



# **Replace a Cisco Nexus 3232C cluster switch**

Cluster and storage switches

NetApp  
September 23, 2022

This PDF was generated from <https://docs.netapp.com/us-en/ontap-systems-switches/switch-cisco-3232c/task-how-to-replace-a-cisco-nexus-3232c-cluster-switch.html> on September 23, 2022. Always check docs.netapp.com for the latest.

# Table of Contents

|  |   |
|--|---|
| Replace a Cisco Nexus 3232C cluster switch .....       | 1 |
| How to replace a Cisco Nexus 3232C cluster switch..... | 1 |

# Replace a Cisco Nexus 3232C cluster switch

You must be aware of certain configuration information, port connections and cabling requirements when you replace Cisco Nexus 3232C cluster switches.

You must verify the following conditions exist before installing the NX-OS software and RCFs on a Cisco Nexus cluster switch:

- Your system can support Cisco Nexus 3232C switches.
- The cluster must be fully functioning.
- You must have consulted the switch compatibility table on the Cisco Ethernet Switch page for the supported ONTAP, NX-OS, and RCF versions.



You should be aware there can be dependencies between command syntax in the RCF and NX-OS versions.

- You must have referred to the appropriate software and upgrade guides available on the Cisco web site for complete documentation on the Cisco switch upgrade and downgrade procedures.
- You must have downloaded the applicable RCFs.

## How to replace a Cisco Nexus 3232C cluster switch

You can nondisruptively replace a defective Cisco Nexus 3232C switch in a cluster by performing a specific sequence of tasks.

### Before you begin

The existing cluster and network configuration must have the following characteristics:

- The Nexus 3232C cluster infrastructure must be redundant and fully functional on both switches.

The Cisco Ethernet Switches page has the latest RCF and NX-OS versions on your switches.

- All cluster ports must be in the up state.
- Management connectivity must exist on both switches.
- All cluster logical interfaces (LIFs) must be in the up state and must not have been migrated.

The replacement Cisco Nexus 3232C switch must have the following characteristics:

- Management network connectivity must be functional.
- Console access to the replacement switch must be in place.
- The appropriate RCF and NX-OS operating system image must be loaded onto the switch.
- Initial customization of the switch must be complete.

### About this task

#### Procedure summary

- **Display and migrate the cluster ports to switch C2 (Steps 1-7)**

- **Reconnect ISL cables from switch CL2 to switch C2, then migrate ISLs to switch CL1 and C2 (Steps 8-14)**
- **Revert all LIFs to originally assigned ports (Steps 15-18)**
- **Verify all ports and LIF are correctly migrated (Steps 19-21)**

This procedure replaces the second Nexus 3232C cluster switch CL2 with the new 3232C switch C2. The examples in this procedure use the following switch and node nomenclature:

- The four nodes are n1, n2, n3, and n4.
- n1\_clus1 is the first cluster logical interface (LIF) connected to cluster switch C1 for node n1.
- n1\_clus2 is the first cluster LIF connected to cluster switch CL2 or C2 for node n1.
- n1\_clus3 is the second LIF connected to cluster switch C2 for node n1.-
- n1\_clus4 is the second LIF connected to cluster switch CL1, for node n1.

The number of 10 GbE and 40/100 GbE ports are defined in the reference configuration files (RCFs) available on the [Cisco® Cluster Network Switch Reference Configuration File Download](#) page.

The examples in this procedure use four nodes. Two of the nodes use four 10 GB cluster interconnect ports: e0a, e0b, e0c, and e0d. The other two nodes use two 40 GB cluster interconnect ports: e4a and e4e. See the [Hardware Universe](#) to verify the correct cluster ports for your platform.

This procedure describes the following scenario:

- The cluster initially has four nodes connected to two Nexus 3232C cluster switches, CL1 and CL2.
- You plan to replace cluster switch CL2 with C2 (steps 1 to 21):
  - On each node, you migrate the cluster LIFs connected to cluster switch CL2 to cluster ports connected to cluster switch CL1.
  - You disconnect the cabling from all ports on cluster switch CL2 and reconnect the cabling to the same ports on the replacement cluster switch C2.
  - You revert the migrated cluster LIFs on each node.

## Steps

1. 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
```

+ 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.

1. Display information about the devices in your configuration:

