



# **Performing IP switch maintenance and replacement**

## **ONTAP MetroCluster**

NetApp  
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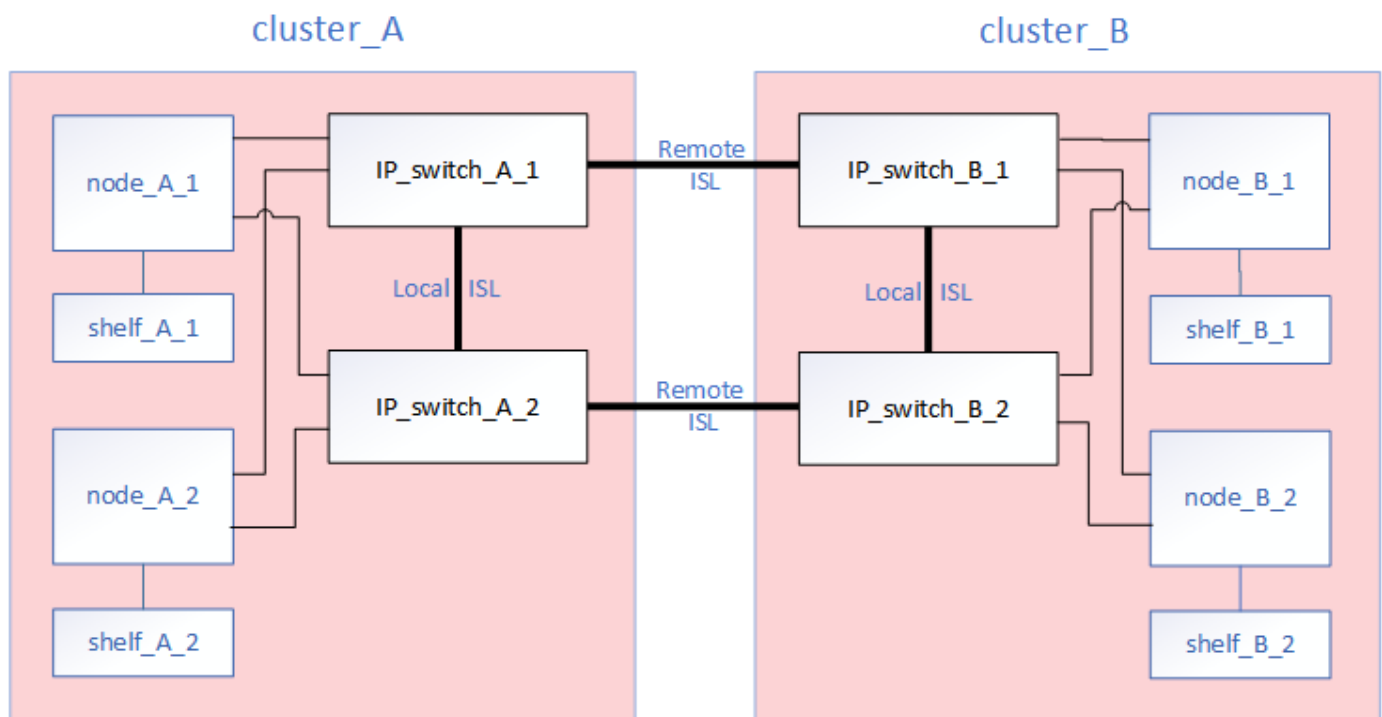
# Performing IP switch maintenance and replacement

If necessary, you can nondisruptively upgrade, downgrade, or replace the IP switches in a MetroCluster configuration.

## Replacing an IP switch

You might need to replace a failed switch, or upgrade or downgrade a switch. The new switch can be the same as the old switch when a switch has failed, or you can change the switch type (upgrade or downgrade the switch).

If you want to replace a failed switch with the same type of switch, you only need to replace the failed switch. If you want to upgrade or downgrade a switch, you need to adjust two switches that are in the same network. Two switches are in the same network if they are connected with an inter-switch link (ISL) and are not located at the same site. For example, Network 1 includes IP\_switch\_A\_1 and IP\_switch\_B\_1. Network 2 includes IP\_switch\_A\_2 and IP\_switch\_B\_2 as shown in the diagram below:



This procedure is for Cisco or Broadcom switches. If you want to change the switch vendor, further steps are required.

If you upgrade or downgrade the networks, you must repeat this procedure for the second network.

### Steps

1. Check the health of the configuration.
  - a. Check that the MetroCluster is configured and in normal mode on each cluster: **metrocluster show**

```
cluster_A::> metrocluster show
```

| Cluster           | Entry Name          | State            |
|-------------------|---------------------|------------------|
| Local: cluster_A  | Configuration state | configured       |
|                   | Mode                | normal           |
|                   | AUSO Failure Domain | auso-on-cluster- |
| disaster          |                     |                  |
| Remote: cluster_B | Configuration state | configured       |
|                   | Mode                | normal           |
|                   | AUSO Failure Domain | auso-on-cluster- |
| disaster          |                     |                  |

- b. Check that mirroring is enabled on each node: **metrocluster node show**

```
cluster_A::> metrocluster node show
```

| DR | Group | Cluster   | Node     | Configuration State | DR      | Mirroring Mode |
|----|-------|-----------|----------|---------------------|---------|----------------|
|    | 1     | cluster_A | node_A_1 | configured          | enabled | normal         |
|    |       | cluster_B | node_B_1 | configured          | enabled | normal         |

2 entries were displayed.

