


# Dell Host Bus Adapter User's Guide

HBA345

## Notes, cautions, and warnings

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

 **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.

<b>Chapter 1: Overview.....</b>	<b>5</b>
Dell HBA345 adapter.....	5
Dell HBA345 front card.....	6
Dell HBA card specifications.....	6
Supported operating systems.....	7
Supported PowerEdge systems.....	7
<b>Chapter 2: Features.....</b>	<b>8</b>
<b>Chapter 3: Deploying Dell HBA cards.....</b>	<b>9</b>
Removing the HBA345 adapter.....	9
Installing the HBA345 adapter.....	10
Removing the HBA345 front card.....	11
Installing the HBA345 front card.....	12
<b>Chapter 4: Driver installation.....</b>	<b>13</b>
Creating the device driver media.....	13
Downloading drivers from the Dell support website.....	13
Downloading drivers from the Dell Systems Service and Diagnostic Tools Media .....	13
Windows driver installation.....	14
Installing the driver during a Windows Server 2016/2019 and newer installation.....	14
Installing the driver after Windows Server 2016/2019 and newer installation .....	14
Updating the Dell HBA controller driver for existing Windows Server 2016/2019 and newer.....	15
Linux driver installation.....	15
Installing or updating the RPM driver package with KMOD support.....	15
Installing or updating the RPM driver package with KMP support.....	16
<b>Chapter 5: Human Interface Infrastructure configuration utility.....</b>	<b>17</b>
Entering the HII configuration utility.....	17
Exiting the HII configuration utility.....	17
Navigating to the Dell HBA345 configuration utility.....	18
Controller management .....	18
<b>Chapter 6: Updating the firmware.....</b>	<b>20</b>
<b>Chapter 7: Troubleshooting.....</b>	<b>21</b>
Known issues.....	21
ESXi node PSOD or multiple drives missing when using the lsi-msgpt35 driver prior to version 19.00.03.00.....	21
<b>Chapter 8: Getting help.....</b>	<b>22</b>
Contacting Dell.....	22
Locating the Express Service Code and Service Tag.....	22
Related documentation.....	23

Documentation feedback..... 23

# Overview

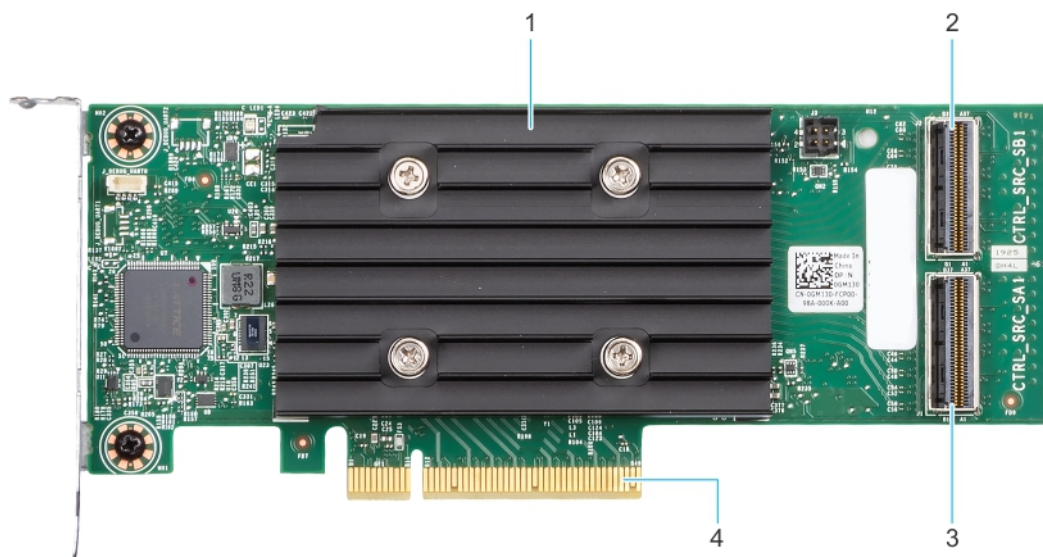
The Dell EMC Host Bus Adapter (HBA) card family consists of the Dell HBA345 adapter and Dell HBA345 front card.

## Topics:

- [Dell HBA345 adapter](#)
- [Dell HBA345 front card](#)
- [Dell HBA card specifications](#)
- [Supported operating systems](#)
- [Supported PowerEdge systems](#)

## Dell HBA345 adapter

The Dell HBA345 adapter is a host bus adapter (HBA) that provides PCIe connectivity to the host through an edge connector and physical disk drive interface with no-RAID capability, and is available in low-profile and full height form factors for internal storage. This is a part of the Dell serial-attached SCSI (SAS) controller solutions family.

