Migrating 1T Single Chassis to 2T Single Chassis

Prerequisites

- Before you perform any procedures, review the safety guidelines in the *Cisco Network Convergence System 6000 Series Routers Hardware Installation Guide* to avoid injuring yourself or damaging the equipment.

- Before cabling the system, install each line card chassis (LCC) in the planned location. For more information, see the *Cisco Network Convergence System 6000 Series Routers Site Planning Guide*.

- Verify that the LCC is running Cisco IOS XR release 6.2.2 or later (with all applicable SMUs and packages).

- Perform the Router Health check on the router to ensure that any errors or exception are resolved prior to migrating to 2T single-chassis mode. See Commands for Router Health Check.

- Verify that field-programmable device (FPD) upgrades are completed for all FPDs on both routers by using the **show hw-module fpd** command. For any FPD components that show status as NEED UPGD, use the **upgrade hw-module location** *location* **fpd** command. For any FPD components that show status as RLOAD REQ, use the **hw-module location** *location* **reload** command.

- Create a backup of the running configuration using the **copy running-config** command in both System Admin EXEC mode and XR EXEC mode.

- Install NC6-FANTRAY-2 Fan Trays. See the Replacing the Fan Tray section in the *Cisco Network Convergence System 6000 Series Routers Hardware Installation Guide*.

Required Tools and Equipment

For a 2T single-chassis configuration, the following Cisco NCS 6000 hardware is required:

- Cisco NCS 6000 router (NCS-6008)

- Two NC6-FANTRAY-2 Fan Trays

- Six Universal Fabric Cards (NC6-FC2-U)
- Supported line cards:
  - NC6-20X100GE-L-C—20-port 100Gbps Line Card with 12 QSFP28 and 8 CPAK
  - NC6-20X100GE-M-C—20-port 100Gbps Line Card with 12 QSFP28 and 8 CPAK

Additional required tool and equipment:

- ESD (Electrostatic Discharge) wrist strap (for inserting a CXP module)
- Number-2 Phillips screwdriver
- Cable Director (P/N 2123610-1), to provide support and strain relief for fabric cable connections (provided by Cisco approved vendor Tyco Electronics)
- Supply of Velcro tie wraps (to bundle cables)
- Ladder

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Note This procedure must be completed for each fabric plane, one at a time.

Before you begin

Review and perform all tasks in the safety guidelines, prerequisites, and required equipment sections before performing this task.

Step 1 From SysAdmin VM configuration mode, shut down the fabric plane.

Example:

```
sysadmin-vm:0_RP0# config
sysadmin-vm:0_RP0(config)# controller fabric plane 0 shutdown
sysadmin-vm:0_RP0(config)# commit
sysadmin-vm:0_RP0(config)# exit
```

Step 2 Use the **show controller fabric plane all detail** command to verify that the fabric plane Admin State and Plane State are down.

Example:

```
sysadmin-vm:0_RP0# show controller fabric plane all detail
Plane  Admin  Plane  Plane  up->dn    up->mcast  Total    Down     PPU
Id     State  State  Mode   counter     counter  Bundles  Bundles  State
-------------------------------------------------------------------
0      DN     DN     SC          0           0    16        0      NA
1      UP     UP     SC          0           0    16        0      NA
2      UP     UP     SC          0           0    16        0      NA
```

```
3     UP    UP    SC         0       0     16      0    NA
4     UP    UP    SC         0       0     16      0    NA
5     UP    UP    SC         0       0     16      0    NA
```

Step 3 From SysAdmin VM configuration mode, power off the fabric card.

Example:

```
sysadmin-vm:0_RP0# config
sysadmin-vm:0_RP0(config)# hw-module shutdown location 0/FC0
sysadmin-vm:0_RP0(config)# commit
sysadmin-vm:0_RP0(config)# exit
```

Step 4 Use the show platform location command to verify that the fabric card is powered off.

Example:

```
sysadmin-vm:0_RP0# show platform location 0/FC0

Mon Dec 5 23:54:02.366 UTC
Location  Card Type              HW State    SW State      Config State
-------------------------------------------------------------------------
0/FC0     NC6-FC                 POWERED_OFF N/A           NSHUT
```

Step 5 Remove the legacy fabric card following the steps in the Removing a Fabric Card section.

Step 6 Install the UFC following the steps in the Installing a Fabric Card section.

