Upgrade UCS Server Firmware, HX Data Platform and VMware vSphere - Combined Upgrade

Upgrade Cisco UCS Firmware, HX Data Platform, and VMware vSphere Workflow

The Cisco HyperFlex "full-stack" upgrade process involves upgrading the following 3 components:

- Cisco HyperFlex Data Platform
- VMware vSphere ESXi
- Cisco UCS Server Firmware

Cisco recommends upgrading all these 3 components in a combined upgrade from HyperFlex Connect. You can choose to upgrade one, two or all three components in the same upgrade workflow. If you are combining two or more components in a single upgrade process, follow the procedure below. Otherwise, navigate to Chapter 9 for individual component upgrade procedures.

This section describes the steps to perform a combined upgrade of HyperFlex Data Platform Software, VMware ESXi, and UCS Server firmware . In this process, the HyperFlex nodes will go through an optimized rolling reboot without any workload disruptions, by use of VMware vMotion.

Note As part of the Server Firmware upgrade operation initiated from HX Connect, some of the UCS policies may be updated to be compatible with the new HXDP version. These changes are applied only to the nodes that are part of the cluster being upgraded. It is highly recommended to use HX Connect to initiate the Server Firmware upgrade to avoid any policy drift.

Upgrade Type	Procedure
HyperFlex Clusters	See the workflow below.

Upgrade Type	Procedure
HyperFlex Edge Clusters	HyperFlex Edge Upgrade
HyperFlex Stretched Clusters	Stretched Cluster Upgrade
Split Upgrade Procedures	HyperFlex Offline Upgrade Workflow

Perform the following tasks to upgrade UCS Firmware and HX Data Platform:

- Review Prerequisites for Upgrading HyperFlex Software before beginning upgrade.

- Log into HX Connect with admin privileges.

- Select the appropriate options from the Upgrade page.

- Upload the required files and complete the necessary user inputs.

Guidelines and Limitations

Consider the following before performing the upgrade:

- If DRS is *Enabled* and set to fully automatic mode, the VMs are automatically vMotioned to other hosts during the rolling upgrade process.

> **Note** If DRS is *Disabled*, vMotion the VMs manually to continue the upgrade process when prompted. For more information, see VMware Documentation for Migration with vMotion.

- Downgrading ESXi and HXDP is not supported.

- Refer to the Release Notes for software compatibilities of HXDP, UCS firmware, and VMware ESX. Additionally, ensure vCenter is upgraded to a compatible version before upgrading ESXi. For details, see the Cisco HyperFlex Release Notes that correspond with your installation,Recommended Cisco HyperFlex HX Data Platform Software Releases - for Cisco HyperFlex HX-Series Systems, and the *VMware Product Interoperability Matrix* on the VMware site.

- Do not manually upgrade UCS server firmware using the tools available in UCS Manager. Changes to policies in UCS Manager for HyperFlex servers are delivered through the orchestrated server firmware upgrade process. Manually performing firmware updates out of band will result in these important configuration updates being missing.

- During a HX 4.5 upgrade, the SSL certificates are regenerated and this causes an interruption with VEEAM integration until the new certificate is re-imported.

- If you are running a HyperFlex release that is earlier than release 3.5(1a) you must run the manual bootstrap process to upgrade the Cisco HX Data Platform. These procedures are covered in the Cisco HyperFlex Systems Upgrade Guide for Unsupported Cisco HX Releases Guide.

Upgrading HyperFlex Data Platform Software, VMware ESXi, and Cisco UCS Server Firmware using HX Connect

Before you begin

- Download the latest Cisco HX Data Platform Upgrade Bundle for upgrading existing clusters from previous release, from Downloading Software.

- Download the appropriate HX custom ESXi offline upgrade bundle from https://www.cisco.com/.

- Disable snapshot schedule, on the storage controller VM. SSH to HyperFlex cluster IP and run the command `stcli snapshot-schedule –disable` snapshot schedule.

- Pause replication using the run the `stcli dp schedule pause` command and enable it after upgrade using the `stcli dp schedule resume` command. For more detailed steps, see Pausing Replication.

