Dell XC720xd
Solutions Guide

Notes, Cautions, and Warnings

NOTE: A NOTE indicates important information that helps you make better use of your computer.

CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

WARNING: A WARNING indicates a potential for property damage, personal injury, or death.

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About Dell web-scale converged appliance

Dell offers a web-scale converged appliance solution that includes the Dell XC720xd server and software from Nutanix (used as a virtual appliance), which simplifies virtualization by converging computer, storage, and network into a single appliance deployed in a clustered environment. The following figures show Dell XC720xd. For more information about the Dell XC720xd system, refer to the *Dell XC720xd Owner's Manual* available at **dell.com/xcseriesmanuals**.

Figure 1. Front view of Dell XC720xd

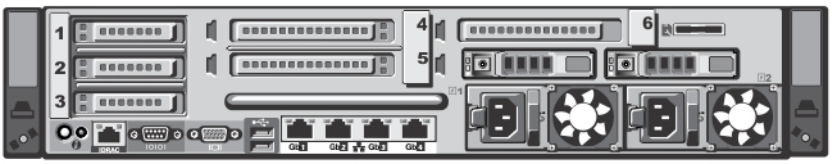

Figure 2. Rear view of Dell XC720xd

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Supported hardware, firmware, and software

This section describes the components of the web-scale converged appliance solution.

Table 1. Dell XC720xd Supported Components

Component	Description
Disk space required	**Configuaration**
64 GB, 128 GB, and 256 GB	A5, B5, B7
128 GB, 256 GB, 384 GB, 512 GB, and 768 GB	B7, C5, C7
CPUs	**Configuration**
E5-2620 v2	A5
E5-2650 v2	B5
E5-2680 v2	B7
E5-2690 v2	C5
E5-2690 v2	C7
BIOS	**Version**
BIOS	2.4.3 and later
iDRAC support	**Version**
iDRAC7	1.57.57 and later

Table 2. Supported physical disk drive models — Front and Rear

Form Factor	Model	Capacity	Speed	Type	Function	Vendor	Location
2.5"	SSDSC2BB160G4T	160 GB	SSD	3 Gbps SATA	Boot SSD	Intel	Rear
3.5" hybrid	SSDSC2BA200G3R	200 GB	SSD	6 Gbps SATA	Data SSD	Intel	Front
3.5" hybrid	SSDSC2BA400G3R	400 GB	SSD	6 Gbps SATA	Data SSD	Intel	Front

Form Factor	Model	Capacity	Speed	Type	Function	Vendor	Location
3.5" hybrid	SSDSC2BA800G3R	800 GB	SSD	6 Gbps SATA	Data SSD	Intel	Front
3.5"	N/A	1 TB	7.2K RPM	6Gbps NL SAS	Data HDD	Dell Supported	Front
3.5"	N/A	2 TB	7.2K RPM	6Gbps NL SAS	Data HDD	Dell Supported	Front

Table 3. Supported Host Bus Adapters (HBAs)

Name	Form Factor/Slot	Firmware Version
LSI 9207-8i	Full Height/4	15.00.00.00 and later
PERC H310 Adapter	Full Height/6	20.12.1-0002 and later

Table 4. Supported Network Daughter Cards (NDCs)

Name	Firmware Version
Intel X520 Dual 1G + Dual 10G SFP+	16.0.22 and later
Intel X540 Dual 1G + Dual 10G BaseT	16.0.22 and later

Table 5. Supported NICs (optional)

Name	Form Factor/Slot	Firmware Version
Intel X520 Dual 10G SFP+	Low Profile/2	16.0.22 and later
Intel X540 Dual 10G BaseT	Low Profile/2	16.0.22 and later

Table 6. Supported hardware management solutions

Name	Firmware Version
Dell OpenManage Essentials	1.3 and later
Dell Nautilus Firmware Update Utility	A13 and later
LSI SAS2Flash	For updated information about your operating system (OS), go to the LSI website.

