



# **RUNNING VMWARE VSPHERE ON HPE INTEGRITY SUPERDOME X**

Configuring VMware vSphere on HPE Integrity Superdome X

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## EXECUTIVE SUMMARY

The purpose of this white paper is to facilitate the successful deployment and configuration of VMware vSphere® virtualization platform on HPE Integrity Superdome X with HPE Superdome BL920s Gen8 and Gen9 Server Blades. It includes a description of recommended HPE hardware and software components for HPE Integrity Superdome X, and best practices you may use when deploying VMware vSphere.

## OVERVIEW OF HPE INTEGRITY SUPERDOME X

The following section provides an overview of the hardware and software requirements for the HPE Integrity Superdome X with HPE Superdome BL920s Gen8 and Gen9 Server Blades.

### Hardware requirements and features

The HPE BladeSystem Superdome Enclosure is the building block for HPE Superdome X. Each compute enclosure supports 15 fans, 12 power supplies, associated power cords, and four HPE Crossbar Fabric Modules (XFM). Configurations of one-to-eight mission-critical, scalable x86 blades can be populated in an enclosure with support for hard partitions (HPE nPars) containing one, two, three, four, or eight blades. Multiple HPE nPars of different sizes are supported within a single enclosure. This partitioning flexibility allows the servers to be rightsized for any workload.

### NOTE

The HPE Integrity Superdome X QuickSpecs is available at: [hpe.com/psnow/doc/c04383189](http://hpe.com/psnow/doc/c04383189).

### Hardware specifications

**TABLE 1.** Supported processor configurations for both the HPE Superdome BL920s Gen8 and Gen9 Server Blades

	Processor	Number of cores per processor	Frequency	Cache	Power
<b>BL920s Gen8</b>	Intel® Xeon® Processor E7-2890 v2	15c	2.8 GHz (3.4 GHz Turbo)	37.5 MB	155W
	Intel Xeon Processor E7-2880 v2	15c	2.5 GHz (3.1 GHz Turbo)	37.5 MB	130W
<b>Ivy Bridge-EX</b>	Intel Xeon Processor E7-4830 v2	10c	2.2 GHz (2.7 GHz Turbo)	20 MB	105W
	Intel Xeon Processor E7-8891 v2	10c	3.2 GHz (3.7 GHz Turbo)	37.5 MB	155W
	Intel Xeon Processor E7-8893 v2	6c	3.4 GHz (3.7 GHz Turbo)	37.5 MB	155W
<b>BL920s Gen9</b>	Intel Xeon Processor E7-8890 v3	18c	2.5 GHz (3.3 GHz Turbo)	45 MB	165W
	Intel Xeon Processor E7-8880 v3	18c	2.3 GHz (3.1 GHz Turbo)	45 MB	150W
<b>Haswell-EX</b>	Intel Xeon Processor E7-4850 v3	14c	2.2 GHz (2.8 GHz Turbo)	35 MB	115W
	Intel Xeon Processor E7-8891 v3	10c	2.8 GHz (3.5 GHz Turbo)	45 MB	165W
	Intel Xeon Processor E7-8893 v3	4c	3.2 GHz (3.5 GHz Turbo)	45 MB	140W
<b>Broadwell-EX</b>	Intel Xeon Processor E7-8890 v4	24c	2.2 GHz (2.6 GHz Turbo)	60 MB	165W
	Intel Xeon Processor E7-8880 v4	22c	2.2 GHz (2.6 GHz Turbo)	55 MB	150W
	Intel Xeon Processor E7-8855 v4	14c	2.1 GHz (2.4 GHz Turbo)	35 MB	140W
	Intel Xeon Processor E7-8891 v4	10c	2.8 GHz (3.3 GHz Turbo)	60 MB	165W
	Intel Xeon Processor E7-8893 v4	4c	3.2 GHz (3.4 GHz Turbo)	60 MB	140W
	Intel Xeon Processor E7-8894 v4	24c	2.4 GHz (3.4 GHz Turbo)	60 MB	165W



## Memory

**TABLE 2.** Supported memory configurations for HPE Superdome X

	BL920s Gen8 v2	BL920s v3/v4
Double data rate type	DDR3	DDR4
Max. memory per complex	12 TB	24 TB
DIMM slots per server blade	48	48
DIMM sizes	16 GB, 32 GB	32 GB, 64 GB

For VMware vSphere memory limitations on HPE Superdome X, please refer the section [“VMware vSphere limitations on HPE Integrity Superdome X.”](#)

## I/O adapters

✓ = Supported

✗ = Not supported

**TABLE 3.** I/O adapters

Type	Product	BL920s Gen8 v2	BL920s Gen9 v3	BL920s Gen9 v4
<b>Mezzanine Ethernet adapter</b>	HPE Ethernet 10 Gb 2-port 560M Adapter	✓	✓	✓
<b>Mezzanine FlexFabric Ethernet adapters</b>	HPE FlexFabric 10 Gb 2-port 534M Adapter (700748-B21)	✓	✗	✗
	HPE FlexFabric 20 Gb 2-port 630M Adapter (700076-B21)	✗	✓	✓
	HPE FlexFabric 20 Gb 2-port 650M Adapter (700767-B21)	✗	✗	✓
<b>LOM Ethernet adapter</b>	HPE Ethernet 10 Gb 2-port 560FLB Adapter (655639-B21)	✓	✓	✓
<b>LOM FlexFabric Ethernet adapters</b>	HPE FlexFabric 10 Gb 2-port 534FLB Adapter (700741-B21)	✓	✗	✗
	HPE FlexFabric 20 Gb 2-port 630FLB Adapter (700065-B21)	✗	✓	✓
	HPE FlexFabric 20 Gb 2-port 650FLB Adapter (700763-B21)	✗	✗	✓
<b>Mezzanine Fibre Channel Adapter</b>	HPE QMH2672 16 Gb Fibre Channel Host Bus Adapter (710608-B21)	✓	✓	✓

### NOTE

Customer should use VMware® 6.0 Patch 04 to support 560FLB/M I/O card on HPE Superdome BL920s Gen9 Server Blades v4 and the workaround defined in the [kb.vmware.com/kb/2147525](http://kb.vmware.com/kb/2147525).

The HPE FlexFabric 534M/FLB and 630M/FLB Adapters (mezzanine and LOM) only provide Ethernet network support.

A 16-socket (eight-blade) HPE Superdome X system may be configured with 1 to 16 dual-port Fibre Channel mezzanine controllers on HPE Superdome BL920s Gen8 and Gen9 Server Blades. It should be noted to not configure different brands of I/O cards to the same interconnect in the same blade. An eight-socket system (four-blade) configuration has similar constraints. In all case, each HPE Superdome BL920s Server Blades supports a maximum of two LOMs and three mezzanine cards. Each 630M/FLB adapter provides two ports. The maximum combined port count for 630M and 630FLB is 16 ports.

### NOTE

FCoE is currently not supported with HPE Integrity Superdome X. Hardware acceleration-based iSCSI is supported with HPE FlexFabric 650FLB with VMware 6.5 starting with HPE Superdome X firmware version 8.7.84 (bundle 2017.03) or later.

For VMware vSphere I/O adapter’s limitations on HPE Superdome X, please refer the section [“VMware vSphere limitations on HPE Integrity Superdome X—VMware vSphere configuration maximum.”](#)



## Interconnect modules

The Table 4 outlines the supported interconnect modules for HPE Superdome X with HPE Superdome BL920s Gen8 and Gen9 Server Blades.

✓ = Supported

✗ = Not supported

**TABLE 4.** Interconnect modules

Type	Product	BL920s Gen8 v2	BL920s Gen9 v3/v4
<b>Ethernet interconnect</b>	HPE 6125XLG Ethernet Blade Switch	✓	✓
	HPE 6125G Ethernet Blade Switch (658247-B21)	✓	✓
	HPE 6127XLG Ethernet Blade Switch (787635-B21)	✗	✓
<b>Fabric Extender</b>	HPE Cisco B22 HPE Fabric Extender for BladeSystem c-Class (641146-B21, 657787-B21)	✓	✓
<b>Ethernet interconnect (pass-thru)</b>	HPE 10GbE Pass-Thru Module for BladeSystem c-Class (538113-B21)	✓	✓
<b>Fibre Channel interconnect</b>	Brocade 16 Gb/16 SAN switch for BladeSystem c-Class (C8S45A)	✓	✓
	Brocade 16 Gb/28 SAN switch Power Pack+ for BladeSystem c-Class (C8S47A)	✓	✓

One to six Fibre Channel interconnects may be installed in bays three through eight in the back of the enclosure, dependent upon the mezzanine slots being utilized. One of the Ethernet interconnects must be installed in bay one; a second Ethernet interconnect of the same type may be installed in bay two if desired. If additional Ethernet adapters are used, the corresponding interconnect modules of the same type may be installed in bays three through eight—again dependent on the mezzanine slots utilized.

See the configuration options table in the [HPE Integrity Superdome X QuickSpecs](#).

### NOTE

VMware vSphere configuration maximum are currently constrained to 10 Gbps speeds. HPE recommends configuring the 630M/FLB or 650M/FLB with a 10GbE interconnect module such as 6125XLG or HPE 10GbE Pass-Thru Module for c-Class BladeSystem.

## Server configuration

### Server partitioning (HPE nPars)

The HPE Integrity Superdome X can be partitioned into different mixes of nPartitions (HPE nPars). The configurations specified here in allow the customer to hard partition their HPE Superdome X into the configuration of 2-socket, 4-socket, 6-socket (Gen9 only), 8-socket, 12-socket (Gen9 v4 only), or 16-socket configurations that best suits their computing needs.



✓ = Supported

✗ = Not supported

**TABLE 5.** HPE nPars configurations

Supported HPE nPars	BL920s Gen8 v2	BL920s Gen9 v3	BL920s Gen9 v4
2s	✓	✓	✓
4s	✓	✓	✓
6s	✗	✓	✓
8s	✓	✓	✓
12s	✗	✗	✓
16s	✓	✓	✓

### Hardware maximum configurations

The Table 6 outlines the maximum configurations for the HPE Superdome BL920s Gen8 and Gen9 Server Blades.

**TABLE 6.** Maximum configurations

	16-socket	12-socket	8-socket	6-socket	4-socket	2-socket
<b>BL920s Gen8 v2</b>						
Processor cores (15 cores per socket)	240	N/A	120	N/A	60	30
Logical processors (Hyper-Threading—enabled)	480	N/A	240	N/A	120	60
Memory capacity (32 GB DIMMs)	12 TB	N/A	6 TB	N/A	3 TB	1.5 TB
Mezzanine slots (current supported limit)	24 (24)	N/A	12 (12)	N/A	6 (6)	3 (3)
LOM	16	N/A	8	N/A	4	2
<b>BL920s Gen9 v3</b>						
Processor cores (18 cores per socket)	288	N/A	144	108	72	36
Logical processors (Hyper-Threading—enabled)	576	N/A	288	216	144	72
Memory capacity (32 GB DIMMs)	12 TB	N/A	6 TB	4.5 TB	3 TB	1.5 TB
Mezzanine slots (current supported limit)	24 (24)	N/A	12 (12)	9 (9)	6 (6)	3 (3)
LOM	16	N/A	8	6	4	2
<b>BL920s Gen9 v4</b>						
Processor cores (24 cores per socket)	384	288	192	144	96	48
Logical processors (Hyper-Threading—enabled)	768	576	384	288	192	96
Memory capacity (64 GB DIMMs)	24 TB	18 TB	12 TB	9 TB	6 TB	3 TB
Mezzanine slots (current supported limit)	24 (24)	18 (18)	12 (12)	9 (9)	6 (6)	3 (3)
LOM	16	12	8	6	4	2



**RAS features**

**Core Analysis Engine (CAE)**—CAE runs on the Onboard Administrator, which moves platform diagnostic capabilities to the firmware level, so it can drive self-healing actions and report failures even when the VMware ESXi™ host is unable to boot. It also provides possible reasons for failures as well as possible actions for repair and detailed replacement part numbers. This speeds recovery to reduce downtime. These errors are also sent to remote management systems like HPE Insight Remote Support (IRS). See [hpe.com/in/en/services/get-connected.html](http://hpe.com/in/en/services/get-connected.html).

**OA live logs**—Both the system event log (SEL) and forward progress log (FPL) viewers provide a way for users to view stored event records. More information is available at [hpe.com/psnow/doc/c04389038?from=app&section=search&isFutureVersion=true](http://hpe.com/psnow/doc/c04389038?from=app&section=search&isFutureVersion=true).

**VMWARE VSPHERE LIMITATIONS ON HPE INTEGRITY SUPERDOME X**

**VMware vSphere configuration maximums**

VMware documentation of configuration maximums is available at the following links:

- VMware vSphere 5.5: [vmware.com/pdf/vsphere5/r55/vsphere-55-configuration-maximums.pdf](http://vmware.com/pdf/vsphere5/r55/vsphere-55-configuration-maximums.pdf)
- For 6.0 and 6.5 VMware maximum configurations are available at the following links: [configmax.vmware.com/guest](http://configmax.vmware.com/guest)  
Select the product name as vSphere (left side of the screen) and appropriate vSphere version on the mentioned URL to list the maximum configurations

**Memory**

The memory limits supported by VMware on HPE Integrity Superdome X are as follows:

**TABLE 7.** Memory limits

VMware vSphere	BL920s Gen8 v2	BL920s Gen9 v3	BL920s Gen9 v4
VMware 5.5 U3	6 TB (4 Blades)	6 TB (4 Blades)	✘
VMware 6.0 U1	6 TB (8 Blades)	6 TB (4 Blades)	✘
VMware 6.0 U2	6 TB (8 Blades)	6 TB (4 Blades)	6 TB (4 Blades)
VMware 6.0 U3	6 TB (8 Blades)	6 TB (4 Blades)	6 TB (4 Blades)
VMware 6.5	✘	✘	6 TB (4 Blades)
VMware 6.5 U1	✘	✘	6 TB (4 Blades)
VMware 6.5 U2	✘	6 TB (4 Blades)	6 TB (4 Blades)
VMware 6.5 U3	✘	6 TB (4 Blades)	6 TB (4 Blades)
VMware 6.7 U3	✘	6 TB (4 Blades)	6 TB (4 Blades)
VMware 7.0	✘	✘	6 TB (4 Blades)
VMware 7.0 U1	✘	✘	6 TB (4 Blades)
VMware 7.0 U2	✘	✘	6 TB (4 Blades)
VMware 7.0 U3	✘	✘	6 TB (4 Blades)



### VMware vSphere supported Server partitioning (HPE nPars)

The HPE Integrity Superdome X may be partitioned into different mixes of nPartitions (HPE nPars). The following listed HPE nPars configurations only currently supported by VMware vSphere:

✓ = Supported

✗ = Not supported

**TABLE 8.** Supported server partition sizes

Supported HPE nPars	BL920s Gen8 v2	BL920s Gen9 v3/v4
2s	✓	✓
4s	✓	✓
6s	✗	✓
8s	✓	✓
12s	✗	✗
16s	✓	✗

#### NOTE

Customer should use VMware 6.0 Patch 04 or VMware 6.0 for supporting 16s and the workaround defined in the [kb.vmware.com/kb/2147525](http://kb.vmware.com/kb/2147525).

