Replacing a CN1610 switch

Replacing a defective CN1610 switch in a cluster network is a nondisruptive upgrade (NDU) procedure.

Before you begin

The following conditions must exist before you perform the switch replacement in the current environment and on the replacement switch for existing cluster and network infrastructure:

- The existing cluster must be verified as completely functional, with at least one fully connected cluster switch.

- All of the cluster ports must be **up**.

- All of the cluster logical interfaces (LIFs) must be **up** and must not have been migrated.

- The ONTAP `cluster ping-cluster -node node1` command must indicate that basic connectivity and larger than PMTU communication are successful on all of the paths.

About this task

You must execute the command for migrating a cluster LIF from the node where the cluster LIF is hosted. The examples in this procedure use the following cluster switch and node nomenclature:

- The names of the two CN1610 cluster switches are cs1 and cs2.

- The name of the CN1610 switch that is to be replaced (the defective switch) is old_cs1.

- The name of the new CN1610 switch (the replacement switch) is new_cs1.

- The name of the partner switch that is not being replaced is cs2.

Steps

1. Confirm that the startup configuration file matches the running configuration file.

   You must save these files locally for use during the replacement.

   Example

   The configuration commands in the following example are for FASTPATH version 1.2.0.7.

   ```
   (old_cs1) >enable
   (old_cs1) #show running-config
   (old_cs1) #show startup-config
   ```

2. Create a copy of the running configuration file.

   Example

   The command in the following example is for FASTPATH version 1.2.0.7.

   ```
   (old_cs1) #show running-config filename.scr
   Config script created successfully.
   ```

Note: You can use any file name except `CN1610_CS_RCF_v1.2.scr`. The file name must have the `.scr` extension.

3. Save the running configuration file of the switch to an external host in preparation for the replacement.

Example

```
(old_cs1) #copy nvram:script filename.scr
scp://<Username>@<remote_IP_address>/path_to_file/filename.scr
```

Note: If requested, you must provide the `.scr` file to technical support personnel.

4. Verify that the switch and ONTAP versions match in the compatibility matrix.

NetApp CN1601 and CN1610 Switches

5. From the **Software Download** page on the NetApp Support Site, select **Cluster Network/Management Switches > NetApp** to download the appropriate RCF and FASTPATH versions.

NetApp CN1610 Cluster Switch Software Download Instructions

6. Set up a Trivial File Transfer Protocol (TFTP) server with the FASTPATH, RCF, and saved configuration `.scr` file for use with the new switch.

7. Connect the serial port (the RJ-45 connector labeled "IOIOI" on the right side of the switch) to an available host with terminal emulation.

8. On the host, set the serial terminal connection settings:

   - 9600 baud

   - 8 data bits

   - 1 stop bit

   - parity: none

   - flow control: none

9. Connect the management port (the RJ-45 wrench port on the left side of the switch) to the same network where your TFTP server is located.

10. Prepare to connect to the network with the TFTP server.

    If you are using Dynamic Host Configuration Protocol (DHCP), you do not have to configure an IP address for the switch at this time. The service port is set to use DHCP by default. The network management port will be set to **none** for the IPv4 and IPv6 protocol settings. If your wrench port is connected to a network that has a DHCP server, then the server settings are configured automatically.

    To set a static IP address, you should use the `serviceport protocol`, `network protocol`, and `serviceport ip` commands.

Example

```
(new_cs1) #serviceport ip <ipaddr> <netmask> <gateway>
```

11. Optional: If the TFTP server is on a laptop, then connect the CN1610 switch to the laptop by using a standard Ethernet cable, and then configure its network port in the same network with an alternate IP address.

You can use the `ping` command to verify the address. If you are unable to establish the connectivity, you should use a nonrouted network, and configure the service port using IP 192.168.x or 172.16.x. You can reconfigure the service port to the production management IP address at a later date.

12. Optional: Verify and install the appropriate versions of the RCF and FASTPATH software for the new switch.

If you have verified that the new switch is correctly set up and does not require updates to the RCF and FASTPATH software, you should go to step *13* on page 5.

a. Verify the new switch settings.

