You must be aware of certain configuration information, port connections and cabling requirements when you replace Cisco Nexus 3132Q-V cluster switches.

- The Cisco Nexus 3132Q-V cluster switch is supported.

- The cluster switches use the following ports for connections to nodes:
  - Nexus 3132Q-V with reference configuration file (RCF) NX3132_RCF_v1.1_24p10g_26p40g.txt has 24x 10 GbE ports e1/1/1-4 to e1/6/1-4 and 24x 40 GbE ports e1/7 to e1/30.
  - Nexus 3132Q-V with RCF NX3132_RCF_v1.1_72p10g_14p40g.txt has 72x 10 GbE ports e1/1/1-4 to e1/18/1-4 and 12x 40 GbE ports e1/19 to e1/30.

- The cluster switches use the Inter-Switch Link (ISL) ports e1/31-32.

- The Hardware Universe contains information about supported cabling to Nexus 3132Q-V switches:
  - The nodes with 10 GbE cluster connections require QSFP optical modules with break-out fiber cables or QSFP to SFP+ copper break-out cables.
  - The nodes with 40 GbE cluster connections require supported QSFP optical modules with fiber cables or QSFP copper direct-attach cables.
  - The cluster switches use the appropriate ISL cabling: 2x QSFP fiber or copper direct-attach cables.

- On Nexus 3132Q-V, you can operate QSFP ports as either 40 Gb Ethernet or 4 x 10 Gb Ethernet modes. By default, there are 32 ports in the 40 Gb Ethernet mode. These 40 Gb Ethernet ports are numbered in a 2-tuple naming convention. For example, the second 40 Gb Ethernet port is numbered as 1/2. The process of changing the configuration from 40 Gb Ethernet to 10 Gb Ethernet is called break out and the process of changing the configuration from 10 Gb Ethernet to 40 Gb Ethernet is called break in. When you break out a 40 Gb Ethernet port into 10 Gb Ethernet ports, the resulting ports are numbered using a 3-tuple naming convention. For example, the breakout ports of the second 40 Gb Ethernet port are numbered as 1/2/1, 1/2/2, 1/2/3, 1/2/4.

- On the left side of Nexus 3132Q-V is a set of four SFP+ ports multiplexed to the first QSFP port. By default, the RCF is structured to use the first QSFP port. You can make four SFP+ ports active instead of a QSFP port for Nexus 3132Q-V by using the hardware profile front portmode sfp-plus command. Similarly, you can reset Nexus 3132Q-V to use a QSFP port instead of four SFP+ ports by using the hardware profile front portmode qsfp command.

- You must have configured some of the ports on Nexus 3132Q-V to run at 10 GbE or 40 GbE. You can break-out the first six ports into 4x10 GbE mode by using the interface breakout module 1 port 1-6 map 10g-4x command. Similarly, you can regroup the first six QSFP+ ports from breakout configuration by using the no interface breakout module 1 port 1-6 map 10g-4x command.

- You must have done planning, migration, and documentation on 10 GbE and 40 GbE connectivity from nodes to Nexus 3132Q-V cluster switches.
  The Cisco Ethernet Switches page has information about the ONTAP and NX-OS versions supported in this procedure.
How to replace Cisco® Nexus 3132Q-V cluster switches

Replacing a defective Cisco Nexus 3132Q-V switch in a cluster network is a nondisruptive procedure (NDO), and you must perform a specific sequence of tasks.

Before you begin

- The existing cluster and network configuration must have:
  - The Nexus 3132Q-V 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 Nexus 3132Q-V replacement switch:
  - Management network connectivity on the replacement switch must be functional.
  - Console access to the replacement switch must be in place.
  - The desired RCF and NX-OS operating system image switch must be loaded onto the switch.
  - Initial customization of the switch must be complete.

About this task

This procedure replaces the second Nexus 3132Q-V cluster switch CL2 with new 3132Q-V switch C2. The examples in this procedure use the following switch and node nomenclature:

- 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 Gb and 40 Gb ports are defined in the following RCFs:
  - The NX3132_RCF_v1.1_24p10g_26p40g.txt RCF has e1/1/1-4 to e1/6/1-4 24x 10G ports and e1/7 to e1/32 26x 40G ports.
  - The NX3132_RCF_v1.1_72p10g_14p40g.txt RCF has e1/1/1-4 to e1/18/1-4 72x 10G ports and e1/19 to e1/32 14x 40G ports.
- The nodes are n1, n2, n3, and n4.

The examples in this procedure use four nodes: Two 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 for the actual cluster ports on your platforms.