## HPE INTEGRITY SUPERDOME X HW/FW SETUP/CONFIGURATION INSTRUCTIONS

### HPE Integrity Superdome X Server Firmware Bundle

The HPE Integrity Superdome X latest Firmware recipe bundle is available from [support.hpe.com/hpesc/public/home/driverHome?sp4ts.oid=7595549](http://support.hpe.com/hpesc/public/home/driverHome?sp4ts.oid=7595549). On the landing page, by selecting the OS as “VMware vSphere” customer will get firmware bundle file under the section “Firmware (Entitlement Required)” which can be installed/updated with the install instructions available in the download page.

### HPE Integrity Superdome X I/O Firmware Image

Customers should utilize the HPE Integrity Superdome X I/O Firmware and Windows Drivers image for updating I/O firmware using Smart Update Manager on your HPE Superdome BL920s Gen8 and Gen9 Server Blades. The HPE Integrity Superdome X I/O Firmware Image ISO is available from [support.hpe.com/hpesc/public/home/driverHome?sp4ts.oid=7595549](http://support.hpe.com/hpesc/public/home/driverHome?sp4ts.oid=7595549) under “Software—CD-ROM” section which can be installed/updated with the install instructions available in the download page.

Updated I/O drivers for HPE Superdome X supported I/O are not available in the VMware vSphere base image distributions and also not contained in the I/O Firmware Image. Customers need to include/update to the appropriate async drivers, which are available from vibsdepot and build their own custom VMware vSphere distributions. Customer can obtain the appropriate OS version specific async drivers for HPE Superdome BL920s Gen8 and Gen9 Server Blades from [vibsdepot.hpe.com/sdx/downloads/](http://vibsdepot.hpe.com/sdx/downloads/).



## Recommended hardware configuration

### Hyper-Threading

The Intel Xeon Processor E7 v4, v3, and v2 families implement the Intel® Hyper-Threading technology feature. When enabled Hyper-Threading allows a single physical processor core to run two independent threads of program. The VMware vSphere may use both logical processors, which often results in increased system performance. However, the two logical processors incur some overhead while sharing common physical resources, so the pair neither has the same processing power, nor consumes the same electrical power as the two physical cores. Beyond that, the increased parallelism may cause increased contention for shared software resources, so some workloads may experience a degradation when Hyper-Threading is enabled.

On the HPE Superdome BL920s Gen8 and Gen9 Server Blades, the Hyper-Threading state is an attribute of the partition and therefore is controlled through interaction with the Onboard Administrator (OA). Hyper-Threading is enabled by default. The current state may be ascertained through the Onboard Administrator `parstatus` command:

```
parstatus -p <partition identifier> -V
```

Hyper-Threading at activation: Enabled

Hyper-Threading at next boot: Enabled

---

### NOTE

Both the current state and the state after the next boot are shown; any change to the Hyper-Threading state will not take effect until the partition is rebooted.

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The Onboard Administrator `parmodify` command may be used if it is desired to change the Hyper-Threading state:

```
parmodify -p <partition identifier> -T [y|n]
```

As a general rule of thumb, it may be desirable to change Hyper-Threading from the disabled to the enabled state if the workload that is running is fully utilizing all of the physical cores, as evidenced by a high value for CPU utilization. Another case where Hyper-Threading would be beneficial is if the physical cores are spending a relatively large amount of time waiting for cache misses to be satisfied.

If there are applications running that tend to consume the entire capacity of the processor cache, it may be beneficial to disable Hyper-Threading. The two logical processors share a common physical cache so there may be contention with each other if the application cache footprint is large.

For performance reasons, it is highly recommended to have the same amount of memory on each blade in a partition.



### Power management

The HPE Integrity Superdome X implements a variety of mechanisms to govern the trade-off between power savings and peak performance. A more thorough discussion of other power per performance mechanisms appears in these references:

- VMware 5.5 Power Management Guide: [vmware.com/files/pdf/techpaper/hpm-perf-vsphere55.pdf](http://vmware.com/files/pdf/techpaper/hpm-perf-vsphere55.pdf)
- VMware 6.0 Power Management Guide: [vmware.com/files/pdf/techpaper/VMware-PerfBest-Practices-vSphere6-0.pdf](http://vmware.com/files/pdf/techpaper/VMware-PerfBest-Practices-vSphere6-0.pdf)
- VMware 6.5 Power Management Guide: [vmware.com/vsphere-65/topic/com.vmware.ICbase/PDF/vsphere-esxi-vcenter-server-65-resource-management-guide.pdf](http://vmware.com/vsphere-65/topic/com.vmware.ICbase/PDF/vsphere-esxi-vcenter-server-65-resource-management-guide.pdf)
- VMware 6.7 Power Management Guide: [vmware.com/vsphere-67/topic/com.vmware.ICbase/PDF/vsphere-esxi-vcenter-server-67-resource-management-guide.pdf](http://vmware.com/vsphere-67/topic/com.vmware.ICbase/PDF/vsphere-esxi-vcenter-server-67-resource-management-guide.pdf)
- VMware 7.0 Power Management Guide: [vmware.com/vsphere-70/topic/com.vmware.ICbase/PDF/vsphere-esxi-vcenter-server-70resource-management-guide.pdf](http://vmware.com/vsphere-70/topic/com.vmware.ICbase/PDF/vsphere-esxi-vcenter-server-70resource-management-guide.pdf)

### I/O

It is recommended that all disks connected to the HPE Superdome X over the two-port QLogic Fibre Channel adapters be set up multipathed for high reliability and hardware availability.

### Installing on a QLogic Fibre Channel device (BOOT from SAN)

To enable boot from a QLogic Fibre Channel device, the boot controller needs to be enabled from the HPE Device Manager. HPE recommends enabling only the primary and secondary boot controllers to avoid delays during system initialization.

1. When boot reaches the EFI Boot Manager menu, press U for System Utilities
2. Select Device Manager
3. For each HPE QMH2672 16Gb 2P FC HBA—FC:
  - a. Select the device
  - b. Select Boot Settings
  - c. Toggle Adapter Driver to <Enabled>
  - d. Toggle Selective Login to <Disabled>
  - e. Toggle Selective LUN Login to <Disabled>
  - f. Ctrl-W to save
  - g. Ctrl-X to exit the Device Manager

### IPv6

Configuration of IPv6 networks on the HPE Superdome X is not supported, and it is recommended that IPv6 be disabled during installation.

### Trim EFI boot entries

Customers are advised to remove stale or unwanted boot options to save boot time. Use “efibootmgr” EFI command to remove the preboot execution environment (PXE) boot options when a new ESXi host is installed and remove the boot options to the old ESXi host after installing a new one.



## VMWARE VSPHERE OVERVIEW

### Virtualization Platform

#### Introduction

VMware vSphere is a virtualization platform for building [cloud infrastructures](#) using existing IT assets and resources. Forged on the strength of a successful 10-year partnership, HPE and VMware deliver proven virtualization solutions from the desktop, to the data center, and into the cloud. HPE and VMware are the market leaders in end-to-end virtualization solutions and work closely together to deliver high value with reduced cost and risk. We offer a portfolio of [HPE software](#) products that integrate with VMware vSphere and take advantage of its capabilities. We are also a source for many VMware extensions. New options let you modify the VMware vSphere environment to meet your specific needs, as well as make it easy to deploy VMware vSphere on [HPE Integrity Superdome X](#). Our joint commitment has led HPE and VMware to be recognized as market leaders in virtualization and cloud computing.

This paper provides instructions to deploy and update VMware vSphere on HPE Integrity Superdome X and build your own VMware vSphere custom image.

#### VMware vSphere ISO image options

- **VMware vSphere® Hypervisor (ESXi ISO) image (VMware base image):** The VMware base image includes the base VMware ESXi Hypervisor image and default set of drivers. This image does not include HPE value-add components or new or updated drivers. [HPE Integrity Superdome X](#) systems require using a custom ISO image that includes new or updated drivers to support the storage and network hardware included in the server.
- **Custom ISO image:** You can create your own ISO image for deploying VMware vSphere. To create a custom ISO image, use the VMware Image Builder included with VMware vSphere® PowerCLI™. Start with the VMware base depot and then customize it to include the VMware vSphere Installation Bundles (VIBs) delivering HPE value-add components that need to be loaded at boot time. VIBs include HPE value-add software deliverables updated drivers, HPE ESXi Utilities Offline Bundles and HPE CIM WBEM Providers. The output of Image Builder will be a custom ISO image that includes the VMware base image and all the added VIBs.
- VMware vSphere offers different image (ISO file) options. You can use the VMware vSphere Hypervisor (ESXi) Offline Bundle (VMware base image) or your own custom image. HPE recommends building a custom image that includes all the HPE value-add components and new/updated drivers. If you choose to use the VMware base image, we recommend you install the updated drivers and HPE value-add components after installing VMware vSphere.
- However, there are few HPE Integrity Superdome X that requires using a custom ISO image that includes new or updated drivers to support the storage and network hardware included in the server. Refer to the [HPE Server Support Matrix](#) for information on which servers require the custom ISO and which do not.

HPE Superdome X supports the following VMware vSphere distributions:

✓ = Supported

✗ = Not supported

**TABLE 9.** VMware vSphere support

VMware vSphere releases	BL920s Gen8 v2	BL920s Gen9 v3	BL920s Gen9 v4
VMware 5.5 U3	✓	✓	✗
VMware 6.0 U1	✓	✓	✗
VMware 6.0 U2	✓	✓	✓
VMware 6.0 U3	✓	✓	✓
VMware 6.5	✗	✗	✓
VMware 6.5 U1	✗	✗	✓
VMware 6.5 U2	✗	✓	✓
VMware 6.5 U3	✗	✓	✓
VMware 6.7 U3	✗	✓	✓
VMware 7.0	✗	✗	✓
VMware 7.0 U1	✗	✗	✓
VMware 7.0 U2	✗	✗	✓
VMware 7.0 U3	✗	✗	✓



- **Download VMware vSphere Hypervisor (ESXi) Offline Bundles from VMware site:** HPE will not support the HPE Integrity Superdome X with the ProLiant HPE VMware Custom Images. You need to build your own VMware vSphere custom image ISO using the VMware vSphere Hypervisor (ESXi) Offline Bundle and specific drivers (includes the third-party drivers bundle) and HPE value-add software deliverables (HPE ESXi Offline Bundles) available specific to HPE Integrity Superdome X from HPE [vibsdepot](#) (Also known as HPE Online Depot).

#### **VMware vSphere Hypervisor (ESXi) 5.5 U3 Offline Bundle**

- The VMware 5.5 U3 base image is available for download at [VMware site](#)
- HPE software deliverables for VMware 5.5 U3 is HPE ESXi Offline Bundle and HPE ESXi Utilities Offline Bundle. The third-party drivers bundle, HPE ESXi Offline Bundle and HPE ESXi Utilities Offline Bundle specific to HPE Integrity Superdome X are published at [HPE vibsdepot.hpe.com/sdx/downloads/](#)
- Refer to section "[Build own VMware vSphere custom images for HPE Integrity Superdome X](#)"

#### **VMware vSphere Hypervisor (ESXi) 6.0 U1 Offline Bundle**

- The VMware 6.0 U1 base image is available for download at [VMware site](#)
- The HPE software deliverables for VMware 6.0 U1 is HPE ESXi Offline Bundle and HPE ESXi Utilities Offline Bundle. The third-party drivers bundle, HPE ESXi Offline Bundle and HPE ESXi Utilities Offline Bundle specific to HPE Integrity Superdome X are published at [HPE vibsdepot.hpe.com/sdx/downloads/](#)
- Refer to section "[Build own VMware vSphere custom images for HPE Integrity Superdome X](#)"

#### **VMware vSphere Hypervisor (ESXi) 6.0 U2 Offline Bundle**

- The VMware 6.0 U2 base image is available for download at [VMware site](#)
- The HPE software deliverables for VMware 6.0 U2 is HPE ESXi Offline Bundle and HPE ESXi Utilities Offline Bundle. The third-party drivers bundle, HPE ESXi Offline Bundle and HPE ESXi Utilities Offline Bundle specific to HPE Integrity Superdome X are published at [HPE vibsdepot.hpe.com/sdx/downloads/](#)
- Refer to section "[Build own VMware vSphere custom images for HPE Integrity Superdome X](#)"

#### **VMware vSphere Hypervisor (ESXi) 6.0 P04 Offline Bundle**

- Customer can build their own custom image starting with the 6.0 U2 base image and add the patch as a bundle
- Customer can download the VMware 6.0 P04 bundle available at [VMware site](#). For more information, refer [kb.vmware.com/kb/2146984](#)
- Using this patch build, SFCBD service restart issue is resolved. For more information, refer [VMware vSphere 6.0 U1/U2/U3 known issues](#)