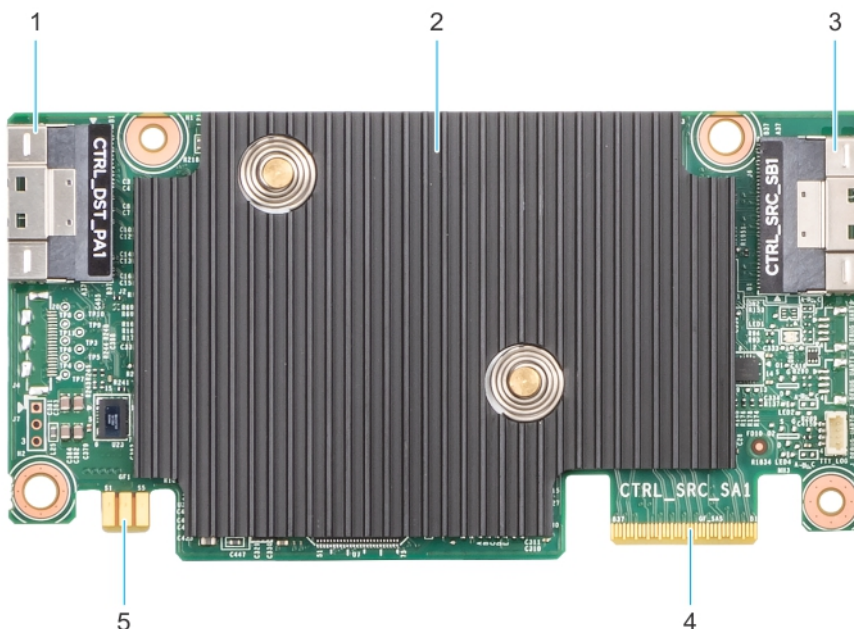


**Figure 1. Features of the HBA345 adapter**

1. Heat sink
2. Secondary SAS output port B
3. Primary SAS output port A
4. Card edge connector

## Dell HBA345 front card

The Dell HBA345 front card is a host bus adapter (HBA) that directly mounts on the front backplane, provides PCIe connectivity to the host through a slim-line connector cable and physical disk drive interface for internal storage with no-RAID capability. The HBA345 front card is a part of the Dell serial-attached SCSI (SAS) controller solutions family.



**Figure 2. Features of the HBA345 front card**

- |  |  |
|--|--|
| 1. PCIe input connector                  | 2. Heat sink                                     |
| 3. Secondary SAS output connector port B | 4. Primary SAS output card edge connector port A |
| 5. Power edge connector                  |  |

## Dell HBA card specifications

The table below describes the Dell HBA card specifications that are applicable to both adapter and front form factors.

**Table 1. Dell HBA345 card specifications**

Feature	Dell HBA345
Processor	Symbios Logic SAS3416 Fusion-MPT I/O controller chip
Drive types	SAS, SATA
Non-RAID	Yes
Boot support	Yes
Queue depth	7680

# Supported operating systems

See [Dell Enterprise operating systems support](#) for a list of supported operating systems by a specific server for the HBA345 card.

**i** **NOTE:** For the latest list of supported operating systems and driver installation instructions, see the operating system documentation at [www.dell.com/operatingsystemmanuals](http://www.dell.com/operatingsystemmanuals). For specific operating system service pack requirements, see the Drivers and Downloads section at [www.dell.com/manuals](http://www.dell.com/manuals).

# Supported PowerEdge systems

The following PowerEdge systems support the Dell HBA controller:

- PowerEdge C6525
- PowerEdge R7525
- PowerEdge R6525
- PowerEdge C6520

## Features

The Dell HBA345 card supports the following features and is applicable to both adapter and front form factors.

### LED activity

The Dell HBA345 controller is equipped with status LEDs.

**Table 2. LED behavior**

LED state	LED status
Off	Indicates one of the following: <ul style="list-style-type: none"><li>• Power is off</li><li>• All the links are disconnected</li><li>• The cable is disconnected</li></ul>
Green	Drive is connected and functional
Flashing green	Active when you perform the locate operation
Amber	Predictive failure

# Deploying Dell HBA cards

**CAUTION:** Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the system.

This section provides a set of high-level installation and removal instructions for the Dell HBA345 adapter and front card.