- c. Check that the MetroCluster components are healthy: **metrocluster check run**

```
cluster_A::> metrocluster check run
```

```
Last Checked On: 10/1/2014 16:03:37
```

| Component          | Result |
|--------------------|--------|
| nodes              | ok     |
| lifs               | ok     |
| config-replication | ok     |
| aggregates         | ok     |

4 entries were displayed.

Command completed. Use the "metrocluster check show -instance" command or sub-commands in "metrocluster check" directory for detailed results.

To check if the nodes are ready to do a switchover or switchback operation, run "metrocluster switchover -simulate" or "metrocluster switchback -simulate", respectively.

d. Check that there are no health alerts: **system health alert show**

2. Configure the new switch before installation.



If you are upgrading or downgrading the switches, you must configure all the switches in the network.

Follow the steps in the section *Configuring the IP switches* in the [MetroCluster IP Installation and Configuration Guide](#).

Make sure that you apply the correct RCF file for switch `_A_1`, `_A_2`, `_B_1` or `_B_2`. If the new switch is the same as the old switch, you need to apply the same RCF file.

If you upgrade or downgrade a switch, apply the latest supported RCF file for the new switch.

3. Run the port show command to view information about the network ports:

```
network port show
```

4. Disconnect the ISL connections from the remote switch that connect to the old switch.

You should disconnect the ISL connections from the ports on the `IP_switch_A_1` that connect to `IP_switch_B_1`.

5. Power off the switch, remove the cables and physically remove `IP_switch_B_1`.

6. Install the new switch.

Cable the new switch first (including the ISLs) according to the steps in the *Cabling the IP switches* section in the [MetroCluster IP Installation and Configuration Guide](#).



The used ports might be different from those on the old switch if the switch type is different. If you are upgrading or downgrading the switches, do **NOT** cable the local ISLs. Only cable the local ISLs if you are upgrading or downgrading the switches in the second network and both switches at one site are the same type.

#### 7. Power up the switch or switches.

If the new switch is the same, power up the new switch. If you are upgrading or downgrading the switches, then power up both switches. The configuration can operate with two different switches at each site until the second network is updated.

#### 8. Verify that the MetroCluster configuration is healthy by repeating step 1.

If you are upgrading or downgrading the switches in the first network, you might see some alerts related to local clustering.



If you upgrade or downgrade the networks, then repeat all of the steps for the second network.

## Upgrading firmware on MetroCluster IP switches

You might need to upgrade the firmware on a MetroCluster IP switch.

When you install the switch software on each of the switch, you must first check the health of the configuration.

You must repeat this task on each of the switch in succession to ensure that all MetroCluster components are healthy.

### Steps

#### 1. Check the health of the configuration.

- Check that the MetroCluster is configured and in normal mode on each cluster: **metrocluster show**

```
cluster_A::> metrocluster show
Cluster                      Entry Name                      State
-----
Local: cluster_A             Configuration state configured
                             Mode                          normal
                             AUSO Failure Domain auso-on-cluster-
disaster
Remote: cluster_B             Configuration state configured
                             Mode                          normal
                             AUSO Failure Domain auso-on-cluster-
disaster
```

- Check that mirroring is enabled on each node: **metrocluster node show**

```
cluster_A::> metrocluster node show
```

| DR                 | Configuration | DR                        |
|--------------------|---------------|---------------------------|
| Group Cluster Node | State         | Mirroring Mode            |
| 1                  | cluster_A     |                           |
|                    | node_A_1      | configured enabled normal |
|                    | cluster_B     |                           |
|                    | node_B_1      | configured enabled normal |

2 entries were displayed.

c. Check that the MetroCluster components are healthy: **metrocluster check run**

```
cluster_A::> metrocluster check run
```

Last Checked On: 10/1/2014 16:03:37

| Component          | Result |
|--------------------|--------|
| nodes              | ok     |
| lifs               | ok     |
| config-replication | ok     |
| aggregates         | ok     |

4 entries were displayed.

Command completed. Use the "metrocluster check show -instance" command or sub-commands in "metrocluster check" directory for detailed results.

To check if the nodes are ready to do a switchover or switchback operation, run "metrocluster switchover -simulate" or "metrocluster switchback -simulate", respectively.

d. Check that there are no health alerts: **system health alert show**

2. Install the software on the first switch.

Follow the steps for installing switch software in the relevant section in the *MetroCluster IP Installation and Configuration Guide* depending on whether the switch type is Cisco or Broadcom:

[MetroCluster IP Installation and Configuration Guide](#)

3. Repeat the previous step for each of the switches.

4. Repeat step 1 to check the health of the configuration.

# Upgrading RCF files on MetroCluster IP switches

You might need to upgrade an RCF file on a MetroCluster IP switch. For example, an ONTAP upgrade or a switch firmware upgrade both require a new RCF file.