#### **VMware vSphere Hypervisor (ESXi) 6.0 U3 Offline Bundle**

- The VMware 6.0 U3 base image is available for download at [VMware site](#)
- The HPE software deliverables for VMware 6.0 U3 is HPE ESXi Offline Bundle and HPE ESXi Utilities Offline Bundle. The third-party drivers bundle, HPE ESXi Offline Bundle and HPE ESXi Utilities Offline Bundle specific to HPE Integrity Superdome X are published at [HPE vibsdepot.hpe.com/sdx/downloads/](#)
- Refer to section "[Build own VMware vSphere custom images for HPE Integrity Superdome X](#)"

#### **VMware vSphere Hypervisor (ESXi) 6.5 Offline Bundle**

- The VMware 6.5 base image is available for download at [VMware site](#)
- The HPE software deliverables for VMware 6.5 is HPE ESXi Offline Bundle and HPE ESXi Utilities Offline Bundle. The third-party drivers bundle, HPE ESXi Offline Bundle and HPE ESXi Utilities Offline Bundle specific to HPE Integrity Superdome X are published at [HPE vibsdepot.hpe.com/sdx/downloads/](#)
- Refer to section "[Build own VMware vSphere custom images for HPE Integrity Superdome X](#)"

#### **VMware vSphere Hypervisor (ESXi) 6.5 U1 Offline Bundle**

- The VMware 6.5 U1 base image is available for download at [VMware site](#)
- The HPE software deliverables for VMware 6.5 U1 is HPE ESXi Offline Bundle and HPE ESXi Utilities Offline Bundle. The third-party drivers bundle, HPE ESXi Offline Bundle and HPE ESXi Utilities Offline Bundle specific to HPE Integrity Superdome X are published at [HPE vibsdepot.hpe.com/sdx/downloads/](#)
- Refer to section "[Build own VMware vSphere custom images for HPE Integrity Superdome X](#)"

#### **VMware vSphere Hypervisor (ESXi) 6.5 U2 Offline Bundle**

- The VMware 6.5 U2 base image is available for download at [VMware site](#)
- The HPE software deliverables for VMware 6.5 U2 is HPE ESXi Offline Bundle and HPE ESXi Utilities Offline Bundle. The third-party drivers bundle, HPE ESXi Offline Bundle and HPE ESXi Utilities Offline Bundle specific to HPE Integrity Superdome X are published at [HPE vibsdepot.hpe.com/sdx/downloads/](#)
- Refer to section "[Build own VMware vSphere custom images for HPE Integrity Superdome X](#)"



**VMware vSphere Hypervisor (ESXi) 6.5 U3 Offline Bundle**

- The VMware 6.5 U3 base image is available for download at [VMware site](#)
- The HPE software deliverables for VMware 6.5 U3 is HPE ESXi Offline Bundle and HPE ESXi Utilities Offline Bundle. The third-party drivers bundle, HPE ESXi Offline Bundle and HPE ESXi Utilities Offline Bundle specific to HPE Integrity Superdome X are published at [HPE\\_vibsdepot.hpe.com/sdx/downloads/](http://HPE_vibsdepot.hpe.com/sdx/downloads/)
- Refer to section “[Build own VMware vSphere custom images for HPE Integrity Superdome X](#)”

**VMware vSphere Hypervisor (ESXi) 6.7 U3 Offline Bundle**

- The VMware 6.7 U3 base image is available for download at [VMware site](#)
- The HPE software deliverables for VMware 6.7 U3 is HPE ESXi Offline Bundle and HPE ESXi Utilities Offline Bundle. The third-party drivers bundle, HPE ESXi Offline Bundle and HPE ESXi Utilities Offline Bundle specific to HPE Integrity Superdome X are published at [HPE\\_vibsdepot.hpe.com/sdx/downloads/](http://HPE_vibsdepot.hpe.com/sdx/downloads/)
- Refer to section “[Build own VMware vSphere custom images for HPE Integrity Superdome X](#)”

**Download VMware vSphere Hypervisor (ESXi) Custom ISO Images from VMware site**

- For HPE Superdome X servers starting with VMware vSphere 7.0 distribution, HPE publishes a tested custom ISO image containing updated drivers (includes the third-party driver’s bundle), on the below mentioned VMware site and can be downloaded directly from following URLs:

**TABLE 10.** VMware vSphere Hypervisor (ESXi) Custom ISO images for HPE Superdome X servers

VMware vSphere releases	Supported servers	Comment	URL
VMware vSphere 7.0 (Mar 2022)	HPE Superdome X	HPE Custom ISO HPE Add-on Depot	<a href="http://customerconnect.vmware.com/downloads/details?downloadGroup=OEM-ESXI70-HPE&amp;productId=974">customerconnect.vmware.com/downloads/details?downloadGroup=OEM-ESXI70-HPE&amp;productId=974</a> <a href="http://customerconnect.vmware.com/en/downloads/details?downloadGroup=ADDON_ESXI700_HPE&amp;productId=974">customerconnect.vmware.com/en/downloads/details?downloadGroup=ADDON_ESXI700_HPE&amp;productId=974</a>
VMware vSphere 7.0 U1 (Mar 2022)	HPE Superdome X	HPE Custom ISO HPE Add-on Depot	<a href="http://customerconnect.vmware.com/en/downloads/details?downloadGroup=OEM-ESXI70U1-HPE&amp;productId=974">customerconnect.vmware.com/en/downloads/details?downloadGroup=OEM-ESXI70U1-HPE&amp;productId=974</a> <a href="http://customerconnect.vmware.com/en/downloads/details?downloadGroup=ADDON_ESXI70U1_HPE&amp;productId=974">customerconnect.vmware.com/en/downloads/details?downloadGroup=ADDON_ESXI70U1_HPE&amp;productId=974</a>
VMware vSphere 7.0 U2 (Mar 2022)	HPE Superdome X	HPE Custom ISO HPE Add-on Depot	<a href="http://customerconnect.vmware.com/en/downloads/details?downloadGroup=OEM-ESXI70U2-HPE&amp;productId=974">customerconnect.vmware.com/en/downloads/details?downloadGroup=OEM-ESXI70U2-HPE&amp;productId=974</a> <a href="http://customerconnect.vmware.com/en/downloads/details?downloadGroup=ADDON_ESXI70U2_HPE&amp;productId=974">customerconnect.vmware.com/en/downloads/details?downloadGroup=ADDON_ESXI70U2_HPE&amp;productId=974</a>
VMware vSphere 7.0 U3 (Mar 2022)	HPE Superdome X	HPE Custom ISO HPE Add-on Depot	<a href="http://customerconnect.vmware.com/en/downloads/details?downloadGroup=OEM-ESXI70U3-HPE&amp;productId=974">customerconnect.vmware.com/en/downloads/details?downloadGroup=OEM-ESXI70U3-HPE&amp;productId=974</a> <a href="http://customerconnect.vmware.com/en/downloads/details?downloadGroup=ADDON_ESXI70U3_HPE&amp;productId=974">customerconnect.vmware.com/en/downloads/details?downloadGroup=ADDON_ESXI70U3_HPE&amp;productId=974</a>

**NOTE**

Remove “**smartpqi**, **hpeesacli** and **nhpsa**” drivers before upgrading to 7. x versions using the esxcli command.  
 syntax/command : **esxcli software vib remove --vibName=<name>**  
 After removing drivers successfully, the system needs to be rebooted for the changes to be effective.

**HPE ESXi Offline Bundle for VMware**

- The ProLiant HPE ESXi Offline Bundle is not supported on HPE Integrity Superdome X. A separate ESXi offline bundle is available for HPE Superdome X.
- HPE Integrity Superdome X ESXi offline bundle includes HPE Common Information Model (CIM) Providers and HPE iLO driver.
- The HPE CIM providers are key components of a fully managed ESXi server. They allow a management client such as HPE Systems Insight Manager (HPE SIM) to acquire and display server health information.

**HPE ESXi Utilities Offline Bundle for VMware**

- Bundle includes HPONCFG, BOOTCFG, TESTEVENT, SSACLI, and CONREP utilities for configuration of servers.
- The TESTEVENT utility generates test WBEM indication and test SNMP trap. The TESTEVENT utility is supported on HPE Integrity Superdome X servers.
- The SSACLI utility provides Smart Array reporting and configuration. This utility runs on an HPE Integrity Superdome X, but as there are currently no Smart Array/Smart HBA supported, it reports no controllers found.
- The rest of the utilities in this bundle report an error indicating they are not supported on HPE Integrity Superdome X servers.
- HPE Utilities offline bundle supports both HPE ProLiant and HPE Integrity Superdome X.



**HPE CIM Providers (HPE Insight Management WBEM Providers)**

HPE CIM Providers (HPE Insight Management WBEM Providers) are key components of a managed VMware vSphere server. The Providers allow a management client, such as HPE SIM, to monitor and display information about server health. VMware vCenter Server® also utilizes the data available from the providers to present additional information about the server. HPE CIM Providers are required by Insight Remote Support. They are also required by CAE to monitor and report I/O related issues on the server.

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**NOTE**

IRS (Insight Remote Support) version 7.6 or later is required for IRS to work on HPE Superdome X running VMware.

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**VMware vSphere Image Builder**

VMware Image Builder is an extension to PowerShell for Windows. It lets you create a custom ISO image, create, or edit an image profile for Auto Deploy, or create an offline depot .zip file for VMware vSphere® Update Manager™ (VUM). The HPE Online Depot offers the individual HPE value-add bundles as well as all the OEM driver bundles required to support HPE Integrity Superdome X. You can use these bundles with Image Builder, or you can deploy them directly. The HPE Online Depot contains all HPE and required device driver VIBs. We recommend including all the HPE Online Depot bundles to create own custom image to ensure you have all the drivers and HPE additions required to install VMware vSphere to HPE Integrity Superdome X servers using the latest hardware and manage the HPE Integrity Superdome X servers.

VMware Image builder also known as “VMware PowerCLI” tool can also be used to add VMware patches or hot fixes to the custom ISO.

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**NOTE**

VMware vSphere PowerCLI can be downloaded from [VMware site](#) by providing appropriate credentials.

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**Build own VMware vSphere custom images for HPE Integrity Superdome X**

Customer can build own VMware vSphere custom image ISO using the VMware vSphere Hypervisor (ESXi) Offline Bundle which is in the .zip format and specific HPE online VIBs software depot for run on HPE Integrity Superdome X.

**Steps to build own VMware vSphere custom image**

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**NOTE**

As the steps mentioned involve usage of a script which downloads HPE online VIBs software depot from vibsdepot link, the server on which these steps performed need to be connected to the internet.

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**NOTE**

For VMware vSphere 5.5 U3 on HPE Superdome BL920s Gen8 v2 and Gen9 v3 Server Blades use vibsdepot available at [vibsdepot.hpe.com/sdx/downloads/apr2017/gen8gen9v3/](https://vibsdepot.hpe.com/sdx/downloads/apr2017/gen8gen9v3/) and follow steps to create a custom ISO by referring section “[To build own VMware vSphere custom image for apr2017 release.](#)”

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**TABLE 11.** Latest software vibsdepot links (for VMware vSphere Hypervisor [ESXi] 6.0)

Servers	Vibsdepot links
BL920s Gen8 v2/BL920s Gen9 v3/BL920s Gen9 v4	<a href="https://vibsdepot.hpe.com/sdx/downloads/may2019/gen9v3">vibsdepot.hpe.com/sdx/downloads/may2019/gen9v3</a>

**TABLE 11-A.** Latest software vibsdepot link (for vSphere Hypervisor [ESXi] 6.5 U1/U2 Offline Bundle)

Server	Vibsdepot links
BL920s Gen9 v3	<a href="https://vibsdepot.hpe.com/sdx/downloads/may2019/gen9v3">vibsdepot.hpe.com/sdx/downloads/may2019/gen9v3</a>
BL920s Gen9 v4	<a href="https://vibsdepot.hpe.com/sdx/downloads/may2019/gen9v4s">vibsdepot.hpe.com/sdx/downloads/may2019/gen9v4s</a>

**TABLE 11-B.** Latest software vibsdepot links (for VMware vSphere Hypervisor [ESXi] 6.5 U3)

Server	Vibsdepot links
BL920s Gen9 v3	<a href="https://vibsdepot.hpe.com/sdx/downloads/june2021/gen9v4">vibsdepot.hpe.com/sdx/downloads/june2021/gen9v4</a>
BL920s Gen9 v4	<a href="https://vibsdepot.hpe.com/sdx/downloads/june2021/gen9v4">vibsdepot.hpe.com/sdx/downloads/june2021/gen9v4</a>

**TABLE 11-C.** Latest software vibsdepot link (for vSphere Hypervisor [ESXi] 6.7 U3 Offline Bundle)

Server	Vibsdepot links
BL920s Gen9 v3	<a href="https://vibsdepot.hpe.com/sdx/downloads/june2021/gen9v4">vibsdepot.hpe.com/sdx/downloads/june2021/gen9v4</a>
BL920s Gen9 v4	<a href="https://vibsdepot.hpe.com/sdx/downloads/june2021/gen9v4">vibsdepot.hpe.com/sdx/downloads/june2021/gen9v4</a>

**NOTE**

For VMware vSphere 6.5 U3 on both HPE Superdome BL920s Gen9 v3 and BL920s Gen9 v4 Server Blades use the same vibsdepot available at [vibsdepot.hpe.com/sdx/downloads/june2021/gen9v4/](https://vibsdepot.hpe.com/sdx/downloads/june2021/gen9v4/) and follow steps to create a custom ISO by referring section “[To build own VMware vSphere custom image for may2019 release.](#)”

For VMware vSphere 6.7 U3 on both HPE Superdome BL920s Gen9 v3 and BL920s Gen9 v4 Server Blades use the same vibsdepot available at [vibsdepot.hpe.com/sdx/downloads/june2021/gen9v4/](https://vibsdepot.hpe.com/sdx/downloads/june2021/gen9v4/) and follow steps to create a custom ISO by referring section “[To build own VMware vSphere custom image for may2019 release.](#)”



**To build own VMware vSphere custom image for May 2019 release, see below:**

1. Download the HPE Image Builder script (".ps1" file) from the appropriate vibsdepot release path and save it as .ps1 file
  - a. For 6.0\6.5 gen9v3: [vibsdepot.hpe.com/sdx/downloads/may2019/gen9v3/build-hpe600-img-may2019-gen9v3.ps1](https://vibsdepot.hpe.com/sdx/downloads/may2019/gen9v3/build-hpe600-img-may2019-gen9v3.ps1)  
[vibsdepot.hpe.com/sdx/downloads/may2019/gen9v3/build-hpe650-img-may2019-gen9v3.ps1](https://vibsdepot.hpe.com/sdx/downloads/may2019/gen9v3/build-hpe650-img-may2019-gen9v3.ps1)
  - b. For 6.0\6.5 gen9v4: [vibsdepot.hpe.com/sdx/downloads/may2019/gen9v4/build-hpe600-img-may2019-gen9v4.ps1](https://vibsdepot.hpe.com/sdx/downloads/may2019/gen9v4/build-hpe600-img-may2019-gen9v4.ps1)  
[vibsdepot.hpe.com/sdx/downloads/may2019/gen9v4/build-hpe650-img-may2019-gen9v4.ps1](https://vibsdepot.hpe.com/sdx/downloads/may2019/gen9v4/build-hpe650-img-may2019-gen9v4.ps1)
  - c. For 6.7 gen9v4: [vibsdepot.hpe.com/sdx/downloads/sep2019/gen9v4/build-hpe670-img-sep2019-gen9v4.ps1](https://vibsdepot.hpe.com/sdx/downloads/sep2019/gen9v4/build-hpe670-img-sep2019-gen9v4.ps1)
2. Download the corresponding VMware vSphere Hypervisor (ESXi) Offline Bundles by referring the section "[Download VMware vSphere Hypervisor \(ESXi\) Offline Bundles from VMware site](#)" and place it on the folder where .ps1 file is kept

**NOTE**

As the above-mentioned PowerShell scripts published are unsigned, you may have to run Set-ExecutionPolicy cmdlet to run unsigned scripts.