This procedure covers the following scenario:

- The cluster starts with four nodes connected to two Nexus 3132Q-V cluster switches, CL1 and CL2.
- Cluster switch CL2 is to be replaced by C2 (steps 1 to 21):
  - On each node, cluster LIFs connected to CL2 are migrated onto cluster ports connected to CL1.
Steps

1. Display information about the devices in your configuration:

   network device-discovery show

Example

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

<table>
<thead>
<tr>
<th>Node</th>
<th>Port</th>
<th>Device</th>
<th>Interface</th>
<th>Platform</th>
</tr>
</thead>
<tbody>
<tr>
<td>n1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>/cdp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e0a</td>
<td>CL1</td>
<td></td>
<td>Ethernet1/1/1</td>
<td>N3K-C3132Q-V</td>
</tr>
<tr>
<td>e0b</td>
<td>CL2</td>
<td></td>
<td>Ethernet1/1/1</td>
<td>N3K-C3132Q-V</td>
</tr>
<tr>
<td>e0c</td>
<td>CL2</td>
<td></td>
<td>Ethernet1/1/2</td>
<td>N3K-C3132Q-V</td>
</tr>
<tr>
<td>e0d</td>
<td>CL1</td>
<td></td>
<td>Ethernet1/1/2</td>
<td>N3K-C3132Q-V</td>
</tr>
<tr>
<td>n2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>/cdp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e0a</td>
<td>CL1</td>
<td></td>
<td>Ethernet1/1/3</td>
<td>N3K-C3132Q-V</td>
</tr>
<tr>
<td>e0b</td>
<td>CL2</td>
<td></td>
<td>Ethernet1/1/3</td>
<td>N3K-C3132Q-V</td>
</tr>
<tr>
<td>e0c</td>
<td>CL2</td>
<td></td>
<td>Ethernet1/1/4</td>
<td>N3K-C3132Q-V</td>
</tr>
<tr>
<td>e0d</td>
<td>CL1</td>
<td></td>
<td>Ethernet1/1/4</td>
<td>N3K-C3132Q-V</td>
</tr>
<tr>
<td>n3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>/cdp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e4a</td>
<td>CL1</td>
<td></td>
<td>Ethernet1/8</td>
<td>N3K-C3132Q-V</td>
</tr>
<tr>
<td>e4e</td>
<td>CL2</td>
<td></td>
<td>Ethernet1/7</td>
<td>N3K-C3132Q-V</td>
</tr>
<tr>
<td>n4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>/cdp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e4a</td>
<td>CL1</td>
<td></td>
<td>Ethernet1/7</td>
<td>N3K-C3132Q-V</td>
</tr>
<tr>
<td>e4e</td>
<td>CL2</td>
<td></td>
<td>Ethernet1/8</td>
<td>N3K-C3132Q-V</td>
</tr>
</tbody>
</table>

12 entries were displayed
```

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

   a. Display the network port attributes:

   network port show

Example

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

Node: n1

<table>
<thead>
<tr>
<th>Port</th>
<th>IPspace</th>
<th>Broadcast</th>
<th>Domain</th>
<th>Link</th>
<th>MTU</th>
<th>Speed(Mbps)</th>
<th>Health</th>
<th>Ignore</th>
</tr>
</thead>
<tbody>
<tr>
<td>e0a</td>
<td>Cluster</td>
<td>Cluster</td>
<td>up</td>
<td>9000</td>
<td>auto/10000</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>e0b</td>
<td>Cluster</td>
<td>Cluster</td>
<td>up</td>
<td>9000</td>
<td>auto/10000</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>e0c</td>
<td>Cluster</td>
<td>Cluster</td>
<td>up</td>
<td>9000</td>
<td>auto/10000</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>e0d</td>
<td>Cluster</td>
<td>Cluster</td>
<td>up</td>
<td>9000</td>
<td>auto/10000</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

Node: n2

<table>
<thead>
<tr>
<th>Port</th>
<th>IPspace</th>
<th>Broadcast</th>
<th>Domain</th>
<th>Link</th>
<th>MTU</th>
<th>Speed(Mbps)</th>
<th>Health</th>
<th>Ignore</th>
</tr>
</thead>
<tbody>
<tr>
<td>e0a</td>
<td>Cluster</td>
<td>Cluster</td>
<td>up</td>
<td>9000</td>
<td>auto/10000</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>e0b</td>
<td>Cluster</td>
<td>Cluster</td>
<td>up</td>
<td>9000</td>
<td>auto/10000</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>e0c</td>
<td>Cluster</td>
<td>Cluster</td>
<td>up</td>
<td>9000</td>
<td>auto/10000</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>e0d</td>
<td>Cluster</td>
<td>Cluster</td>
<td>up</td>
<td>9000</td>
<td>auto/10000</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

Node: n3

<table>
<thead>
<tr>
<th>Port</th>
<th>IPspace</th>
<th>Broadcast</th>
<th>Domain</th>
<th>Link</th>
<th>MTU</th>
<th>Speed(Mbps)</th>
<th>Health</th>
<th>Ignore</th>
</tr>
</thead>
<tbody>
<tr>
<td>e4a</td>
<td>Cluster</td>
<td>Cluster</td>
<td>up</td>
<td>9000</td>
<td>auto/40000</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>
```

