



Cisco HX Release 4.5(x) - Software Requirements

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Cisco HX Data Platform Compatibility and Scalability Details - 4.5(x) Releases

Cluster Limits

- Cisco HX Data Platform supports up to 100 clusters managed per vCenter as per [VMware configuration maximums](#).
- Cisco HX Data Platform supports any number of clusters on a single FI domain. Each HX converged node must be directly connected to a dedicated FI port on fabric A and fabric B without the use of a FEX. C-series compute only nodes must also directly connect to both FIs. B-series compute only nodes will connect through a chassis I/O module to both fabrics. In the end, the number of physical ports on the FI will dictate the maximum cluster size and maximum number of individual clusters supported in a UCS domain.
- Using a FEX on uplink ports connecting the Fabric Interconnects to the top of rack (ToR) switches is not supported due to the possibility of network oversubscription leading to the inability to handle HyperFlex storage traffic during failure scenarios.

The following table provides Cisco HX Data Platform Compatibility and Scalability Details.

Table 1: Cisco HX Data Platform Storage Cluster Specifications for VMware ESXi

Node	VMware ESXi				Stretched Cluster* (Available on ESX Only)		
Deployment Type	FI-Connected			Edge	DC-No-FI	FI-Connected	
HX Servers	HX220c M5 HX220c AF M5 HX240c M5 HX240c AF M5 HX220c M4 HX220c AF M4 HX240c M4 HX240c AF M4	HX240c M5L	HXAF220c M5SN HXAF240c M5SN	HX240c M5 Edge Full Depth HXAF240c M5 Edge Full Depth HX240c M5 Edge Short Depth HXAF240c M5 Edge Short Depth HX220c M5 Edge HXAF220c M5 Edge HX220c M4 Edge HXAF220c M4 Edge	HX220c M5 HX220c AF M5 HX240c M5 HX240c AF M5	HX220c M5 HX220c AF M5 HX240c M5 HX240c AF M5 HXAF220c M5SN	HX240c M5L
Compute-Only UCS B-Series/C-Series Servers	B200 M5/M4, B260 M4, B420 M4, B460 M4, B480 M5, C220 M5/M4, C240 M5/M4, C460 M4, C480 M5	B200 M5/M4, B260 M4, B420 M4, B460 M4, B480 M5, C220 M5/M4, C240 M5/M4, C460 M4, C480 M5	B200 M5/M4, B260 M4, B420 M4, B460 M4, B480 M5, C220 M5/M4, C240 M5/M4, C460 M4, C480 M5	—	C220 M5 C240 M5	B200 M5/M4, B260 M4, B420 M4, B460 M4, B480 M5, C220 M5/M4, C240 M5/M4, C460 M4, C480 M5	B200 M5/M4, B260 M4, B420 M4, B460 M4, B480 M5, C220 M5/M4, C240 M5/M4, C460 M4, C480 M5,
Supported Nodes	Converged and Compute-only nodes	Converged and Compute-only nodes	Converged and Compute-only nodes	Converged nodes only	Converged and Compute-only nodes	Converged and Compute-only nodes	Converged and Compute-only nodes

Node	VMware ESXi				Stretched Cluster* (Available on ESX Only)		
Deployment Type	FI-Connected			Edge	DC-No-FI	FI-Connected	
HXDP-DC-AD Licensed Node Limits 1:1 ratio of HXDP-DC-AD to Compute only nodes (Min—Max)	Converged nodes:3-32 Compute only nodes: 0-32 Compute-only nodes: 0-32	Converged nodes:3-16 Compute-only nodes: 0-16	N/A	M4 Converged nodes: 3 M5 Converged nodes: 2,3,or 4	Converged nodes: 3-12 Compute-only nodes: 0-12	N/A	N/A
HXDP-DC-PR Licensed Node Limits 1:2 ratio of HXDP-DC-PR to Compute only nodes (Min—Max)	Converged nodes:3-32 Compute only nodes: 0-64 (up to max cluster size) Compute-only nodes: 0-64 (up to max cluster size)	Converged nodes:3-16 Compute-only nodes: 0-32	Converged nodes: 3-32 Compute Only nodes: 0-64 (up to max cluster size)	M4 Converged nodes: 3 M5 Converged nodes: 2,3,or 4	Converged nodes: 3-12 Compute-only nodes: 0-24 Required for HXAF220c M5SN	Converged nodes: 2-16 per Site Compute-only nodes: 0-21 per Site (up to max cluster size) Compute only nodes: 0-64 (up to max cluster size)	Converged nodes: 2-8 per Site Compute-only nodes: 0-16 per Site (up to max cluster size)
Max Cluster Size	96 ¹	48	96	4	36	32 per Site/ 64 per cluster	24 per Site/ 48 per cluster
Max Compute to Converged ratio	2:1	2:1	2:1	—	2:1	2:1	2:1
Expansion	✓	✓	✓	✓ ²	✓	✓*	✓*