Table 7. Supported management software

Name	Version
Nutanix Operating System (NOS)	4.0.2 and later

Table 8. Supported hypervisor OSs

Name
VMware ESXi 5.5 and later
Windows Server 2012 R2 Standard Edition and later
Windows Server 2012 R2 Datacenter Edition and later

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Documentation matrix

The documentation matrix provides information about the documents you use to configure and deploy the Dell web-scale converged appliance solution.

WARNING: See the safety and regulatory information that shipped with your system. Warranty information may be included with this document or as a separate document.

Make sure that you read through any media that ships with your system that provides documentation and tools for configuring and managing your system, including those pertaining to the OS, system management software, system updates, and system components that you purchased with your system.

NOTE: URLs such as **dell.com/support** or **dell.com/support/home** are not active, because you must type the URL from your location to access your specific language.

For the full name of an abbreviation or acronym used in this document, see the Glossary at **dell.com/support/home**.

NOTE: Always check for updates on **dell.com/support/home** and read through the updates first, because they often supersede information in other documents.

NOTE: While upgrading your system, it is recommended that you download and install the latest BIOS, driver, and systems management firmware on your system from **dell.com/support**.

The following tables list the documents provided by Dell and Nutanix.

Dell documentation

Dell documentation is either included with your shipment or available at the Dell website at **dell.com/xcseriesmanuals**.

Dell documentation for:

- Dell iDRAC is available at **dell.com/esmmanuals**.
- Dell OpenManage Essentials is available at **dell.com/openmanagemanuals**.

To access Dell documentation:

1. On the Dell Support page, scroll down to **General Support**, and then click **Servers, Storage & Networking**.
2. Click **Engineered Solutions** and select the documentation you require.

Table 9. Dell reference documentation

To learn about...	Refer to...
Setup instructions of your Dell XC720xd, including the technical specifications	*Dell XC720xd Getting Started Guide*
Hardware details of your Dell XC720xd	*Dell XC720xd Owner's Manual*
How to install your Dell XC720xd in a rack	*Dell Rack Install Guide*
How to deploy and set up this solution	*Dell XC720xd Solutions Guide*
Setting up and using Dell iDRAC7	*Dell iDRAC7 Quick Start Guide*
Using OpenManage Essentials to monitor, perform updates, view hardware, and view inventory on your system	*Dell OpenManage Essentials User's Guide*

Nutanix documentation

Most Nutanix documentation is available at **https://portal.nutanix.com/#/page/docs** on the **Nutanix Documents** page. However, two documents are available behind the Nutanix document portal. Nutanix documentation is listed by version, category, and type. Make sure that you select the appropriate version of documentation for this release, which is 4.0 or later. Or refer to the Nutanix OS to find corresponding documentation support.

To access most Nutanix documentation:

1. Go to **https://portal.nutanix.com/#/page/docs**.
2. Select the documentation you require from the list specified in Table 10.

NOTE: To access the *Hardware Replacement Documentation* using the open document portal, use the **Filter By** controls in the upper right corner of the page. Select NOS, 4.x, and XC720xd to display this document.

To access the *NOS Advanced Administration Guide* and *Advanced Setup Guide*:

1. Go to **https://portal.nutanix.com/#login**.
2. Log in to your portal and select **Documentation**.
3. On the **Nutanix Documents** page, select the documentation you require.