3. Identify the VMware Image profile to use from VMware vSphere Hypervisor (ESXi) Offline Bundle by viewing the contents of the "profiles" directory in the metadata file inside the .zip file (always use the image profile with xxxxxxxx-standard embedded in the name with NO "s" before "-standard")  
 Example Output: ESXi-6.0.0-20150902001-standard...
4. Start an Image Builder session
5. Run the Image Builder script and supply the input parameters to build a custom image. Customer can choose from one of the following two options to create the image:
  - a. **Option a.** Run the .ps1 file and supply all the parameters in the same command line:  
`< .\ps1 file > -VMwareDepot < VMware vSphere Hypervisor (ESXi) Offline Bundle > -VMwareIP <name of the Image Profile> - CustomIP "<Your choice of New ISO image to be created >" -CustomVendor "<Your Company Name>"`
  - b. **Option b.** Run the script with no parameters from the command line and supply parameters one by one as prompted:
    - I. PowerCLI C:\vmware> .\ps1 file
    - II. **VMwareDepot:** VMware vSphere Hypervisor (ESXi) Offline Bundle
    - III. **VMwareIP:** Your choice of New ISO image be created
    - IV. **CustomIP:** Your choice of New Image Profile name
    - V. **CustomVendor:** Your Company Name
6. The custom image (.ISO) will be generated in the current working directory

**To build own VMware vSphere custom image for aug2018 release, see below:**

1. Download the HPE Image Builder script (".ps1" file) from the vibsdepot release path of the desired drivers and save it as .ps1 file  
 For 6.0\6.5 gen9v3: [vibsdepot.hpe.com/sdx/downloads/aug2018/gen9v3/build-hpe600-img-aug2018-gen9v3.ps1](https://vibsdepot.hpe.com/sdx/downloads/aug2018/gen9v3/build-hpe600-img-aug2018-gen9v3.ps1)  
[vibsdepot.hpe.com/superdome/sdx/downloads/aug2018/gen9v3/build-hpe650-img-aug2018-gen9v3.ps1](https://vibsdepot.hpe.com/superdome/sdx/downloads/aug2018/gen9v3/build-hpe650-img-aug2018-gen9v3.ps1)  
 For 6.0\6.5 gen9v4: [vibsdepot.hpe.com/sdx/downloads/aug2018/gen9v4/build-hpe600-img-aug2018-gen9v4.ps1](https://vibsdepot.hpe.com/sdx/downloads/aug2018/gen9v4/build-hpe600-img-aug2018-gen9v4.ps1)  
[vibsdepot.hpe.com/superdome/sdx/downloads/aug2018/gen9v4/build-hpe650-img-aug2018-gen9v4.ps1](https://vibsdepot.hpe.com/superdome/sdx/downloads/aug2018/gen9v4/build-hpe650-img-aug2018-gen9v4.ps1)
2. For the remaining steps, follow the steps starting from step 2 in the section "[To build own VMware vSphere custom image for may2019 release](#)"



**To build own VMware vSphere custom image for May 2018 release, see below:**

1. Download the HPE Image Builder script (".ps1" file) for the desired HPE server model from the vibsdepot release path as mentioned in the Table 12 below and save it as .ps1 file

**TABLE 12.** May 2018 Software depot links for HPE Superdome X servers

Servers	Vibsdepot links
BL920s Gen8 v2/BL920s Gen9 v3	<a href="https://vibsdepot.hpe.com/sdx/downloads/may2018/gen8gen9v3/">vibsdepot.hpe.com/sdx/downloads/may2018/gen8gen9v3/</a>
BL920s Gen9 v4	<a href="https://vibsdepot.hpe.com/sdx/downloads/may2018/gen9v4">vibsdepot.hpe.com/sdx/downloads/may2018/gen9v4</a>

2. Download the corresponding VMware vSphere Hypervisor (ESXi) Offline Bundles by referring the section "[Download VMware vSphere Hypervisor \(ESXi\) Offline Bundles from VMware site](#)" and place it on the folder where .ps1 file is kept

**NOTE**

As the above-mentioned PowerShell scripts published are unsigned, you may have to run Set-ExecutionPolicy cmdlet to run unsigned scripts.

3. Identify the VMware Image profile to use from VMware vSphere Hypervisor (ESXi) Offline Bundle by viewing the contents of the "profiles" directory in the metadata file inside the .zip file (always use the image profile with xxxxxxxx-standard embedded in the name with NO "s" before "-standard")

Example Output: ESXi-6.0.0-20150902001-standard...

**NOTE**

Perform step 5 and step 6 if you are creating a custom image for VMware vSphere 6.5. If you are creating a custom image for VMware vSphere 6.0, proceed to step 7.

4. Start an Image Builder session
5. Run the below command to clone the profile into a new image profile of your choice

```
New-EsxImageProfile -CloneProfile <Image profile obtained from the above step> -Name <Your choice of New Image CloneProfile name>
```

6. Run the below command to remove the bnx2x driver from the ISO

```
Remove-EsxSoftwarePackage -ImageProfile <CloneProfile name used in the above step> -SoftwarePackage net-bnx2x,net-bnx2,scsi-bnx2i,scsi-bnx2fc,net-cnic,misc-cnic-register
```

7. Run the HPE Image Builder script and supply the input parameters to build a custom image. Customer can choose from one of the below two options to create the image:

**Option a.** Run the script and supply all the parameters in the same command line:

```
< \ps1 file> -VMwareDepot <VMware vSphere Hypervisor (ESXi) Offline Bundles> -VMwareIP <Cloned Profile name> -CustomIP "<Your choice of New Image Profile name>" -CustomVendor "<Your Company Name>"
```

**Option b.** Run the script with no parameters from the command line and supply parameters one by one as prompted:

```
PowerCLI C:\vmware> .\ps1 file
cmdlet HPE Image Builder script file at command pipeline position 1
```

Supply values for the following parameters:

- VMwareDepot: VMware vSphere Hypervisor (ESXi) Offline Bundle
- VMwareIP: Cloned Profile name
- CustomIP: Your choice of New Image Profile name
- CustomVendor: Your Company Name

8. The custom image will be generated in the current working directory



**To build own VMware vSphere custom image for April 2017 release, see below:**

**TABLE 13.** April 2017 Software depot links for HPE Superdome X servers

Servers	Vibsdepot links
BL920s Gen8 v2/BL920s Gen9 v3	<a href="http://vibsdepot.hpe.com/sdx/downloads/apr2017/gen8gen9v3/">vibsdepot.hpe.com/sdx/downloads/apr2017/gen8gen9v3/</a>
BL920s Gen9 v4	<a href="http://vibsdepot.hpe.com/sdx/downloads/apr2017/gen9v4/">vibsdepot.hpe.com/sdx/downloads/apr2017/gen9v4/</a>

- Download the HPE Image Builder script (".ps1" file) from the vibsdepot release path of the desired drivers and save it as .ps1 file
  - For 5.5 gen8gen9v3: [vibsdepot.hpe.com/sdx/downloads/apr2017/gen8gen9v3/build-hpe550-img-apr2017-gen8gen9v3.ps1](http://vibsdepot.hpe.com/sdx/downloads/apr2017/gen8gen9v3/build-hpe550-img-apr2017-gen8gen9v3.ps1)
  - For 6.0 gen8gen9v3: [vibsdepot.hpe.com/sdx/downloads/apr2017/gen8gen9v3/build-hpe600-img-apr2017-gen8gen9v3.ps1](http://vibsdepot.hpe.com/sdx/downloads/apr2017/gen8gen9v3/build-hpe600-img-apr2017-gen8gen9v3.ps1)
- Download the corresponding VMware vSphere Hypervisor (ESXi) Offline Bundles by referring the section "[Download VMware vSphere Hypervisor \(ESXi\) Offline Bundles from VMware site](#)" and place it on the folder where .ps1 file is kept

**NOTE**

As the above-mentioned PowerShell scripts published are unsigned, you may have to run Set-ExecutionPolicy cmdlet to run unsigned scripts.

- Identify the VMware Image profile to use from VMware vSphere Hypervisor (ESXi) Offline Bundle by viewing the contents of the "profiles" directory in the metadata file inside the .zip file (always use the image profile with xxxxxxxx-standard embedded in the name with NO "s" before "-standard")
 

Example Output: ESXi-6.0.0-20150902001-standard...
- Start an Image Builder session
- Run the Image Builder script and supply the input parameters to build a custom image. Customer can choose from one of the following two options to create the image:
  - Option a.** Run the .ps1 file and supply all the parameters in the same command line:
 

```
< .\ps1 file > -VMwareDepot <VMware vSphere Hypervisor (ESXi) Offline Bundle> -VMwareIP <name of the Image Profile> -CustomIP "<Your choice of New ISO image to be created >" -CustomVendor "<Your Company Name>"
```
  - Option b.** Run the script with no parameters from the command line and supply parameters one by one as prompted:
    - PowerCLI C:\vmware> .\ps1 file
    - VMwareDepot: VMware vSphere Hypervisor (ESXi) Offline Bundle
    - VMwareIP: Your choice of New ISO image be created
    - CustomIP: Your choice of New Image Profile name
    - CustomVendor: Your Company Name
- The custom image (.ISO) will be generated in the current working directory

**VMware ESXi logs**

VMware ESXi has various logs and user can obtain information from the Knowledge Base site: [kb.vmware.com/kb/2004201](http://kb.vmware.com/kb/2004201).



# VMWARE VSPHERE IMAGE INSTALL INSTRUCTIONS

## Installation procedure

### Prerequisites

A dedicated FC LUN is required to install and boot the VMware vSphere. FC LUN > 10 GB is fine.

1. Attach VMware vSphere installer ISO through “Virtual Drives” -> “Image File CD-ROM/DVD” on HPE iLO Integrated Remote Console of the selected partition.
2. Power on or reset the server partition. (Using Boot to System Utilities from the Virtual Devices tab is useful here.)
3. Following the POST, select the System Utilities (Type “U” when prompted).
4. Select the Boot Manager, and boot from the ISO image (HPE iLO virtual DVD/Enclosure DVD).
5. Once server boots the VMware vSphere Installer, navigate through the installation process.
6. On the Select a Disk page, select the intended FC LUN on which to install VMware vSphere and press Enter.
7. Continue to navigate through the rest of the installation steps.
8. When the installation is complete, press Enter to reboot the host.

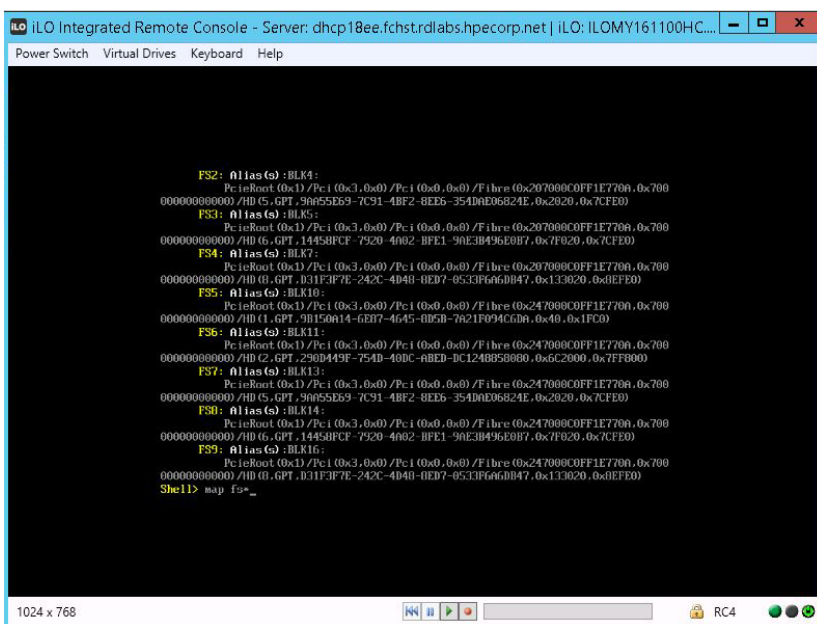
### Booting from SAN

User can add the boot entry at Boot maintenance manager level and boot the VMware vSphere from corresponding boot entry added. Please refer the following VMware documentation regarding Boot from SAN for more information.