¹ Cluster sizes above 64 nodes require ESXi 7.0 U1 or later.

² Edge cluster expansion with 1G network topology is not supported

Table 2: Cisco HX Data Platform Storage Cluster Specifications for Microsoft Hyper-V

Node	Microsoft Hyper-V	
Deployment Type	FI-Connected	
HX Servers	HX220c M5 HX220c AF M5 HX240c M5 HX240c AF M5	HX240c M5L
Compute-Only UCS B-Series/C-Series Servers	C240 M5, C220 M5, B200 M4, B200 M5	C220 M5, C240 M5, B200 M4, B200 M5
Supported Nodes	Converged and Compute-only nodes	Converged and Compute-only nodes
HXDP-DC-AD Licensed Node Limits 1:1 ratio of HXDP-DC-AD to Compute only nodes (Min—Max)	Converged nodes: 3-16 Compute-only nodes: 0-16	Converged nodes: 3-16 (12TB HDD option is not supported for HyperV) Compute-only nodes: 0-16
HXDP-DC-PR Licensed Node Limits 1:2 ratio of HXDP-DC-PR to Compute only nodes (Min—Max)	Converged nodes: 3-12 Compute-only nodes: 0-16	Converged nodes: 3-12 (12TB HDD option is not supported for HyperV) Compute-only nodes: 0-16
Max Cluster Size	32	32
Max Compute to Converged ratio	1:1	1:1
Expansion	✓	✓

* Requires uniform expansion across both sites

FI/Server Firmware - 4.5(x) Releases

If you are installing new cluster(s), or upgrading existing clusters and require guidance on UCS FI/Server firmware versions, see [Choosing UCS Server Firmware Versions](#).

If you are installing or upgrading HyperFlex clusters with All NVMe nodes, please see the Note below.

Table 3: FI/Server Firmware Versions for M4/M5 Servers

Release	M4/M5 Qualified FI/Server Firmware
4.5(2e)	4.0(4k), 4.0(4m), 4.1(1e), 4.1(2a)*, 4.1(2c)*, 4.1(3e), 4.1(3f), 4.1(3h), 4.1(3i), 4.2(1f), 4.2(1i), 4.2(1m), 4.2(1n)

Release	M4/M5 Qualified FI/Server Firmware
4.5(2d)	4.0(4k), 4.0(4m), 4.1(1e), 4.1(2a)*, 4.1(2c)*, 4.1(3e), 4.1(3f), 4.1(3h), 4.1(3i), 4.2(1f), 4.2(1i), 4.2(1m), 4.2(1n)
4.5(2c)	4.0(4k), 4.0(4m), 4.1(1e), 4.1(2a)*, 4.1(2c)*, 4.1(3e), 4.1(3f), 4.1(3h), 4.1(3i), 4.2(1f), 4.2(1i), 4.2(1m), 4.2(1n)
4.5(2b)	4.0(4k), 4.0(4m), 4.1(1e), 4.1(2a)*, 4.1(2c)*, 4.1(3e), 4.1(3f), 4.1(3h), 4.1(3i), 4.2(1f), 4.2(1i), 4.2(1m), 4.2(1n)
4.5(2a)	4.0(4k), 4.0(4m), 4.1(1e), 4.1(2a)*, 4.1(2c)*, 4.1(3e), 4.1(3f), 4.1(3h), 4.1(3i), 4.2(1f), 4.2(1i), 4.2(1m), 4.2(1n)
4.5(1a)	4.0(4l), 4.1(1e), 4.1(2c)*, 4.1(3e), 4.1(3f), 4.1(3i)



Important For all NVMe HyperFlex clusters using legacy BIOS mode, do not upgrade the server firmware to 4.1(3h), 4.1(3i), 4.1(3j), 4.2(1m) or 4.2(1n). For more information, see [CSCwd04797](#).