```
network device-discovery show
```

```
cluster::> network device-discovery show
```

| Node | Local Port | Discovered Device | Interface     | Platform   |
|------|------------|-------------------|---------------|------------|
| n1   | /cdp       |                   |               |            |
|      | e0a        | CL1               | Ethernet1/1/1 | N3K-C3232C |
|      | e0b        | CL2               | Ethernet1/1/1 | N3K-C3232C |
|      | e0c        | CL2               | Ethernet1/1/2 | N3K-C3232C |
|      | e0d        | CL1               | Ethernet1/1/2 | N3K-C3232C |
| n2   | /cdp       |                   |               |            |
|      | e0a        | CL1               | Ethernet1/1/3 | N3K-C3232C |
|      | e0b        | CL2               | Ethernet1/1/3 | N3K-C3232C |
|      | e0c        | CL2               | Ethernet1/1/4 | N3K-C3232C |
|      | e0d        | CL1               | Ethernet1/1/4 | N3K-C3232C |
| n3   | /cdp       |                   |               |            |
|      | e4a        | CL1               | Ethernet1/7   | N3K-C3232C |
|      | e4e        | CL2               | Ethernet1/7   | N3K-C3232C |
| n4   | /cdp       |                   |               |            |
|      | e4a        | CL1               | Ethernet1/8   | N3K-C3232C |
|      | e4e        | CL2               | Ethernet1/8   | N3K-C3232C |

12 entries were displayed

## 2. Determine the administrative or operational status for each cluster interface.

### a. Display the network port attributes:

```
network port show -role cluster
```

```
cluster::*> network port show -role cluster
(network port show)
Node: n1

Ignore

Health
Port      IPspace      Broadcast Domain Link MTU  Admin/Oper  Status
Status
-----
e0a       Cluster      Cluster      up    9000  auto/10000  -
e0b       Cluster      Cluster      up    9000  auto/10000  -
```

```

e0c      Cluster      Cluster      up    9000 auto/10000 -
e0d      Cluster      Cluster      up    9000 auto/10000 -
-

Node: n2

Ignore

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

e0a      Cluster      Cluster      up    9000 auto/10000 -
e0b      Cluster      Cluster      up    9000 auto/10000 -
e0c      Cluster      Cluster      up    9000 auto/10000 -
e0d      Cluster      Cluster      up    9000 auto/10000 -
-

Node: n3

Ignore

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

e4a      Cluster      Cluster      up    9000 auto/40000 -
-
e4e      Cluster      Cluster      up    9000 auto/40000 -
-

Node: n4

Ignore

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

e4a      Cluster      Cluster      up    9000 auto/40000 -
e4e      Cluster      Cluster      up    9000 auto/40000 -

12 entries were displayed.

```

b. Display information about the logical interfaces (LIFs):

```
network interface show -role cluster
```

```
cluster::*> network interface show -role cluster
```

|            | Logical   | Status     | Network       | Current |
|------------|-----------|------------|---------------|---------|
| Current Is |           |            |               |         |
| Vserver    | Interface | Admin/Oper | Address/Mask  | Node    |
| Port       | Home      |            |               |         |
| -----      | -----     | -----      | -----         | -----   |
| -----      | ---       |            |               |         |
| Cluster    |           |            |               |         |
|            | n1_clus1  | up/up      | 10.10.0.1/24  | n1      |
| e0a        | true      |            |               |         |
|            | n1_clus2  | up/up      | 10.10.0.2/24  | n1      |
| e0b        | true      |            |               |         |
|            | n1_clus3  | up/up      | 10.10.0.3/24  | n1      |
| e0c        | true      |            |               |         |
|            | n1_clus4  | up/up      | 10.10.0.4/24  | n1      |
| e0d        | true      |            |               |         |
|            | n2_clus1  | up/up      | 10.10.0.5/24  | n2      |
| e0a        | true      |            |               |         |
|            | n2_clus2  | up/up      | 10.10.0.6/24  | n2      |
| e0b        | true      |            |               |         |
|            | n2_clus3  | up/up      | 10.10.0.7/24  | n2      |
| e0c        | true      |            |               |         |
|            | n2_clus4  | up/up      | 10.10.0.8/24  | n2      |
| e0d        | true      |            |               |         |
|            | n3_clus1  | up/up      | 10.10.0.9/24  | n3      |
| e0a        | true      |            |               |         |
|            | n3_clus2  | up/up      | 10.10.0.10/24 | n3      |
| e0e        | true      |            |               |         |
|            | n4_clus1  | up/up      | 10.10.0.11/24 | n4      |
| e0a        | true      |            |               |         |
|            | n4_clus2  | up/up      | 10.10.0.12/24 | n4      |
| e0e        | true      |            |               |         |

12 entries were displayed.

c. Display the discovered cluster switches:

```
system cluster-switch show
```

The following output example displays the cluster switches:

```
cluster::> system cluster-switch show
```

| Switch   | Type            | Address     | Model |
|--|-----------------|-------------|-------|
| CL1  | cluster-network | 10.10.1.101 |       |
| NX3232C  |                 |             |       |
| Serial Number: FOX000001   |                 |             |       |
| Is Monitored: true   |                 |             |       |
| Reason:  |                 |             |       |
| Software Version: Cisco Nexus Operating System (NX-OS) Software, |                 |             |       |
| Version  |                 |             |       |
| 7.0(3)I6(1)  |                 |             |       |
| Version Source: CDP  |                 |             |       |
| CL2  | cluster-network | 10.10.1.102 |       |
| NX3232C  |                 |             |       |
| Serial Number: FOX000002   |                 |             |       |
| Is Monitored: true   |                 |             |       |
| Reason:  |                 |             |       |
| Software Version: Cisco Nexus Operating System (NX-OS) Software, |                 |             |       |
| Version  |                 |             |       |
| 7.0(3)I6(1)  |                 |             |       |
| Version Source: CDP  |                 |             |       |

2 entries were displayed.

3. Verify that the appropriate RCF and image are installed on the new Nexus 3232C switch and make any necessary site customizations.

- a. Go to the NetApp Support Site.

[mysupport.netapp.com](https://mysupport.netapp.com)

- b. Go to the **Cisco Ethernet Switches** page and note the required software versions in the table.

[Cisco Ethernet Switches](#)

- c. Download the appropriate version of the RCF.
- d. Click **CONTINUE** on the **Description** page, accept the license agreement, and then navigate to the **Download** page.
- e. Download the correct version of the image software from the **Cisco® Cluster and Management Network Switch Reference Configuration File Download** page.

[Cisco® Cluster and Management Network Switch Reference Configuration File Download](#)

4. Migrate the cluster LIFs to the physical node ports connected to the replacement switch C2:

```
network interface migrate -vserver Cluster -lif lif-name -source-node node-
```



*name -destination-node node-name -destination-port port-name*

You must migrate all the cluster LIFs individually as shown in the following example:

```
cluster::*> network interface migrate -vserver Cluster -lif n1_clus2
-source-node n1 -destination-
node n1 -destination-port e0a
cluster::*> network interface migrate -vserver Cluster -lif n1_clus3
-source-node n1 -destination-
node n1 -destination-port e0d
cluster::*> network interface migrate -vserver Cluster -lif n2_clus2
-source-node n2 -destination-
node n2 -destination-port e0a
cluster::*> network interface migrate -vserver Cluster -lif n2_clus3
-source-node n2 -destination-
node n2 -destination-port e0d
cluster::*> network interface migrate -vserver Cluster -lif n3_clus2
-source-node n3 -destination-
node n3 -destination-port e4a
cluster::*> network interface migrate -vserver Cluster -lif n4_clus2
-source-node n4 -destinationnode
n4 -destination-port e4a
```

5. Verify the status of the cluster ports and their home designations:

```
network interface show -role cluster
```

```

cluster::*> network interface show -role cluster
(network interface show)

```

| Current Is<br>Vserver<br>Home | Logical<br>Interface | Status<br>Admin/Oper | Network<br>Address/Mask | Current<br>Node | Port |
|-------------------------------|----------------------|----------------------|-------------------------|-----------------|------|
| Cluster                       | n1_clus1             | up/up                | 10.10.0.1/24            | n1              | e0a  |
| true                          | n1_clus2             | up/up                | 10.10.0.2/24            | n1              | e0a  |
| false                         | n1_clus3             | up/up                | 10.10.0.3/24            | n1              | e0d  |
| false                         | n1_clus4             | up/up                | 10.10.0.4/24            | n1              | e0d  |
| true                          | n2_clus1             | up/up                | 10.10.0.5/24            | n2              | e0a  |
| true                          | n2_clus2             | up/up                | 10.10.0.6/24            | n2              | e0a  |
| false                         | n2_clus3             | up/up                | 10.10.0.7/24            | n2              | e0d  |
| false                         | n2_clus4             | up/up                | 10.10.0.8/24            | n2              | e0d  |
| true                          | n3_clus1             | up/up                | 10.10.0.9/24            | n3              | e4a  |
| true                          | n3_clus2             | up/up                | 10.10.0.10/24           | n3              | e4a  |
| false                         | n4_clus1             | up/up                | 10.10.0.11/24           | n4              | e4a  |
| true                          | n4_clus2             | up/up                | 10.10.0.12/24           | n4              | e4a  |
| false                         |                      |                      |                         |                 |      |

12 entries were displayed.

6. Shut down the cluster interconnect ports that are physically connected to the original switch CL2: `network port modify -node node-name -port port-name -up-admin false`

The following example shows the cluster interconnect ports are shut down on all nodes:

```
cluster::*> network port modify -node n1 -port e0b -up-admin false
cluster::*> network port modify -node n1 -port e0c -up-admin false
cluster::*> network port modify -node n2 -port e0b -up-admin false
cluster::*> network port modify -node n2 -port e0c -up-admin false
cluster::*> network port modify -node n3 -port e4e -up-admin false
cluster::*> network port modify -node n4 -port e4e -up-admin false
```

## 7. Ping the remote cluster interfaces and perform an RPC server check:

```
cluster ping-cluster -node node-name
```

The following example shows node n1 being pinged and the RPC status indicated afterward:

```
cluster::*> cluster ping-cluster -node n1
Host is n1 Getting addresses from network interface table...
Cluster n1_clus1 n1      e0a      10.10.0.1
Cluster n1_clus2 n1      e0b      10.10.0.2
Cluster n1_clus3 n1      e0c      10.10.0.3
Cluster n1_clus4 n1      e0d      10.10.0.4
Cluster n2_clus1 n2      e0a      10.10.0.5
Cluster n2_clus2 n2      e0b      10.10.0.6
Cluster n2_clus3 n2      e0c      10.10.0.7
Cluster n2_clus4 n2      e0d      10.10.0.8
Cluster n3_clus1 n4      e0a      10.10.0.9
Cluster n3_clus2 n3      e0e      10.10.0.10
Cluster n4_clus1 n4      e0a      10.10.0.11
Cluster n4_clus2 n4      e0e      10.10.0.12
Local = 10.10.0.1 10.10.0.2 10.10.0.3 10.10.0.4
Remote = 10.10.0.5 10.10.0.6 10.10.0.7 10.10.0.8 10.10.0.9 10.10.0.10
10.10.0.11
10.10.0.12 Cluster Vserver Id = 4294967293 Ping status:
....
Basic connectivity succeeds on 32 path(s)
Basic connectivity fails on 0 path(s) .....
Detected 9000 byte MTU on 32 path(s):
    Local 10.10.0.1 to Remote 10.10.0.5
    Local 10.10.0.1 to Remote 10.10.0.6
    Local 10.10.0.1 to Remote 10.10.0.7
    Local 10.10.0.1 to Remote 10.10.0.8
    Local 10.10.0.1 to Remote 10.10.0.9
    Local 10.10.0.1 to Remote 10.10.0.10
    Local 10.10.0.1 to Remote 10.10.0.11
    Local 10.10.0.1 to Remote 10.10.0.12
    Local 10.10.0.2 to Remote 10.10.0.5
    Local 10.10.0.2 to Remote 10.10.0.6
```

```
Local 10.10.0.2 to Remote 10.10.0.7
Local 10.10.0.2 to Remote 10.10.0.8
Local 10.10.0.2 to Remote 10.10.0.9
Local 10.10.0.2 to Remote 10.10.0.10
Local 10.10.0.2 to Remote 10.10.0.11
Local 10.10.0.2 to Remote 10.10.0.12
Local 10.10.0.3 to Remote 10.10.0.5
Local 10.10.0.3 to Remote 10.10.0.6
Local 10.10.0.3 to Remote 10.10.0.7
Local 10.10.0.3 to Remote 10.10.0.8
Local 10.10.0.3 to Remote 10.10.0.9
Local 10.10.0.3 to Remote 10.10.0.10
Local 10.10.0.3 to Remote 10.10.0.11
Local 10.10.0.3 to Remote 10.10.0.12
Local 10.10.0.4 to Remote 10.10.0.5
Local 10.10.0.4 to Remote 10.10.0.6
Local 10.10.0.4 to Remote 10.10.0.7
Local 10.10.0.4 to Remote 10.10.0.8
Local 10.10.0.4 to Remote 10.10.0.9
Local 10.10.0.4 to Remote 10.10.0.10
Local 10.10.0.4 to Remote 10.10.0.11
Local 10.10.0.4 to Remote 10.10.0.12
Larger than PMTU communication succeeds on 32 path(s) RPC status:
8 paths up, 0 paths down (tcp check)
8  paths up, 0 paths down (udp check)
```

8. Shut down the ports 1/31 and 1/32 on cluster switch CL1.

For more information on Cisco commands, see the guides listed in the [Cisco Nexus 3000 Series NX-OS Command References](#).

```
(CL1)# configure
(CL1)(Config)# interface e1/31-32
(CL1(config-if-range)# shutdown
(CL1(config-if-range)# exit
(CL1)(Config)# exit (CL1)#
```

9. Remove all the cables attached to the cluster switch CL2 and reconnect them to the replacement switch C2 for all the nodes.
10. Remove the inter-switch link (ISL) cables from ports e1/31 and e1/32 on cluster switch CL2 and reconnect them to the same ports on the replacement switch C2.
11. Bring up ISL ports 1/31 and 1/32 on the cluster switch CL1.

For more information on Cisco commands, see the guides listed in the [Cisco Nexus 3000 Series NX-OS Command References](#).

```
(CL1)# configure
(CL1) (Config)# interface e1/31-32
(CL1(config-if-range)# no shutdown
(CL1(config-if-range)# exit
(CL1) (Config)# exit
(CL1)#
```

12. Verify that the ISLs are up on CL1.

For more information on Cisco commands, see the guides listed in the [Cisco Nexus 3000 Series NX-OS Command References](#).

Ports Eth1/31 and Eth1/32 should indicate (P) , which means that the ISL ports are up in the port-channel:

```
CL1# show port-channel summary
Flags: D - Down          P - Up in port-channel (members)
      I - Individual    H - Hot-standby (LACP only)
      s - Suspended     r - Module-removed
      S - Switched      R - Routed
      U - Up (port-channel)
      M - Not in use. Min-links not met

