



Replacing a CN1601 switch

Replacing a defective CN1601 switch in a cluster network is a nondisruptive procedure (NDU).

Before you begin

The following conditions must exist in both the current environment and on the replacement switch before performing the switch replacement.

- Existing cluster and network infrastructure:
 - There must be a physical connection from each cluster node to each CN1601 switch.
 - There must be a logical interface (LIF) on each node that is set up to use a failover group.
 - The LIF must have a node management role.
 - The failover group must have two ports, each connected to a different management switch.
 - The node management LIFs on the cluster nodes must successfully serve IP addresses. They must also be home and not migrated.

About this task

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

- The names of the existing CN1601 switches in this procedure are MS1 and MS2, and MS2 is the defective switch that is being replaced.
- The name of the new CN1601 switch is newMS, which will replace the defective MS2 switch.
- The node names are node1 and node2.
- The names of the Vservers are node1 and node2.
- The management ports on each node are e0M (the home port) and e0a.

Steps

1. Verify that the reference configuration file (RCF) residing on your switch is the appropriate version. If it is not, install the appropriate RCF and image on the newMS switch and make any necessary site customizations.

If you need to upgrade or change the RCF and image, follow these steps:

- a) Go to [NetApp CN1601 and CN1610 Switches](#) on The NetApp Support Site.
- b) Note the required switch software versions and click on the appropriate link for your type of switch.
- c) On the *Description* page for your switch, click on **CONTINUE**, accept the license agreement, and go to the *Download* page.
- d) Follow the steps on the *Download* page to download the correct RCF for the version of Data ONTAP software you are installing.

2. **Note:** If you already have redundant management set up on your switch, go to Step 3.

If you do not have a redundant management setup that lets your node management interface fail over to another port, it might be disruptive for clients. To create a redundant management setup, follow these steps:

- a) Use `network port show` to display information about the ports that will be associated with the node management failover group.

Choose the alternate ports to be part of the new failover group that you are creating and cable up those ports.

Example

This example provides information about the status of the network ports e0M and e0a on node1, which will be part of the failover group:

```
cluster::*> network port show -node node1
```

Node	Port	Role	Link	MTU	Auto-Negot Admin/Oper	Duplex Admin/Oper	Speed (Mbps) Admin/Oper
node1	e0M	node-mgmt	up	1500	true/true	full/full	auto/100
	e0a	data	up	1500	true/true	full/full	auto/1000

- b) Use `network interface show` to display information about the LIFs in your configuration.

Example

This example displays detailed information about node1:

```
cluster::*> network interface show -vserver node1
```

Vserver	Logical Interface	Status Admin/Oper	Network Address/Mask	Current Node	Current Port	Is Home
node1	mgmt_net	up/up	172.1.1.1/24	node1	e0M	true

- c) Use `network interface failover-groups create` to create a new failover group and add ports to that group.

Example

This example creates the failover group and adds ports e0a and e0M to the group:

```
cluster::*> network interface failover-groups create -failover-group mgmt_net -node node1 -port e0a
cluster::*> network interface failover-groups create -failover-group mgmt_net -node node1 -port e0M
```

- d) Use `network interface failover-groups show` to verify that the failover group has been created.

Example

This example verifies that mgmt_net is part of the cluster:

```
cluster::*> network interface failover-groups show -failover-group mgmt_net
```

Failover Group	Node	Port
mgmt_net	node1	e0M
	node1	e0a

- e) Use the `network interface modify` command to get the current management LIF to use on the new failover group.

Example

This example gets the current management LIF to use the new failover group:

```
cluster::*>network interface modify -vserver node1 -lif mgmt1 -use-failover-group
enabled -failover-group mgmt_net
```

- Use `network interface failover-groups show` to verify the management failover configuration.

Example

This example displays information about the failover group configuration in your current cluster:

```
cluster::*> network interface failover-groups show -failover-group mgmt_net
```

Failover Group	Node	Port
mgmt_net	node1	e0M
	node1	e0a

2 entries were displayed.

- Use `network interface show` to display information about your management LIF, verifying that the LIF is home.

Example

This example shows the LIF information for mgmt1 on node1:

```
cluster::*>network interface show -vserver node1 -lif mgmt1
```

Vserver	Logical Interface	Status Admin/Oper	Network Address/Mask	Current Node	Current Port	Is Home
node1	mgmt1	up/up	172.1.1.1/24	node1	e0M	true

- Shut down all of the ports on the newMS switch.

These ports will be brought up manually after the new switch is physically connected to the existing cluster.

```
(newMS) #config
(newMS)(config)#interface 0/1-0/16
(newMS)(interface 0/1-0/16)#shutdown
```

- On all of the cluster nodes, use `network port modify` to shut down the management ports connected on the broken CN1601 switch, MS2.