To review the BIOS version, see [Verifying Firmware Versions](#).



Note HX 4.5(2a) is qualified with server firmware version 4.2(1f) and 4.2(1i). If you are deploying a cluster with the classic installer version 4.5(2a) and looking to use server firmware version 4.2(1f) or 4.2(1i), please download the latest HX Compatibility Catalog file - storfs-catalog-4.5.2-39637.tgz from the [HyperFlex HX Data Platform Release 4.5\(2a\) Software Download](#) page and update the installer with the latest catalog. Refer to [Upgrading HX Compatibility Catalog](#) for steps to upgrade the catalog. Cluster deployment validations will fail if you try to deploy the cluster with above HXDP and Server Firmware combinations without the catalog update.



Note For HyperFlex clusters with M5 nodes, ensure that the server firmware version is identified as recommended or supported. If you are running any M5 nodes with UCS server firmware versions 4.1(3b) or 4.1(3c), ensure to upgrade to version 4.1(3d) or above. For more information, see [CSCvx93920](#). This defect does not affect M4 nodes in your cluster.

*UCS Server Firmware 4.1(2a) and 4.1(2c) are not supported on clusters with self-encrypting drives (SED). For more information, see [CSCvv69704](#).



Note HX 4.5(1a) with SED drives is supported on UCS Server Firmware release 4.1(1e).



Important If your environment (or deployment) is a Fabric Interconnect 6400 connected to VIC 1455/1457 using SFP-H25G-CU3M or SFP-H25G-CU5M cables, only use UCS Release 4.0(4k), or 4.1(2a) and later. Do not use the any other UCS version listed in the table of qualified releases. Using a UCS Release that is not UCS Release 4.0(4k), or 4.1(2a) and later may cause cluster outages.

Refer to [Release Notes for UCS Manager, Firmware/Drivers, and Blade BIOS](#) for any UCS issues that may affect your environment.

Use the following upgrade sequence **ONLY** for Fabric Interconnect 6400 connected to VIC 1455/1457 using SFP-H25G-CU3M or SFP-H25G-CU5M cables:

- Upgrade the UCS server firmware from HX Connect.
- Upgrade the UCS Infrastructure.
- Upgrade HXDP.
- Upgrade ESXi.

If you have the above hardware and software combination, combined upgrade of UCS server firmware is not supported. However, combined upgrade of HXDP and ESXi is supported after UCS server firmware and UCS infrastructure firmware upgrade is completed.

If the current UCS F/W version is above 4.0(4k) or 4.1(2a), then combined upgrade of UCS server firmware, HX and ESXi is supported.

The HX components—Cisco HX Data Platform Installer, Cisco HX Data Platform, and Cisco UCS firmware—are installed on different servers. Verify that each component on each server used with and within an HX Storage Cluster are compatible.

- Verify that the preconfigured HX servers have the same version of Cisco UCS server firmware installed. If the Cisco UCS Fabric Interconnects (FI) firmware versions are different, see the [Cisco HyperFlex Systems Upgrade Guide](#) for steps to align the firmware versions.
 - **M5:** For NEW hybrid or All Flash (Cisco HyperFlex HX240c M5 or HX220c M5) deployments, verify that the recommended UCS firmware version is installed.
 - To reinstall an HX server, download supported and compatible versions of the software. See the [Cisco HyperFlex Systems Installation Guide for VMware ESXi, Release 4.5](#) for the requirements and steps.



Important For Intersight edge servers running older than 4.0(1a) CIMC version, HUU is the suggested mechanism to update the firmware.

HyperFlex Edge/DC-No-FI and Firmware Compatibility Matrix for 4.5(x) Deployments

Cisco HX Data Platform, Release 4.5.x based Deployments

Confirm the component firmware on the server meets the minimum versions listed in the following tables.



Important HyperFlex Edge does not support Cisco IMC versions 4.0(4a), 4.0(4b), 4.0(4c), 4.0(4d), and 4.0(4e).



Note DC-No-FI is not applicable/supported on 4.0(x).