-----
-----
Group Port-          Type   Protocol  Member Ports
      Channel
-----
-----
1      Po1 (SU)       Eth    LACP      Eth1/31 (P)  Eth1/32 (P)
```

13. Verify that the ISLs are up on cluster switch C2.

For more information on Cisco commands, see the guides listed in the [Cisco Nexus 3000 Series NX-OS Command References](#).

Ports Eth1/31 and Eth1/32 should indicate (P), which means that both ISL ports are up in the port-channel.

Example

C2# show port-channel summary

Flags: D - Down                    P - Up in port-channel (members)  
      I - Individual        H - Hot-standby (LACP only)            s - Suspended  
r - Module-removed  
      S - Switched        R - Routed  
      U - Up (port-channel)  
      M - Not in use. Min-links not met

```
-----  
-----  
Group Port-          Type   Protocol  Member Ports  
Channel  
-----  
-----  
1      Po1(SU)       Eth     LACP      Eth1/31(P)  Eth1/32(P)
```

14. On all nodes, bring up all the cluster interconnect ports connected to the replacement switch C2:

```
network port modify -node node-name -port port-name -up-admin true
```

```
cluster::*> network port modify -node n1 -port e0b -up-admin true  
cluster::*> network port modify -node n1 -port e0c -up-admin true  
cluster::*> network port modify -node n2 -port e0b -up-admin true  
cluster::*> network port modify -node n2 -port e0c -up-admin true  
cluster::*> network port modify -node n3 -port e4e -up-admin true  
cluster::*> network port modify -node n4 -port e4e -up-admin true
```

15. Revert all the migrated cluster interconnect LIFs on all the nodes:

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

You must revert all the cluster interconnect LIFs individually as shown in the following example:

```
cluster::*> network interface revert -vserver cluster -lif n1_clus2  
cluster::*> network interface revert -vserver cluster -lif n1_clus3  
cluster::*> network interface revert -vserver cluster -lif n2_clus2  
cluster::*> network interface revert -vserver cluster -lif n2_clus3  
Cluster::*> network interface revert -vserver cluster -lif n3_clus2  
Cluster::*> network interface revert -vserver cluster -lif n4_clus2
```

16. Verify that the cluster interconnect ports are now reverted to their home:

```
network interface show
```

The following example shows that all the LIFs have been successfully reverted because the ports listed under the `Current Port` column have a status of `true` in the `Is Home` column. If a port has a value of `false`, the LIF has not been reverted.

```
cluster::*> network interface show -role cluster
(network interface show)
```

|            | Logical   | Status     | Network       | Current |       |
|------------|-----------|------------|---------------|---------|-------|
| Current Is |           |            |               |         |       |
| Vserver    | Interface | Admin/Oper | Address/Mask  | Node    | Port  |
| Home       |           |            |               |         |       |
| -----      | -----     | -----      | -----         | -----   | ----- |
| Cluster    |           |            |               |         |       |
| true       | n1_clus1  | up/up      | 10.10.0.1/24  | n1      | e0a   |
| true       | n1_clus2  | up/up      | 10.10.0.2/24  | n1      | e0b   |
| true       | n1_clus3  | up/up      | 10.10.0.3/24  | n1      | e0c   |
| true       | n1_clus4  | up/up      | 10.10.0.4/24  | n1      | e0d   |
| true       | n2_clus1  | up/up      | 10.10.0.5/24  | n2      | e0a   |
| true       | n2_clus2  | up/up      | 10.10.0.6/24  | n2      | e0b   |
| true       | n2_clus3  | up/up      | 10.10.0.7/24  | n2      | e0c   |
| true       | n2_clus4  | up/up      | 10.10.0.8/24  | n2      | e0d   |
| true       | n3_clus1  | up/up      | 10.10.0.9/24  | n3      | e4a   |
| true       | n3_clus2  | up/up      | 10.10.0.10/24 | n3      | e4e   |
| true       | n4_clus1  | up/up      | 10.10.0.11/24 | n4      | e4a   |
| true       | n4_clus2  | up/up      | 10.10.0.12/24 | n4      | e4e   |

12 entries were displayed.

#### 17. Verify that the cluster ports are connected:

```
network port show -role cluster
```

```
cluster::*> network port show -role cluster
(network port show)
```

Node: n1

Ignore

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

|       |         |         |      |      |       |            |       |
|-------|---------|---------|------|------|-------|------------|-------|
| ----- | -----   | -----   | ---- | ---- | ----- | -----      | ----- |
| ----- |         |         |      |      |       |            |       |
| e0a   | Cluster | Cluster |      | up   | 9000  | auto/10000 | -     |
| e0b   | Cluster | Cluster |      | up   | 9000  | auto/10000 | -     |
| e0c   | Cluster | Cluster |      | up   | 9000  | auto/10000 | -     |
| e0d   | Cluster | Cluster |      | up   | 9000  | auto/10000 | -     |

Node: n2

Ignore

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

|       |         |         |      |      |       |            |       |
|-------|---------|---------|------|------|-------|------------|-------|
| ----- | -----   | -----   | ---- | ---- | ----- | -----      | ----- |
| ----- |         |         |      |      |       |            |       |
| e0a   | Cluster | Cluster |      | up   | 9000  | auto/10000 | -     |
| e0b   | Cluster | Cluster |      | up   | 9000  | auto/10000 | -     |
| e0c   | Cluster | Cluster |      | up   | 9000  | auto/10000 | -     |
| e0d   | Cluster | Cluster |      | up   | 9000  | auto/10000 | -     |

Node: n3

Ignore

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

|       |         |         |      |      |       |            |       |
|-------|---------|---------|------|------|-------|------------|-------|
| ----- | -----   | -----   | ---- | ---- | ----- | -----      | ----- |
| ----- |         |         |      |      |       |            |       |
| e4a   | Cluster | Cluster |      | up   | 9000  | auto/40000 | -     |
| e4e   | Cluster | Cluster |      | up   | 9000  | auto/40000 | -     |

Node: n4

Ignore

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



