoSupport is enabled on this cluster, suppress automatic case creation by invoking an AutoSupport message:

system node autosupport invoke -node \* -type all -message MAINT=xh

where x is the duration of the maintenance window in hours.



The AutoSupport message notifies technical support of this maintenance task so that automatic case creation is suppressed during the maintenance window.

3. Install the appropriate Reference Configuration File (RCF) and image on the switch, newcs2, and make any necessary site preparations.

If necessary, verify, download, and install the appropriate versions of the RCF and EFOS software for the new switch. If you have verified that the new switch is correctly set up and does not need updates to the RCF and EFOS software, continue to step 2.

- a. You can download the applicable Broadcom EFOS software for your cluster switches from the Broadcom Ethernet Switch Support site. Follow the steps on the Download page to download the EFOS file for the version of ONTAP software you are installing.
- b. The appropriate RCF is available from the Broadcom Cluster Switches page. Follow the steps on the Download page to download the correct RCF for the version of ONTAP software you are installing.
- 4. On the new switch, log in as admin and shut down all of the ports that will be connected to the node cluster interfaces (ports 1 to 16).
  - (i)

If you purchased additional licenses for additional ports, shut down these ports too.

If the switch that you are replacing is not functional and is powered down, the LIFs on the cluster nodes should have already failed over to the other cluster port for each node.



No password is required to enter enable mode.

# Show example

```
User: admin
Password:
(newcs2) > enable
(newcs2) # config
(newcs2) (config) # interface 0/1-0/16
(newcs2) (interface 0/1-0/16) # shutdown
(newcs2) (interface 0/1-0/16) # exit
(newcs2) (config) # exit
(newcs2) #
```

5. Verify that all cluster LIFs have auto-revert enabled:

```
network interface show -vserver Cluster -fields auto-revert
```

### Show example topology

6. Shut down the ISL ports 0/55 and 0/56 on the BES-53248 switch cs1:

# Show example topology

```
(cs1) # config
(cs1) (config) # interface 0/55-0/56
(cs1) (interface 0/55-0/56) # shutdown
```

- 7. Remove all cables from the BES-53248 cs2 switch, and then connect them to the same ports on the BES-53248 newcs2 switch.
- 8. Bring up the ISLs ports 0/55 and 0/56 between the cs1 and newcs2 switches, and then verify the port channel operation status.

The Link State for port-channel 1/1 should be **up** and all member ports should be True under the Port Active heading.

### Show example

This example enables ISL ports 0/55 and 0/56 and displays the Link State for port-channel 1/1 on switch cs1:

```
(cs1) # config
(cs1) (config) # interface 0/55-0/56
(cs1) (interface 0/55-0/56) # no shutdown
(cs1) (interface 0/55-0/56) # exit
(cs1) # show port-channel 1/1
Local Interface..... 1/1
Channel Name..... Cluster-ISL
Link State..... Up
Admin Mode..... Enabled
Type...... Dynamic
Load Balance Option..... 7
(Enhanced hashing mode)
Mbr
    Device/
             Port
                    Port
Ports Timeout
             Speed
                    Active
_____ ____
0/55
   actor/long
             100G Full True
   partner/long
0/56 actor/long 100G Full True
    partner/long
```

9. On the new switch newcs2, re-enable all of the ports that are connected to the node cluster interfaces (ports 1 to 16).



If you purchased additional licenses for additional ports, shut down these ports too.

# Show example

```
User:admin
Password:
(newcs2)> enable
(newcs2)# config
(newcs2) (config)# interface 0/1-0/16
(newcs2) (interface 0/1-0/16)# no shutdown
(newcs2) (interface 0/1-0/16)# exit
(newcs2) (config)# exit
```

