Upgrading Cisco HyperFlex 2.6(x), 3.0(x), and 3.5(1x)

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Overview: Upgrading Cisco HyperFlex 2.6(x), 3.0(x), and 3.5(1x)

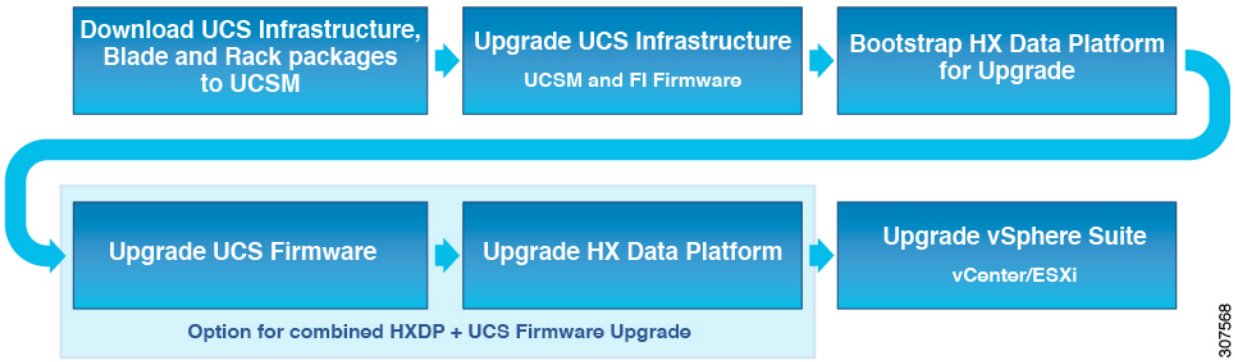
Prerequisites

Before you begin the upgrading process, you should have already completed the following tasks:

- Prerequisites for Upgrading Obsolete Hyperflex Releases
- Hypercheck: HyperFlex and Pre-Upgrade Check Tool
- Verify the ESXi and vCenter Build Number

Upgrade Path for Cisco HyperFlex Data Platform HXDP 2.6(x), 3.0(x), and 3.5(1x)

Upgrading from Cisco HyperFlex Data Platform 2.6(x), 3.0(x), or 3.5(1x) to the Cisco Recommended HXDP release is a single upgrade to your destination release. The following image describes the upgrade workflow.



The following outlines your starting release version and the destination release that completes your upgrade to a recommended Cisco HyperFlex version.

Product	Your Current Release	Upgrade to the Intermediate Release	Upgrade to the Destination Release
HyperFlex software	HXDP 2.6(x), 3.0(x), or 3.5(1x)	4.0(2f)	The latest suggested release on the Cisco Software Download site.
UCS firmware	UCS 3.1(2g) or later.	Minimum version 4.0(4i)	The recommended UCS related firmware based on the suggested HXDP release on the Cisco Software Download site.

You are now ready to begin the Cisco HyperFlex Data Center Upgrade process.

Note The upgrade process consists of the following tasks complete each step in the order presented.

- Download and Install Software Bundles.
- Upgrade UCS firmware to the latest suggested version for your HyperFlex Data Platform Software.
- Upgrade HyperFlex Data Platform Software to Version 3.5(2i) or the latest suggested release.
- (Optional) ESXi Upgrade to 6.5 or 6.7.

Workflow 1: Upgrading to the Destination Release

Upgrading to the Destination Release

Perform the following tasks, using the specified software releases to upgrade to your destination release:

HXDP Software Downloads: From the Current Release to the Destination Release

To upgrade to the destination release, download the software bundles needed for your upgrade from the Cisco Software Downloads

- Software Download for the Recommended UCS Firmware, on page 2
- Software Download for HXDP Release 3.5(2i) or the latest suggested release , on page 3

Software Download

Software Download for the Recommended UCS Firmware

Before starting the upgrade process, download and install the UCS Infra Package that matches your installation as well as the UCS Blade, and the UCS C-series Package.

Note At the time of authoring 4.0(4k) was the compatible UCS server firmware for the suggested HXDP release of 3.5(2h) and 3.5(2i). Before selecting a UCS server firmware to use, start with the current suggested HX release, and choose the corresponding UCS server firmware. For more information about the latest suggested release, see Cisco HyperFlex Recommended Software Release and Requirements Guide.

Download Link: https://software.cisco.com/download/home/286305544/type/286305994/release/3.5(2h)

UCS Infra Package Download

UCS 6200 Fabric Interconnects: ucs-k9-bundle-infra.4.0.4k.A.bin

6300 series UCS Infra package: ucs-6300-k9-bundle-infra.4.0.4k.A.bin

6400 series UCS Infra package: ucs-6400-k9-bundle-infra.4.0.4k.A.bin

UCS Blade Package:

ucs-k9-bundle-b-series.4.0.4k.B.bin

UCS C-series Package:

ucs-k9-bundle-c-series.4.0.4k.C.bin

Software Download for HXDP Release 3.5(2i) or the latest suggested release

Before starting the upgrade process, download and install all software bundles needed to complete this upgrade.