Table 10. Nutanix reference documentation

To learn about...	Refer to...
Setup instructions for your solution.	*Setup Guide*
Setup instructions for environments with special requirements and restrictions	*Advanced Setup Guide*

To learn about...	Refer to...
Instructions and reference for administering the Nutanix Operation System (NOS) outside the Nutanix Prism UI (such as cluster start/stop, manual upgrade, changing passwords, reconfiguring IP addresses, and troubleshooting tools).	*NOS Advanced Administration Guide*
Comprehensive instructions and references for the Nutanix UI, including overview information.	*Web Console Guide*
Managing VMware ESXi hosts that run NOS, including VMware vCenter requirements.	*vSphere Administration Guide*
Managing Hyper-V hosts that run NOS.	*Hyper-V Administration Guide*
Comprehensive references for the Nutanix REST API.	*API Reference*
Comprehensive references for Controller Virtual Machine (CVM) utilities, nCLI commands, and Nutanix PowerShell cmdlets.	*Command Reference*
Software instructions for hardware components that are not functioning.	*Hardware Replacement Documentation*

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Licensing overview

Nutanix virtual computing platform licenses

The Nutanix virtual computing platform includes various features to enable you to administer your environment according to your current and future requirements. You can use the default feature set of Nutanix Operating System (NOS), upgrade to a enhanced feature set, update your license for a longer term, or reassign existing licenses to nodes or clusters as required.

Starter license

Each Nutanix node and block is delivered with a default Starter license, which is issued for a six-year term that begins at the shipping date for your Dell XC720xd order. You are not required to register this license on the Nutanix Customer Portal account assigned to you when you purchased your nodes.

Pro- and Ultimate licenses

The Pro- and Ultimate license types require you to download a license file from the Nutanix Customer Support Portal and install it on your cluster. When you upgrade to a Pro or Ultimate license or add nodes or clusters to your environment with these licensed features, you must generate the license file, download it, and then install it.

Viewing license status

The most current information about your license is available at the Nutanix Customer Support Portal. You can view information about license types, expiration dates, and any free license inventory (that is, unassigned available licenses).

Setting up Nutanix Customer Portal

If you are new to Nutanix Support, create a personal profile on the Nutanix Customer Portal. Creating a personal profile allows you to manage your licenses.

NOTE: The Nutanix Customer Portal is also required to access some of the advanced Nutanix documentation.

To set up your Nutanix Customer Portal, complete the following tasks:

1. Go to the Nutanix Customer Portal at **http://portal.nutanix.com** and click **Register Now**.
2. Register by typing data in appropriate boxes.
3. In the **Serial Number** box, type the Service Tag number of your Dell XC720d system.

NOTE: To find the Service Tag of your Dell XC720xd, see the “Locating The Service Tag” section in this document.

4. After the Customer Portal account is created, you can manage your licenses.

License management

For more information about license management, complete the following tasks:

1. On the Nutanix Documentation portal, access the *Web Console Guide* (for access details, see the “Documentation matrix” section in this document).
2. In the Nutanix *Web Console Guide*, see the ”License Management” section.
3. Perform the relevant licensing tasks for your system.

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Deploying your system

WARNING: Before you set up and operate your Dell XC720xd, review the safety instructions that shipped with your storage enclosure.

WARNING: The weight of your system without the physical disk drives installed (empty weight) is 10.3 kg (22.7 lb) and when fully populated with all the physical disks is 32.5 kg (71.5 lb).

WARNING: Your system must be installed by Dell certified service technicians.

CAUTION: Before installing your system in the rack, make sure that the weight of the system does not exceed the weight limit of the rack. For more information, see the Rack Installation instructions that shipped with your system.

NOTE: For weight stability, always load the rack from the bottom up.

Before you begin

Make sure the following items are available:

- Power cables
- Network cables: optical and/or copper (SFP+ or BaseT)
- Rail kit
- Nutanix documentation — *Setup Guide*, *Advanced Setup Guide*
- Dell Documentation — *Dell XC720xd Getting Started Guide*, *Dell XC720xd Solutions Guide*, *Rack Installation Instructions*, *Safety Instructions*

  NOTE: For information about locating required documents, see the “Document matrix” section in this document.

Setting up your Dell XC720xd for first use

1. Make sure your system components are properly seated.

   Your system is shipped with physical disk drives, power supply units (PSUs), and fan components already installed. Make sure that all components are properly seated and have not become dislodged and/or damaged during shipping.
2. Install the Dell XC720xd in a rack.

