



Stretched Cluster Upgrade

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Overview

This section provides information related to upgrading a Cisco HyperFlex Stretched Cluster. The procedure for performing a Stretched Cluster upgrade is similar to the regular HyperFlex cluster upgrade procedure.

Upgrade Guidelines for Stretched Cluster

- Review the Cisco HyperFlex Upgrade Guidelines in the [Recommended Cisco HyperFlex HX Data Platform Software Releases - for Cisco HyperFlex HX-Series Systems](#).
- Combined HXDP and UCS FW is not supported.
- UCS FW upgrade from HX-Connect is not supported.
- Manual cluster bootstrap is required for upgrade from a pre-3.5 release to 3.5(1a).
Auto bootstrap is supported for upgrade from 3.5(1a) to later releases.
- HyperFlex Witness node version 1.0.2 is supported from 3.5(1a) or later releases. An upgrade of the HyperFlex Witness node is not required when upgrading stretched clusters to 3.5(1a) or later releases.
- Hypercheck Health Check Utility— Cisco recommends running this proactive health check utility on your HyperFlex cluster prior to upgrade. These checks provide early visibility into any areas that may need attention and will help ensure a seamless upgrade experience. For more information see the Hyperflex Health & Pre-Upgrade Check Tool TechNote for full instructions on how to install and run Hypercheck.

HX Data Platform Software Versions for HyperFlex Witness Node for Stretched Cluster - 3.5(x) Releases

Table 1: HX Data Platform Software Versions for HyperFlex Witness Node

HyperFlex Release	Witness Node Version
3.5(2i)	1.0.9
3.5(2h)	1.0.8
3.5(2g)	1.0.6
3.5(2f)	1.0.6
3.5(2e)	1.0.4
3.5(2d)	1.0.3
3.5(2c)	Release Deferred
3.5(2b)	1.0.3
3.5(2a)	1.0.3
3.5(1a) - Unsupported	1.0.2



Note Cisco HyperFlex Release 3.5(2f) requires that stretch clusters upgrade the Witness VM to version 1.0.6. For details on how to upgrade the Witness VM, see [Upgrading a Witness VM](#).



Note Older versions of witness VMs are supported when the cluster is upgraded to the latest HXDP version.

Upgrading HyperFlex Stretched Cluster Using HX Connect

Follow these steps when upgrading a HyperFlex Stretched Cluster from a current Cisco HX Data Platform version of 3.0(1x) or later releases.



Warning Do NOT use Cisco HyperFlex Release 3.5(2c) with Stretched Clusters. Please wait for Cisco HyperFlex Release 3.5(2d). For more information, refer to the [Software Advisory for CSCvp90129: Stretched cluster nodes that experience failures may become unavailable](#).



Note If the HyperFlex package update is interrupted due to power failure or reboot of the node that is being upgraded, the controller VM must be re-imaged or manual intervention is required to fix the issue depending on the state of the system. For more details, contact Cisco TAC.

Before you begin

- Complete pre-upgrade validation checks. See for more details.
- Download the latest *Cisco HX Data Platform Upgrade Bundle for upgrading existing clusters from previous releases*, from [Software Download](#).
- Complete steps 1 to 6 in the *Online Upgrade Process Work flow*. See for more details.
 - Upgrade Cisco UCS Infrastructure.
 - Bootstrap to upgrade Cisco HX Data Platform plug-in.
 - Disable snapshot schedule, on the bootstrapped storage controller VM.
- If DRS is *Enabled*, the VMs are automatically migrated to other hosts with vMotion.



Note If DRS is not enabled and the VMs of the node are not migrated with vMotion, all the VMs on the node will be automatically shutdown. For more information, see VMware Documentation for Migration with vMotion.