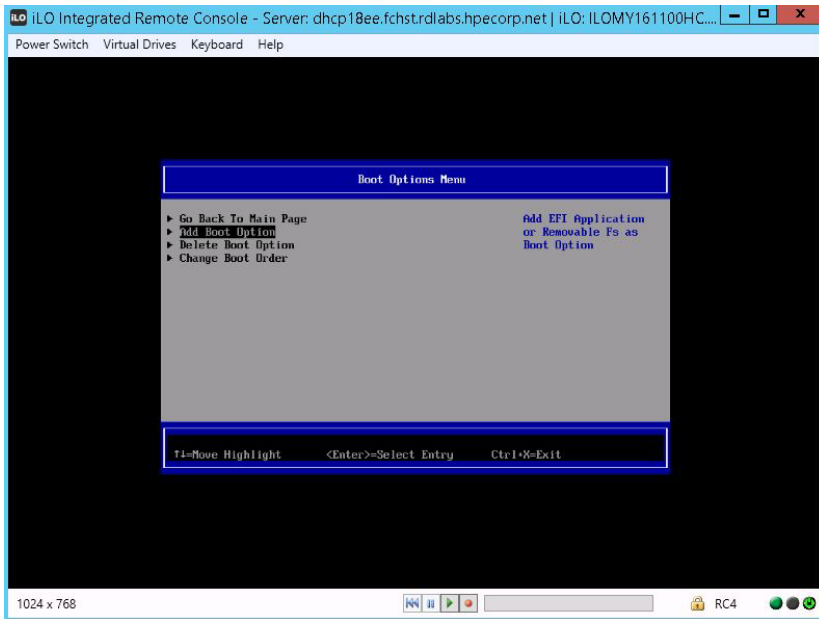
[docs.vmware.com/en/VMware-vSphere/6.0/vsphere-esxi-vcenter-server-601-storage-guide.pdf](https://docs.vmware.com/en/VMware-vSphere/6.0/vsphere-esxi-vcenter-server-601-storage-guide.pdf)

Please follow the below procedure to add boot entry and boot the VMware ESXi on HPE Integrity Superdome X servers.

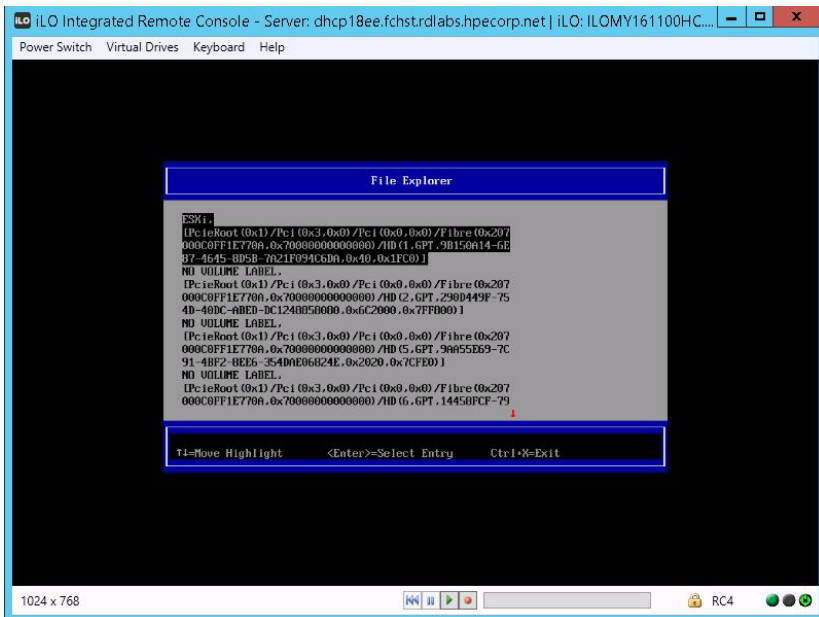
1. Following POST, select the EFI shell (Press “S” when prompted). Type command “map fs\*” and make note of the FC LUNs device name (ex, FSO:) where you installed VMware vSphere.
2. You can check by listing the contents (ex, > dir fs0:\EFI\BOOT\BOOTx64.efi and > dir fs0:\EFI\VMware).

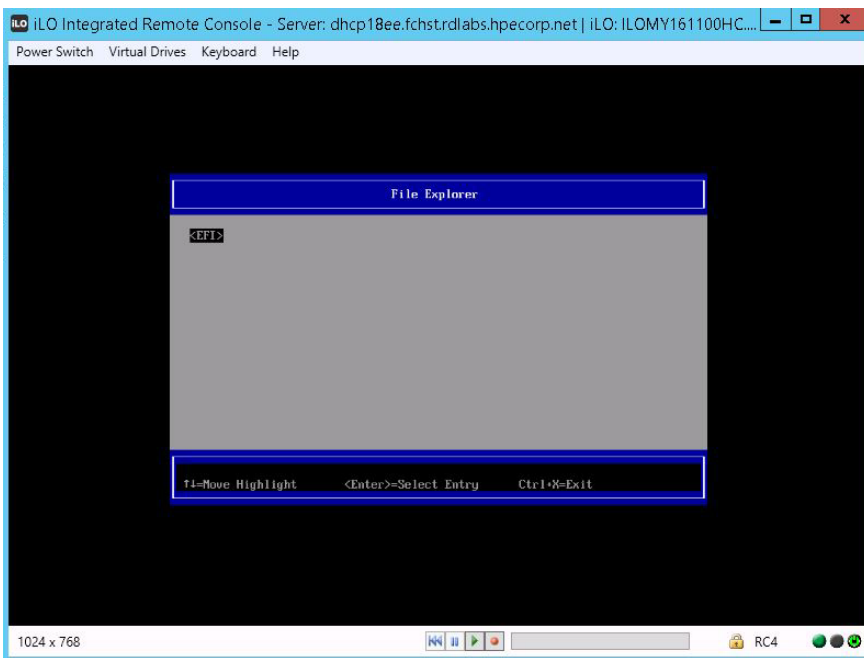


- Exit EFI shell (type “exit”) and enter into System Utilities (Press “U” when prompted). Go to “Boot Maintenance Manager” -> “Boot Options Menu” and choose “Add Boot Option.”



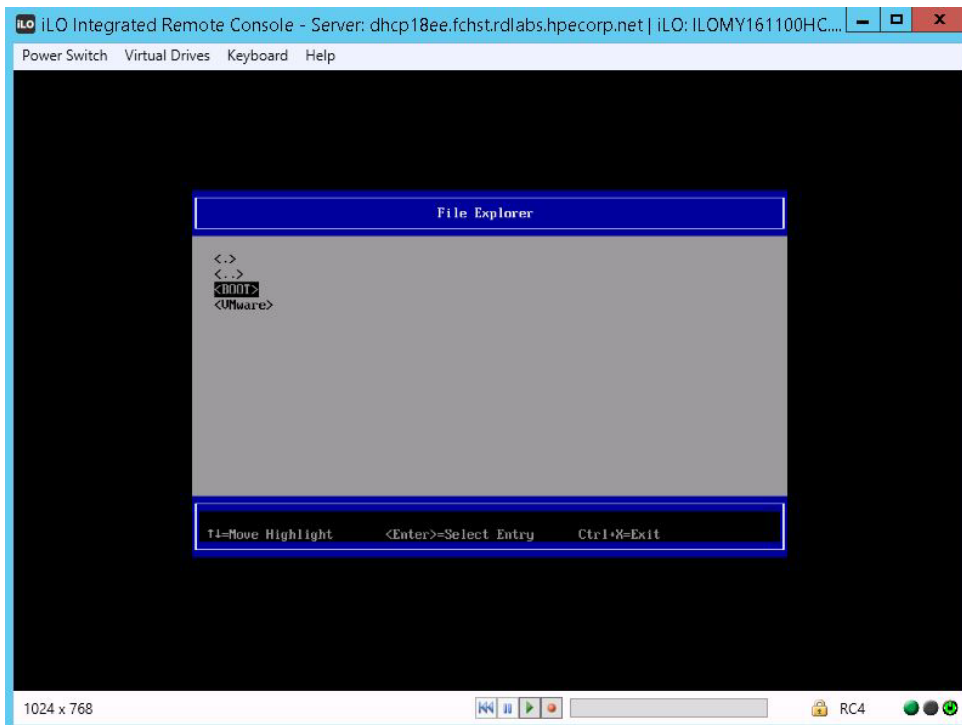
- Choose the correct boot entry for VMware vSphere (matching entry for the one noted in step 1 and 2) and complete adding VMware vSphere entry to the boot options.

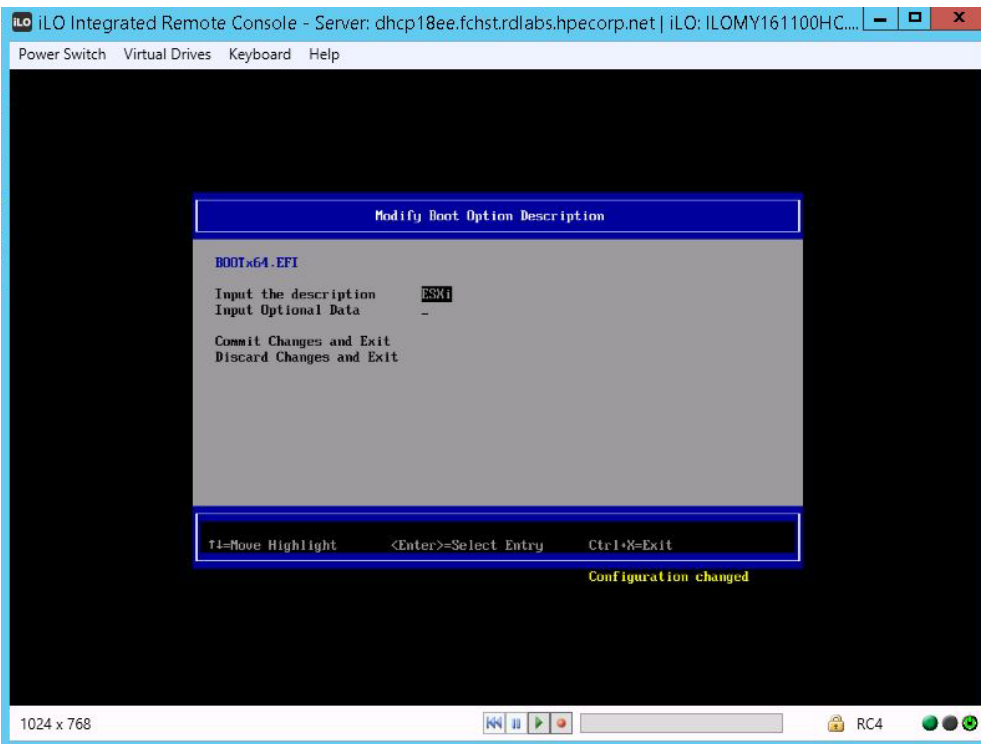
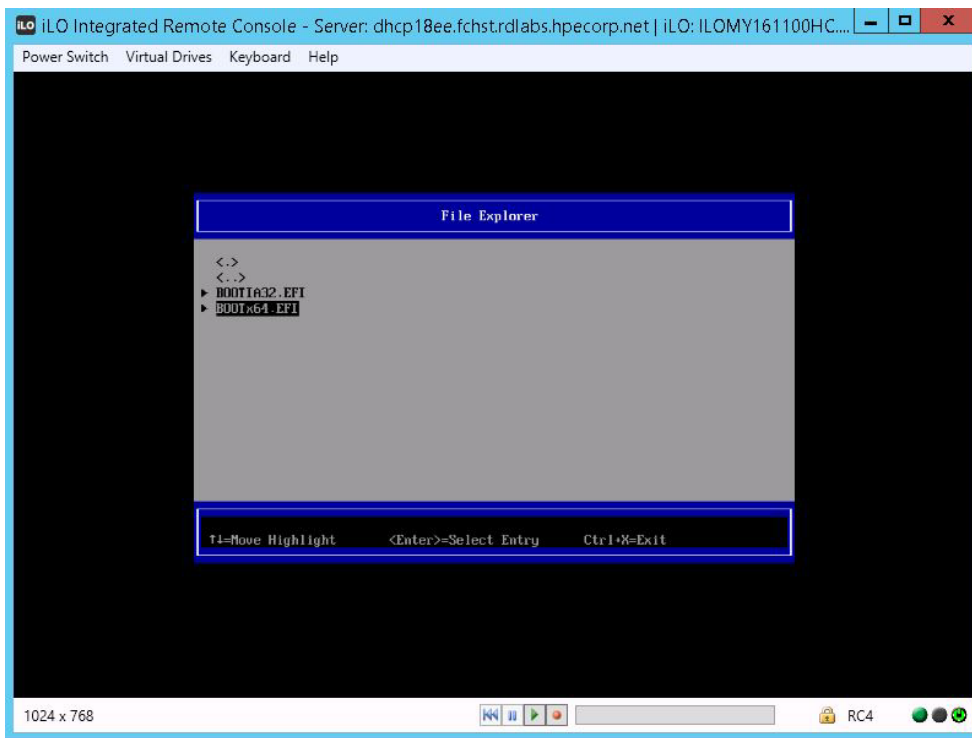




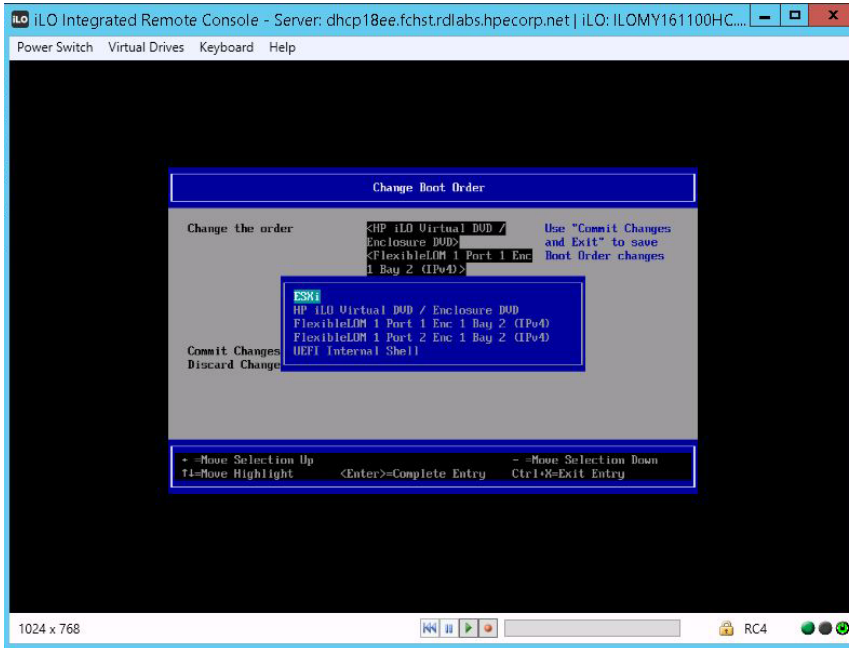
**NOTE**

In the next step, use the BOOT directory, not the VMware directory.





