Replacing the NCS 4000 Rack

Rolling Back a Multi Chassis System (1+1) to a Single Chassis System

This procedure describes the steps for rolling back a 1+1 MC system to an SC system.

Procedure

Step 1   Take note of the important configuration values of fabric planes on calvados in system admin mode.

```
sysadmin-vm:2_RP1:R3# show controller fabric plane all detail
Wed Jan  8  13:59:51.628 UTC-05:30

Plane Admin Plane  Plane  up->dn  up->mcast Total   Down     PPU
Id    State State  Mode   counter   counter Bundles Bundles State
-------------------------------------------------------------
0     UP    UP        MC      0         1    24       0  NA
1     UP    UP        MC      0         1    24       0  NA
2     UP    UP        MC      0         2    24       0  NA
3     UP    UP        MC      0         1    24       0  NA
sysadmin-vm:2_RP1:R3# show controller fabric link port s3 rx | in UP/UP | count
Wed Jan  8  14:00:12.240 UTC-05:30
Count: 1151 lines
sysadmin-vm:2_RP1:R3# show running-config controller
Wed Jan  8  14:00:45.634 UTC-05:30
controller fabric plane 0
instance 0
location F0/FC0
!
instance 1
location F0/FC4
!
!
controller fabric plane 1
instance 0
location F0/FC1
!
instance 1
```

```
location F0/FC5
!
!
controller fabric plane 2
instance 0
location F1/FC0
!
instance 1
location F1/FC4
!
!
controller fabric plane 3
instance 0
location F1/FC1
!
instance 1
location F1/FC5
!
!

sysadmin-vm:2_RP1:R3# show running-config chassis
Wed Jan  8  14:01:53.275 UTC-05:30
chassis serial FLM213200B9
rack F0
!
chassis serial FLM213200BN
rack F1
!
chassis serial SAL18370JXS
rack 2
!
chassis serial SAL1925H76U
rack 0
!
```

Step 2   Shutdown fabric plane 0 using the following commands.

```
sysadmin-vm:2_RP1:R3(config)# controller fabric plane 0
sysadmin-vm:2_RP1:R3(config-plane-0)# shut
sysadmin-vm:2_RP1:R3(config-plane-0)# commit
Wed Jan  8  14:03:13.639 UTC-05:30
Commit complete.
```

Step 3   Remove the instance fabric configuration for plane 0 using the following command.

```
sysadmin-vm:2_RP1:R3(config)# no instance 0
sysadmin-vm:2_RP1:R3(config)# no instance 1
sysadmin-vm:2_RP1:R3(config-plane-0)# commit
```

Note   Verify the NCS4016-FC2-M or NCS4009-FC2-M card for fabric plane 0 and wait for the card to reload automatically. The mode changes to SC.

```
0/RP0/ADMIN0:Jan  8 14:16:15.852 IST: shelf_mgr[3118]: %INFRA-SHELF_MGR-4-CARD_RELOAD :
Reloading card 0/FC0
0/RP0/ADMIN0:Jan  8 14:16:15.852 IST: shelf_mgr[3118]: %PKT_INFRA-FM-4-FAULT_MINOR :
ALARM_MINOR :AUTORESET :DECLARE :0/FC0: Automatic System Reset
2/RP0/ADMIN0:Jan  8 14:16:16.045 IST: shelf_mgr[3177]: %INFRA-SHELF_MGR-4-CARD_RELOAD :
Reloading card 2/FC0
2/RP0/ADMIN0:Jan  8 14:16:16.048 IST: shelf_mgr[3177]: %PKT_INFRA-FM-4-FAULT_MINOR :
ALARM_MINOR :AUTORESET :DECLARE :2/FC0: Automatic System Reset
```

Step 4   After 7 minutes, when the fabric cards become operational, un-shut the fabric plane 0. After un-shut, Admin State changes to UP and Fabric State changes to DOWN; and the traffic is not affected on the LCC0 and the plane 0 fabric cards in SC Mode.

Step 5 Follow the above steps for the other fabric planes 1, 2, 3 and check the fabric status.

```
sysadmin-vm:0_RP0:R3# show controller fabric plane all detail
Wed Jan  8  18:31:01.271 UTC-05:30

Plane Admin Plane  Plane  up->dn  up->mcast Total   Down    PPU
Id    State State  Mode   counter   counter Bundles Bundles State
---------------------------------------------------------------
0     UP    DN       SC     3         0       0       0    NA
1     UP    DN       SC     3         1       0       0    NA
2     UP    DN       SC     3         0       0       0    NA
3     UP    DN       SC     2         1       0       0    NA
```

Step 6 Remove the chassis configuration for fabric plane 0, fabric plane 1, and LCC2 to shutdown the respective fabric and other LCC1, LCC2, LCC3 chassis. Only LCC0 remains live.

```
sysadmin-vm:0_RP0:R3(config)# no chassis serial FLM213200B9
Wed Jan  8  18:37:12.290 UTC-05:30
sysadmin-vm:0_RP0:R3(config)# no chassis serial FLM213200BN
Wed Jan  8  18:37:20.647 UTC-05:30
sysadmin-vm:0_RP0:R3(config)# no chassis serial SAL18370JXS
Wed Jan  8  18:37:27.800 UTC-05:30
sysadmin-vm:0_RP0:R3(config)# commit
Wed Jan  8  18:37:31.194 UTC-05:30
```

Step 7 Check the fabric plane details in the system admin mode.