> **Note** Do not connect any cables to the UFC.

Step 7 From SysAdmin VM configuration mode, unshut the fabric card.

Example:

```
sysadmin-vm:0_RP0# config
sysadmin-vm:0_RP0(config)# no hw-module shutdown location 0/FC0
0/RP0/ADMIN0:Dec 5 11:27:52.757 : shelf_mgr[2921]: %INFRA-SHELF_MGR-6-CARD_HW_OPERATIONAL :
Card: 0/FC0 hardware state going to Operational
0/RP0/ADMIN0:Dec 5 11:28:09.532 : confd_helper[2900]: %MGBL-CONFD_HELPER-5-SYSADMIN_COMMIT :
A sysadmin configuration change has been committed. Use 'show configuration commit list'
in admin mode for more details
LC/0/0/CPU0:Dec 5 11:28:15.538 : fia_driver[246]: %PLATFORM-CIH-5-ASIC_ERROR_THRESHOLD : fia[2]:
A link-err error has occurred. CMIC.CMIC_CMC0_IRQ_STAT3.RTP.Interrupt_Register.LinkMaskChange
Threshold has been exceeded
LC/0/5/CPU0:Dec 5 11:28:15.740 : fia_driver[216]: %PLATFORM-CIH-5-ASIC_ERROR_THRESHOLD : fia[4]:
A link-err error has occurred. CMIC.CMIC_CMC0_IRQ_STAT3.RTP.Interrupt_Register.LinkMaskChange
Threshold has been exceeded
LC/0/2/CPU0:Dec 5 11:28:15.927 : fia_driver[293]: %PLATFORM-CIH-5-ASIC_ERROR_THRESHOLD : fia[3]:
A link-err error has occurred. CMIC.CMIC_CMC0_IRQ_STAT3.RTP.Interrupt_Register.LinkMaskChange
Threshold has been exceeded
0/RP0/ADMIN0:Dec 5 11:28:17.401 : fsdbagg[4620]: %FABRIC-FSDB_AGG-5-PLANE_UPDOWN : [4620] :
Plane 0 state changed to UP
sysadmin-vm:0_RP0(config)# commit
sysadmin-vm:0_RP0(config)# exit
```

Step 8 Use the **show platform location** command to verify that the fabric card is operational.

Example:

```
sysadmin-vm:0_RP0# show platform location 0/FC0

Mon Dec 5 23:54:02.366 UTC
Location  Card Type                HW State    SW State     Config State
-----------------------------------------------------------------------
0/FC0     NC6-FC2-U                OPERATIONAL  N/A          NSHUT
```

Step 9 Use the **show hw-module fpd** command to verify the status of all FPDs.

Verify that no FPD components require an upgrade (as indicated by NEED UPGD in the Status field) and that the Running and Programmed fields display the same version. See the Prerequisites section for FPD upgrade information.

Step 10 From SysAdmin VM configuration mode, unshut the fabric plane.

Example:

```
sysadmin-vm:0_RP0# config
sysadmin-vm:0_RP0(config)# no controller fabric plane 0 shutdown
sysadmin-vm:0_RP0(config)# commit
sysadmin-vm:0_RP0(config)# exit
```

Step 11 Use the **show controller fabric plane all detail** command to verify that Admin State and Plane State are up.

Example:

```
sysadmin-vm:0_RP0# show controller fabric plane all detail
Plane Admin Plane  Plane  up->dn  up->mcast Total  Down    PPU
Id    State State  Mode   counter  counter Bundles Bundles State
----------------------------------------------------------------
0     UP    UP     SC        0        0      16     0      NA
1     UP    UP     SC        0        0      16     0      NA
2     UP    UP     SC        0        0      16     0      NA
3     UP    UP     SC        0        0      16     0      NA
4     UP    UP     SC        0        0      16     0      NA
5     UP    UP     SC        0        0      16     0      NA
```

Step 12 Perform the Router Health Check. See Commands for Router Health Check.

What to do next

1. Repeat these steps for each remaining fabric plane (FC1, FC2, FC3, FC4, and FC5) until all six fabric planes have been migrated.

2. After all fabric planes have been migrated, you can install the 2T line card. Do the following:

    a. Verify Power Requirements

    b. Remove Line Card Slice Configurations

    c. Remove 1T Line Cards

    d. Install 2T Line Cards