- [Removing the Dell HBA345 adapter](#)
- [Installing the Dell HBA345 adapter](#)
- [Removing the Dell HBA345 front card](#)
- [Installing the Dell HBA345 front card](#)

## Topics:

- [Removing the HBA345 adapter](#)
- [Installing the HBA345 adapter](#)
- [Removing the HBA345 front card](#)
- [Installing the HBA345 front card](#)

## Removing the HBA345 adapter

**CAUTION:** Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that are shipped with your product.

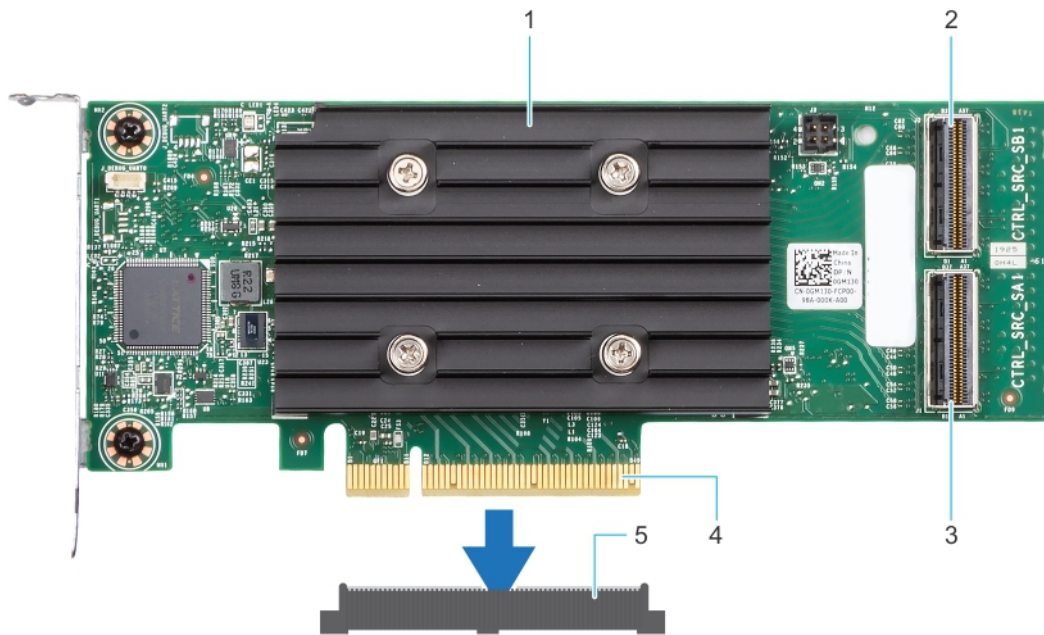
1. Turn off the system, including any attached peripherals, and disconnect the system from the electrical outlet and peripherals.

**NOTE:** It is recommended that you always use a static mat and static strap while working on components in the interior of the system.

2. Open the system.
3. Locate the HBA card in the expansion riser on the system board.

**CAUTION:** To prevent damage to the card, hold the card by its edges only.

4. Unfasten and lift the riser from the system board. Remove the HBA card.
5. Disconnect the SAS cables connected to the card:
  - a. Press down and hold the metal tab on the SAS cable connector.
  - b. Pull the SAS cable out of the connector.
6. Replace the storage controller and reconnect the SAS cable before placing them in the riser. For more information on installing the card, see [Installing the HBA345 adapter](#).
7. Reinstall the riser on the system board and fasten the riser.
8. Close the system.
9. Reconnect the system to its electrical outlet and turn the system on, including any attached peripherals.



**Figure 3. Removing and installing the HBA345 adapter**

- |                              |  |
|------------------------------|--|
| 1. Heat sink                 | 2. Primary SAS output port B               |
| 3. Primary SAS output port A | 4. Card edge connector on the system board |
| 5. HBA345 adapter connector  |  |

## Installing the HBA345 adapter

**CAUTION:** Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that are shipped with your product.

- Turn off the system, including any attached peripherals, and disconnect the system from the electrical outlet.
  - NOTE:** It is recommended that you always use a static mat and static strap while working on components in the interior of the system.
- Open the system.
- Connect the SAS data cable connectors to the card.
  - NOTE:** Ensure that you connect the cable according to the connector labels on the cable. The cable does not function properly if reversed.
- Align the card-edge connector with the connector on the system board.
  - CAUTION:** To prevent damage to the card, hold the card by its edges only.
- Press the card-edge down until the card is fully seated.
- Route the SAS data cable through the channel on the inner side of the chassis to the backplane.
- Attach the connector labeled SAS A to connector SAS A on the backplane, and attach the connector labeled SAS B to connector SAS B on the backplane.
- Close the system.
- Reconnect the system to its electrical outlet and turn the system on, including any attached peripherals.

# Removing the HBA345 front card

**CAUTION:** Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that are shipped with your product.

1. Turn off the system, including any attached peripherals, and disconnect the system from the electrical outlet and peripherals.

**NOTE:** It is recommended that you always use a static mat and static strap while working on components inside the system.

2. Open the system.
3. Locate the HBA card in the controller carrier at the front of the system.

**CAUTION:** To prevent damage to the card, hold the card by its edges only.

4. Unscrew the fasteners on the controller carrier, and slide the carrier away from the backplane, disconnecting the controller from the backplane.