   The Dell XC720xd requires a compatible rack and a rack installation kit. For information about installing the rails for the Dell XC720xd, see the *Rack Installation Instructions* that shipped with your system.
3. Cable your solution on the basis of best practices cabling diagram shown here.

NOTE: At a minimum, there are three Dell XC720xd servers in a cluster. Each Dell XC720xd is referred to as a node.

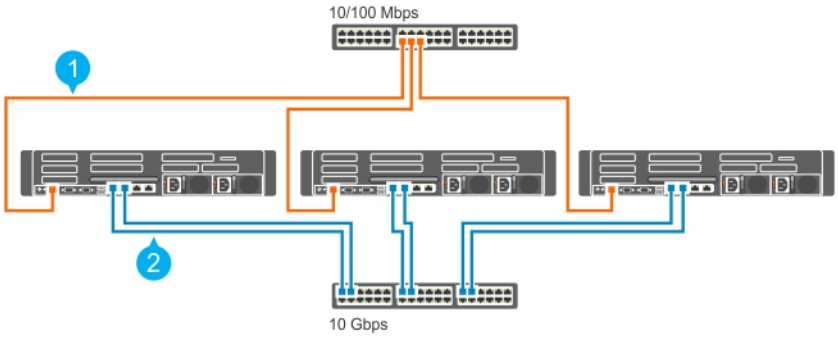

Figure 3. Cabling a system

1. Management Network
2. Host Network

NOTE: The preferred (best practice) setup is to connect the 10/100 Mbps management port across all three nodes to the same switch (management network).

Setting up VMware ESXi

When you set up the VMware ESXi, you must prepare each node, and then configure your cluster.

Preparing your nodes

Complete the following tasks on each node.

1. Access system graphical user interface (GUI), and do one of the following:
   - Connect the physical keyboard or monitor or mouse to the ports on the Dell XC720xd.
   - Connect to the iDRAC GUI.
2. Turn on system.

   NOTE: For information about configuring and accessing the iDRAC GUI, see *iDRAC Quick Start Guide* at **dell.com/support/home**.
3. During the boot process, press Ctrl+R to access the PERC Adapter BIOS Configuration Utility.
4. Press Ctrl+N until you see the **Controller Settings** page.
5. Go to **Select boot device**. By default, the virtual disk is set to (0).
6. Change the boot device to **Virtual Disk 1**.
7. Click **Apply**.
8. Press Enter.
9. To exit the **Dell PERC Configuration Utility**, press Esc.
10. To restart the server, press Ctrl+Alt+Del.

    NOTE: The system boots into ESXi and restarts several times to complete the setup process.

Setting up Hyper-V

When you set up Hyper-V, there are tasks for preparing your nodes and different tasks for configuring your cluster.

Preparing your nodes

1. Access system GUI, and do one of the following:
   - Connect the physical keyboard or monitor or mouse to the ports on the Dell XC720xd.
   - Connect to the iDRAC GUI
2. Turn on system.
3. On the **Microsoft Windows Settings** page, to accept the Microsoft End User License Agreement, click **I Agree**. After accepting the agreement, Windows continues the startup process.
4. Log in to Windows using the Nutanix password (Nutanix/4u).
5. The first Boot Wizard launches automatically. To continue, click **OK**.
6. The system restarts.
7. Log in to Windows again.
8. The first Boot Wizard launches automatically. To continue, click **OK**.
9. Log in to Windows again.
10. Click **OK**.
11. The system automatically logs off.
12. After the system starts, connect a workstation or laptop to the host network switch.