Example

This example shuts down port e0a on node1 and node2 in the cluster:

```
cluster::*> network port modify -node node1 -port e0a -up-admin false
cluster::*> network port modify -node node2 -port e0a -up-admin false
```

- Use `network interface show` to verify that the management LIF on each cluster node is still servicing the management IP address and that the node can be reached on the network.

Example

This example verifies that the management LIF mgmt1 is up and that the current port is e0M:

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

Vserver	Logical Interface	Status Admin/Oper	Network Address/Mask	Current Node	Current Port	Is Home
node1	mgmt1	up/up	172.1.1.1/24	node1	e0M	true

Note that if the switch being replaced is the switch where the primary management port is connected, then the management LIF will migrate to the alternate port connected to the remaining switch. In that case, the output from the command will be false in the `Is Home` column.

- Remove all of the cables from the MS2 switch and connect them to the same ports on the newMS switch.
- Bring up ISLs 15 and 16 between the newMS and MS1 switches.

Example

This example brings up ports 15 and 16 on both switches:

```
(newMS) #config
(newMS)(config)#interface 0/15-0/16
(newMS)(interface 0/15-0/16)#no shutdown
```

- Use `show port-channel` to verify the link state for port channel 1/1.

The Link State for port channel 1/1 should be `Up` and both member ports should be `True` under the Port Active state.

Example

This example shows the status for ISL ports 15 and 16 and displays the Link State for port-channel 1/1:

```
(newMS) #show port-channel 1/1

Local Interface..... 1/1
Channel Name..... ISL-LAG
Link State..... Up
Admin Mode..... Enabled
Type..... Static
Load Balance Option..... 6

Mbr   Device/      Port   Port
Ports Timeout    Speed  Active
-----
0/15  actor/long   Auto   True
      partner/long
0/16  actor/long   Auto   True
      partner/long
```

- Bring up the port that connects to the site management network and verify that the switch can be reached from that network.

Example

This example brings up port 14 on the newMS switch to connect to the site management network:

```
(newMS) #config
(newMS)(config)#interface 0/14
(newMS)(interface 0/14)#no shutdown
```

- Bring up the ports on the newMS switch that are connected to the serviceport on the cluster switch.

Example

This example brings up port 13 on the newMS switch to connect to the cluster switch:

```
(newMS) #config
(newMS)(config)#interface 0/13
(newMS)(interface 0/13)#no shutdown
```

13. Use `show port` to verify that the port is up.

Example

This example verifies that port 13 is connected to the cluster switch and verifies that the cluster switch is reachable:

```
(newMS)(interface 0/13)#show port 0/13
```

Intf	Type	Admin Mode	Physical Mode	Physical Status	Link Status	Link Trap	LACP Mode	Actor Timeout
0/13		Enable	Auto	1000 Full	Up	Enable	Enable	long

14. Bring up the switch ports that are connected to the cluster nodes and verify that these nodes can be reached on the network.

Example

This example brings up switch ports 1 to 12:

```
(newMS) #config
(newMS)(config)#interface 0/1-0/12
(newMS)(interface 0/1-0/12)#no shutdown
```

15. On all of the cluster nodes, use `network port modify` to bring up the management ports connected to the newMS switch.

Example

This example brings up port e0a on cluster node1 and cluster node2:

```
cluster::*> network port modify -node node1 -port e0a -up-admin true
cluster::*> network port modify -node node2 -port e0a -up-admin true
```

16. Use `network interface show` to verify that the management LIF is up and home.

Example

This example displays information about the node1 management interface:

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

Vserver	Logical Interface	Status Admin/Oper	Network Address/Mask	Current Node	Current Port	Is Home
node1	mgmt1	up/up	172.1.1.1/24	node1	e0M	true

17. Use `network port show` to display information about the status of the network ports.

Example

This example provides information about the status of the network ports e0M and e0a on node1:

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

Node	Port	Role	Link	MTU	Auto-Negot Admin/Oper	Duplex Admin/Oper	Speed (Mbps) Admin/Oper
node1	e0M						
node1	e0a						

```

node1
  e0M    node-mgmt    up    1500  true/true  full/full  auto/100
  e0a    data           up    1500  true/true  full/full  auto/1000

```

18. Use network interface failover-groups show -failover-group mgmt_net to display and verify that the ports and the interface are up.

Example

This example provides information about the LIF failover groups in the cluster:

```

cluster::*> network interface failover-groups show -failover-group mgmt_net

Failover
Group           Node           Port
-----
mgmt_net
                node1         e0M
                node1         e0a
2 entries were displayed.

```

Related information

[NetApp CN1601 Cluster Switch Description Page](#)

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