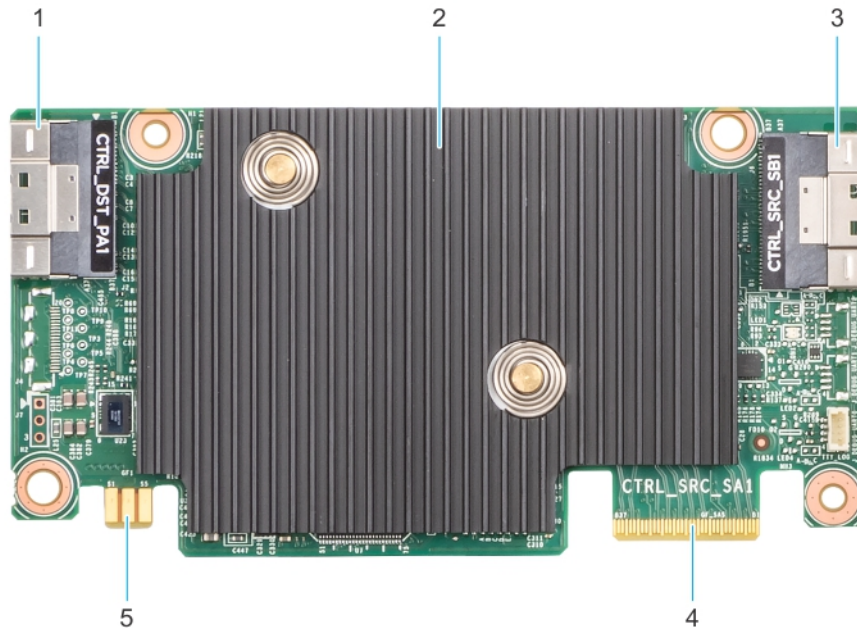
**NOTE:** For systems configured with a H345 front controller in an upside down orientation, it is necessary to uninstall all the drives from the backplane first, and then uninstall the backplane along with the controller. There is not enough clearance to uninstall the controller otherwise.

5. Disconnect the SAS cables that are connected to the card:
  - a. Press down, and hold the metal tab on the SAS cable connector.
  - b. Pull the SAS cable out of the connector.

6. Remove the HBA controller from the controller carrier.

**NOTE:** If the replacement storage controller is a front controller, then reinsert the controller into the carrier and secure it with the appropriate screws.

7. Take the replacement storage controller, and reconnect the SAS cable before reconnecting it to the backplane. For systems configured with a H345 front controller in an upside down orientation, reattach the HBA controller to the backplane before reinstalling the backplane into the system. For more information about installing the card, see [Installing the HBA345 front card](#).
8. Close the system.
9. Reconnect the system to its electrical outlet, and turn the system on, including any attached peripherals.



**Figure 4. Removing and installing the HBA345 front card**

- |  |  |
|--|--|
| 1. PCIe input connector                  | 2. Heat sink                                     |
| 3. Secondary SAS output connector port B | 4. Primary SAS output card edge connector port A |
| 5. Power edge connector                  |  |

## Installing the HBA345 front card

**CAUTION:** Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that are shipped with your product.

- Turn off the system, including any attached peripherals, and disconnect the system from the electrical outlet.
  - NOTE:** It is recommended that you always use a static mat and static strap while working on components in the interior of the system.
- Open the system.
- Connect the SAS data cable connectors to the card.
  - NOTE:** Ensure that you connect the cable according to the connector labels on the cable. The cable does not function properly if reversed.
- Align the card-edge connector with the connector on the system board.
  - CAUTION:** To prevent damage to the card, hold the card by its edges only.
- Press the card-edge down until the card is fully seated in the connector
- Close the system.
- Reconnect the system to its electrical outlet and turn the system on, including any attached peripherals.

# Driver installation

Dell HBA cards require software drivers to operate with the supported operating systems.

This chapter contains the procedures for installing the drivers for the Dell HBA controllers.

**NOTE:** The drivers for the Dell HBA controller for VMware ESXi are packaged within the VMware ESXi ISO image that is downloaded from the Dell support site. For more information, see the VMware documentation at [Dell.com/virtualizationsolutions](https://www.dell.com/support/forums/topic/virtualizationsolutions).

Two methods for installing a driver that is discussed in this chapter are:

- **Installing a driver during operating system installation:** Use this method if you are performing a new installation of the operating system and want to include the drivers.
- **Updating existing drivers:** Use this method if the operating system and the Dell HBA controller are already installed, and you want to update to the latest drivers.

**NOTE:** It is recommended that you update existing operating system drivers after installation. Native driver support is available for Windows 2016.

## Topics:

- [Creating the device driver media](#)
- [Windows driver installation](#)
- [Linux driver installation](#)

## Creating the device driver media

Use one of the following two methods to create the device driver media:

1. [Windows driver installation](#).
2. [Linux driver installation](#).