Procedure

- Step 1** Log in to HX Connect.
- a) Enter the HX Storage Cluster management IP address in a browser. Navigate to `https://<storage-cluster-management-ip>`.
 - b) Enter the administrative username and password.
 - c) Click **Login**.
- Step 2** In the Navigation pane, select **Upgrade**.
- Step 3** On the **Select Upgrade Type** page, select **HX Data Platform** and complete the following fields:

Table 2:

UI Element	Essential Information
Drag the HX file here or click to browse	Upload the latest <i>Cisco HyperFlex Data Platform Upgrade Bundle for upgrading existing clusters with previous release.tgz</i> package file from Download Software - HyperFlex HX Data Platform . Sample file name format: <i>storfs-packages-3.5.2a-31601.tgz</i> .
Current version	Displays the current HyperFlex Data Platform version.

UI Element	Essential Information
Current cluster details	Lists the HyperFlex cluster details like the HyperFlex version and Cluster upgrade state .
Bundle version	Displays the HyperFlex Data Platform version of the uploaded bundle.
(Optional) Checksum field	The <i>MD5 Checksum number</i> is stored in a separate text file at the <code>/tmp</code> directory where the upgrade package was downloaded. This is an optional step that helps you verify the integrity of the uploaded upgrade package bundle.

Step 4 Enter the vCenter credentials.

UI Element	Essential Information
User Name field	Enter the vCenter <i><admin></i> username.
Admin Password field	Enter the vCenter <i><admin></i> password.

Step 5 Click **Upgrade** to begin the cluster upgrade process.

Step 6 The **Validation Screen** on the **Upgrade Progress** page displays the progress of the checks performed. Fix validation errors, if any. Confirm that the upgrade is complete.

Upgrading a Witness VM

Before you begin

Select the Witness VM version that supports the HXDP version you are upgrading to. For supported versions see the HX Data Platform Software Versions for HyperFlex Witness Node for Stretched Cluster section of the Cisco HyperFlex Recommended Software Release and Requirements Guide.

- For supported versions see the *HX Data Platform Software Versions for HyperFlex Witness Node for Stretched Cluster* section of the [Cisco HyperFlex Recommended Software Release and Requirements Guide](#)
- Upgrade HyperFlex Stretched Cluster.
- The upgraded HyperFlex Stretched Cluster must be in healthy state. To check the health state of Stretched Cluster after upgrade, run the following command:

```
root@StCtlVM:~# stcli cluster info | grep healthy
```

Procedure

Step 1 Log in to the witness VM using SSH and execute the following command to stop the service exhibitor.

```
root@WitnessVM:~# service exhibitor stop
```

- Step 2** Copy the `exhibitor.properties` file available in the `/usr/share/exhibitor/` path to a remote machine from where you can retrieve the `exhibitor.properties` file.

```
scp root@<Witness-VM-IP>:/usr/share/exhibitor/exhibitor.properties user@
<Remote-Machine>:/directory/exhibitor.properties
```

- Step 3** Log out from the Witness VM. Power off and rename the Witness VM to `WitnessVM.old`.

Note Confirm that the IP address of the old Witness VM is unreachable, using the ping command.

- Step 4** Deploy a new Witness VM and configure the same IP address as the old Witness VM.

Note If the IP address is not reachable, the Witness OVA deployment may contain stale entries in the `/var/run/network` directory. You must manually remove these entries and reboot the VM to have the assigned IP address become reachable on the network.

To reboot the VM, open the VM console in vCenter/vSphere and execute the following command:

```
rm -rf /var/run/network/*
reboot
```

- Step 5** Log in to the new witness VM using SSH and execute the following command to stop the service exhibitor.

```
root@WitnessVM:~# service exhibitor stop
```

- Step 6** Copy the `exhibitor.properties` file from the remote machine (copied in [Step 2](#)) to the `/usr/share/exhibitor/` path of the new Witness VM.

```
scp /directory/exhibitor.properties root@<Witness-VM-IP>:
/usr/share/exhibitor/exhibitor.properties
```

- Step 7** Verify if the following symlinks are preserved in the new Witness VM:

```
root@Cisco-HX-Witness-Appliance:~# cd /etc/exhibitor/
root@Cisco-HX-Witness-Appliance:/etc/exhibitor# ls -al
total 8
drwxr-xr-x 2 root root 4096 Sep 11 13:00 .
drwxr-xr-x 88 root root 4096 Sep 11 12:55 ..
lrwxrwxrwx 1 root root 41 Sep 11 13:00 exhibitor.properties
lrwxrwxrwx 1 root root 37 Jul 24 16:49 log4j.properties
```