Configuring your cluster

To configure a cluster:

1. After preparing all nodes, connect workstation or laptop to the host network switch.

   For more information, refer to the *Nutanix Setup Guide* and see the Configuring the Cluster section.
2. If you want to configure your cluster in a VLAN-segmented network, refer to the Nutanix *Advanced Setup Guide* and see the "Configuring the Cluster" in a VLAN Segmented Network section.

   NOTE: To configure the cluster, build the URL from Service Tag of any one node (XC720xd) and enter it in a browser window on a workstation or laptop connected to the host network switch. For example: **http://ntnx-c1mlv12-a-cvm.local.:2100/cluster_init.html**.

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Downloading and installing software applications

Dell OpenManage Essentials

OpenManage Essentials is a hardware management application that provides a comprehensive view of the Dell XC720xd and its devices. OpenManage Essentials enables you to:

- Discover and list the system inventory
- Monitor the health of a system
- Perform system updates and remote tasks
- View hardware inventory and compliance reports

For information about the supported OpenManage Essentials versions, see the Supported hardware, firmware, and software section in this document.

To download OpenManage Essentials management software, go to **dell.com/support/home** or the Dell TechCenter website at **DellTechCenter.com/OME**.

To download the *OpenManage Essentials User's Guide*, go to **dell.com/OpenManageManuals**.

NOTE: To install OpenManage Essentials, you must have local system administrator privileges and the system you are using must meet the criteria mentioned in Minimum Recommended Hardware and Minimum Requirements of this document.

NOTE: OpenManage Essentials must be installed on the management network or a network that has access to the IMPI/iDRAC ports.

To install OpenManage Essentials:

1. Go to **dell.com/OpenManage Essentials** and open the *OpenManage Essentials User's Guide*.
2. Go to the "Installation Prerequisites and Minimum Requirements" section and complete the tasks as described.
3. Go to the "Installing OpenManage Essentials" section and complete the tasks as described.
4. Install the following optional software applications:
    - Dell OpenManage Essentials
    - Dell Repository Manager

      NOTE: Install Dell Repository Manager only if you want to customize the Firmware Bundles and Update Packages.
    - Documentation

Dell Nautilus

Dell Nautilus is a general maintenance release utility for updating firmware for SAS and SATA drives (or disks).
For information about the supported Dell Nautilus version number, see the Supported hardware, firmware, and software section in this document.

NOTE: You can update the firmware for the front HDDs and SSDs using the Nutanix Web GUI. You must use Dell Nautilus to update the boot (rear) SSDs.

To download the Dell Nautilus Firmware Update Utility for SAS and SATA disk Solid State Drives (SSDs):

1. Go to **dell.com/support/drivers**.
2. Under the "Customized support" section, in the **Enter your Service Tag or Express Service Code** box, type the Service Tag of your Dell XC720xd, and then click **Submit**.

   NOTE: If you do not have a Service Tag, select **Detect My Product** to allow the system to automatically detect your Service Tag, or select **Choose from a list of all Dell products** to select your product from the **Product Selection** page.
3. On the **Product Support** page, click **Drivers & downloads**.
4. From the **Operating System** drop-down menu, select **Not Applicable**.
5. Go to the "SAS Drive" section.
6. Search for Dell Nautilus Firmware Utility for SAS and SATA disk and SSDs.
7. Click **Download**. Click **Download** again to download the .exe file. In your Download folder, locate the latest version of Dell Nautilus and click to expand the compressed files.
8. In the extracted folder, run the USBMake Utility.
9. Create the bootable Nautilus package and perform one of the following tasks:
   - To create a bootable CD or DVD image (ISO), click **Create Bootable CD Image** and follow instructions. Burn the .iso image file to CD or save the bootable ISO on a management workstation.
   - Connect a USB flash drive to the system and follow instructions to create a bootable USB flash drive.

LSI SAS2Flash Utilities

1. Go to **dell.com/support/drivers**.
2. Under the "Customized support" section, in the **Enter your Service Tag or Express Service Code** box, type the Service Tag of your Dell XC720xd, and then click **Submit**.

