Reconfigure the FC switch layout for ONTAP 9.1 or later

Upgrade controllers

NetApp
February 22, 2024

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If your existing FC switch layout was configured prior to ONTAP 9.1, you must reconfigure the port layout and apply the latest Reference Configuration Files (RCFs). This procedure applies only to MetroCluster FC configurations.

Before you begin

You must identify the FC switches present in the fabric domain.

You need the admin password and access to an FTP or SCP server.

About this task

You must perform this task if your existing FC switch layout was configured prior to ONTAP 9.1 and you are upgrading to a platform model supported in ONTAP 9.1 or later. It is *not* required if you are upgrading from an existing switch layout that was configured for ONTAP 9.1 or later.

This procedure is nondisruptive and takes approximately four hours to complete (excluding rack and stack) when disks are zeroed.

Steps

1. Send a custom AutoSupport message prior to reconfiguring switches
2. Verify the health of the MetroCluster configuration
3. Check for MetroCluster configuration errors
4. Persistently disable the switches
5. Determine the new cabling layout
6. Apply RCF files and recable the switches
7. Persistently enable the switches
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Send a custom AutoSupport message prior to reconfiguring switches

Before reconfiguring your switches, you must issue an AutoSupport message to notify NetApp technical support that maintenance is underway. Informing technical support that maintenance is underway prevents them from opening a case on the assumption that a disruption has occurred.

About this task

This task must be performed on each MetroCluster site.

Steps

1. Log in to the cluster.

2. Invoke an AutoSupport message indicating the start of the maintenance:

   `system node autosupport invoke -node * -type all -message MAINT=`*`maintenance-window-in-hours`*

   The `maintenance-window-in-hours` value specifies the length of the maintenance window, with a maximum of 72 hours. If the maintenance is completed before the time has elapsed, you can invoke an AutoSupport message indicating the end of the maintenance period:

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

3. Repeat these steps on the partner site.

Verify the health of the MetroCluster configuration

You should check the health of the MetroCluster configuration to verify correct operation.

Steps

1. Verify that the MetroCluster components are healthy:

   `metrocluster check run`

   ```
   cluster_A::> metrocluster check run

   Last Checked On: 10/1/2017 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.
   ```

2. Verify that there are no health alerts:

   `system health alert show`

Check for MetroCluster configuration errors

You can use the Active IQ Config Advisor tool available from the NetApp Support Site to

check for common configuration errors.

If you do not have a MetroCluster configuration, you can skip this section.

About this task

Active IQ Config Advisor is a configuration validation and health check tool. You can deploy it at both secure sites and non-secure sites for data collection and system analysis.

> Support for Config Advisor is limited, and available only online.

1. Download the Active IQ Config Advisor tool.
2. Run Active IQ Config Advisor, reviewing the output and following its recommendations to address any issues.

Persistenly disable the switches

You must disable the switches in the fabric persistently so that you can modify its configuration.

About this task

You disable the switches by running the commands on the switch command line; the commands used for this are not ONTAP commands.

Step

Persistently disable the switch:

- For Brocade switches, use the `switchCfgPersistentDisable` command.
- For Cisco switches, use the `suspend` command.

The following command disables a Brocade switch persistently:

```
FC_switch_A_1:admin> switchCfgPersistentDisable
```

The following command disables a Cisco switch:

```
vsan [vsna #] suspend
```

Determine the new cabling layout

You must determine the cabling for the new controller modules and any new disk shelves to the existing FC switches.

About this task

This task must be performed at each MetroCluster site.

Step

Use the *Fabric-attached MetroCluster Installation and Configuration* content to determine the cabling layout for your switch type, using the port usage for an eight-node MetroCluster configuration. The FC switch port usage must match the usage described in the content so that the Reference Configuration Files (RCFs) can be used.

Go to References to link to the *Fabric-attached MetroCluster Installation and Configuration* content.

> If your environment cannot be cabled in a way that RCFs can be used, contact technical support. Do not use this procedure if the cabling cannot use RCFs.

Apply RCF files and recable the switches

You must apply the appropriate reference configuration files (RCFs) to reconfigure your switches to accommodate the new nodes. After you apply the RCFs, you can recable the switches.

Before you begin

The FC switch port usage must match the usage described in the *Fabric-attached MetroCluster Installation and Configuration* content so that the RCFs can be used. Go to References to link to the *Fabric-attached MetroCluster Installation and Configuration* content.

Steps

1. Go to the MetroCluster RCF downloads page and select the RCFs for your switch configuration.

   You must use the RCFs that match your switch models.

2. Install the FC switch RCFs by selecting the procedure that matches your switch models and following the installation instructions:
   - Install a Brocade FC switch RCF
   - Install a Cisco FC switch RCF
3. Verify that the switch configuration is saved.
4. Cable both of the FC-to-SAS bridges to the FC switches, using the cabling layout you created in Determine the new cabling layout.
5. Verify that the ports are online:
   - For Brocade switches, use the `switchshow` command.
   - For Cisco switches, use the show `interface brief` command.
6. Cable the FC-VI ports from the controllers to the switches.
7. From the existing nodes, verify that the FC-VI ports are online:

   ```
   metrocluster interconnect adapter show

   metrocluster interconnect mirror show
   ```

Persistently enable the switches

You must enable the switches in the fabric persistently.

Step

Persistently enable the switch:

- For Brocade switches, use the `switchCfgPersistentenable` command.

```
FC_switch_A_1:admin> switchCfgPersistentenable
```

- For Cisco switches, use the `no suspend` command.

```
vsan [vsna #]no suspend
```

Verify switchover, healing, and switchback

You should verify the switchover, healing, and switchback operations of the MetroCluster configuration.

Step

Refer to References to link to the *MetroCluster Management and Disaster Recovery* content and follow the procedures for negotiated switchover, healing, and switchback.