```

-----
e4a      Cluster      Cluster      up    9000 auto/40000 -
e4e      Cluster      Cluster      up    9000 auto/40000 -
12 entries were displayed.

```

18. Ping the remote cluster interfaces and perform an RPC server check:

```
cluster ping-cluster -node node-name
```

The following example shows node n1 being pinged and the RPC status indicated afterward:

```

cluster::*> cluster ping-cluster -node n1
Host is n1 Getting addresses from network interface table...
Cluster n1_clus1 n1      e0a    10.10.0.1
Cluster n1_clus2 n1      e0b    10.10.0.2
Cluster n1_clus3 n1      e0c    10.10.0.3
Cluster n1_clus4 n1      e0d    10.10.0.4
Cluster n2_clus1 n2      e0a    10.10.0.5
Cluster n2_clus2 n2      e0b    10.10.0.6
Cluster n2_clus3 n2      e0c    10.10.0.7
Cluster n2_clus4 n2      e0d    10.10.0.8
Cluster n3_clus1 n3      e0a    10.10.0.9
Cluster n3_clus2 n3      e0e    10.10.0.10
Cluster n4_clus1 n4      e0a    10.10.0.11
Cluster n4_clus2 n4      e0e    10.10.0.12
Local = 10.10.0.1 10.10.0.2 10.10.0.3 10.10.0.4
Remote = 10.10.0.5 10.10.0.6 10.10.0.7 10.10.0.8 10.10.0.9 10.10.0.10
10.10.0.11 10.10.0.12
Cluster Vserver Id = 4294967293 Ping status:
....
Basic connectivity succeeds on 32 path(s)
Basic connectivity fails on 0 path(s) .....
Detected 1500 byte MTU on 32 path(s):
    Local 10.10.0.1 to Remote 10.10.0.5
    Local 10.10.0.1 to Remote 10.10.0.6
    Local 10.10.0.1 to Remote 10.10.0.7
    Local 10.10.0.1 to Remote 10.10.0.8
    Local 10.10.0.1 to Remote 10.10.0.9
    Local 10.10.0.1 to Remote 10.10.0.10
    Local 10.10.0.1 to Remote 10.10.0.11
    Local 10.10.0.1 to Remote 10.10.0.12
    Local 10.10.0.2 to Remote 10.10.0.5
    Local 10.10.0.2 to Remote 10.10.0.6
    Local 10.10.0.2 to Remote 10.10.0.7
    Local 10.10.0.2 to Remote 10.10.0.8
    Local 10.10.0.2 to Remote 10.10.0.9

```

```
Local 10.10.0.2 to Remote 10.10.0.10
Local 10.10.0.2 to Remote 10.10.0.11
Local 10.10.0.2 to Remote 10.10.0.12
Local 10.10.0.3 to Remote 10.10.0.5
Local 10.10.0.3 to Remote 10.10.0.6
Local 10.10.0.3 to Remote 10.10.0.7
Local 10.10.0.3 to Remote 10.10.0.8
Local 10.10.0.3 to Remote 10.10.0.9
Local 10.10.0.3 to Remote 10.10.0.10
Local 10.10.0.3 to Remote 10.10.0.11
Local 10.10.0.3 to Remote 10.10.0.12
Local 10.10.0.4 to Remote 10.10.0.5
Local 10.10.0.4 to Remote 10.10.0.6
Local 10.10.0.4 to Remote 10.10.0.7
Local 10.10.0.4 to Remote 10.10.0.8
Local 10.10.0.4 to Remote 10.10.0.9
Local 10.10.0.4 to Remote 10.10.0.10
Local 10.10.0.4 to Remote 10.10.0.11
Local 10.10.0.4 to Remote 10.10.0.12
```

```
Larger than PMTU communication succeeds on 32 path(s) RPC status:
8 paths up, 0 paths down (tcp check)
8  paths up, 0 paths down (udp check)
```

19. Display the information about the devices in your configuration by entering the following commands:

You can execute the following commands in any order:

- ° network device-discovery show
- ° network port show -role cluster
- ° network interface show -role cluster
- ° system cluster-switch show