## Downloading drivers from the Dell support website

To download drivers from the Dell support website:

1. Go to <https://www.dell.com/support>.
2. Enter your system service tag in the **Choose by Service Tag to get started** field, or select **Choose from a list of all Dell products**.
3. Select **System Type**, **Operating System**, and **Category** from the drop-down list. The drivers that are applicable to your selection are displayed.
4. Download the drivers that you require to a USB drive, CD, or DVD.
5. During the operating system installation, use the media that you created with the **Load Driver** option to load mass storage drivers. For more information about reinstalling the operating system, see the relevant section for your operating system later in this guide.

## Downloading drivers from the Dell Systems Service and Diagnostic Tools Media

To download drivers from the *Dell Systems Service and Diagnostic Tools* media:

1. Insert the *Dell Systems Service and Diagnostics Tools* media into your system. The **Welcome to Dell Service and Diagnostic Utilities** screen is displayed.
2. Select your system model and operating system.

3. Click **Continue**.
4. From the list of drivers displayed, select the driver you require.
5. Select the self-extracting zip file and click **Run**.
6. Copy the driver to a hard drive, CD, DVD, or USB drive.
7. Repeat steps 1 to 6 for all the drivers you require.

## Windows driver installation

Before you install the Windows driver for the Dell HBA controller, you must first create a device driver media.

- Read the Microsoft *Getting Started* document that shipped with your operating system.
- Ensure that your system has the latest BIOS, firmware, and driver updates. If required, download the latest BIOS, firmware, and driver updates from <https://www.dell.com/support>.
- Create a device driver media using one of the following media types:
  - USB drive
  - CD
  - DVD

## Installing the driver during a Windows Server 2016/2019 and newer installation

To install the driver:

1. Start the system using the Windows Server 2016/2019, or newer media.
2. Follow the on-screen instructions until you reach **Where do you want to install Windows Server 2016/2019 or newer** window, and then select **Load driver**.
3. When the system asks you to insert the media, insert the installation media and browse to the appropriate location.
4. Select **Controller HBA** from the list.
5. Click **Next** and continue the installation.

## Installing the driver after Windows Server 2016/2019 and newer installation

Perform the following steps to configure the driver for the Dell HBA controller on a system that already has Windows installed:

1. Turn off the system.
2. Install the new Dell HBA controller in the system.  
For detailed instructions on installing and cabling the Dell HBA controller in the system, see [Deploying Dell HBA cards](#).
3. Turn on the system.  
The **Found New Hardware Wizard** screen displays the detected hardware device.
4. Click **Next**.
5. On the **Locate device driver** screen, select the **Search for a suitable driver for my device** option and click **Next**.
6. Browse and select the drivers from the **Locate Driver Files** screen.
7. Click **Next**.  
The wizard detects and installs the appropriate device drivers.
8. Click **Finish** to complete the installation.
9. Restart the system when prompted.

# Updating the Dell HBA controller driver for existing Windows Server 2016/2019 and newer

**NOTE:** Close all applications on your system before you update the driver.

1. Insert the media containing the driver.
2. Click **Start > Settings > Control Panel > System**.  
The **System Properties** screen is displayed.  
**NOTE:** The path to **System** might vary on the basis of operating system family.
3. Click the **Hardware** tab.
4. Click **Device Manager**.  
The **Device Manager** screen is displayed.  
**NOTE:** The path to **Device Manager** might vary on the basis of operating system family.
5. Expand **SCSI and RAID Controllers** by double-clicking the entry or by clicking the plus (+) symbol next to **SCSI and RAID Controller**.  
**NOTE:** In Windows Server 2016, and Windows Server 2019, the Dell HBA controller is listed under **Storage Controllers**.
6. Double-click the controller for which you want to update the driver.
7. Click the **Driver** tab and click **Update Driver**.  
The screen to update the device driver wizard is displayed.
8. Select **Install from a list or specific location**.
9. Click **Next**.
10. Follow the steps in the wizard and browse to the location of the driver files.
11. Select the INF file from the driver media.
12. Click **Next** and continue the installation steps in the wizard.
13. Click **Finish** to exit the wizard and reboot the system for the changes to take place.  
**NOTE:** Dell provides the Dell Update Package (DUP) to update drivers on systems running Windows Server 2016/2019 and newer operating system. The DUP is an executable application that updates drivers for specific devices. The DUP supports command line interface and silent execution. For more information, see <https://www.dell.com/support>.

## Linux driver installation

The driver update disk (DUD) images are created only for those operating system releases in which the native (in-box) driver is insufficient for installation. In the event that an operating system is being installed with a corresponding DUD image, see, [Installing or updating the RPM driver package with KMOD support](#). If not, proceed with using the native device driver and then skip to the topic [Installing or Updating the RPM Driver Package With KMP Support](#).