- Go to “Change Boot Order” under “Boot Options Menu.” Set the boot order so VMware vSphere ESXi (VMware vSphere) is the first option or as the next option after the HPE iLO virtual DVD. Commit the changes.



- Reset the server. During next boot, VMware vSphere will boot from the FC LUN.
- Once VMware vSphere is successfully booted, configure the Management network (IP address, etc.), enable SSH, etc., through DCUI (on HPE iLO Integrated Remote Console).

**NOTE**

If you re-install to the same FC LUN, it should not be necessary to repeat steps 1–5.

**Other method to add boot entry**

User can use the bcfg EFI command to add/modify the boot entries in UEFI NVRAM at EFI level, which allows the user to change the boot entries or driver options. Please follow the following procedure to add the boot entry at EFI shell level.

To dump a list of current boot entries:

```
Shell > bcfg boot dump -v
```

To add a boot menu entry for VMware vSphere (for example) as 4th (numbering starts from zero) option in the boot menu:

```
Shell > bcfg boot add 3 fs0:\EFI\BOOT\BOOTx64.efi "ESXi"
```

Where fs0: is the mapping corresponding to the EFI System Partition and fs0:\EFI\boot\boot\_x64.efi is the file to be launched

To move the boot option #3 to #0 (i.e., 1st or the default entry in the UEFI Boot menu):

```
Shell > bcfg boot mv 3 0
```

To remove the boot option:

```
Shell > bcfg boot rm 0
```

**NOTE**

Users are recommended to try bcfg only if efibootmgr fails to create working boot entries in the system.



## Recommended software configuration and tuning

### Virtualization Platform

VMware vSphere required some minor administrative adjustments are recommended to get the highest value from the considerable hardware resources available with the [HPE Superdome X](#).

### Configure serial console

Customer can enable serial logging to send all VMkernel logs (and Service Console for VMware vSphere host) to the serial port in addition to their normal destination. With the help of these logs, customer can diagnose/debug the problem in case of installation and boot up issues.

To enable the serial console, add the following to the kernel command line:

```
console=ttyS0, 115200 console=tty0
```

Please refer the link for more information [kb.vmware.com/kb/1030667](http://kb.vmware.com/kb/1030667).

---

### NOTE

Enabling serial console will result in a small performance penalty at boot time.

---

Ensure the baud rate of the serial console on your partition is set correctly from the OA interface. The default setting for the baud rate for each blade when it is the first blade in a partition is set at the factory to 9600. Increase the baud rate to run at 115200.

In order to do this, determine the blade number of the lowest numbered blade in your partition. If you have made a partition consisting of blades 1, 3, 5, and 7 this would be blade 1. If the partition consists of blade 6 and blade 8, the lowest blade would be 6. Check the baud setting of the blade's serial console by typing at the OA prompt:

```
SET SCRIPT MODE ON
```

```
HPONCFG <blade # of lowest numbered blade in the partition> <<EOF
```

Then copy and paste in the following:

```
<RIBCL VERSION="2.0">
```

```
<LOGIN USER_LOGIN="username" PASSWORD="password">
```

```
<RIB_INFO MODE="read">
```

```
<GET_GLOBAL_SETTINGS/>
```

```
</RIB_INFO>
```

```
</LOGIN>
```

```
</RIBCL> EOF Press ctrl+D
```

Once commands complete, there is a dump of all the global settings on the console and below setting will provide the latest speed value as shown below:

```
<GET_GLOBAL_SETTINGS>
```

```
<SESSION_TIMEOUT VALUE="30"/>
```

```
.....
```

```
<SERIAL_CLI_SPEED VALUE="9600"/>
```

```
.....
```

```
<!-- ===== END RIBCL RESULTS ===== -->
```

Look for the SERIAL\_CLI\_SPEED VALUE in the list, and as shown in earlier, if it says, its 9600, which is the factory default, you need to change it to 115200.



To do this, type from the OA prompt:

```
HPONCFG <blade#> << EOF
```

Then cut and paste in the following:

```
<RIBCL VERSION="2.0">  
<LOGIN USER_LOGIN="username" PASSWORD="password">  
<RIB_INFO MODE="write">  
<MOD_GLOBAL_SETTINGS>  
<SERIAL_CLI_SPEED value="5"/>  
</MOD_GLOBAL_SETTINGS>  
</RIB_INFO>  
</LOGIN>  
</RIBCL> EOF
```

You may perform the read operation after the above operation completes to verify if the baud rate is now set to 115200.

### Maintaining the real-time clock

The real-time clock (RTC) in a partition is synced to OA time when the partition is rebooted. If you change the time on the OA, it may affect the RTC on the partition.

It is recommended to configure network time protocol (NTP) on both the OA (as described in the [OA user's guide](#)) and the VMware vSphere partition. By configuring NTP on both, the time should be correct on initial boot of the HPE nPars, because the firmware sets it correctly, and it should stay correct as VMware vSphere runs by virtue of ongoing synchronization with the configured NTP servers.

For information on configuring NTP on an ESXi host:

[kb.vmware.com/kb/1003063](http://kb.vmware.com/kb/1003063)

[kb.vmware.com/kb/1339](http://kb.vmware.com/kb/1339)

[kb.vmware.com/kb/2012069](http://kb.vmware.com/kb/2012069)

### Kernel tuning

VMware 5.5 performance tuning guide is found at the reference: [vmware.com/pdf/Perf\\_Best\\_Practices\\_vSphere5.5.pdf](http://vmware.com/pdf/Perf_Best_Practices_vSphere5.5.pdf)

VMware 6.0 performance tuning guide is found at the reference: [vmware.com/files/pdf/techpaper/VMware-PerfBest-Practices-vSphere6-0.pdf](http://vmware.com/files/pdf/techpaper/VMware-PerfBest-Practices-vSphere6-0.pdf)

VMware 6.5 performance tuning guide is found at the reference:

[vmware.com/content/dam/digitalmarketing/vmware/en/pdf/techpaper/performance/Perf\\_Best\\_Practices\\_vSphere6.5.pdf](http://vmware.com/content/dam/digitalmarketing/vmware/en/pdf/techpaper/performance/Perf_Best_Practices_vSphere6.5.pdf)

VMware 6.7 performance tuning guide is found at the reference:

[vmware.com/content/dam/digitalmarketing/vmware/en/pdf/techpaper/performance/vsphere-esxi-vcenter-server-6.7-performance-best-practices.pdf](http://vmware.com/content/dam/digitalmarketing/vmware/en/pdf/techpaper/performance/vsphere-esxi-vcenter-server-6.7-performance-best-practices.pdf)

### Dumping diagnostic information

By following two methods, customers can dump the diagnostic logs and report to HPE/VMware in case of any issues.

1. The traditional way of using the vm-support command-line utility produces a gzipped tarball (tgz file) locally on the host.

- a. vm-support
- b. vm-support -f -w /vmfs/volumes/DATASTORE\_NAME

Please refer to the following links for more information:

[kb.vmware.com/kb/1010705](http://kb.vmware.com/kb/1010705)

[kb.vmware.com/kb/1006796](http://kb.vmware.com/kb/1006796)

2. Capturing VMkernel core dump for purple screen of death (PSOD).

Please refer following links for detailed information to capture the VMkernel core dump for PSOD:

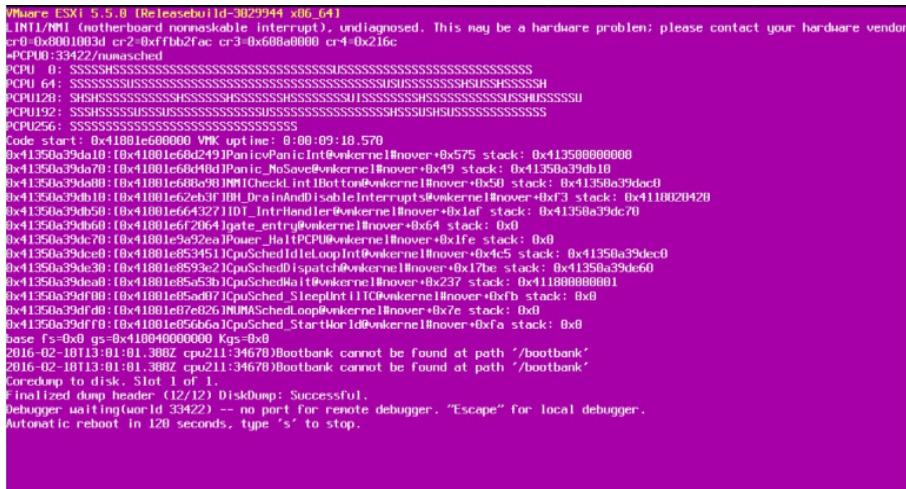
[kb.vmware.com/kb/2004299](http://kb.vmware.com/kb/2004299)

[kb.vmware.com/kb/2002955](http://kb.vmware.com/kb/2002955)





- If the host is configured to reboot automatically after it PSODs, the host will automatically reboot after the debugger message is displayed.



For more information on how to configure the VMware to halt or reboot after the PSOD refer the following Knowledge Base site: [kb.vmware.com/kb/2042500](http://kb.vmware.com/kb/2042500)

## USING THE DEPOTS WITH VUM

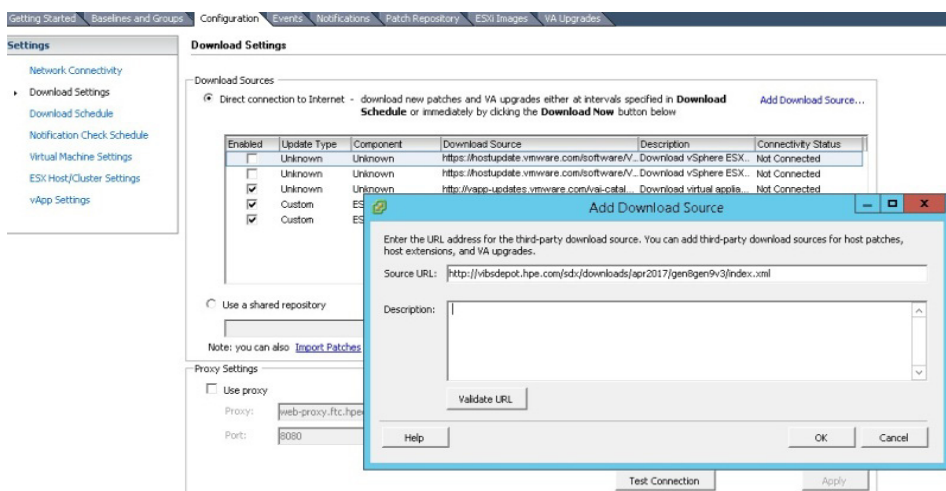
To use HPE Online Depot and the VMware depot in VUM, add the depot URL to the VUM download source. In the Update Manager Admin View, click the Configuration tab, and then select Download Settings. By default, the main VMware depot is in the list of download sources. Previously documented links sdx/index.xml and sdx/index-pcli.xml should not be used.

Example: To add HPE Online Depot:

**TABLE 14.** HPE Online depot links for Hawk Servers

Servers	Vibsdepot links
BL920s Gen8 v2/BL920s Gen9 v3	<a href="http://vibsdepot.hpe.com/sdx/downloads/may2019/gen9v3/">vibsdepot.hpe.com/sdx/downloads/may2019/gen9v3/</a>
BL920s Gen9 v4	<a href="http://vibsdepot.hpe.com/sdx/downloads/may2019/gen9v4/">vibsdepot.hpe.com/sdx/downloads/may2019/gen9v4/</a>

1. Click the Add Download Source link.
2. Add both depot's URL as shown in Table 14.



**FIGURE 1.** The VUM Download Settings “Add Download Source” dialog box lets you add download sources for future updates



- Click OK to add the HPE Online Depot to the Download Source list and set VUM to connect to the URL.
- Click the Download Now button to download all patches and upgrades available from the enabled sources (Figure 2).

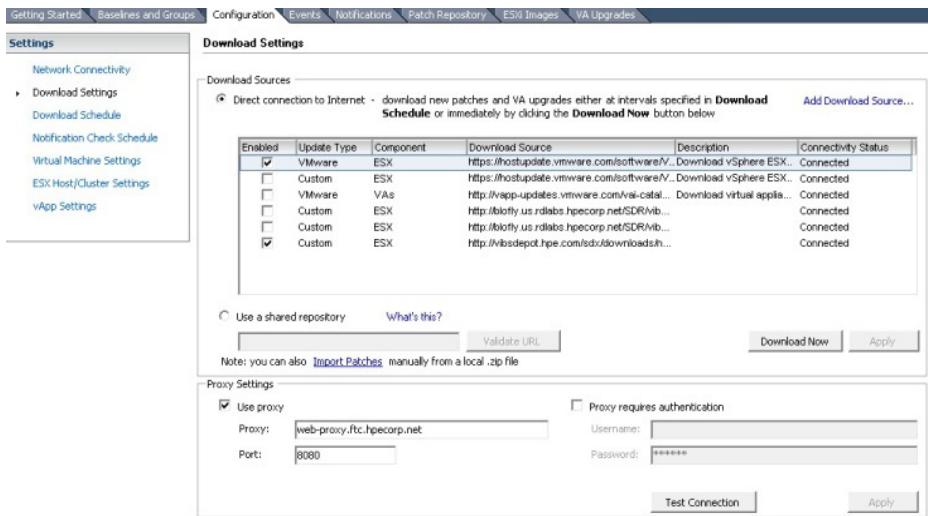


FIGURE 2. The Configuration tab lets you select sources from which to download patches and upgrades

- After the download completes, you can find a list of downloaded patches and upgrades in the Patch Repository tab as shown in Figure 3.