Example

```
(new_cs1) >enable
(new_cs1) #show version
```

b. Download the RCF to the new switch.

Example

```
(new_cs1) #copy tftp://<server_ip_address>/CN1610_CS_RCF_v1.2.txt nvram:script
CN1610_CS_RCF_v1.2.scr

Mode.......................................... TFTP
Set Server IP................................. 172.22.201.50
Path.......................................... ./
Filename...................................... CN1610_CS_RCF_v1.2.txt
Data Type..................................... Config Script
Destination Filename.......................... CN1610_CS_RCF_v1.2.scr

File with same name already exists.
WARNING:Continuing with this command will overwrite the existing file.

Management access will be blocked for the duration of the transfer
Are you sure you want to start? (y/n) y

File transfer in progress. Management access will be blocked for the duration of the transfer.
please wait...

Validating configuration script...
(the entire script is displayed line by line)

...

description "NetApp CN1610 Cluster Switch RCF v1.2 - 2015-01-13"

...

Configuration script validated.
File transfer operation completed successfully.
```

c. Verify that the RCF is downloaded to the switch.

Example

```
(new_cs1) #script list

Configuration Script Name        Size(Bytes)
-------------------------------- -----------
CN1610_CS_RCF_v1.1.scr                  2191
CN1610_CS_RCF_v1.2.scr                  2240
```

```
latest_config.scr                        2356

4 configuration script(s) found.
2039 Kbytes free.
```

d. Apply the RCF to the CN1610 switch.

Example

```
(new_cs1) #script apply CN1610_CS_RCF_v1.2.scr

Are you sure you want to apply the configuration script? (y/n) y
...
(the entire script is displayed line by line)
...
description "NetApp CN1610 Cluster Switch RCF v1.2 - 2015-01-13"

...

Configuration script 'CN1610_CS_RCF_v1.2.scr' applied.

Note that the script output will go to the console.

After the script is applied, those settings will be active in the running-config file. To save
them to the startup-config file, you must use the write memory command, or if you used the reload
answer yes when asked if you want to save the changes.
```

e. Save the running configuration file so that it becomes the startup configuration file when you reboot the switch.

Example

```
(new_cs1) #write memory

This operation may take a few minutes.
Management interfaces will not be available during this time.

Are you sure you want to save? (y/n) y

Config file 'startup-config' created successfully.

Configuration Saved!
```

f. Download the image to the CN1610 switch.

Example

```
(new_cs1) #copy tftp://<server_ip_address>/NetApp_CN1610_1.2.0.7.stk active

Mode........................................ TFTP
Set Server IP............................... tftp_server_ip_address
Path........................................ ./
Filename.................................... NetApp_CN1610_1.2.0.7.stk
Data Type................................... Code
Destination Filename........................ active

Management access will be blocked for the duration of the transfer
Are you sure you want to start? (y/n) y
TFTP Code transfer starting...

File transfer operation completed successfully.
```

g. Run the new active boot image by rebooting the switch.

The switch must be rebooted for the command in step *6* on page 2 to reflect the new image. There are two possible views for a response that you might see after you enter the reload command.

Example

```
(new_cs1) #reload

The system has unsaved changes.
Would you like to save them now? (y/n) y Config file 'startup-config' created
successfully.
Configuration Saved!
System will now restart!
 .
 .
 .
 Cluster Interconnect Infrastructure

 User:admin
 Password:
 (new_cs1) >enable
```

h. Copy the saved configuration file from the old switch to the new switch.

Example

```
(new_cs1) #copy tftp://<server_ip_address>/<filename>.scr nvram:script <filename>.scr
```

i. Apply the previously saved configuration to the new switch.

Example

```
(new_cs1) #script apply <filename>.scr

Are you sure you want to apply the configuration script? (y/n) y


The system has unsaved changes.
Would you like to save them now? (y/n) y


Config file 'startup-config' created successfully.
Configuration Saved!
```

j. Save the running configuration file to the startup configuration file.