If you are installing new switch firmware, you must install the switch firmware before upgrading the RCF file.

This procedure disrupts traffic on the switch where the RCF file is upgraded. Traffic will resume once the new RCF file is applied.

## Steps

1. Verify the health of the configuration.
  - a. Verify that the MetroCluster components are healthy:

**metrocluster check run**

```
cluster_A::*> metrocluster check run
```

The operation runs in the background.

- a. After the `metrocluster check run` operation completes, run `metrocluster check show` to view the results.

After approximately five minutes, the following results are displayed:

```
-----
::*> metrocluster check show

Last Checked On: 4/7/2019 21:15:05

Component          Result
-----
nodes               ok
lifs                ok
config-replication ok
aggregates          warning
clusters            ok
connections         not-applicable
volumes             ok
7 entries were displayed.
```

- b. To check the status of the running MetroCluster check operation, use the command:

**metrocluster operation history show -job-id 38**

- c. Verify that there are no health alerts:

**system health alert show**



2. Prepare the IP switches for the application of the new RCF files.

Follow the steps in the section for your switch vendor from the *MetroCluster IP Installation and Configuration guide*.

#### MetroCluster IP installation and configuration

- *Resetting the Broadcom IP switch to factory defaults*
- *Resetting the Cisco IP switch to factory defaults*

3. Download and install the IP RCF file depending on your switch vendor.

Follow the steps in the section for your switch vendor from the *MetroCluster IP Installation and Configuration guide*.

#### MetroCluster IP installation and configuration

- *Downloading and installing the Broadcom IP RCF files*
- *Downloading and installing the Cisco IP RCF files*
  - a. Update the switches in the following order: Switch\_A\_1, Switch\_B\_1, Switch\_A\_2, Switch\_B\_2.

## Renaming a Cisco IP switch

You might need to rename a Cisco IP switch to provide consistent naming throughout your configuration.

In the examples in this task, the switch name is changed from `myswitch` to `IP_switch_A_1`.

1. Enter global configuration mode:

**configure terminal**

The following example shows the configuration mode prompt. Both prompts show the switch name of `myswitch`.

```
myswitch# configure terminal
myswitch(config)#
```

2. Rename the switch:

**switchname new-switch-name**

If you are renaming both switches in the fabric, use the same command on each switch.

The CLI prompt changes to reflect the new name:

```
myswitch(config)# switchname IP_switch_A_1
IP_switch_A_1(config)#
```

3. Exit configuration mode:

**exit**

The top-level switch prompt is displayed:

```
IP_switch_A_1(config)# exit
IP_switch_A_1#
```

4. Copy the current running configuration to the startup configuration file:

**copy running-config startup-config**

5. Verify that the switch name change is visible from the ONTAP cluster prompt.

Note that the new switch name is shown, and the old switch name (myswitch) does not appear.

- a. Enter advanced privilege mode, pressing **y** when prompted:

**set -privilege advanced**

- b. Display the attached devices:

**network device-discovery show**

- c. Return to admin privilege mode:

**set -privilege admin**

The following example shows that the switch appears with the new name, IP\_switch\_A\_1:

```
cluster_A::storage show> set advanced
```

Warning: These advanced commands are potentially dangerous; use them only when directed to do so by NetApp personnel.

Do you want to continue? {y|n}: y

```
cluster_A::storage show*> network device-discovery show
```

| Node/<br>Protocol<br>Platform | Local<br>Port | Discovered<br>Device                    | Interface        |      |
|-------------------------------|---------------|---|------------------|------|
| -----                         |               |   |                  |      |
| node_A_2/cdp                  |               |   |                  |      |
|                               | e0M           | LF01-410J53.mycompany.com (SAL18516DZY) | Ethernet125/1/28 | N9K- |
| C9372PX                       |               |   |                  |      |
|                               | e1a           | IP_switch_A_1 (FOC21211RBU)             | Ethernet1/2      | N3K- |
| C3232C                        |               |   |                  |      |
|                               | e1b           | IP_switch_A_1 (FOC21211RBU)             | Ethernet1/10     | N3K- |
| C3232C                        |               |   |                  |      |
| .                             |               |   |                  |      |
| .                             |               |   |                  |      |
| .                             |               |   | Ethernet1/18     | N9K- |
| C9372PX                       |               |   |                  |      |
| node_A_1/cdp                  |               |   |                  |      |
|                               | e0M           | LF01-410J53.mycompany.com (SAL18516DZY) | Ethernet125/1/26 | N9K- |
| C9372PX                       |               |   |                  |      |
|                               | e0a           | IP_switch_A_2 (FOC21211RB5)             | Ethernet1/1      | N3K- |
| C3232C                        |               |   |                  |      |
|                               | e0b           | IP_switch_A_2 (FOC21211RB5)             | Ethernet1/9      | N3K- |
| C3232C                        |               |   |                  |      |
|                               | e1a           | IP_switch_A_1 (FOC21211RBU)             |                  |      |
| .                             |               |   |                  |      |
| .                             |               |   |                  |      |
| .                             |               |   |                  |      |

16 entries were displayed.

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