```
cluster::> network device-discovery show
```

| Node | Local Port | Discovered Device | Interface     | Platform   |
|------|------------|-------------------|---------------|------------|
| n1   | /cdp       |                   |               |            |
|      | e0a        | C1                | Ethernet1/1/1 | N3K-C3232C |
|      | e0b        | C2                | Ethernet1/1/1 | N3K-C3232C |
|      | e0c        | C2                | Ethernet1/1/2 | N3K-C3232C |
|      | e0d        | C1                | Ethernet1/1/2 | N3K-C3232C |
| n2   | /cdp       |                   |               |            |
|      | e0a        | C1                | Ethernet1/1/3 | N3K-C3232C |
|      | e0b        | C2                | Ethernet1/1/3 | N3K-C3232C |
|      | e0c        | C2                | Ethernet1/1/4 | N3K-C3232C |
|      | e0d        | C1                | Ethernet1/1/4 | N3K-C3232C |
| n3   | /cdp       |                   |               |            |
|      | e4a        | C1                | Ethernet1/7   | N3K-C3232C |
|      | e4e        | C2                | Ethernet1/7   | N3K-C3232C |
| n4   | /cdp       |                   |               |            |
|      | e4a        | C1                | Ethernet1/8   | N3K-C3232C |
|      | e4e        | C2                | Ethernet1/8   | N3K-C3232C |

```
12 entries were displayed.
```

```
cluster::*> network port show -role cluster
```

```
(network port show)
```

```
Node: n1
```

```
Ignore
```

| Health | Port | IPspace | Broadcast Domain | Link | MTU  | Admin/Oper | Speed(Mbps) | Health |
|--------|------|---------|------------------|------|------|------------|-------------|--------|
| Status |      |         |                  |      |      |            |             |        |
|        | e0a  | Cluster | Cluster          | up   | 9000 | auto/10000 | -           | -      |
|        | e0b  | Cluster | Cluster          | up   | 9000 | auto/10000 | -           | -      |
|        | e0c  | Cluster | Cluster          | up   | 9000 | auto/10000 | -           | -      |
|        | e0d  | Cluster | Cluster          | up   | 9000 | auto/10000 | -           | -      |
|        | -    |         |                  |      |      |            |             |        |

```
Node: n2
```

Ignore

|        |         |           |        |      |      | Speed(Mbps) | Health |
|--------|---------|-----------|--------|------|------|-------------|--------|
| Health |         |           |        |      |      |             |        |
| Port   | IPspace | Broadcast | Domain | Link | MTU  | Admin/Oper  | Status |
| Status |         |           |        |      |      |             |        |
| -----  |         |           |        |      |      |             |        |
| -----  |         |           |        |      |      |             |        |
| e0a    | Cluster | Cluster   |        | up   | 9000 | auto/10000  | -      |
| e0b    | Cluster | Cluster   |        | up   | 9000 | auto/10000  | -      |
| e0c    | Cluster | Cluster   |        | up   | 9000 | auto/10000  | -      |
| e0d    | Cluster | Cluster   |        | up   | 9000 | auto/10000  | -      |
| -      |         |           |        |      |      |             |        |

Node: n3

Ignore

|        |         |           |        |      |      | Speed(Mbps) | Health |
|--------|---------|-----------|--------|------|------|-------------|--------|
| Health |         |           |        |      |      |             |        |
| Port   | IPspace | Broadcast | Domain | Link | MTU  | Admin/Oper  | Status |
| Status |         |           |        |      |      |             |        |
| -----  |         |           |        |      |      |             |        |
| -----  |         |           |        |      |      |             |        |
| e4a    | Cluster | Cluster   |        | up   | 9000 | auto/40000  | -      |
| e4e    | Cluster | Cluster   |        | up   | 9000 | auto/40000  | -      |
| -      |         |           |        |      |      |             |        |

Node: n4

Ignore

|        |         |           |        |      |      | Speed(Mbps) | Health |
|--------|---------|-----------|--------|------|------|-------------|--------|
| Health |         |           |        |      |      |             |        |
| Port   | IPspace | Broadcast | Domain | Link | MTU  | Admin/Oper  | Status |
| Status |         |           |        |      |      |             |        |
| -----  |         |           |        |      |      |             |        |
| -----  |         |           |        |      |      |             |        |
| e4a    | Cluster | Cluster   |        | up   | 9000 | auto/40000  | -      |
| e4e    | Cluster | Cluster   |        | up   | 9000 | auto/40000  | -      |

12 entries were displayed.