   NOTE: If you do not have the Service Tag, select **Detect My Product** to allow the system to automatically detect your Service Tag, or select **Choose from a list of all Dell products** to select your product from the **Product Selection** page.
3. On the **Product Support** page, click **Drivers & downloads**.
4. From the **Operating System** drop-down menu, select your OS (Microsoft Windows Server 2012 R2/SP or VMware ESXi 5.5).
5. From the **Category** drop-down menu, select **SAS Non-RAID**.
6. Click **SAS Non-RAID** (2 files) to expose LSI SAS 9207-8i, and then click **Download**.
7. Select download for LSI SAS 9207-8i.

8. Go to the latest drivers and firmware portal (**http://www.lsi.com/sep/Pages/Dell.aspx**) of LSI.
9. Expand **Firmware**.
10. Select the 9207_8i_Package and install.

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Monitoring

Table 11. System component monitoring guide

System Components	Monitor Utility
System memory	Dell Open Manage Essentials
Cooling fans	Dell Open Manage Essentials
Network Daughter Card	Dell Open Manage Essentials
Processors	Dell Open Manage Essentials
PSUs	Dell Open Manage Essentials
NIC	Dell Open Manage Essentials
Dell PERC H310 adapter	Dell Open Manage Essentials
Front HDDs	Nutanix Web GUI
Front SSDs	Nutanix Web GUI
Rear SSDs	Dell Open Manage Essentials

NOTE: For instructions about using OME to monitor the Dell XC720xd system, do the following:

1. Access the *OpenManage Essentials User's Guide*.
2. For information about discovering components of a Dell XC720xd system, refer to the" Discovering and Inventorying Devices" section.
3. To add Dell XC720xd to the discovered list of systems, discover Dell XC720xd through an IP range.

Monitoring software

To monitor the health of a cluster, virtual machines, performance, and alerts and events, the Nutanix Web GUI provides a range of status checks.

For more information about monitoring with the Web GUI, view the *Web Console Guide* document on the Nutanix documentation portal (for more information, see "Documentation matrix" in this document).

In the Nutanix *Web Console Guide* document, see the following sections:

- Health Monitoring
- Virtual Machine Monitoring
- Performance Monitoring
- Alert and Event Monitoring

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Updating firmware

Table 12. System component update guide

System components	Utility
Network Daughter Card	Dell Open Manage Essentials
PSUs	Dell Open Manage Essentials
NIC	Dell Open Manage Essentials
BIOS	Dell Open Manage Essentials
iDRAC	Dell Open Manage Essentials
Dell PERC H310 Adapter	Dell Open Manage Essentials
LSI 9207-8i	LSI SAS2Flash Utility
Front HDDs	Nutanix Web GUI (preferred) or Dell Nautilis
Front SSDs	Nutanix Web GUI (preferred) or Dell Nautilis
Rear SSDs	Dell Nautilus

Updating other components

Use OpenManage Essentials to update the firmware of the discovered system components. For instructions about using OpenManage Essentials to monitor and update the discovered components of the Dell XC720xd system, see Updating Server BIOS, Firmware, Drivers, and Applications in the *OpenManage Essentials User's Guide*.

Updating drive firmware with Dell Nautilus

To update disk firmware with Dell Nautilus:

1. Turn off Controller Virtual Machine (CVM).
   For information about how to turn off a node, refer to *Nutanix Hardware Replacement* document.
2. Put hypervisor in Maintenance Mode.
3. Access system GUI, and by doing one of the following:
   - Connect the physical keyboard or monitor or mouse to the ports on the Dell XC720xd.

- Connect to the iDRAC GUI.

NOTE: For information about configuring and accessing the iDRAC GUI see *iDRAC Quick Starrt Guide* at **dell.com/support/home**.