How to replace Cisco® Nexus 3132Q-V cluster switches
b. Display information about the logical interfaces:

```
network interface show
```

**Example**

```
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
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 information on the discovered cluster switches:

```
system cluster-switch show
```

**Example**

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

Switch                      Type               Address          Model
--------------------------- ------------------ ---------------- ---------------
CL1                          cluster-network   10.10.1.101      NX3132V
   Serial Number: FOX000001
   Is Monitored: true
   Version Source: CDP
CL2                          cluster-network   10.10.1.102      NX3132V
   Serial Number: FOX000002
   Is Monitored: true
   Version Source: CDP
2 entries were displayed.
```

3. Verify that the appropriate RCF and image are installed on the new Nexus 3132Q-V switch as necessary for your requirements, and make any essential site customizations.
You must prepare the replacement switch at this time. If you need to upgrade the RCF and image, you must follow these steps:

a. On the NetApp Support Site, go to the following location: *Cisco Ethernet Switch*

b. Note your switch and the required software versions in the table on that page.

c. Download the appropriate version of the RCF.

d. Click **CONTINUE** on the Description page, accept the license agreement, and then follow the instructions on the Download page to download the RCF.

e. Download the appropriate version of the image software.


4. Migrate the LIFs associated to the cluster ports connected to switch C2:

   **network interface migrate**

   **Example**

   This example shows that the LIF migration is done on all the nodes:

   ```
   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 -destination-node n4 -destination-port e4a
   ```

5. Verify cluster’s health:

   **network interface show**

   **Example**

   ```
   cluster::*> network interface show -role cluster
   (network interface show)
   Logical Interface Admin/Oper Network Address/Mask Current Node Current 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  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 switch CL2:

   **network port modify**
Example

This example shows the specified ports being 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
```

Example

```
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 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
```

Replacing Cisco® Nexus 3132Q-V cluster switches
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 CL1, and the active Nexus 3132Q-V switch:

```plaintext
shutdown
```

Example

This example shows the ISL ports 1/31 and 1/32 being shut down on switch CL1:

```plaintext
(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 Nexus 3132Q-V switch CL2 and reconnect them to the replacement switch C2 on all nodes.

10. Remove the ISL cables from ports e1/31 and e1/32 on CL2 and reconnect them to the same ports on the replacement switch C2.

11. Bring up ISLs ports 1/31 and 1/32 on the Nexus 3132Q-V switch CL1.

Example

```plaintext
(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:

```plaintext
show port-channel
```

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

Example

```plaintext
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
--------------------------------------------------------------------------------
```
13. Verify that the ISLs are up on C2:

```markdown
show port-channel summary
```

Ports Eth1/31 and Eth1/32 should indicate \( \text{(P)} \), 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
```

<table>
<thead>
<tr>
<th>Group Port-Channel</th>
<th>Type</th>
<th>Protocol</th>
<th>Member</th>
<th>Ports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Po1(SU)</td>
<td>Eth</td>
<td>LACP</td>
<td>Eth1/31(P) Eth1/32(P)</td>
<td></td>
</tr>
</tbody>
</table>

14. On all nodes, bring up all the cluster interconnect ports connected to the Nexus 3132Q-V switch C2:

```markdown
network port modify
```

**Example**

```
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. For all nodes, revert all of the migrated cluster interconnect LIFs:

```markdown
network interface revert
```

**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:

```markdown
network interface show
```

**Example**

This example shows that all the LIFs are successfully reverted because the ports listed under the Current Port column have a status of `true` in the Is Home column. If the Is Home column value is `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
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     true

12 entries were displayed.

