Upgrade Procedures

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Online Upgrade Process Workflow

First upgrade Cisco UCS infrastructure to the latest version and then use the automated upgrade workflow for a combined upgrade of Cisco UCS firmware and Cisco HX Data Platform. Online upgrade uses host firmware packages to upgrade all server endpoints.

During online upgrade, as one node is being upgraded (placed into maintenance mode), the number of tolerated node failures is reduced based on the Data Replication Factor and Access Policy settings.

If upgrading both HXDP and UCS firmware, either a combined or split upgrade can be selected through the vSphere Web Client plugin depending on the length of the maintenance window. Direct firmware upgrade using server firmware auto install through Cisco UCS Manager should not be attempted. Instead, use the UCS server upgrade orchestration framework provided by the HyperFlex Plugin.

Caution
Do not use Firefox browser. It is not supported due to an outdated version of flash that is bundled with the browser.

1. If UCSM (A-bundle) or UCS Server Firmware (C-bundle) upgrade is required, download Cisco UCS Infrastructure A, blade bundle B, and rack bundle C. See Downloading Software.

2. Ensure that the hx-storage-data and vMotion upstream switches are configured for full network failover capability before proceeding forward. Otherwise the HyperFlex Cluster becomes offline and all datastores unmount from the ESXi hosts. See Test Upstream Network Connectivity for more details.

3. Upgrade Cisco UCS Infrastructure as required. See Upgrading Cisco UCS Firmware Using Cisco UCS Manager.


Important

• Be sure to copy the bootstrap file to the controller VM /tmp directory.

• Ensure you confirm the version of the plugin in the vCenter Administration > Client Plug-Ins page.
5. To disable snapshot schedule, on the bootstrapped storage controller VM, run the command `stcli snapshot-schedule --disable`.
   It is enough to run this script on one of the controller nodes.


   To upgrade HX Data Platform only or Cisco UCS firmware only. See Upgrading Cisco HX Data Platform and Upgrading Cisco UCS Firmware for more details.

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**Note**

When only Cisco UCS firmware is being upgraded, you may see the upgrade process pause at the validation screen, after the fabric interconnect discovery. Most likely this occurs due to network connectivity failure. Please contact Cisco TAC for help.

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8. Confirm that upgrade is complete. See Post Upgrade Tasks.

9. On the same controller VM, to enable snapshot schedule, run the command `stcli snapshot-schedule --enable`.

## Split Upgrade

**Attention**

The recommended upgrade method is to upgrade Cisco HX Data Platform first and then upgrade Cisco UCS firmware.

If you prefer to upgrade Cisco UCS firmware first, before upgrading the HX Data Platform do the following:

1. Bootstrap CIP-M using the command `~# ./cluster-bootstrap.sh`.
2. Bootstrap all other nodes using `.cluster-bootstrap.sh -n`.
3. Begin Cisco UCS firmware only upgrade.
4. After UCS firmware upgrade is complete, begin Cisco HX Data Platform upgrade.

### Upgrade Cisco HX Data Platform Only Using GUI

Start upgrade of HX Data Platform only. See Upgrading Cisco HX Data Platform.

### Upgrade Cisco UCS Firmware Only Using GUI

Start upgrade of UCS firmware only. See Upgrading Cisco UCS Firmware.

### Upgrade Cisco HX Data Platform Only Using CLI

```
stcli cluster upgrade --components hxdp --location /tmp/<storfs package name> --vcenter-user <vcuser>
```

**Example:**
stcli cluster upgrade --components hxdp --location /tmp/storfs-packages-1.8.1c-19694.tgz --vcenter-user administrator@vsphere.local

Upgrade Cisco UCS Firmware Only Using CLI
From the same controller VM, use the command:

stcli cluster upgrade --components ucs-fw --ucsm-host eng-fi1 --ucsm-user <UCSM User> --ucsm-pwd <UCSM Password> --ucsfw-version <UCSM Firmware Version>

Example:

stcli cluster upgrade --components ucs-fw --ucsm-host eng-fi1 --ucsm-user admin --ucsm-pwd admin --ucsfw-version '3.1(2b)'

Combined Upgrade

Combined Upgrade Using GUI
Start combined upgrade of HX Data Platform and Cisco UCS firmware. See Combined Upgrade of Cisco HX Data Platform and Cisco UCS Firmware.