Table 4: HX220c M4 / HXAF220c M4 Cluster

Component	Qualified Firmware Version - HXDP 4.5x *(be sure to review important note(s) above)
Host Upgrade Utility (HUU) Version	4.0(2h) Download Software Then click on the UCS Server Firmware link to download the desired HUU version.
Note	M4 is not supported with DC-No-FI.

Table 5: HX220c M5 / HXAF220c M5 / HyperFlex HX220c M5 All NVMe / HX240c M5 / HXAF240c M5Cluster

Component	Qualified Firmware Version - HXDP 4.5x *(be sure to review important notes above)
Host Upgrade Utility (HUU) Version	4.1(2f), 4.1(3c), 4.1(3f), 4.1(3h), 4.1(3i) Download Software for 220 Download Software for 240 Then click on the UCS Server Firmware link to download the desired HUU version.

HX Data Platform Software Versions for HyperFlex Witness Node for Stretched Cluster - 4.5(x) Releases

Table 6: HX Data Platform Software Versions for HyperFlex Witness Node for Stretched Cluster

HyperFlex Release	Witness Node Version
4.5(2e)	1.1.3
4.5(2d)	1.1.3
4.5(2c)	1.1.3
4.5(2b)	1.1.3
4.5(2a)	1.1.2, 1.1.3 ³
4.5(1a)	1.1.1

³ 1.1.3 is the preferred Witness Node version for HX 4.5(2a).

Software Requirements for VMware ESXi - 4.5(x) Releases

The software requirements include verification that you are using compatible versions of Cisco HyperFlex Systems (HX) components and VMware vSphere, VMware vCenter, and VMware ESXi.

- Verify that all HX servers have a compatible version of vSphere preinstalled.
- Verify that the vCenter version is the same or later than the ESXi version.
- Verify that the vCenter and ESXi versions are compatible by consulting the [VMware Product Interoperability Matrix](#). Newer vCenter versions may be used with older ESXi versions, so long as both ESXi and vCenter are supported in the table below.
- Verify that you have a vCenter administrator account with root-level privileges and the associated password.

The following table applies for all of the following VMware vSphere Editions: Enterprise, Enterprise Plus, Standard, Essentials Plus, ROBO.



Note Any other licensed editions of VMware vSphere not listed above are not supported, including Essentials Edition.

Table 7: Software Requirements for VMware ESXi

Version	VMware ESXi Versions	VMware vCenter Versions
4.5(2e)	6.5 U3, 6.7 U3, 7.0 U2 ⁴ , 7.0 U3	6.5 U3, 6.7 U3, ⁵ 7.0 U2, 7.0 U3

Version	VMware ESXi Versions	VMware vCenter Versions
4.5(2d)	6.5 U3, 6.7 U3, 7.0 U2 ⁶ , 7.0 U3	6.5 U3, 6.7 U3, ⁷ 7.0 U2, 7.0 U3
4.5(2c)	6.5 U3, 6.7 U3, 7.0 U2 ⁸ , 7.0 U3	6.5 U3, 6.7 U3, ⁹ 7.0 U2, 7.0 U3
4.5(2b)	6.5 U3, 6.7 U3, 7.0 U2 ¹⁰	6.5 U3, 6.7 U3, ¹¹ 7.0 U2, 7.0 U3 ¹²
4.5(2a)	6.5 U3, 6.7 U3, 7.0 U1c (build 17325551) through 7.0 U1d (build 17551050) - See limitations: 4, 7.0 U2 ¹³	6.5 U3, 6.7 U3, 7.0 U1c (build 17327517) through 7.0 U1d (build 17491101) ¹⁴ 7.0 U2
4.5(1a)	6.5 U3, 6.7 U3, 7.0 U1c (build 17325551) through 7.0 U1d (build 17551050) ^{15 16}	6.5 U3, 6.7 U3, 7.0 U1c (build 17327517) through 7.0 U1d (build 17491101) - See limitations: 3, 7.0 U2 ¹⁷

⁴ ESXi 7.0 U2 is not supported on HyperFlex clusters running older Intel CPUs. See [CSCvy84658](#) for more information.

⁵ Care should be taken to use the minimum vCenter 7.0 version listed in the table. VMware vCenter 7.0 versions prior to 7.0 U1c are susceptible to a software interoperability issue. For more information, see [Field Notice: FN - 70620](#). When using vCenter 7.0 U1 or later with a 4.5 HXDP cluster, the following limitation applies:

- vCenter Server 7.0 U1 and later utilizes vCLS cluster VMs. These VMs must reside on a shared non-replicated HX datastore to ensure smooth upgrade operations. If the vCLS VMs reside on local storage, storage vMotion them to a shared non-replicated HX datastore before attempting upgrade. See [VMware documentation](#) for full details.