# 10. Verify that port e0b is **up**:

network port show -ipspace Cluster

# Show example

The output should be similar to the following:

| CIUSCEII       | ::> network po   | rt show -ipspac | e Cluste | er    |              |   |
|----------------|------------------|-----------------|----------|-------|--------------|---|
| Node: no       | de1              |                 |          |       |              |   |
| Ignore         |                  |                 |          |       |              |   |
| Health         | Health           |                 |          |       | Speed (Mbps) |   |
|                | IPspace          | Broadcast Doma  | in Link  | MTU   | Admin/Oper   |   |
|                |                  |                 |          |       |              |   |
| e0a<br>healthy | Cluster          | Cluster         | up       | 9000  | auto/10000   |   |
| _              | Cluster          | Cluster         | up       | 9000  | auto/10000   |   |
| healthy        | false            |                 |          |       |              |   |
| Node: no       | de2              |                 |          |       |              |   |
| Ignore         |                  |                 |          |       |              |   |
|                |                  |                 |          |       | Speed(Mbps)  |   |
| Health         |                  | D 1             |          |       | 7.1.1.70     |   |
|                | _                | Broadcast Doma  | in Link  | M'I'U | Admin/Oper   |   |
| Status<br>     | อเสเนร<br>       |                 |          |       |              |   |
|                |                  |                 |          |       |              |   |
|                | Cluster          | Cluster         | up       | 9000  | auto/10000   |   |
| healthy        | false<br>Cluster | Cluster         | up       | 9000  | auto/auto    | _ |
| false          | CIUSCEI          | CIUSCEI         | uр       | 2000  | auto, auto   |   |

11. On the same node as you used in the previous step, wait for the cluster LIF node1\_clus2 on node1 to autorevert.

### Show example

In this example, LIF node1\_clus2 on node1 is successfully reverted if Is Home is true and the port is e0b.

The following command displays information about the LIFs on both nodes. Bringing up the first node is successful if Is Home is true for both cluster interfaces and they show the correct port assignments, in this example e0a and e0b on node1.

```
cluster::> 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 169.254.209.69/16 node1
e0a
     true
         node1 clus2 up/up 169.254.49.125/16 node1
e0b
     true
         node2 clus1 up/up 169.254.47.194/16 node2
e0a true
         node2 clus2 up/up 169.254.19.183/16 node2
e0a
      false
```

## 12. Display information about the nodes in a cluster:

cluster show

### Show example

This example shows that the node health for node1 and node2 in this cluster is true:

```
cluster1::> cluster show

Node Health Eligibility Epsilon

-----
node1 true true true

node2 true true true
```

# 13. Confirm the following cluster network configuration:

network port show

| Ignore         |      |            |              |        | Snood | l (Mbna) | )          | Uool+h      |
|----------------|------|------------|--------------|--------|-------|----------|------------|-------------|
| Health         |      |            |              |        | pheec | (MDPS)   |            | nearti.     |
| Port<br>Status | IF   | Pspace     | Broadcast Do | omain  | Link  | MTU      | Admin/Oper | Status<br>- |
| e0a<br>healthy |      |            | Cluster      |        | up    | 9000     | auto/10000 |             |
| _              | Cl   | uster      | Cluster      |        | up    | 9000     | auto/10000 |             |
| Node: no       | ode2 |            |              |        |       |          |            |             |
| Ignore         |      |            |              |        | Q     | -l /h/l  | - )        |             |
| Health         |      |            |              |        | spee  | ea (Mbps | 5)         | неатти      |
| Port<br>Status | IF   | Space      | Broadcast 1  | Domain | Link  | : MTU    | Admin/Oper | Status      |
|                | <br> |            |              |        |       |          |            | -           |
| e0a            | Cl   | uster      | Cluster      |        | up    | 9000     | auto/10000 |             |
| healthy        | fal  | se         |              |        |       |          |            |             |
|                |      | uster      | Cluster      |        | up    | 9000     | auto/10000 |             |
| healthy        | fal  | se         |              |        |       |          |            |             |
| cluster1       | L::> | network in | terface show | w -vse | rver  | Cluste   | er         |             |
|                |      | Logical    | Status       | Netwo  | rk    |          | Current    |             |
| Current        | Is   |            |              |        |       |          |            |             |
| Vserver        |      | Interface  | Admin/Oper   | Addre  | ss/Ma | ısk      | Node       |             |
| Port           | Home |            |              |        |       |          |            |             |
|                |      |            |              |        |       |          |            |             |
| Cluster        |      |            | 1 /          | 160 2  | 54 20 | 19 69/   | l6 node1   |             |
| Clustel        |      | nodel clus | ı up/up      | 100.2  | 51.20 |          |            |             |
|                | true | node1_clus | ı up/up      | 107.2  | 31.20 |          |            |             |

```
e0a true
node2_clus2 up/up 169.254.19.183/16 node2
e0b true
4 entries were displayed.
```