If the symlinks are not available, execute the following command:

```
root@Cisco-HX-Witness-Appliance:/etc/exhibitor#
ln -s /usr/share/exhibitor/exhibitor.properties exhibitor.properties
root@Cisco-HX-Witness-Appliance:/etc/exhibitor#
ln -s /usr/share/exhibitor/log4j.properties log4j.properties
oot@Cisco-HX-Witness-Appliance:/etc/exhibitor#
ls -al total 8 drwxr-xr-x 2 root root 4096 Sep 11 13:00 . drwxr-xr-x 88 root root 4096
Sep 11 12:55 .. lrwxrwxrwx 1 root root 41
Sep 11 13:00 exhibitor.properties -> /usr/share/exhibitor/exhibitor.properties lrwxrwxrwx
1 root root 37 Jul 24 16:49 log4j.properties -> /usr/share/exhibitor/log4j.properties
```

- Step 8** **Note** This step is required for users that are moving to Witness VM Node version 1.1.1 and later, if the Witness VM being upgraded is a version previous to 1.1.1.

Run the `/usr/share/springpath/storfs-misc/setexhibitorconfig.sh` command to upgrade the Witness exhibitor configuration.

Note The `setexhibitorconfig.sh` automates the process of editing the `exhibitor.properties` file, and replaces all of the data IP addresses with the management IP addresses for each corresponding controller VM.

Note It is normal for this command to not show any output when upgrading from a Witness VM that is older than 1.1.1.

Step 9 Start the service exhibitor by executing the following command:

```
root@Cisco-HX-Witness-Appliance:~# service exhibitor start
exhibitor start/running, process <ID>
```

Manually Upgrading ESXi for Cisco HyperFlex Stretch Cluster 4.0(x)

Procedure

Step 1 Select one of the hosts and put it in HX maintenance mode using the vSphere Web Client. After the host enters maintenance mode, complete the following steps.

Step 2 Copy files using SCP, start the SSH service in the destination ESXi hosts as well.

Note

- On HX240, you can use the local SpringpathDS datastore or a mounted HX datastore.
- On HX220, you can use either a mounted HX datastore or create a temporary RAM disk.

```
scp local_filename user@server:/path/where/file/should/go
```

Step 3 Log in to ESXi, and execute the following command to query the list of available image profiles and for profile name verification.

```
esxcli software sources profile list -d <location_of_the_esxi_zip_bundle_on_the_datastore>
```

Attention Full path must be used when running the `esxcli software` command.

Example:

```
[root@localhost:~] esxcli software sources profile list -d
/vmfs/volumes/5d3a21da-7f370812-ca58-0025
b5a5a102/HX-ESXi-6.0U3-13003896-Cisco-Custom-6.0.3.9-upgrade-bundle.zip
Name                               Vendor  Acceptance Level  Creation Time
Modification Time
-----
HX-ESXi-6.0U3-13003896-Cisco-Custom-6.0.3.9  Cisco  PartnerSupported  2019-04-02T00:14:56
2019-04-02T13:38:34
```

Step 4 Run the following command to perform the upgrade.

```
esxcli software profile update -d <path_to_profile_ZIP_file> -p < profile name>
```

Example:

```
[root@HX-ESXi-01:/vmfs/volumes/1a234567-89bc1234] esxcli software profile update -d
/vmfs/volumes/1a234567-89bc1234/HX-Vmware-ESXi-60U2-4192238-Cisco-Custom-Bundle-6.0.2.3.zip
-p HX-ESXi-6.0U3-13003896-Cisco-Custom-6.0.3.9
```

Step 5 After the ESXi host comes up, verify that the host has booted up with the correct version.

```
vmware -v1
```

Step 6 Exit maintenance mode using the vSphere Web Client.

Step 7 Ensure that the cluster becomes healthy between each ESXi upgrade.

```
stcli cluster storage-summary --detail
```

Step 8 Repeat this process for all hosts in the cluster in a sequence.

Note Make sure that the cluster becomes healthy between each ESXi upgrade.