Combined Upgrade Using CLI
From the same controller VM, use the command:

# stcli cluster upgrade --components hxdp,ucs-fw --location/tmp/<storfs package name> --vcenter-user <vcuser> --ucsm-host <IP/FQDN of UCSM> --ucsm-user <UCSM User> --ucsfw-version <UCSM Firmware Version>

Example:

root@ucs-stctlvm-357-1:~# stcli cluster upgrade --components hxdp,ucs-fw --location /tmp/storfs-packages-1.8.1c-19712.tgz --vcenter-user administrator@vsphere.local --ucsm-host eng-fi16.eng.storvisor.com --ucsm-user admin --ucsfw-version '3.1(2b)'

Offline Upgrade Process Workflow

1. If UCSM (A-bundle) or UCS Server Firmware (C-bundle) upgrade is required, download Cisco UCS Infrastructure A, blade bundle B, and rack bundle C. See Downloading Software.

2. Ensure that the hx-storage-data and vMotion upstream switches are configured for full network failover capability before proceeding forward. Otherwise the HyperFlex Cluster becomes offline and all datastores unmount from the ESXi hosts. See Test Upstream Network Connectivity for more details.

3. Upgrade Cisco UCS Infrastructure as required. See Upgrading Cisco UCS Firmware Using Cisco UCS Manager.

4. Launch the vSphere Web Client and power down all user VMs residing on HX servers and all user VMs running on HX datastores. This includes VMs running on compute-only nodes. After the VMs have been shut down, verify the health state of the cluster and perform a graceful shutdown. See Graceful Shutdown of a HX Cluster for more details.

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Important

HyperFlex controller VMs (stCtlVMs) must remain powered on.
5. To manually stage the correct firmware version before starting the upgrade process, refer Modifying Host Firmware Package Using Cisco UCS Manager.

6. Shutdown the HyperFlex Controller VM's (stCtlVMs). In vCenter, right-click on each HX Controller VM (stCtlVM) and select Power > Shut Down Guest OS.
   Once the Controller VM’s are shutdown, place the ESXi hosts into Maintenance Mode. In vCenter, right-click on each ESXi host select Maintenance Mode > Enter Maintenance Mode.

7. Acknowledge the pending reboot on the servers that comprise your HX cluster nodes, including both converged nodes and compute-only nodes connected to the cluster. Wait until all nodes are upgraded. Confirm that correct firmware packages have been installed before proceeding.

8. Once the ESXi hosts have booted, take them out of Maintenance Mode. Now the controller VM should come back online. In vCenter, right-click on each ESXi host select Maintenance Mode > Exit Maintenance Mode.

   - Be sure to copy the bootstrap file to the controller VM /tmp directory.
   - Ensure you confirm the version of the plugin in the vCenter Administration > Client Plug-Ins page.

10. To disable snapshot schedule, on the bootstrapped storage controller VM, run the command stcli snapshot-schedule --disable.
    It is enough to run this script on one of the controller nodes.

11. From the same controller VM, begin the upgrade. See Upgrading Cisco HX Data Platform for more details.

12. Confirm that the upgrade is complete. See Post Upgrade Tasks.

13. After the upgrade is complete, start the cluster and power on VMs. See Start Cluster and Power On VMs, on page 4.

14. On the same controller VM, to enable snapshot schedule, run the command stcli snapshot-schedule --enable.

Start Cluster and Power On VMs

After the upgrade is complete and the cluster has been upgraded, log out and log back in to vCenter to see upgrade changes.

Step 1
After the upgrade is complete, start your cluster.

Step 2
Login to any controller VM through SSH:

```
# stcli cluster start
```

Example:

HyperFlex StorageController 1.8(1c)
root@ucs-stclivm - 384 -1;~# stcli cluster upgrade-status
Cluster upgrade succeeded. Cluster version: 1.8(1c)
root@ucs-stclivm-384;~# stcli cluster start
waiting for Cluster to start on nodes: [ucs-383, ucs-384, ucs-385, ucs-386]

This will start the cluster and mount the HX datastores. Wait for cluster to come online. You will see the prompt:

Started cluster on nodes: [ucs-383, ucs-384, ucs-385, ucs-386]
Cluster is online
root@ucs-stclivm-384-1;~#

**Step 3**  
Wait for cluster to become healthy before starting the VMs. Run command:

```bash
~# stcli clustr info | grep health
```

**Example:**

```bash
root@SpringpathControllerZRVF040451;~# stcli cluster info | grep health
healthState: healthy
state: healthy
storage cluster is healthy
```

**Step 4**  
After the cluster is healthy, launch vSphere Web Client or Thick Client, navigate to **Hosts and Cluster > Datacenter > Cluster >**. Right click, select **Power > Power On** to start the VMs.
Start Cluster and Power On VMs