## Installing or updating the RPM driver package with KMOD support

**NOTE:** This procedure is applicable to Red Hat Enterprise Linux 8.0, 7.6 and 6.5 SP2.

Perform the following steps to install the RPM package with KMOD support:


1. Expand the gzipped tarball driver release package.
2. Install the driver package using the command: `kmod-mpt3sas-<version>.rpm`.  
**NOTE:** Use `rpm -Uvh <package name>` when upgrading an existing package.
3. If the previous device driver is in use, you must restart the system for the updated driver to take effect.
4. Verify that the driver is loaded with the following system commands: `modinfo mpt3sas`.

## Installing or updating the RPM driver package with KMP support

 **NOTE:** This procedure is also applicable to SUSE Enterprise Linux 15 SP1, SLES11, and SLES 11 SP3.

Perform the following steps to install the RPM package with KMP support:

1. Expand the gzipped tarball driver release package.
2. Install the driver package using the command: `rpm -ihv lsi-mpt3sas-kmp-default-<version>.rpm`.

 **NOTE:** Use `rpm -Uvh <package name>` when updating an existing package.

3. If the previous device driver is in use, you must reboot the system for the updated driver to take effect.
4. Verify that the driver is loaded with the following system commands: `lsi-mpt3sas`.

## Upgrading the Kernel

When upgrading to a new kernel, you must reinstall the DKMS-enabled driver packages. Perform the following steps to update or install the driver for a new kernel:

1. At a **terminal** window, type the following: `dkms build -m <module_name> - v <module version> - k <kernel version> dkms install -m <module_name> - v <module version> - k <kernel version>`.
2. To check if the driver is successfully installed in the new kernel, type: `dkms status`.  
A message similar to the following is displayed: `<driver name>, <driver version>, <new kernel version>: installed`.
3. If the previous device driver is in use, you must restart the system for the updated driver to take effect.

# Human Interface Infrastructure configuration utility

The HII configuration utility is a standardized way of viewing and setting device configuration. The HII configuration utility provides pre-operating system functionality and management for the following:

- Viewing physical device properties.
- Running physical device operations.
- Retrieving debug information.

## Topics:

- [Entering the HII configuration utility](#)
- [Exiting the HII configuration utility](#)
- [Navigating to the Dell HBA345 configuration utility](#)

## Entering the HII configuration utility

Follow the steps to enter the HII configuration utility:

1. To view **System Setup**, power on the system, press F2, and click **System Setup Main Menu**. The System Setup Main Menu screen details are described as follows:

**Table 3. System setup menu**

Option	Description
System BIOS	Configure BIOS settings.
iDRAC Settings	Configure iDRAC settings. The iDRAC settings utility is an interface that is used to set up and configure the iDRAC parameters by using Unified Extensible Firmware Interface (UEFI). You can enable or disable various iDRAC parameters by using the iDRAC settings utility. For more information about this utility, see the iDRAC user's guide at <a href="https://www.dell.com/poweredgemanuals">https://www.dell.com/poweredgemanuals</a>
Device Settings	Configure device settings for devices such as storage controllers and network cards.


2. Click **Device Settings**.


To access the management menu for the controller, use the arrow keys or the mouse.

 **NOTE:** For more information these options, click **Help** on the upper-right corner of the browser screen.

## Exiting the HII configuration utility

To exit the HII configuration utility, click the **Exit** button on the upper-right corner in **System Setup menu** of the HII Configuration utility.

 **NOTE:** Clicking **Exit** in any HII configuration utility page takes you back to the main **System Setup** menu.

 **NOTE:** Press **Esc** from any HII configuration utility page to return to the previous page.

# Navigating to the Dell HBA345 configuration utility

1. Enter the HII configuration utility. See [Entering the HII configuration utility](#).  
The **Device Settings** screen displays a list of NIC ports and the Dell HBA345 front configuration utility.
2. To access the Dell HBA345 front configuration utility, click **Dell HBA345 Front Configuration Utility**.  
The following list of configuration options is displayed:
  - Controller Properties
  - Refresh Topology
  - Device Properties

## Controller management

Controller management allows you to configure, manage, and view the controller properties.

### Viewing the controller properties


The **View Controller Properties** screen allows you to view the controller properties.

In the **System Setup Main Menu**, click **Device Settings > Dell HBA345 Front Configuration Utility > Controller Management > View Controller Properties**.