Patch Name	Product	Release Date	Type	Severity	Category	Impact	Vendor	Patch ID	Baselines
HPE Utility Bundle for ESXi 6.0 2.6a-9	embeddedEsx 6.0.0	2/9/2017 5:00:00 AM	Host Extension	Moderate	Other	Reboot, Maintenance Mode	Hewlett Packard Enterprise	hpe-utility-esxi6.0-bundle-2.6a-9	Add to baseline...
Device Drivers for HPE ESXi 6.0.0 v3.04.24.2017	embeddedEsx 6.0.0	4/24/2017 11:00:00 AM	Host Extension	Moderate	Other	Reboot, Maintenance Mode	Hewlett Packard Enterprise	hpe-esxi6.0-driver-bundle-sdx-v3.04.24.2017	Add to baseline...
Device Drivers for HPE ESXi 5.5.0 v3.04.24.2017	embeddedEsx 5.5.0	4/24/2017 11:00:00 AM	Host Extension	Moderate	Other	Reboot, Maintenance Mode	Hewlett Packard Enterprise	hpe-esxi5.5-driver-bundle-sdx-v3.04.24.2017	Add to baseline...
HPE Utility Bundle for ESXi 5.5 2.6-12	embeddedEsx 5.5.0	10/1/2016 6:00:00 AM	Host Extension	Moderate	Other	Reboot, Maintenance Mode	Hewlett Packard Enterprise	hpe-utility-esxi5.5-bundle-2.6-12	Add to baseline...
HPE ESXi 5.5 Management Bundle 2.6.0-1	embeddedEsx 5.5.0	11/18/2016 5:00:00 AM	Host Extension	Moderate	Other	Reboot, Maintenance Mode	Hewlett Packard Enterprise	hpe-esxi5.5ul-bundle-sd-2.6.0-1	Add to baseline...
HPE ESXi 6.0 Management Bundle 2.6.0-1	embeddedEsx 6.0.0	11/18/2016 5:00:00 AM	Host Extension	Moderate	Other	Reboot, Maintenance Mode	Hewlett Packard Enterprise	hpe-esxi6.0ul-bundle-sd-2.6.0-1	Add to baseline...

FIGURE 3. The Patch Repository tab lists downloaded patches and upgrades

Table 15 lists the patches available on the HPE Online Depot.

TABLE 15. HPE Online Depot patch list

Patch name	Description
HPE ESXi Depot Bundle <version>	HPE Depot Bundle includes three bundles: HPE CIM Provider, HPE Utility Bundle, and HPE NMI Driver Bundle
HPE ESXi Bundle <version>	HPE CIM Provider Bundle for Server Management
HPE Utility ESXi Bundle <version>	HPE Utility Bundle for Server Configuration

To install all HPE Software Bundles available on VMware vSphere hosts, create a baseline that includes only the HPE ESXi Depot Bundle as shown in Figure 4. For details on creating baselines, see [vmware.com/support/pubs/vum\\_pubs.html](http://vmware.com/support/pubs/vum_pubs.html).

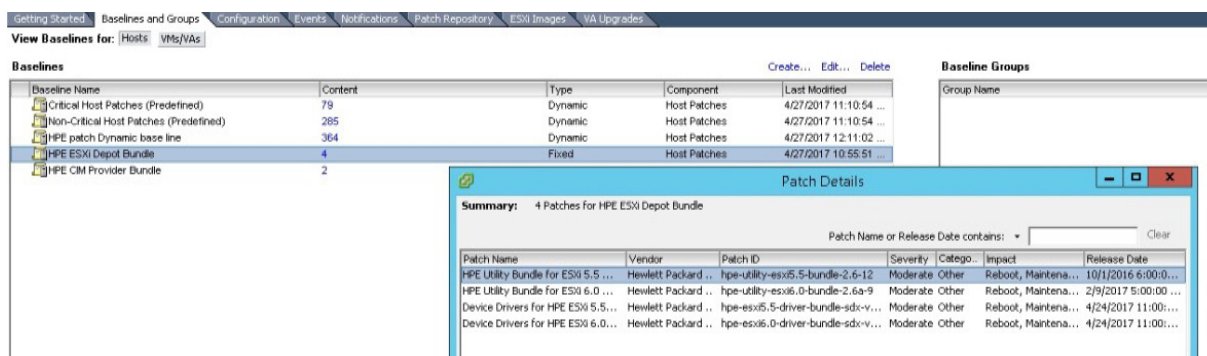


FIGURE 4. The Baselines and Groups tab lets you install all HPE Software Bundles

To install a specific HPE Software Bundle, create a baseline that includes only that bundle (for example HPE CIM Provider Bundle) shown in Figure 5. For details on creating baselines, see [vmware.com/support/pubs/vum\\_pubs.html](http://vmware.com/support/pubs/vum_pubs.html).

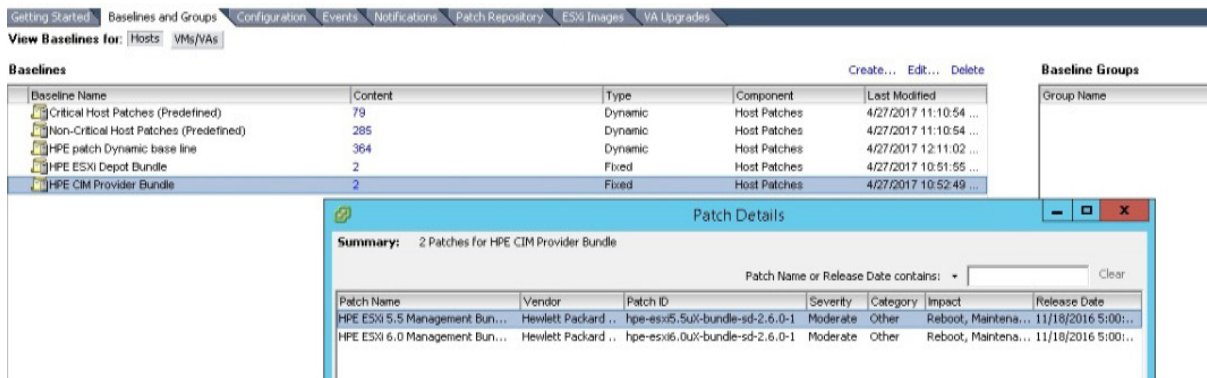


FIGURE 5. The Baselines and Groups tab lets you install a specific HPE Software Bundle

Attach the data center or individual VMware vSphere hosts to the baseline. To upgrade the hosts with the HPE Software Bundles for VMware vSphere included in the baseline, perform scan, and remediate functions in the VUM Compliance View.

## USING VUM TO KEEP HPE SERVERS UP TO DATE

We recommend using the following procedures to keep HPE servers updated with the latest patches from the depot.

### Configuring a download schedule

With a download schedule, you can specify the download frequency, start time, and an email address to receive notifications when the system downloads new patches. To configure the download schedule:

1. Go to VUM Admin View (Figure 6).
2. Select Configuration.
3. Select Download Schedule.

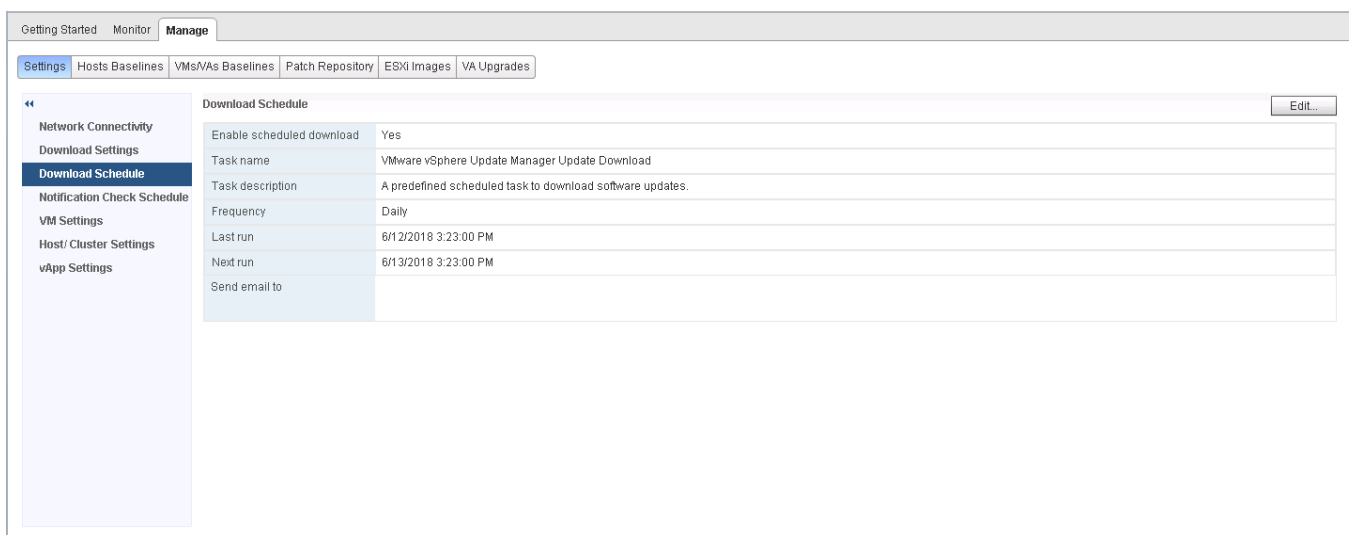


FIGURE 6. The Download Schedule link lets you configure the download schedule



### Creating a dynamic baseline

Creating a new dynamic baseline allows you to add downloaded patches that match the criteria you specify. This procedure adds the patches to the baseline. You can then attach your data center or selected HPE VMware vSphere hosts to this dynamic baseline. To create a new dynamic baseline:

1. Go to VUM Admin View.
2. Select Baselines and Groups (see Figure 7).
3. Select Create Baseline.
4. Under Baseline, type Host Patch.
5. Select Dynamic.
6. Select the vendor name “Hewlett Packard Enterprise.”
7. Under Criteria, leave Severity, Category, and Product set to “Any.” The system lists the downloaded patches associated with the new dynamic baseline.

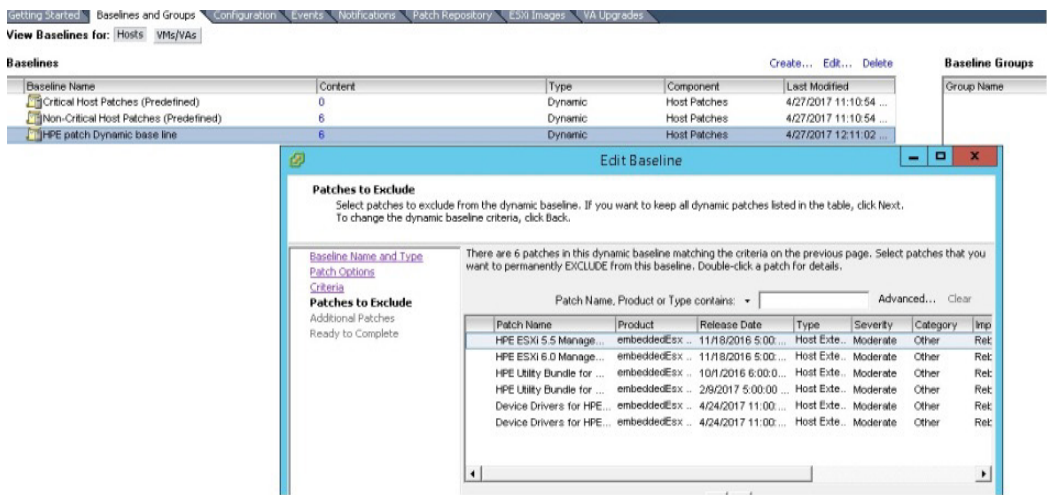


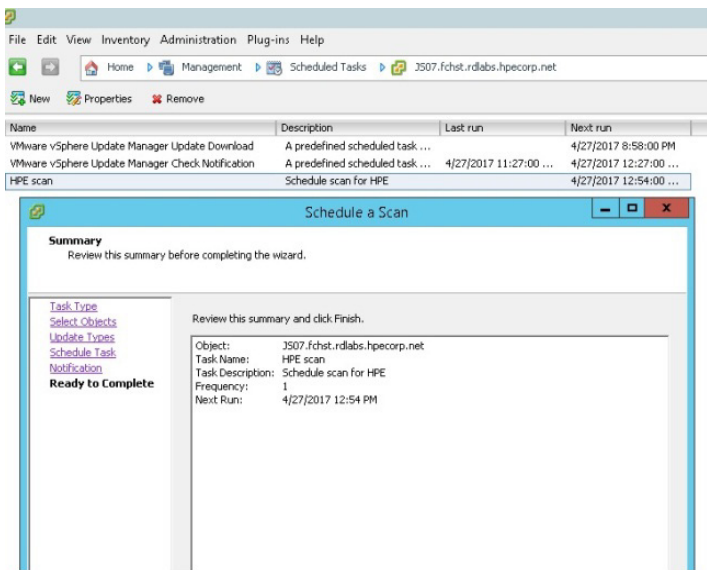
FIGURE 7. The Patch Details dialog box lets you create a new dynamic baseline

### Scheduling tasks for a new dynamic baseline

To create a task for performing scheduled scans on the data center or selected VMware vSphere hosts attached to the new dynamic baseline:

1. Go to vCenter Home.
2. Select Management.
3. Select Scheduled Tasks.
4. Select New.
5. Select Scan for Updates from the task selection pull-down list.
6. Specify update types, frequency, start time, and email address for notification of results (Figure 8).





**FIGURE 8.** The Schedule a Scan dialog box lets you create a scheduled task to schedule scans

You can configure all the scheduled tasks listed here to scan after the download completes. In addition, the system performs the remediate process after the scan completes. Alternatively, you can manually create fixed baselines, perform scans, and remediate tasks.