Note At the time this document was authored, HDPX Release 3.5(2i) was the suggested release. For more information about how to locate the latest suggested release on the Cisco Software Download page, see Navigating the Cisco HyperFlex Data Platform Software Downloads and the Cisco HyperFlex Recommended Software Release and Requirements Guide.

- **Upgrade Package:** storfs-packages-3.5.2i-32180.tgz
- **Link:** https://software.cisco.com/download/home/286305544/type/286305994/release/3.5(2i)

Software Installation

To install your software bundles, follow the detailed steps located in the Cisco UCS Manager Firmware Management Guide

Upgrade the UCS Infrastructure Package

Configuring UCS Infrastructure

Perform the following steps:

1. Open the UCS Manager GUI.
2. Select `Equipment > Firmware Management > Firmware auto-install`

3. Click **Install Infrastructure Firmware**.
   a. The Install Infrastructure Firmware window appears, select **ignore all**.
4. Select the desired UCS infrastructure version. Refer the compatibility matrix to identify the version desired for your use case.
   a. Click **Next**.
5. Check the **Upgrade Now** box.
6. Click **Finish**.

Note The expected upgrade behavior is for the UCS Manager to stop and then restart with the new version. Wait until the UCS Manager is back online to log back in to UCS Manager and complete the next steps.

You may check the **Ignore All** box for warnings are not critical to user environment.

7. If the UCS blade server chassis is present, wait for IO Modules (IOM) to upgrade.
   a. Select `Equipment > Installed Firmware`. Expand each chassis and check the Update Status of the IO Module.
      - During upgrade, the IOM status is **Upgrading**.
      - When the update process completes, the IOMs state is **Pending Next Boot for Activate** status.
      - After the IOM upgrade is complete, the IOM state is **Ready**.
8. Wait for Subordinate Fabric Interconnects (FI) to be activated.
   a. Select `Equipment > Installed Firmware > Fabric Interconnects`.
   b. Check the Activate Status of the kernel and switch images.

Note During upgrade, the Activate Status is set to **Activating**.

9. During FI reboot, all HX traffic is forwarded to the primary FI (based on ESXi vSwitch failover policy).
   - This will cause a brief traffic interruption.
   - This will not cause storage IO failures.
10. Verify subordinate FI has rebooted and joined the UCS cluster.
    a. Select `Equipment > Installed Firmware > Fabric Interconnects`.
    b. After activation, the Activate Status of the FI is set to Ready.
    c. Verify that the Overall Status of the FI is operable.
    d. Verify that the kernel and switch versions of the FI match the desired and updated version.

e. Verify that the FI has no fault.

f. Verify that the FI cluster membership is **Subordinate**.

11. If the UCS blade server chassis is present, wait for IO Modules (IOM) to upgrade.

Note Only the IOMs connected to the subordinate FI will enter Ready state, IOMs attached to the Primary FI will remain in **Pending Next Boot Activate** Status.

a. `Select Equipment > Blade Chassis > IO Module`.

b. Wait for the Activate Status of the IOM to change to **Ready**.

12. Wait until HX traffic is re-pinned to both FIs.

Wait for UCS Manager vNIC faults to be cleared. The fault clearing indicates ESXi has loaded the ENIC driver and the interface is up. The traffic is not re-pinned immediately when the network interface goes up because ESXi has a fail back timer. But the `Net.teampolicyupdelay` timer is very low by default (100ms).

13. Verify the HX Cluster is online, and healthy before rebooting the primary fabric interconnect.

- Access summary tab from the vSphere Web Client Navigator. Select `Home > vCenter Inventory Lists > Cisco HyperFlex Systems > Cisco HX Data Platform > cluster > Summary`.

14. In the UCS manager GUI toolbar, click **Pending Activities**.

15. Click on **Fabric Interconnects** tab that display the tasks requiring user acknowledgment before they can complete.

a. Click **Reboot Now** for each pending activity that you want to deploy immediately.

b. Click **OK**. Cisco UCS Manager immediately reboots the primary FI and makes the subordinate FI the primary FI (FI failover).

During FI reboot, all HyperFlex traffic is forwarded to the new primary FI. This will cause a brief traffic interruption, but it will not cause storage IO failures.

16. Wait for UCS Manager to disconnect, then reconnected the UCS Manager to the other FI. This step is necessary because a UCS fail over occurs during the primary FI reboot (step 15).