Example

```
(new_cs1) #write memory
```

13. 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.

Note: The AutoSupport message notifies technical support of this maintenance task so that automatic case creation is suppressed during the maintenance window.

Example

The following command suppresses automatic case creation for two hours:

```
cluster::*> system node autosupport invoke -node * -type all -message MAINT=2h
```

14. On the new switch new_cs1, log in as the admin user, and shut down all of the ports that will be connected to the node cluster interfaces (ports 1 through 12).

Example

```
User:admin
Password:
(new_cs1) >enable
(new_cs1) #

(new_cs1) #config
(new_cs1)(config)#interface 0/1-0/12
(new_cs1)(interface 0/1-0/12)#shutdown
(new_cs1)(interface 0/1-0/12)#exit
(new_cs1) #write memory
```

15. Migrate the cluster LIFs from the ports that are connected to the old_cs1 switch.

You must migrate each cluster LIF from its current node's management interface.

Example

```
cluster::> set -privilege advanced
cluster::>

network interface migrate -vserver <vserver_name> -lif <Cluster_LIF_to_be_moved> -
sourcenode <current_node> -dest-node <current_node> -dest-port <cluster_port_that_is_UP>
```

16. Verify that all of the cluster LIFs have been moved to the appropriate cluster port on each node.

Example

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

17. Shut down the cluster ports that are attached to the switch that you replaced.

Example

```
cluster::*> network port modify -node <node_name> -port <port_to_admin_down> -up-admin
false
```

18. Verify the cluster health.

Example

```
cluster::*> cluster show
```

19. Verify that the ports are **down**: **cluster ping-cluster**

Example

```
cluster::*> cluster ping-cluster -node <node_name>
```

20. On the switch cs2, shut down the ISL ports 13 through 16.

Example

```
(cs2) #config
(cs2)(config)#interface 0/13-0/16
(cs2)(interface 0/13-0/16)#shutdown
(cs2) #show port-channel 3/1
```

21. Verify whether the storage administrator is ready for the replacement of the switch.

22. Remove all of the cables from the old_cs1 switch, and then connect the cables to the same ports on the new_cs1 switch.

23. On the cs2 switch, bring up the ISL ports 13 through 16.

Example

```
(cs2) #config
(cs2)(config)#interface 0/13-0/16
(cs2)(interface 0/13-0/16)#no shutdown
```

24. Bring up the ports on the new switch that are associated with the cluster nodes.

Example

```
(new_cs1) #config
(new_cs1)(config)#interface 0/1-0/12
(new_cs1)(interface 0/1-0/12)#no shutdown
```

25. On a single node, bring up the cluster node port that is connected to the replaced switch, and then confirm that the link is **up**.

Example

```
cluster::*> network port modify -node node1 -port <port_to_be_onlined> -up-admin true
cluster::*> network port show -role cluster
```

26. Revert the cluster LIFs that are associated with the port in the step *25* on page 7 on the same node: **network interface revert**

Example

In this example, the LIFs on node1 are successfully reverted if the "Is Home" column is **true**.

```
cluster::*> network interface revert -vserver node1 -lif <cluster_lif_to_be_reverted>
cluster::*> network interface show -role cluster
```

27. If the first node's cluster LIF is **up** and is reverted to its home port, repeat steps *25* on page 7 and *26* on page 7 to bring up the cluster ports and to revert the cluster LIFs on the other nodes in the cluster.

28. Display information about the nodes in a cluster: `cluster show`

Example

```
cluster::*> cluster show
```

29. Confirm that the startup configuration file and running configuration file are correct on the replaced switch.

This configuration file should match the output in step *1* on page 1.

Example

```
(new_cs1) >enable
(new_cs1) #show running-config
(new_cs1) #show startup-config
```

30. If you suppressed automatic case creation, reenable it by invoking an AutoSupport message: `system node autosupport invoke -node * -type all -message MAINT=END`

Example

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

Related information

NetApp Support Site
Hardware Universe
NetApp KB Article 1010449: How to suppress automatic case creation during scheduled maintenance windows

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