```
cluster::*> network interface show -role cluster
```

|            | Logical   | Status     | Network       | Current |
|------------|-----------|------------|---------------|---------|
| Current Is |           |            |               |         |
| Vserver    | Interface | Admin/Oper | Address/Mask  | Node    |
| Port       | Home      |            |               |         |
| -----      | -----     | -----      | -----         | -----   |
| -----      | ----      |            |               |         |
| Cluster    |           |            |               |         |
|            | nm1_clus1 | up/up      | 10.10.0.1/24  | n1      |
| e0a        | true      |            |               |         |
|            | n1_clus2  | up/up      | 10.10.0.2/24  | n1      |
| e0b        | true      |            |               |         |
|            | n1_clus3  | up/up      | 10.10.0.3/24  | n1      |
| e0c        | true      |            |               |         |
|            | n1_clus4  | up/up      | 10.10.0.4/24  | n1      |
| e0d        | true      |            |               |         |
|            | n2_clus1  | up/up      | 10.10.0.5/24  | n2      |
| e0a        | true      |            |               |         |
|            | n2_clus2  | up/up      | 10.10.0.6/24  | n2      |
| e0b        | true      |            |               |         |
|            | n2_clus3  | up/up      | 10.10.0.7/24  | n2      |
| e0c        | true      |            |               |         |
|            | n2_clus4  | up/up      | 10.10.0.8/24  | n2      |
| e0d        | true      |            |               |         |
|            | n3_clus1  | up/up      | 10.10.0.9/24  | n3      |
| e4a        | true      |            |               |         |
|            | n3_clus2  | up/up      | 10.10.0.10/24 | n3      |
| e4e        | true      |            |               |         |
|            | n4_clus1  | up/up      | 10.10.0.11/24 | n4      |
| e4a        | true      |            |               |         |
|            | n4_clus2  | up/up      | 10.10.0.12/24 | n4      |
| e4e        | true      |            |               |         |

12 entries were displayed.

```
cluster::*> system cluster-switch show
```

| Switch   | Type            | Address     | Model   |
|--|-----------------|-------------|---------|
| CL1  | cluster-network | 10.10.1.101 | NX3232C |
| Serial Number: FOX000001   |                 |             |         |
| Is Monitored: true   |                 |             |         |
| Reason:  |                 |             |         |
| Software Version: Cisco Nexus Operating System (NX-OS) Software, Version 7.0(3)I6(1) |                 |             |         |
| Version Source: CDP  |                 |             |         |
| CL2  | cluster-network | 10.10.1.102 | NX3232C |
| Serial Number: FOX000002   |                 |             |         |
| Is Monitored: true   |                 |             |         |
| Reason:  |                 |             |         |
| Software Version: Cisco Nexus Operating System (NX-OS) Software, Version 7.0(3)I6(1) |                 |             |         |
| Version Source: CDP  |                 |             |         |
| C2   | cluster-network | 10.10.1.103 | NX3232C |
| Serial Number: FOX000003   |                 |             |         |
| Is Monitored: true   |                 |             |         |
| Reason:  |                 |             |         |
| Software Version: Cisco Nexus Operating System (NX-OS) Software, Version 7.0(3)I6(1) |                 |             |         |
| Version Source: CDP 3 entries were displayed.  |                 |             |         |

20. Delete the replaced cluster switch CL2 if it has not been removed automatically:

```
system cluster-switch delete -device cluster-switch-name
```

21. Verify that the proper cluster switches are monitored: `system cluster-switch show`

The following example shows the cluster switches are monitored because the `Is Monitored` state is `true`.

```

cluster::> system cluster-switch show
Switch                               Type                               Address                           Model
-----
CL1                                  cluster-network                   10.10.1.101                       NX3232C
Serial Number: FOX000001
Is Monitored: true
Reason:
Software Version: Cisco Nexus Operating System (NX-OS) Software, Version
7.0(3)I6(1)
Version Source: CDP

C2                                  cluster-network                   10.10.1.103                       NX3232C
Serial Number: FOX000002
Is Monitored: true
Reason:
Software Version: Cisco Nexus Operating System (NX-OS) Software, Version
7.0(3)I6(1)
Version Source: CDP
2 entries were displayed.

```

22. Enable the cluster switch health monitor log collection feature for collecting switch-related log files:

```

system cluster-switch log setup-password

system cluster-switch log enable-collection

```

```

cluster::*> system cluster-switch log setup-password
Enter the switch name: <return>
The switch name entered is not recognized.
Choose from the following list:
CL1
C2

cluster::*> system cluster-switch log setup-password

Enter the switch name: CL1
**RSA key fingerprint is e5:8b:c6:dc:e2:18:18:09:36:63:d9:63:dd:03:d9:cc
Do you want to continue? {y|n}::[n] y

Enter the password: <enter switch password>
Enter the password again: <enter switch password>

cluster::*> system cluster-switch log setup-password

Enter the switch name: C2
RSA key fingerprint is 57:49:86:a1:b9:80:6a:61:9a:86:8e:3c:e3:b7:1f:b1
Do you want to continue? {y|n}:: [n] y

Enter the password: <enter switch password>
Enter the password again: <enter switch password>

cluster::*> system cluster-switch log enable-collection

Do you want to enable cluster log collection for all nodes in the
cluster?
{y|n}: [n] y

Enabling cluster switch log collection.

cluster::*>

```



If any of these commands return an error, contact NetApp support.

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

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

## Related information

[Cisco Ethernet Switch description page](#)

[Hardware Universe](#)



## Copyright Information

Copyright © 2022 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.

RESTRICTED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.277-7103 (October 1988) and FAR 52-227-19 (June 1987).

## 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.