Note The fabric plane changes to UP state and does not impact traffic on LCC0.

```
sysadmin-vm:0_RP0:R3# show controller fabric plane all detail
Wed Jan  8  18:39:49.109 UTC-05:30

Plane Admin Plane  Plane  up->dn  up->mcast Total   Down    PPU
Id    State State  Mode   counter   counter Bundles Bundles State
---------------------------------------------------------------
0     UP    UP       SC     3         0       0       0    NA
1     UP    UP       SC     3         1       0       0    NA
2     UP    UP       SC     3         0       0       0    NA
3     UP    UP       SC     2         1       0       0    NA
```

Step 8 Remove the control plane cables and other fabric plane cables.

Replacing the NCS 4000 Rack

This procedure describes the steps for replacing the NCS 4000 rack.

Procedure

Step 1 Check the running configuration of the NCS 4000 chassis.

```
sysadmin-vm:2_RP1:R3# show running-config chassis
Wed Jan  8  14:01:53.275 UTC-05:30
chassis serial FLM213200B9
rack F0
!
chassis serial FLM213200BN
rack F1
!
```

```
chassis serial SAL18370JXS
rack 2
!
chassis serial SAL1925H76U
rack 0
!
```

Step 2 Verify the rack to be replaced is the source of mac-pool using **show macpool** command.

- If the rack to be replaced is the source of mac-pool, the rack is marked as **true**.

  In the below example, rack1 is the source of mac addresses. It is marked as **true**.

```
sysadmin-vm:1_RP1# show macpool
Sat Oct  30 13:25:07.475 UTC+00:00
Rack Serial   Rack Num  Mac Base          Mac Count  Selected   Allocated
-------------------------------------------------------------------------
FLM213101UR   F0        00:00:00:00:00:00  0          false      0
FLM213200BC   F1        00:00:00:00:00:00  0          false      0
FLM213300GV   F2        00:00:00:00:00:00  0          false      0
SAL1806LW7T   6         74:ab:62:44:eb:20  2015       false      0
SAL1824UHYD   3         b0:4a:d4:00:00:20  2015       false      0
SAL1824UJ1F   4         aa:00:ea:00:00:20  2015       false      0
SAL1834Z18B   5         f0:7f:06:e7:26:c0  2015       false      0
SAL184121V3   0         f0:7f:06:e7:8c:80  2015       false      0
SAL1917DZBZ   1         78:ba:f9:9b:72:40  2015       true       100
SAL1940Q2A4   2         00:af:1f:d6:00:20  2015       false      0
SAL2016PB3V   7         04:2a:e2:b3:b0:20  2015       false      0
```

- If the rack to be replaced is the not source of mac-pool, the rack is marked as **false**.

  In the procedure, the rack to be replaced, rack2, is not the source of mac addresses.

Step 3 Enter the serial number of the chassis to remove the old rack using **no chassis serial** *serialNumber* command.

```
sysadmin-vm:0_RP0:R3(config)# no chassis serial SAL18370JXS
Wed Jan  8  18:37:27.800 UTC-05:30
sysadmin-vm:0_RP0:R3(config)# commit
Wed Jan  8  18:37:31.194 UTC-05:30
```

Step 4 After deleting the chassis configuration, check if the chassis is shut down. If not, power off the rack.

Step 5 If the deleted rack is the source of the mac-pool:

- Reload the complete system using the **hw-module location all reload** command.

- If not, skip this step.

Step 6 Check if other racks are operational using **show chassis**.

```
sysadmin-vm:0_RP0# show chassis
Wed Oct  16  09:41:31.116 UTC-05:00
Serial Num    Rack Num    Rack Type    Rack State   Data Plane  Ctrl Plane
--------------------------------------------------------------------------
FLM213200BN   F1          FCC          OPERATIONAL CONN         CONN
FLM213200B9   F0          FCC          OPERATIONAL CONN         CONN
SAL1925H76U   0           LCC          OPERATIONAL CONN         CONN
```

Step 7 Remove the control plane connection SFP+ pluggables and cables from the RP0 and RP1 for the rack under removal.

Step 8 Remove the CXP2 pluggables and related fiber for all the fabric cards FC0, FC1, FC2, and FC3.

Step 9 Insert the required cards and pluggables for the line card.

Step 10   Insert the required fabric card without CXP2 pluggables and insert RPs without SFP+ pluggables.

Step 11   Power on the new rack and connect the Console Con0 and Con1 on RP0 and RP1.

Step 12   Check the rack id of the new rack using **show chassis** command in admin mode.

         Note   By default, the new rack displays rack id as 0.

Step 13   Add new chassis in system admin configuration mode.

```
sysadmin-vm:0_RP0:R3(config)# chassis serial SAL18370JXT rack 2
Wed Jan  8  18:37:27.800 UTC-05:30
sysadmin-vm:0_RP0:R3(config)# commit
Wed Jan  8  18:37:31.194 UTC-05:30
```

Step 14   Power up the new rack and check the rack id is changed according to requirement using **show chassis** command.

Step 15   When the rack is proper with rack id, switch off the rack.

Step 16   Reconnect the CXP2 pluggable and related fiber on all the fabric cards FC0, FC1, FC2, and FC3.

Step 17   Reconnect the SFP+ pluggable and related fiber on RP0 and RP1.

Step 18   Note down the new rack serial number written on the rack or displayed in Step 13 output.

Step 19   Provision the new rack serial number in existing MC system.

```
sysadmin-vm:0_RP0:R3(config)# chassis serial SAL18370JXT rack 2
Wed Jan  8  18:37:27.800 UTC-05:30
sysadmin-vm:0_RP0:R3(config)# commit
Wed Jan  8  18:37:31.194 UTC-05:30
```

Step 20   Power on the new rack. In this example, it is rack 2.

Step 21   Validate all the control plane and fabric connectivity.