For more information, see the “Installing and Administering VMware vSphere Update Manager” user guide at [vmware.com/support/pubs/vum\\_pubs.html](http://vmware.com/support/pubs/vum_pubs.html).

## KNOWN ISSUES

### Finding Customer Advisories

For the most up to date information about issues on this platform go to the link: [support.hpe.com/hpesc/public/km/product/7595549/Product#t=Documents&sort=relevancy&layout=table&numberOfResults=25&f:@kmdoctype=\[cv60000005\]&f:@kmdoqlanguagecode=\[cv1871440\]&hpe=1](http://support.hpe.com/hpesc/public/km/product/7595549/Product#t=Documents&sort=relevancy&layout=table&numberOfResults=25&f:@kmdoctype=[cv60000005]&f:@kmdoqlanguagecode=[cv1871440]&hpe=1). This will provide a list of the most recent advisories.

## GENERAL KNOWN ISSUES

### Suspend/Resume

The hibernate/suspend/resume functionality is not supported on HPE Superdome X. If by accident a hibernation operation is initiated on HPE Superdome X, power cycle the system from the OA, and reboot the system in order to recover.

### Garbage value listed for the physical slots

Garbage values are listed for physical slot in HPE Superdome X servers instead of actual physical slot number. This is encountered at the esxcli command level to check all the pci list of the hardware. This can be safely ignored as it will not affect the functionality.

Example: Following is one of the examples for reference.

### #esxcli hardware pci list

0000:c4:00.0

Address: 0000:c4:00.0

Segment: 0x0000

Bus: 0xc4

Slot: 0x00

Function: 0x0

VMkernel Name: vmnic92

Vendor Name: Broadcom Corporation

Device Name: NetXtreme II BCM57840 10/20 Gigabit Ethernet



Configured Owner: Unknown  
Current Owner: VMkernel  
Vendor ID: 0x14e4  
Device ID: 0x16a2  
SubVendor ID: 0x103c  
SubDevice ID: 0x1917  
Device Class: 0x0200  
Device Class Name: Ethernet controller  
Programming Interface: 0x00  
Revision ID: 0x11  
Interrupt Line: 0xff  
IRQ: 255  
Interrupt Vector: 0x00  
PCI Pin: 0x00  
Spawned Bus: 0x00  
Flags: 0x0201  
Module ID: 4124  
Module Name: bnx2x  
Chassis: 0  
Physical Slot: 117643140  
Slot Description: Chassis slot 7031784; function 0  
Passthru Capable: true  
Parent Device: PCI 0:192:3:0  
Dependent Device: PCI 0:196:0:0  
Reset Method: Function reset  
FPT Sharable: true

#### **VMware impact of limited IPMI command support in HPE Superdome X**

Please refer VMware KB article for brief information: [kb.vmware.com/kb/2140823](https://kb.vmware.com/kb/2140823).

#### **HPE nPars Partition status behavior for VMware with HPE Superdome X**

The `OA CLI PARSTATUS -P` command, and partition status tab in OA GUI, will only show partition run state as OSBOOT even after ESXi has fully booted. The next VMware HPE CIM Providers release will correctly transition the partition run state to UP after ESXi has booted to login.

#### **Cannot export an OVF template from an existing virtual machine with an attached VF PCI device**

Exporting an OVF template from the virtual machine with an attached virtual function (VF) PCI device fails with the error: Failed to export Virtual Machine: Unknown PCI device and VM Client OVF templates can't be created.

**Workaround:** To resolve this issue, edit the virtual machine settings and disconnect/remove PCI device.

#### **VMware Host crashes with purple screen of death (PSOD) while export system logs**

VMware ESXi crashes with purple screen of death (PSOD) while exporting system logs through vSphere client when connecting to VMware host or vCenter Server. HPE recommends to restart the host. For more information on how to configure the VMware to halt or reboot after the PSOD refer the KB site: [kb.vmware.com/kb/2042500](https://kb.vmware.com/kb/2042500).

#### **MISSING\_DEPENDENCY\_VIBS\_ERROR is seen while updating host**

While updating host, if an error message saying MISSING\_DEPENDENCY\_VIBS\_ERROR is seen then please refer VMware KB: [kb.vmware.com/s/article/49816](https://kb.vmware.com/s/article/49816).



## VMware vSphere 5.5 U3 known issues

### PXE Network Installation

The PXE installation is not supported by VMware vSphere 5.5 U3 at UEFI Mode. Doing a PXE network installation of VMware vSphere 5.5 U3 may fail with the following messages:

Booting Embedded FlexibleLOM 1 Port 1 Enc1 bay2 (IPv4)

>>Start PXE Over IPv4.

Station IP address is 15.242.22.198

PXE-E53: No boot filename Received

Press any key to continue...

### VMkernel messages

The ESXi hosts reports following SITPUA error messages.

“Could not detect setting of SITPUA for device eui.xxxxxxxxxxxxxxx. Error Not supported.”

SITPUA is a feature of some storage arrays to indicate that they support the thin provisioned LUN Out Of Space (OOS) warning. All SITPUA related warnings or errors are informational and can be safely ignored and refer for more information: [kb.vmware.com/kb/2045271](http://kb.vmware.com/kb/2045271).

SITPUA is a single bit that can be set to a value of 0 or 1. To ensure that an Out Of Space (OOS) warning is sent to just one host using the affected LUN, set the SITPUA bit in the Thin Provisioning Mode Page to 1.

## VMware vSphere 6.0 U1/U2/U3 known issues

### Boot messages

Interrupted system call message may be displayed during a Reboot of a HPE Superdome X Server after an Installation of the VMware vSphere 6.0 U1/U2 image on more than 2 TB LUN and sometimes on all FC LUN. During an installation of the VMware vSphere 6.0 U1/U2 Image, when the HPE Superdome X is rebooted as part of the installation, the following error message may be displayed:

“util.util waitpid:interrupted System call.”

After the message appears, the system will stop responding for a few minutes before proceeding. After this time, the installation will successfully resume. This message does not affect the installation and can be safely ignored.

### SITPUA error messages

The VMware vSphere hosts reports following SITPUA error messages.

“Could not detect setting of SITPUA for device eui.xxxxxxxxxxxxxxx. Error not supported.”

SITPUA is a feature of some storage arrays to indicate that they support the thin provisioned LUN Out Of Space (OOS) warning. All SITPUA related warnings or errors are informational and can be safely ignored and refer for more information: [kb.vmware.com/kb/2045271](http://kb.vmware.com/kb/2045271).

SITPUA is a single bit that can be set to a value of 0 or 1. To ensure that an Out Of Space (OOS) warning is sent to just one host using the affected LUN, set the SITPUA bit in the Thin Provisioning Mode Page to 1.

### IOMMU error messages

The VMware vSphere hosts reports following IOMMU error messages.

“Device not supported by IOMMU hardware.”

This message occurs because of the uncore devices not hidden at firmware level and can be safely ignored as it will not affect any functionality.

### Hardware status information is not accessible via Web Client

Hardware status information of the host is not accessible via Web Client under hardware status tab on HPE Superdome BL920s Gen8 and Gen9 Server Blades across all the ESXi flavors (ESXi 5.5 U3, ESXi 6.0, ESXi 6.5, and ESXi 6.5 U1). Status for Processor, Memory, and Baseboard Management Controller are accessible with P04 patch on ESXi 6.0 U2, however other sensors like PCI, Network etc., are not updated with the status.



## VMware vSphere 6.5 U1/U2 known issues

### PSOD with #PF Exception 14 in world with VMware vSphere 6.5/6.5 U1:

VMware vSphere 6.5/6.5 U1 installed on a BL920S v4 Processor may PSOD with message “#PF Exception 14 in world.” The PSOD may occur even if the server is idle.

**Workaround:** To resolve this issue, reboot the ESXi host.

For more information, contact HPE support team.

### Host CD/DVD media connected to the VM shows as HPE iLO Virtual USB

When trying to access the connected CD/DVD option of host from the VM, the connected media shows as [HPE iLO Virtual USB](#) (mpx:vmhba33:c0:T0:L0) instead of CD-ROM option. This behavior is observed on VMware 6.5/6.5 U1/U2 with HPE Integrity Superdome X server blade BL920s Gen9.

### Available disk capacity not updated in Web Client 6.5/6.5 U1/U2

In Web Client 6.5/6.5 U1, after adding disk devices to the VM (Client), the available disk capacity is not getting updated in the datastore of VM as well as the datastore on the host. The disk capacity continues to show the original capacity even after the addition of disks.

**Workaround:** Use `esxcli` to get the updated disk capacity.

### PSOD issue seen with more than 14 NIC ports of HPE FlexFabric 20 GB 2-port 630FLB and HPE FlexFabric 20 GB 2-port 630M Adapter

If a HPE Superdome X system running VMware vSphere 6.5 U2 has more than 14 NIC ports of 630FLB and 630M card, the system may hit PSOD during the OS installation.

**Workaround:** The maximum supported NIC ports of 630FLB and 630M adapter in a HPE Superdome X partition is 14 and so avoid using more than 14 NIC ports to prevent this PSOD.

## Resolved issues

### Power on by manual vCenter option reports timeout error even after extending timeout

User will encounter the “operation timed out” message when they power on the HPE Integrity Superdome X server using VMware Distributed Power Management, even after extending the timeout value in the vCenter Server. This issue is resolved in VMware vSphere 6.0 U3 build (5049729).

### Virtual functions are not getting created for intended physical functions with 560FLB/M cards on VMware 5.5 U3

Virtual functions are not getting created at host level to pass-through the virtual functions to VMs. This behavior is observed on VMware 5.5 U3 with HPE Integrity Superdome X server blade BL920s Gen8 and BL920s Gen9 specifically with 560FLB/M I/O card. This issue is resolved with VMware 5.5 P09 build. For more information, refer to [kb.vmware.com/kb/2146717](http://kb.vmware.com/kb/2146717).

### VMware DirectPath I/O (pass-through) to VM is not working on VMware 5.5 U3 HPE Superdome X BL920s Gen9 with 630FLB/M and BL920s Gen8 with 534FLB/M

Virtual functions are getting created at the host level for HPE Superdome X BL920s Gen9 with 630FLB/M and BL920s Gen8 with 534FLB/M but are not getting listed at the vSphere client level, so cannot pass-through virtual functions to VMs. This issue is resolved in VMware 5.5 U3 latest build.

### All WBEM provider requests fail due to SFCBD service crash on HPE Integrity Superdome X BL920s Gen8 server with 16s (8 Blade) configuration using 6.0 U1

HPE WBEM Provider (SMX Provider) not functional at times due to SFCBD restarting continuously on HPE Superdome BL920s Gen8 Server Blades. The SFCBD service restart impacts VMware and other OEM providers as the queries to respective providers also fail during SFCBD restart. This issue is resolved with VMware 6.0 P04 build.

### All WBEM provider requests fail due to SFCBD service crash on HPE Integrity Superdome X server with 6.0 U2 with 560FLB/M network cards

HPE WBEM Provider (SMX Provider) not functional at times due to SFCBD restarting continuously on HPE Integrity Superdome X server. The SFCBD service restart impacts VMware and other OEM providers as the queries to respective providers also fail during SFCBD restart. The issue resolution is available at [kb.vmware.com/kb/2147525](http://kb.vmware.com/kb/2147525).

### All WBEM provider requests fail due to SFCBD service crash on HPE Integrity Superdome X server 4 bladed HPE Superdome BL920s Gen9 Server Blades (v4) with only 650FLB/M I/O cards on 6.0 U2

Refer VMware 6.0 U2 [release notes](#). Below is the suggested command from this release notes.

```
“esxcfg-advcfg -A CIMOemPluginsRPMemMax --add-desc ‘Maximum Memory for plugins RP’ --add-default 500 --add-type int --add-min 175 --add-max 500.”
```



**VMware vSphere 7.0 U2/U3 known issues:****VMware DirectPath I/O (pass-through) and SRIOV to VM HPE Superdome X BL920s Gen9 Server goes for Machine Check Abort (MCA):**

Virtual functions are getting created at the host level for HPE Superdome X BL920s Gen9 server, when you present created virtual functions to the guest VM's and when you powered ON the guest VM's ESXi host server goes for MCA.

**Resolved issues**

Below are the suggested commands for the Workaround to resolve VMware **DirectPath I/O (pass-through) and SRIOV** features

**Example:**

**Step1:** Check the current status of system settings kernel list by using the below esxcli command:

```
# esxcli system settings kernel list | grep vtdEnableIntrVirt
```

```
vtdEnableIntrVirt Bool TRUE TRUE TRUE Enable support for VT-d posted interrupts.
```

**Step2:** Set the system settings kernel by using the below command:

```
# esxcli system settings kernel set -s vtdEnableIntrVirt -v FALSE
```

**Step3:** The system needs to be rebooted for the changes to be effective and re-check the system settings kernel list by using the command mentioned in Step1.

```
vtdEnableIntrVirt Bool FALSE FALSE TRUE Enable support for VT-d posted interrupts.
```

**Step4:** Observe the column #3 and #4 which has changed to FALSE from TRUE.

**Step5:** Now, Perform VMware DirectPath I/O (pass-through) and SRIOV features.



## SUMMARY

Hewlett Packard Enterprise is committed to providing a long road map of solutions for virtualized mission-critical computing. These solutions are grounded on solid HPE hardware platforms, augmented by VMware vSphere virtualization. We are working with the VMware community to make continuous improvements to these mission-critical virtualization solutions.

Further innovations will be released to the market on a regular basis. This technical white paper will be updated as further enhancements are announced.

## RESOURCE

- HPE Integrity Superdome X and HPE Superdome 2 Onboard Administrator Guide for Users:  
[support.hpe.com/hpsc/public/home/documentHome?docId=emr\\_na-c04389052&document\\_type=5000001&language\\_code=1871440&sort\\_by=relevance&ts.oid=1008995472](https://support.hpe.com/hpsc/public/home/documentHome?docId=emr_na-c04389052&document_type=5000001&language_code=1871440&sort_by=relevance&ts.oid=1008995472)

## LEARN MORE AT

[HPE Integrity Superdome X QuickSpecs](#)

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