The table explains the **View Controller Properties** screen details:

**Table 4. View Controller Properties options**

Option	Description
Controller Name	Controller name
Chip Name	Controller chip name
Chip Revision	Controller chip revision
PCI Bus:Dev:Func	PCI Bus: Device: Controller function format
PCI Slot	Controller PCI slot number
PCI Ven: Dev	Controller PCI Vendor ID and Device ID
PCI SSVen:SSDev	Controller PCI Sub Vendor ID and Sub Device ID
SAS Address	Controller SAS Address
Package Version	Controller package version
Number of SAS and SATA Devices*	Number of SAS and SATA devices supported
Number of Enclosures*	Number of controller enclosures

 **NOTE:** \*This option is displayed only after you refresh the topology.

### Refreshing the topology

Refresh topology allows you to rediscover the devices. It also helps you detect changes in the devices that are connected to the controller.

1. In the **System Setup Main Menu**, click **Device Settings > Dell HBA345 Front Configuration Utility > Controller Management > Refresh Topology**.
2. Click **Ok** to refresh the topology.  
A screen is displayed **topology refresh process is completed successfully**.
3. Click **Ok** to continue.

## Device Properties

Device properties allows you to view the properties of the device.

1. To view the **Device Properties** screen, power on the system, press F2, and click **System Setup Main Menu > Device Settings > Dell HBA345 Front Configuration Utility > Device Properties > Enclosure (Bay ID=1, Enclosure Level=1)**.

**Table 5. Enclosure: Bay ID=1 properties**

Option	Description
Enclosure Logical ID	Logical ID of the enclosure
Enclosure Level	Level of the enclosure
Bay ID	Bay ID of the enclosure
Vendor Name	Vendor name of the enclosure
Product Name	Product name of the enclosure
Product Revision	Product revision of the enclosure
Number of Slots	Number of slots that the enclosure supports

2. Click <Slot 0> SAS-HDD-SEAGATE ST600MM0069 to view the Enclosure: Enclosure Level=1 properties.

**Table 6. Enclosure: Enclosure Level=1 properties**

Option	Description
Device Type	Type of the physical disk.
Protocol	The drive protocol.
Slot Number	Drive slot number in the enclosure.
Vendor Name	Vendor name of the drive.
Product Name	Product name of the drive.
Revision Name	Revision version of the drive.
Serial Number	Serial of the physical disk.
Capacity	Capacity of the drive.
Sector Size	Sector size of the selected physical disk.
Multipath Device	Drive supports multipath or not.
SAS address	SAS address of the physical disk.
Negotiated Logical link Rate	Negotiated logical link rate of the device.
Negotiated Physical link Rate	Negotiated physical link rate of the device.
Maximum Drive Rate	Maximum possible drive rate.
Write Cache	You can either enable or disable the Write Cache.
Locate LED	You can either select On or Off the locate LED.
Legacy OpROM Boot Device	You can either select Yes or No.

3. Click **Apply Changes** to submit the changes selected. A confirmation screen is displayed. Click **Ok** to continue.

## Updating the firmware

Perform the below procedures to download and run the DUP and update the firmware:

1. Go to <https://www.dell.com/support>.
2. Enter your system Service Tag, and click **Submit**.  
The product support page is displayed.
3. Click **Drivers and Downloads**.
4. Select the operating system, category, and the update importance.  
The list of applicable updates is displayed.
5. Click **Download**.
6. When the download is complete, run the DUP by double-clicking the filename.
  - NOTE:** You can also download a different file format from the File Title column by selecting a file format for the DUP and clicking it. If you want to download more than one file type, download them one at a time.
  - NOTE:** You can download a DUP or group of DUPs using Dell Repository Manager. For more information, see the [www.dell.com/openmanagemanuals](https://www.dell.com/openmanagemanuals) > Repository Manager User's Guide.
7. Read the update information displayed in the DUP window.
8. Check the DUP inventory report for package version and installed versions of component.
9. Click **Install** to install the DUP.
  - NOTE:** For more information about updating the firmware on system supporting different operating systems, see <https://www.dell.com/openmanagemanuals>.

# Troubleshooting

To get help with your Dell Host Bus Adapter series, you can contact your Dell Technical Service representative or see <https://www.dell.com/support>.

## Topics:

- [Known issues](#)

## Known issues

This section explains the known issues and expected behavior of the system when using the Host Bus Adapter.

### ESXi node PSOD or multiple drives missing when using the lsi-msgpt35 driver prior to version 19.00.03.00

<b>Description</b>	An ESXi server or a node that is part of a vSAN cluster may report PSOD or multiple drives missing after every 49 days from the system boot.
<b>Solution</b>	Download and install ESXi driver version 19.00.03.00 from the following links: <ul style="list-style-type: none"><li>• ESXi 7.0 U1/U2/U3: <a href="http://www.vmware.com/download/vsphere/drivers_tools.html">http://www.vmware.com/download/vsphere/drivers_tools.html</a></li><li>• ESXi 6.7 U1/U2/U3: <a href="https://customerconnect.vmware.com/en/downloads/details?downloadGroup=DT-ESXI67-BROADCOM-LSI_MSGPT35-19000300-1OEM&amp;productId=742">https://customerconnect.vmware.com/en/downloads/details?downloadGroup=DT-ESXI67-BROADCOM-LSI_MSGPT35-19000300-1OEM&amp;productId=742</a></li></ul>
<b>Applies to</b>	HBA345 Adapter, HBA345 Front

# Getting help

You can get help with your Dell product by contacting Dell, or send feedback on product documentation.