⁶ ESXi 7.0 U2 is not supported on HyperFlex clusters running older Intel CPUs. See [CSCvy84658](#) for more information.

⁷ Care should be taken to use the minimum vCenter 7.0 version listed in the table. VMware vCenter 7.0 versions prior to 7.0 U1c are susceptible to a software interoperability issue. For more information, see [Field Notice: FN - 70620](#). When using vCenter 7.0 U1 or later with a 4.5 HXDP cluster, the following limitation applies:

- vCenter Server 7.0 U1 and later utilizes vCLS cluster VMs. These VMs must reside on a shared non-replicated HX datastore to ensure smooth upgrade operations. If the vCLS VMs reside on local storage, storage vMotion them to a shared non-replicated HX datastore before attempting upgrade. See [VMware documentation](#) for full details.

⁸ ESXi 7.0 U2 is not supported on HyperFlex clusters running older Intel CPUs. See [CSCvy84658](#) for more information.

⁹ Care should be taken to use the minimum vCenter 7.0 version listed in the table. VMware vCenter 7.0 versions prior to 7.0 U1c are susceptible to a software interoperability issue. For more information, see [Field Notice: FN - 70620](#). When using vCenter 7.0 U1 or later with a 4.5 HXDP cluster, the following limitation applies:

- vCenter Server 7.0 U1 and later utilizes vCLS cluster VMs. These VMs must reside on a shared non-replicated HX datastore to ensure smooth upgrade operations. If the vCLS VMs reside on local storage, storage vMotion them to a shared non-replicated HX datastore before attempting upgrade. See [VMware documentation](#) for full details.

- ¹⁰ ESXi 7.0 U2 is not supported on HyperFlex clusters running older Intel CPUs. See [CSCvy84658](#) for more information.
- ¹¹ Care should be taken to use the minimum vCenter 7.0 version listed in the table. VMware vCenter 7.0 versions prior to 7.0 U1c are susceptible to a software interoperability issue. For more information, see [Field Notice: FN - 70620](#). When using vCenter 7.0 U1 or later with a 4.5 HXDP cluster, the following limitation applies:
- vCenter Server 7.0 U1 and later utilizes vCLS cluster VMs. These VMs must reside on a shared non-replicated HX datastore to ensure smooth upgrade operations. If the vCLS VMs reside on local storage, storage vMotion them to a shared non-replicated HX datastore before attempting upgrade. See [VMware documentation](#) for full details.
- ¹² Only HXDP version 4.5(2b) supports vCenter 7.0 U3. ESXi 7.0 U3 is not supported with HXDP version 4.5(2b). Refer to the table above for ESXi 7.0 U3 support details.
- ¹³ ESXi 7.0 U2 is not supported on HyperFlex clusters running older Intel CPUs. See [CSCvy84658](#) for more information.
- ¹⁴ Care should be taken to use the minimum vCenter 7.0 version listed in the table. VMware vCenter 7.0 versions prior to 7.0 U1c are susceptible to a software interoperability issue. For more information, see [Field Notice: FN - 70620](#). When using vCenter 7.0 U1 or later with a 4.5 HXDP cluster, the following limitation applies:
- vCenter Server 7.0 U1 and later utilizes vCLS cluster VMs. These VMs must reside on a shared non-replicated HX datastore to ensure smooth upgrade operations. If the vCLS VMs reside on local storage, storage vMotion them to a shared non-replicated HX datastore before attempting upgrade. See [VMware documentation](#) for full details.
- ¹⁵ Upgrades to ESXi 7.0 U1 and U2 are not recommended on servers booting from SD cards. For more information, see [VMware KB 83376](#).
- ¹⁶ Fresh HyperFlex Edge installation with ESXi 7.0 is not supported using the OVA installer. Use the Intersight installer or deploy with ESXi 6.5/6.7 and upgrade to 7.0 after installation.
- ¹⁷ When using vCenter 7.0 U2 with a 4.5(1a) HXDP cluster, the following limitations apply:

Note These limitation do not apply to 4.5(2a) and later.