+

# cs1# show cdp neighbors Capability Codes: R - Router, T - Trans-Bridge, B - Source-Route-Bridge S - Switch, H - Host, I - IGMP, r - Repeater, V - VoIP-Phone, D - Remotely-Managed-Device, s - Supports-STP-Dispute Device-ID Local Intrfce Hldtme Capability Platform Port ID Eth1/1 144 node1 Н FAS2980 e0a node2 Eth1/2 145 Н FAS2980 e0a newcs2(FDO296348FU) Eth1/65 176 R S I S N9K-C92300YC Eth1/65 newcs2(FD0296348FU) Eth1/66 176 R S I s N9K-C92300YC Eth1/66 cs2# show cdp neighbors Capability Codes: R - Router, T - Trans-Bridge, B - Source-Route-Bridge S - Switch, H - Host, I - IGMP, r - Repeater, V - VoIP-Phone, D - Remotely-Managed-Device, s - Supports-STP-Dispute Device-ID Local Intrfce Hldtme Capability Platform Port ID node1 Eth1/1 139 Н FAS2980 e0b Eth1/2 124 node2 FAS2980 Н e0b cs1(FD0220329KU) Eth1/65 178 R S I s N9K-C92300YC Eth1/65 Eth1/66 cs1(FDO220329KU) 178 R S I s N9K-C92300YC Eth1/66

14. Verify that the cluster network is healthy:

```
show isdp neighbors
```

# Show example

```
(cs1) # show isdp neighbors
Capability Codes: R - Router, T - Trans Bridge, B - Source Route
Bridge,
S - Switch, H - Host, I - IGMP, r - Repeater
Device ID Intf Holdtime Capability
                                        Platform Port ID
                                                  -----
-----
          ____
                  -----
                            -----
                                        -----
          0/1
               175
                                        FAS2750
                                                  e0a
node1
                            Η
node2
          0/2
                 152
                           Н
                                       FAS2750
                                                 e0a
         0/55 179
0/56 179
newcs2
                           R
                                       BES-53248 0/55
                           R
                                       BES-53248 0/56
newcs2
(newcs2) # show isdp neighbors
Capability Codes: R - Router, T - Trans Bridge, B - Source Route
Bridge,
S - Switch, H - Host, I - IGMP, r - Repeater
Device ID
                 Holdtime
                            Capability
          Intf
                                       Platform
                                                 Port ID
_____
           ____
                  _____
                            _____
                                        -----
                                                  _____
           0/1
                129
node1
                            Н
                                        FAS2750
                                                  e0b
node2
           0/2
                  165
                            Η
                                        FAS2750
                                                  e0b
          0/55
                                        BES-53248 0/55
cs1
                 179
                            R
           0/56
                  179
                            R
                                        BES-53248 0/56
cs1
```

15. If you suppressed automatic case creation, re-enable it by invoking an AutoSupport message:

```
system node autosupport invoke -node * -type all -message MAINT=END
```

# What's next?

See Enable the log collection feature for the steps required to enable cluster health switch log collection used for collecting switch-related log files.

# Replace Broadcom BES-53248 cluster switches with switchless connections

You can migrate from a cluster with a switched cluster network to one where two nodes are directly connected for ONTAP 9.3 and later.

# **Review requirements**

### Guidelines

Review the following guidelines:

- Migrating to a two-node switchless cluster configuration is a nondisruptive operation. Most systems have
  two dedicated cluster interconnect ports on each node, but you can also use this procedure for systems
  with a larger number of dedicated cluster interconnect ports on each node, such as four, six or eight.
- You cannot use the switchless cluster interconnect feature with more than two nodes.
- If you have an existing two-node cluster that uses cluster interconnect switches and is running ONTAP 9.3 or later, you can replace the switches with direct, back-to-back connections between the nodes.