## Topics:

- [Contacting Dell](#)
- [Locating the Express Service Code and Service Tag](#)
- [Related documentation](#)
- [Documentation feedback](#)

## Contacting Dell

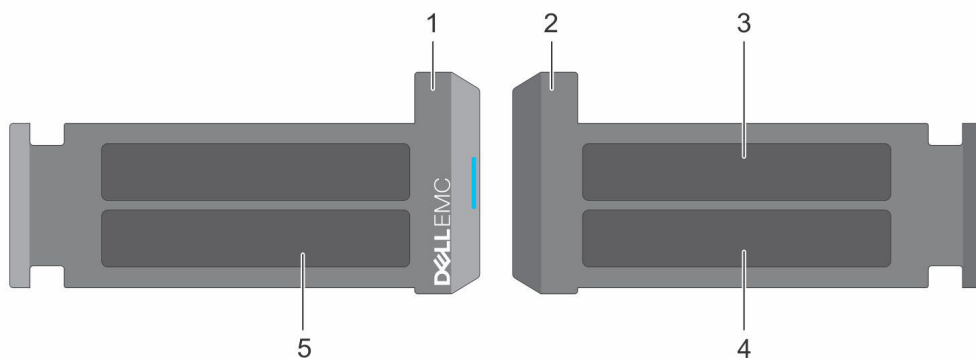
Dell provides online and telephone based support and service options. If you do not have an active internet connection, you can find Dell contact information on your purchase invoice, packing slip, bill or Dell product catalog. The availability of services varies depending on the country and product, and some services may not be available in your area. To contact Dell for sales, technical assistance, or customer service issues:

1. Go to [www.dell.com/support/home](http://www.dell.com/support/home).
2. Select your country from the drop-down menu on the lower right corner of the page.
3. For customized support:
  - a. Enter the system Service Tag in the **Enter a Service Tag, Serial Number, Service Request, Model, or Keyword** field.
  - b. Click **Submit**.  
The support page that lists the various support categories is displayed.
4. For general support:
  - a. Select your product category.
  - b. Select your product segment.
  - c. Select your product.  
The support page that lists the various support categories is displayed.
5. For contact details of Dell Global Technical Support:
  - a. Click [Global Technical Support](#)
  - b. The **Contact Technical Support** page is displayed with details to call, chat, or e-mail the Dell Global Technical Support team.

## Locating the Express Service Code and Service Tag

The unique Express Service Code and Service Tag is used to identify the system.

The information tag is located on the front of the system rear of the system that includes system information such as Service Tag, Express Service Code, Manufacture date, NIC, MAC address, QRL label, and so on. If you have opted for the secure default access to iDRAC, the Information tag also contains the iDRAC secure default password. If you have opted for iDRAC Quick Sync 2, the Information tag also contains the OpenManage Mobile (OMM) label, where administrators can configure, monitor, and troubleshoot the PowerEdge servers.



**Figure 5. Locating the Express Service Code and Service tag**

- |   |  |
|---|--|
| 1. Information tag (front view)                 | 2. Information tag (back view)                       |
| 3. OpenManage Mobile (OMM) label                | 4. iDRAC MAC address and iDRAC secure password label |
| 5. Service Tag, Express Service Code, QRL label |  |

The Mini Enterprise Service Tag (MEST) label is located on the rear of the system that includes Service Tag (ST), Express Service Code (Exp Svc Code), and Manufacture Date (Mfg. Date). The Exp Svc Code is used by Dell to route support calls to the appropriate personnel.

Alternatively, the Service Tag information is located on a label on left wall of the chassis.

## Related documentation

### **i** NOTE:

- For all storage controllers and PCIe SSD documents, go to [www.dell.com/storagecontrollermanuals](http://www.dell.com/storagecontrollermanuals).
- For all Dell OpenManage documents, go to [www.dell.com/openmanagemanuals](http://www.dell.com/openmanagemanuals).
- For all operating system documents, go to [www.dell.com/operatingsystemmanuals](http://www.dell.com/operatingsystemmanuals).
- For all PowerEdge documentation, go to [www.dell.com/poweredgemanuals](http://www.dell.com/poweredgemanuals).

## Documentation feedback

Click the **Feedback** link in any of the Dell documentation pages, fill out the form, and click **Submit** to send your feedback.