4. Mount the Dell Nautilus ISO or the USB key to the system using virtual media.
5. While restarting the server, press F11 for BIOS boot manager.
6. From the list, select **EFI Boot Manager**.
7. From the **EFI boot** list, select **Virtual CD** or the **USB drive**.
8. To update drive firmware, click **Update Firmware**.

NOTE: Dell Nautilus updates all HDD and SSD firmware for all HDDs and SSDs connected to the system (both front and rear).

Updating LSI 9207-8i HBA

ESXi hypervisor

1. From VMware vSphere Web Client or the GUI, turn off the Controller Virtual Machine (CVM) and all the guest virtual machines (VMs) on the host that have the LSI 9207-8i HBA that you want to update.
2. Use the VMware vSphere Web Client to complete the on-screen instructions to put the host in Maintenance Mode.
3. To disable DirectPath I/O of the LSI 9207-8i HBA, do the following:
   a. On the **vCenter Host Management** page, click **Manage**, and from the list select **PCI Devices**.
   b. In the **DirectPath I/O PCI Devices** table, right-click **LSI Logic/Symbios Logic**, and then click **Edit**.
   c. Clear the **LSI Logic/Symbios Logic** check box from the list and click **OK**.
4. Restart the system.
5. After the system restarts, install LSI SAS2Flash Utility and the firmware binary on the system by doing the following:
   a. Download LSI SAS2Flash Utility and the firmware from the LSI website.
   b. Using SCP, copy the files to the ESXi host.
   c. Log in to the ESXi host by using SSH.
   d. Expand the SAS2Flash and firmware compressed file.
   e. To install SAS2Flash, at the command line interface (CLI), enter `esxcli software vib install –force –v <full path to file.vib>`.
6. Update the LSI firmware by running the following commands:
   a. To enable the mpt2sas driver, at the CLI, enter `esxcfg-module -e mpt2sas`.
   b. To run LSI SAS2Flash to list the controllers on the system, at the CLI, enter `/opt/lsi/bin/sas2flash –list`.

      NOTE: By default, the controller number is 0.

   c. To upgrade by using SAS2Flash and the firmware binary extracted earlier, at the CLI, enter `/opt/lsi/bin/sas2flash -c <controller number> –f <path to firmware binary>`.
   d. To disable the mpt2sas driver, at the CLI, enter `esxcfg-module -d mpt2sas`.
7. Reenable DirectPath I/O for the LSI 9207-8i HBA by doing the following:
   a. On the **vCenter Host Management** page, click **Manage**, and then select **PCI Devices** from the list.
   b. In the **DirectPath I/O PCI Devices** table, right-click **LSI Logic/Symbios Logic**, and then click **Edit**.
   c. Select the **LSI Logic/Symbios Logic** option from the list and click **OK**.

8. Disable Maintenance Mode and restart the system.

Hyper-V

1. By using **System Center Virtual Machine Manager** (SCVMM), turn off the **Controller Virtual Machine** (CVM) and all the guest VMs on the host that have the LSI 9207-8i HBA which you want to update.
2. Using SCVMM, complete the on-screen instructions to put the host in Maintenance Mode.
3. Access the Hyper-V host GUI by using iDRAC or RDP.
4. Download **LSI SAS2Flash** and the **firmware binaries** to the host from the LSI website.
5. Update the LSI firmware by running the following commands:
   a. From an elevated command prompt, run SAS2Flash and note the LSI controller number. At the CLI, enter `sas2flash.exe –list`.

      NOTE: By default, the controller number is 0.

   b. Run the upgrade using LSI SAS2Flash and the firmware binary extracted earlier. At the CLI, enter `sas2flash.exe -c <controller number> -f <path to firmware binary>`.
6. Disable the Maintenance Mode and restart the system.

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Replacing hardware

This section describes high-level tasks to replace components correctly within the Dell XC720xd solution.