Step 1 Log into HX Connect.

    a) Enter the administrative username and password.

    b) Click **Login**.

Step 2 In the Navigation pane, select **Upgrade**.

Step 3 On the **Select Upgrade Type** page, select **HX Data Platform**, **ESXi**, and **UCS Server Firmware** and complete the following fields:

Field	Essential Information
UCS Manager Connectivity	
UCS Manager FQDN/IP	Enter the Cisco UCS Manager FQDN or IP address. Example: 10.193.211.120.
User Name	Enter the Cisco UCS Manager <admin> username.
Admin Password	Enter the Cisco UCS Manager <admin> password
HX Server Firmware	
Discover	Click **Discover** to view the current UCS firmware package version.

Field	Essential Information
M3/M4 Desired Version/M5 Desired Version (Depending on the nodes in the cluster)	Select the appropriate C-Series firmware versions. Optionally, if you have Compute only B-Series UCS blades in the cluster select the appropriate B-Series firmware version. Only C & B bundles uploaded to UCS Manager will be shown in the list. Return to Upgrading UCS Infrastructure Firmware Workflow if the desired version is not shown. Only compatible firmware versions are shown in the dropdown list. If the desired version is not displayed, confirm the compatibility between HXDP & Server Firmware in the Cisco HyperFlex Software Requirements and Recommendations document.

Note If the UI doesn't show your desired UCS server firmware version in dropdown, see HX Connect UCS Server Firmware Selection Dropdown Doesn't List the Firmware Version 4.1 or Above.

Step 4 Upload the HyperFlex Data Platform upgrade package (storfs-package).

Field	Essential Information
Drag the HX file here or click to browse	Upload the latest Cisco HyperFlex Data Platform Upgrade Bundle for upgrading existing clusters with previous release.tgz package file from Download Software -HyperFlex HX Data Platform. Sample file name format: `storfs-packages-4.5.1a-31601.tgz`.
Current version	Displays the current HyperFlex Data Platform version.
Current cluster details	Lists the HyperFlex cluster details like the **HyperFlex release**and **cluster upgrade state**.
Bundle version	Displays the HyperFlex Data Platform version of the uploaded bundle.
(Optional) **Checksum**	The MD5 Checksum number is available by hovering over the filename in the Cisco.com Software Download section. This is an optional step that helps you verify the integrity of the uploaded upgrade package bundle

Step 5 Upload the ESXi offline upgrade bundle.

Step 6 Provide vCenter login credentials.

Field	Essential Information
User Name	Enter the vCenter *<admin>* username.
Admin Password	Enter the vCenter *<admin>* password.

Step 7 Click **Upgrade** to begin the first step of the combined upgrade process.

Step 8 The **Validation Screen** on the **Upgrade Progress** page displays the progress of the checks performed. Fix validation errors, if any.

Note   At this point, all pre-upgrade checks and validations will run, along with the initial upgrade stage. Within a few minutes, HX Connect returns and prompts the user to confirm and start the second stage of the upgrade. The upgrade is not complete until both steps are performed in the UI. The system should never be left in a state where only the first step of the upgrade is complete.

Note   Do not manually acknowledge servers in UCS Manager. While the servers enter a pending-ack state, the administrator should not manually intervene. The HyperFlex platform will automatically acknowledge each server at the correct time.

Note   As of HX 5.0(1b), an upgrade status appears providing the result of the last upgrade along with the versions that were upgraded (source and target versions for each component selected in the upgrade). You can dismiss this status only if it is successful. If the last upgrade fails, you will need to fix the issue. This banner is a reminder to take action to correct the upgrade.

Step 9   The HyperFlex Connect UI refreshes after the first step of the upgrade, and a banner pops up prompting you to provide the UCS and vCenter credentials and start the second stage of the upgrade process. Monitor the upgrade page and confirm that the upgrade is complete.

When upgrade is in progress, you may see an error message, `Websocket connection failed. Automatic refresh disabled.` You can either refresh the page or log out and log back in to clear the error message. You can safely ignore this error message.

What to do next

Proceed to Confirm That Upgrade Is Complete for post upgrade tasks once the upgrade is complete. 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.