- Fresh Installation cannot be performed with vCenter 7.0 U2. Clusters may be deployed without vCenter initially and then subsequently registered to vCenter Server. Clusters must be registered to a vCenter server before entering production.
- Cluster expansion (converged & compute only) cannot be performed with vCenter 7.0 U2. Reregister the cluster to a vCenter Server 6.x before cluster expansion is attempted.



Note For vSphere 6.x users. VMware has announced vSphere 6.5 and 6.7 End of general support as of October 15, 2022. Cisco strongly recommends upgrading as soon as possible to a supported VMware vSphere 7.x release and follow Cisco's recommendations as outlined in [General Recommendation for New and Existing Deployments](#).

Software Requirements for Microsoft Hyper-V - 4.5(x) Releases

The software requirements include verification that you are using compatible versions of Cisco HyperFlex Systems (HX) components and Microsoft Hyper-V (Hyper-V) components.

HyperFlex Software versions

The HX components—Cisco HX Data Platform Installer, Cisco HX Data Platform, and Cisco UCS firmware—are installed on different servers. Verify that each component on each server used with and within the HX Storage Cluster are compatible. For detailed information on installation requirements and steps, see the *Cisco HyperFlex Systems Installation Guide on Microsoft Hyper-V*.

Table 8: Qualified Server Firmware for M5 Servers on Hyper-V

HyperFlex Release	M5 Qualified Server Firmware
4.5(2e)	4.1(3f)
4.5(2d)	4.1(3f)
4.5(2c)	4.1(3f)
4.5(2b)	4.1(3f)
4.5(2a)	4.1(3f)
4.5(1a)	4.1(3f)

Table 9: Supported Microsoft Software versions

Microsoft Component	Version
Windows Operating System (Windows OS)	<p>Windows Server 2016 Datacenter Core & Desktop Experience.</p> <p>Note For Windows Server 2016 Datacenter Core and Desktop Experience, the Windows 2016 ISO image should be Update Build Revision (UBR) 1884 at a minimum.</p> <p>Windows Server 2019 Datacenter-Desktop Experience is supported starting from HXDP 4.0.1(a) onwards.</p> <p>Note For Windows Server 2019 Desktop Experience, the Windows 2019 ISO image should be Update Build Revision (UBR) 107 at a minimum.</p> <p>Windows Server 2019 Datacenter-Core is not supported currently.</p> <p>Also note that the following are currently not supported: OEM activated ISOs and Retail ISOs are not supported.</p> <p>Earlier versions of Windows Server such as Windows 2012r2 are not supported.</p> <p>Non-English versions of the ISO are not supported.</p>

Microsoft Component	Version
Active Directory	A Windows 2012 or later domain and forest functionality level.

Supported Microsoft License Editions

The Microsoft Windows Server version that is installed on one or more HyperFlex hosts must be licensed as per Microsoft licensing requirements listed on [Microsoft Licensing](#).

Browser Recommendations - 4.5(x) Releases

Use one of the following browsers to run the listed HyperFlex components. These browsers have been tested and approved. Other browsers might work, but full functionality has not been tested and confirmed.

Table 10: Supported Browsers

Browser	Cisco Intersight	Cisco UCS Manager	HX Data Platform Installer	HX Connect
Microsoft Internet Explorer	NA	11 or later	11 or later	11 or later
Google Chrome	62 or later	57 or later	70 or later	70 or later
Mozilla Firefox	57 or later	45 or later	60 or later	60 or later
Apple Safari	10 or later	9 or later	NA	NA
Opera	NA	35 or later	NA	NA

Notes

- **Cisco HyperFlex Connect:**

The minimum recommended resolution is 1024 X 768.

- **Cisco HX Data Platform Plug-In:**

The **Cisco HX Data Platform Plug-In** runs in vSphere. For VMware Host Client System browser requirements, see the [VMware documentation](#).

The **Cisco HX Data Platform Plug-In** is not displayed in the vCenter HTML client. You must use the vCenter flash client.

- **Cisco UCS Manager:**

The browser must support the following:

- Java Runtime Environment 1.6 or later.
- Adobe Flash Player 10 or later is required for some features.

For the latest browser information about Cisco UCS Manager, refer to the most recent [Cisco UCS Manager Getting Started Guide](#).