Before you begin, for information about downloading the following required documents for the three hardware replacement tasks, see the "Documentation matrix" section in this document. The documents are:

- *Nutanix Hardware Replacement Documentation*
- *Dell XC720xd Owner's Manual*

After you have these documents, you are ready to proceed with any of these hardware replacement tasks. To complete these tasks, you must refer to both the documents.

Replacing components with no cluster data

The hardware you can replace that involve no cluster data includes:

- System memory
- Cooling fans
- Network Daughter Cards or Network Interface Cards
- PSUs

NOTE: Use the hot-swap tasks in task 2 (if only one PSU stops functioning).

1. In the *Nutanix Hardware Replacement Documentation*, see the "Failure of Components that do not Contain Cluster Data" section and shut down the node for the relevant hypervisor.
2. In the *Dell XC720xd Owner's Manual*, see the "Installing and removing system components" section and replace the failed component.
3. Refer to the *Nutanix Hardware Replacement Documentation* again, see the "Failure of Components" that do not Contain Cluster Data section and restart the node for the relevant hypervisor.

Replacing failed front HDD and SSD components that contain Cluster data

To replace failed front HDDs and SSDs that contain cluster data, do the following:

1. In the *Nutanix Hardware Replacement Documentation*, see the "Data Drive Failure" section and identify the failed HDD or SDD.
2. In the *Dell XC720xd Owner's Manual*, see the "Installing and removing system components", "Hard Disk Drives", "removing front hot-swappable HDD or SSD" sections, and replace the HDD or SSD.

3. Refer to the *Nutanix Hardware Replacement Documentation* again, see the "Completing Data Drive Replacement" section and complete the replacement of the failed HDD or SSD.

Replacing rear SSD (hypervisor boot drives)

If the RAID is functioning when one of the two hypervisor boot drives fail, only physical replacement is required. No NOS or hypervisor tasks are necessary.

In the *Dell XC720xd Owner's Manual*, see the "Installing and removing system components", "Hard disk drives", and "Removing a rear hot-swappable SSD" sections and replace the SSD.

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Recovering system

For information about recovery of your system, contact your service provider.

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Getting help

Other Documents You May Need

WARNING: See the safety and regulatory information that shipped with your system. Warranty information may be included within this document or as a separate document.

- The *Getting Started Guide* provides an overview of setting up your system and includes the technical specifications.
- The Rack Installation instructions provide information on how to rack your system.
- The *Owner's Manual* provides information on installing, troubleshooting, and replacing the hardware.
- Any media that ships with your system that provides documentation and tools for configuring and managing your system, including those pertaining to the operating system, system management software, system updates, and system components that you purchased with your system.
- For the full name of an abbreviation or acronym used in this document, see the Glossary at **support.dell.com/manuals**.

NOTE: Always check for updates on **dell.com/support/manuals** and read the updatesfirst because they often supersede information in other documents.

NOTE: When upgrading your system, it is recommended that you download and install the latest BIOS, driver, and systems management firmware on your system from **support.dell.com**.

Locating service tag and quick resource locator

Your system is identified by a unique Express Service Code and Service Tag number. This information is used by Dell to route support calls to the appropriate personnel.

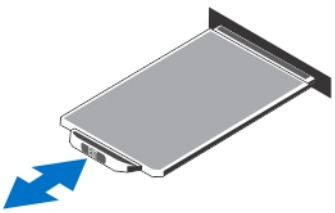

Figure 4. Locating service tag and quick resource locator

Contacting Dell

NOTE: If you do not have an active internet connection, you can find contact information on your purchase invoice, packing slip, bill, or Dell product catalog.

Dell provides several online and telephone-based support and service options. Availability varies by country and product, and some services may not be available in your area. To contact Dell for sales, technical support, or customer service issues:

1. Go to **dell.com/support/home**.
2. Select your support category.
3. Verify your country or region in the **Choose a Country/Region** drop-down menu at the upper-right corner of the page.
4. Select the appropriate service or support link based on your requirement.