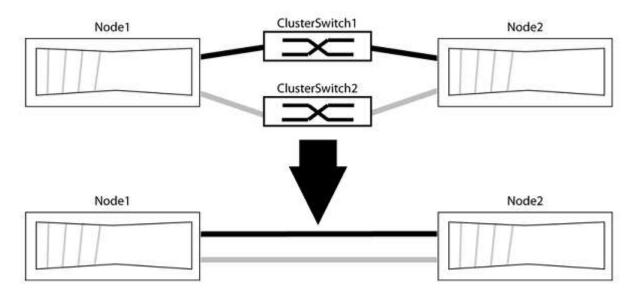
# What you'll need

- A healthy cluster that consists of two nodes connected by cluster switches. The nodes must be running the same ONTAP release.
- Each node with the required number of dedicated cluster ports, which provide redundant cluster interconnect connections to support your system configuration. For example, there are two redundant ports for a system with two dedicated cluster interconnect ports on each node.

# Migrate the switches

#### About this task

The following procedure removes the cluster switches in a two-node cluster and replaces each connection to the switch with a direct connection to the partner node.



# About the examples

The examples in the following procedure show nodes that are using "e0a" and "e0b" as cluster ports. Your nodes might be using different cluster ports as they vary by system.

### **Step 1: Prepare for migration**

1. Change the privilege level to advanced, entering y when prompted to continue:

set -privilege advanced

The advanced prompt \*> appears.

2. ONTAP 9.3 and later supports automatic detection of switchless clusters, which is enabled by default.

You can verify that detection of switchless clusters is enabled by running the advanced privilege command:

```
network options detect-switchless-cluster show
```

## Show example

The following example output shows if the option is enabled.

```
cluster::*> network options detect-switchless-cluster show
  (network options detect-switchless-cluster show)
Enable Switchless Cluster Detection: true
```

If "Enable Switchless Cluster Detection" is false, contact NetApp support.

If AutoSupport is enabled on this cluster, suppress automatic case creation by invoking an AutoSupport message:

```
system node autosupport invoke -node * -type all -message MAINT=<number of hours>h
```

where  ${\tt h}$  is the duration of the maintenance window in hours. The message notifies technical support of this maintenance task so that they can suppress automatic case creation during the maintenance window.

In the following example, the command suppresses automatic case creation for two hours:

# Show example

```
cluster::*> system node autosupport invoke -node * -type all
-message MAINT=2h
```

### Step 2: Configure ports and cabling

- Organize the cluster ports on each switch into groups so that the cluster ports in group1 go to cluster switch1 and the cluster ports in group2 go to cluster switch2. These groups are required later in the procedure.
- 2. Identify the cluster ports and verify link status and health:

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

In the following example for nodes with cluster ports "e0a" and "e0b", one group is identified as "node1:e0a" and "node2:e0a" and the other group as "node1:e0b" and "node2:e0b". Your nodes might be using different cluster ports because they vary by system.



Verify that the ports have a value of up for the "Link" column and a value of healthy for the "Health Status" column.

# Show example

| Node: r | node1   |           |        |      |      |              |         |
|---------|---------|-----------|--------|------|------|--------------|---------|
|         |         |           |        |      |      |              |         |
| Ignore  |         |           |        |      |      |              |         |
|         |         |           |        |      |      | Speed(Mbps)  | Health  |
| Health  |         |           |        |      |      |              |         |
| Port I  | [Pspace | Broadcast | Domain | Link | MTU  | Admin/Oper   | Status  |
| Status  |         |           |        |      |      |              |         |
|         |         |           |        |      |      |              |         |
|         | -       |           |        |      |      | /4.00==      |         |
|         | Cluster | Cluster   |        | up   | 9000 | auto/10000   | healthy |
| false   | ~ 1     |           |        |      | 0000 | /10000       | 1 7 1   |
|         | Cluster | Cluster   |        | up   | 9000 | auto/10000   | healthy |
| false   |         |           |        |      |      |              |         |
| Node: r | node?   |           |        |      |      |              |         |
| Noue: 1 | 10462   |           |        |      |      |              |         |
| Ignore  |         |           |        |      |      |              |         |
| 3       |         |           |        |      |      | 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   |         |           |        |      |      |              |         |