17. Verify the FI settings:

- Verify that the subordinate FI is primary.
- Verify that the FI cluster membership is Primary.

18. Once the FI is activated, `Select Equipment > Installed Firmware > Fabric Interconnects`.

19. Wait for the Activate Status of the FI to be **Ready** and verify the following:

- Check the Overall Status of FI is operable.

- Check the FI has no fault.
- Verify FI has rebooted and joined the UCS cluster as subordinate.
- Check that the FI cluster membership is Subordinate.

20. Wait for IOM activation to complete, then select `Equipment > Blade Chassis > IO Module`.
21. Wait for the Activate Status of the IP module to be **Ready**.
    - You can monitor the status on the FSM tab.

Note You will lose connectivity to UCS Manager throughout the entire upgrade. This is normal behavior

22. Wait for the HX traffic to re-pin to both FIs.
23. In the UCS manager GUI, wait for all server vNIC faults to clear.
24. In the vSphere Web Client Navigator. Select `Home > vCenter Inventory Lists > Cisco HyperFlex Systems > Cisco HX Data Platform > cluster > Summary`. Verify the HX Cluster is online and healthy after rebooting the FI.

Combined HXDP and UCS Firmware Upgrade

Upgrade the Plugin User Interface (UI)

Note This workflow should only be used if the current HXDP version is before 3.5(1a). Beginning with HXDP Release 3.5(1a), the plugin is updated as part of the HXDP upgrade.

1. From the vSphere Web Client Navigator, select `vCenter Inventory Lists > Cisco HyperFlex Systems > Cisco HX Data Platform > cluster`.
2. Navigate to `Actions > Summary` and note the Cluster Management IP address.
3. SSH to the cluster management IP address with root privileges.
4. Transfer the latest HX Data Platform upgrade bundle to the controller VM's `/tmp` directory. Depending on your operating system, use you can either use SCP directly or download third-party tools, such as WinSCP or MobaXterm.
5. From the controller VM shell, change to the `/tmp` directory.

Warning Do not use any folder other than `/tmp` and do not create any subfolders.

6. Uncompress and extract all files to the root using tar `-zxvf <storfs package name>.tgz`.

   Example:

```
storfs-packages-3.5.2h-32139.tgz
```

7. To invoke the cluster-bootstrap.sh script to bootstrap packages for upgrade, execute the command `~# ./cluster-bootstrap.sh`
   a. Enter the vCenter FQDN or IP address and administrator level username and password.
   b. Wait for the system management service to restart and the bootstrap process to complete. Verify if the HX Data Platform Plug-in is now updated.
8. Log out from the cluster management IP controller VM.
9. Log out of vSphere Web Client.

Note Do not merely close the browser.

10. Log in to vSphere Web Client again to refresh the HX Data Platform Plug-in.
11. Verify the plugin version in vCenter by navigating to `Administration > Client Plug-Ins > Springpath` Plugin in the vSphere Web Client. Confirm the current version matches the new version you are upgrading to.

Upgrade the HXDP/UCS Firmware from the Plugin UI

Note This workflow should only be used if the current HXDP version is before 3.5(1a).

If the current HXDP Release is 3.5(1a) or later, upgrade using HX Connect.

1. From the vSphere Web Client Navigator, select `vCenter Inventory Lists > Cisco HyperFlex Systems > Cisco HX Data Platform > HX-Cluster > Summary`.
2. Select **Upgrade Cluster**.
3. Select both, **HX Data Platform** and **UCS Firmware**.
4. Click **Next**.
5. Browse and select the HXDP package `storfs-packages-<version>.tgz`.
6. To verify the integrity of the uploaded upgrade package bundle, enter administrator level vCenter credentials.
   a. Under Advanced Options, enter the MD5 Checksum # information. The file checksum can be found on the Cisco.com download page by clicking on the download title to reveal the md5 checksum.
7. Enter administrator level UCS Manager credentials.
8. To view the current firmware package version, click **Discover**.
9. Type the latest version of Cisco UCS firmware in the **Target** version field.

Important Type the release number exactly as shown, for example 4.0(4k). Confirm the desired version of UCS C-series and B-series firmware bundles are uploaded to the UCSM before you start the upgrade process.

10. Click **Upgrade**.

    The Cisco UCS servers are now upgraded with the desired firmware packages. The pending activities are automatically acknowledged in a rolling fashion.

Note The upgrade process performs the rolling reboot of each node in the cluster without any traffic disruptions.

If the upgrade fails, you can re-try the upgrade or contact Cisco TAC for further assistance. Running a cluster without remediation after an upgrade failure is not recommended. Care should be taken to fully complete the upgrade as soon as possible.