17. Verify that the cluster ports are connected:

network port show

Example

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

Node: n1

Port | IPspace | Broadcast Domain | Link | MTU  | Admin/Oper | Health Status | Ignore | 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

Port | IPspace | Broadcast Domain | Link | MTU  | Admin/Oper | Health Status | Ignore | 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: n3

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

Node: n4

Port | IPspace | Broadcast Domain | Link | MTU  | Admin/Oper | Health Status | Ignore | Health 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
Example

```
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:
   - network device-discovery show
   - network port show -role cluster
   - network interface show -role cluster
   - system cluster-switch show
cluster::> network device-discovery show

<table>
<thead>
<tr>
<th>Local Port</th>
<th>Discovered Node</th>
<th>Device</th>
<th>Interface</th>
<th>Platform</th>
</tr>
</thead>
<tbody>
<tr>
<td>/cdp</td>
<td>n1</td>
<td>C1</td>
<td>Ethernet1/1/1</td>
<td>N3K-C3132Q-V</td>
</tr>
<tr>
<td>e0a</td>
<td>C2</td>
<td>C1</td>
<td>Ethernet1/1/2</td>
<td>N3K-C3132Q-V</td>
</tr>
<tr>
<td>e0c</td>
<td>C2</td>
<td>C1</td>
<td>Ethernet1/1/2</td>
<td>N3K-C3132Q-V</td>
</tr>
<tr>
<td>e0d</td>
<td>C1</td>
<td>C1</td>
<td>Ethernet1/1/1</td>
<td>N3K-C3132Q-V</td>
</tr>
</tbody>
</table>

cluster::*> network port show –role cluster

<table>
<thead>
<tr>
<th>Port</th>
<th>Node</th>
<th>Ignore</th>
<th>Speed(Mbps)</th>
<th>Health</th>
<th>Health</th>
<th>Ignore</th>
<th>Ignore</th>
</tr>
</thead>
<tbody>
<tr>
<td>e0a</td>
<td>n1</td>
<td></td>
<td>9000</td>
<td>auto/10000</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>e0b</td>
<td>n1</td>
<td></td>
<td>9000</td>
<td>auto/10000</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>e0c</td>
<td>n1</td>
<td></td>
<td>9000</td>
<td>auto/10000</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>e0d</td>
<td>n1</td>
<td></td>
<td>9000</td>
<td>auto/10000</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

cluster::*> network interface show -role cluster

<table>
<thead>
<tr>
<th>Logical Interface</th>
<th>Status</th>
<th>Network Address/Mask</th>
<th>Current Node</th>
<th>Current Is Port Home</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cluster</td>
<td>up/up</td>
<td>10.10.0.1/24</td>
<td>n1</td>
<td>e0a</td>
</tr>
<tr>
<td>Cluster</td>
<td>up/up</td>
<td>10.10.0.2/24</td>
<td>n1</td>
<td>e0b</td>
</tr>
<tr>
<td>Cluster</td>
<td>up/up</td>
<td>10.10.0.3/24</td>
<td>n1</td>
<td>e0c</td>
</tr>
<tr>
<td>Cluster</td>
<td>up/up</td>
<td>10.10.0.4/24</td>
<td>n1</td>
<td>e0d</td>
</tr>
<tr>
<td>Cluster</td>
<td>up/up</td>
<td>10.10.0.5/24</td>
<td>n2</td>
<td>e0a</td>
</tr>
</tbody>
</table>

How to replace Cisco® Nexus 3132Q-V cluster switches
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.

system cluster-switch show
Switch                      Type               Address          Model
--------------------------- ------------------ ---------------- ---------------
CL1                          cluster-network   10.10.1.101      NX3132V
Serial Number: FOX000001
Is Monitored: true
7.0(3)I4(1)
Version Source: CDP
C2                          cluster-network     10.10.1.103      NX3132V
Serial Number: FOX000002
Is Monitored: true
7.0(3)I4(1)
Version Source: CDP
3 entries were displayed.

20. Remove the replaced Nexus 3132Q-V switch, if it is not already removed automatically:

```
system cluster-switch delete
```

```bash
Example

cluster:::* system cluster-switch delete -device CL2
```

21. Verify that the proper cluster switches are monitored:

```
system cluster-switch show
```

```bash
Example

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

<table>
<thead>
<tr>
<th>Switch</th>
<th>Type</th>
<th>Address</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>CL1</td>
<td>cluster-network</td>
<td>10.10.1.101</td>
<td>NX3132V</td>
</tr>
<tr>
<td>C2</td>
<td>cluster-network</td>
<td>10.10.1.103</td>
<td>NX3132V</td>
</tr>
</tbody>
</table>
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