3. Confirm that all the cluster LIFs are on their home ports.

Verify that the "is-home" column is true for each of the cluster LIFs:

network interface show -vserver Cluster -fields is-home

# Show example

If there are cluster LIFs that are not on their home ports, revert those LIFs to their home ports:

```
network interface revert -vserver Cluster -lif *
```

4. Disable auto-revert for the cluster LIFs:

```
network interface modify -vserver Cluster -lif * -auto-revert false
```

5. Verify that all ports listed in the previous step are connected to a network switch:

```
network device-discovery show -port cluster port
```

The "Discovered Device" column should be the name of the cluster switch that the port is connected to.

### Show example

The following example shows that cluster ports "e0a" and "e0b" are correctly connected to cluster switches "cs1" and "cs2".

```
cluster::> network device-discovery show -port e0a|e0b
  (network device-discovery show)
      Local Discovered
Node/
Protocol Port Device (LLDP: ChassisID) Interface Platform
node1/cdp
         e0a cs1
                                        0/11
                                                  BES-53248
         e0b cs2
                                        0/12
                                                  BES-53248
node2/cdp
         e0a cs1
                                        0/9
                                                  BES-53248
         e0b
                                        0/9
               cs2
                                                   BES-53248
4 entries were displayed.
```

6. Verify the cluster connectivity:

```
cluster ping-cluster -node local
```

7. Verify that the cluster is healthy:

```
cluster ring show
```

All units must be either master or secondary.

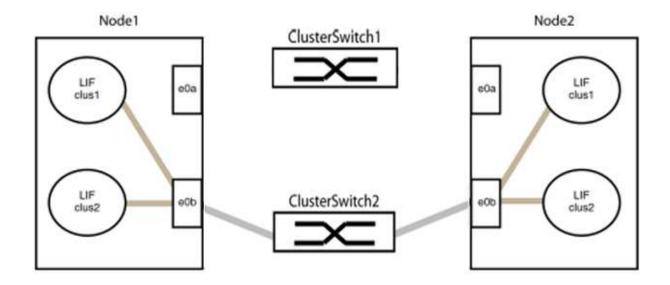
8. Set up the switchless configuration for the ports in group 1.



To avoid potential networking issues, you must disconnect the ports from group1 and reconnect them back-to-back as quickly as possible, for example, **in less than 20 seconds**.

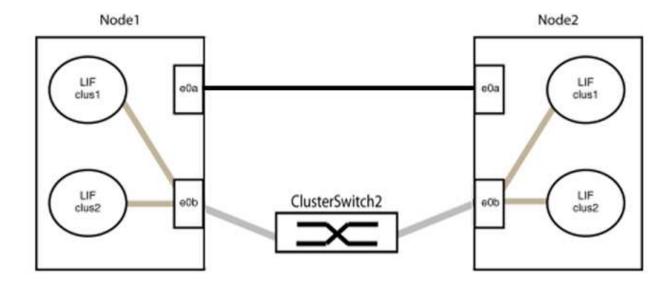
a. Disconnect all the cables from the ports in group1 at the same time.

In the following example, the cables are disconnected from port "e0a" on each node, and cluster traffic continues through the switch and port "e0b" on each node:



b. Cable the ports in group1 back-to-back.

In the following example, "e0a" on node1 is connected to "e0a" on node2:



9. The switchless cluster network option transitions from false to true. This might take up to 45 seconds. Confirm that the switchless option is set to true:

network options switchless-cluster show

The following example shows that the switchless cluster is enabled:

cluster::\*> network options switchless-cluster show
Enable Switchless Cluster: true

10. Verify that the cluster network is not disrupted:

cluster ping-cluster -node local



Before proceeding to the next step, you must wait at least two minutes to confirm a working back-to-back connection on group 1.

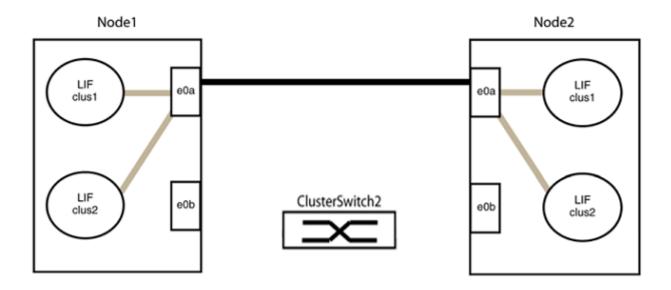
# 11. Set up the switchless configuration for the ports in group 2.



To avoid potential networking issues, you must disconnect the ports from group2 and reconnect them back-to-back as quickly as possible, for example, **in less than 20 seconds**.

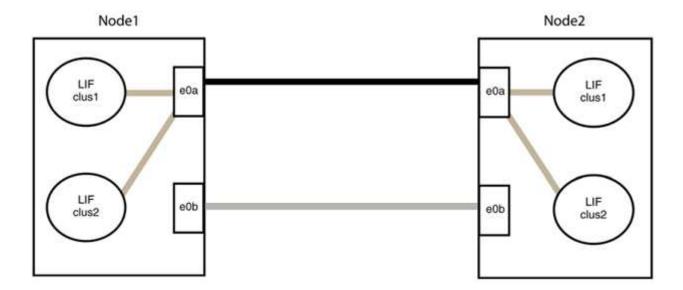
a. Disconnect all the cables from the ports in group2 at the same time.

In the following example, the cables are disconnected from port "e0b" on each node, and cluster traffic continues through the direct connection between the "e0a" ports:



b. Cable the ports in group2 back-to-back.

In the following example, "e0a" on node1 is connected to "e0a" on node2 and "e0b" on node1 is connected to "e0b" on node2:



# Step 3: Verify the configuration

1. Verify that the ports on both nodes are correctly connected:

network device-discovery show -port cluster port

# Show example

The following example shows that cluster ports "e0a" and "e0b" are correctly connected to the corresponding port on the cluster partner:

```
cluster::> net device-discovery show -port e0a|e0b
 (network device-discovery show)
Node/
     Local Discovered
Protocol Port Device (LLDP: ChassisID) Interface Platform
node1/cdp
        e0a node2
                                   e0a
                                           AFF-A300
        e0b node2
                                   e0b
                                            AFF-A300
node1/lldp
        e0a node2 (00:a0:98:da:16:44) e0a
        e0b node2 (00:a0:98:da:16:44) e0b
node2/cdp
         e0a node1
                                   e0a
                                            AFF-A300
         e0b
             node1
                                   e0b
                                            AFF-A300
node2/11dp
         e0a
             node1 (00:a0:98:da:87:49) e0a
              node1 (00:a0:98:da:87:49) e0b
        e0b
8 entries were displayed.
```

2. Re-enable auto-revert for the cluster LIFs:

network interface modify -vserver Cluster -lif  $\star$  -auto-revert true

3. Verify that all LIFs are home. This might take a few seconds.

network interface show -vserver Cluster -lif lif\_name

### Show example

The LIFs have been reverted if the "Is Home" column is true, as shown for node1\_clus2 and node2\_clus2 in the following example:

If any cluster LIFS have not returned to their home ports, revert them manually from the local node:

```
network interface revert -vserver Cluster -lif lif name
```

4. Check the cluster status of the nodes from the system console of either node:

cluster show

### Show example

The following example shows epsilon on both nodes to be false:

5. Confirm connectivity between the cluster ports:

```
cluster ping-cluster local
```

6. If you suppressed automatic case creation, reenable it by invoking an AutoSupport message:

```
system node autosupport invoke -node * -type all -message MAINT=END
```

For more information, see NetApp KB Article 1010449: How to suppress automatic case creation during scheduled maintenance windows.

7. Change the privilege level back to admin:

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