

DELL OPENMANAGE  
STORAGE MANAGEMENT

Version 4.0

**Readme**



This is the readme file for Dell OpenManage Server Administrator Storage Management Version 4.0. For additional information, see the Server Administrator Readme file and the "Dell OpenManage Server Administrator User's Guide."

NOTE: The Storage Management service is installed using the Server Administrator installation process. See the installation readme (readme\_ins.txt) on the "Dell Systems Management Tools and Documentation" DVD for the latest installation information.

NOTE: With Dell OpenManage Systems Management software version 5.0 or later, Array Manager is not an installable option. If the Array Manager is installed on your system and you need information on how to migrate from Array Manager to Storage Management, see the product documentation prior to Storage Management 2.1 or the Systems Management software version 5.1.

## What's New

The release highlights of OpenManage Storage Management 4.0 are:

Added support for the following operating systems:

- VMware ESXi 5.0 P1
- Citrix Xen Server 6.0
- Red Hat Enterprise Linux 6.1
- Red Hat Enterprise Linux 5.7
- VMware ESXi 4.1 U2

Deprecated the following operating systems:

- Citrix Xen Server 5.6 FP1
- Windows Server 2003
- Windows Server 2003 R2
- Windows Server 2003 x64

New Platforms supported:

Dell PowerEdge R720

Dell PowerEdge R620

Dell PowerEdge T620

Dell PowerEdge M620

New Features:

- This release provides device management support for PCI Express Solid-State Drive (PCIe SSD).
- On PERC H710 and PERC H810 controllers, the Manage Physical Disk Power controller task provides additional power saving modes that help you to customize the power saving settings.
- On Dell PowerEdge yx2x systems, multiple backplanes and multiple internal controllers are supported.
- On Dell PERC H310 card, the new controllers tasks Convert to Non-RAID Disks and Convert to RAID Capable Disks allow you to convert unconfigured Ready RAID capable disks to Non-RAID disks and vice-versa.

- The current release supports the Web browsers, Internet Explorer 9.0 and Mozilla Firefox 4.0

For a complete list of supported operating systems and platforms, see the latest Dell Systems Software Support Matrix stored on the media.

# Hardware and Software Requirements

This section provides information about the minimum hardware and software requirements for installing Repository Manager.

## Hardware Requirements

- \* Processor - 1 GHz or higher Pentium processor, AMD or equivalent
- \* RAM - 2 GB or higher
- \* Display - 1024 X 768 high color

## Supported Operating Systems

- \* Microsoft Windows Server 2008 Service Pack 2, Microsoft windows Server 2008 R2 and Microsoft Windows HPC Server 2008 is required to support SAS technology.
- \* Red Hat(R) Enterprise Linux(R) 5.x.or later is required for Storage Management and Update 7 or later is required for the Red Hat Network (RHN) service to update your system software with the latest update package before deploying your system. See "www.redhat.com" to access the RHN service and download updates.
- \* SUSE Linux Enterprise Server 10 for Intel(R) EM64T with Service Pack 4 or later (Service Pack 4 is required to support SAS technology) and SUSE Linux Enterprise Server 11 with Service Pack 2.
- \* VMware ESXi 5.0 server

Note: Installation of Repository Manager on Linux operating systems is not supported.

# Installation

For complete installation instructions, see the "Dell OpenManage Server Administrator Installation Guide Version 7.0".

This section provides information to help enhance your experience with Server Administrator, particularly, implementations and environments.

- OMSA uses port 1311 as the default port. Port 1311 is a registered port number of Dell Inc. If another application is configured to run on port 1311 before OMSA is installed, the DSM SA Connection Service will not start after installation. Before you install OMSA, ensure that port 1311 is not being used.
- You must enable the client-side scripting in Internet Explorer before starting OMSA. To do so, perform the following steps:
  1. Navigate to "Tools" in Internet Explorer.
  2. Under Tools, click "Internet Options".
  3. Under "Internet Options", click the "Security" tab.
  4. Select the security zone that the system running OMSA belongs to.

NOTE: This option should be set to "Trusted sites".

5. Click the "Custom Level" button.

6. For Windows 2003, perform the following steps,

- Under "Miscellaneous", select the "Allow Meta Refresh" radio button.
- Under "Active Scripting", select the "Enable" radio button.
- Under "Active scripting", select the "Allow scripting of Internet Explorer web browser controls" radio button.

7. Click "OK" and restart your browser.

- To allow Single Sign-on for OMSA, perform the following steps:

1. Navigate to "Tools" in Internet Explorer.
2. Under "Tools", click "Internet Options".
3. Under "Internet Options", click the "Security" tab.
4. Select "Trusted sites".
5. Click the "Custom Level" button.
6. Under "User Authentication", select the "Automatic Logon with current username and password" radio button. Press 'OK' to exit the "Custom Level" window.
7. Now select the "Advanced" tab, and under "HTTP 1.1 settings", make sure "Use HTTP 1.1" is checked.
8. Select "Trusted sites". Click "Sites". Add the server to the website. Click "Close".
9. Click "OK" and restart your browser.

- If you run a security scanner tool (such as Nessus) against the Server Administrator Web server, certain security warnings against port 1311 running the Server Administrator Web server may be displayed. The following warnings have been investigated by Dell engineering and are determined to be "false positives" (invalid security warnings) that you can safely ignore:

- "The Web server on 1311 allows scripts to read sensitive configuration and / or XML files." Dell has determined that this warning is a false positive.
- "The Web server on 1311 allows to delete " / " which implies that the Web server will allow a remote user to delete the files in root on the server." Dell has determined that this warning is a false positive.
- "The web server on 1311 may be susceptible to a 'www Infinite Request' attack." Dell has determined that this warning is a false positive.
- "It is possible to make the remote thttpd server execute arbitrary code by sending a request like: GET If-Modified-Since:AAA[...]AAAA

Solution: If you are using thttpd, upgrade to version 2.0. If you are not, then contact your vendor and ask for a patch, or change your web server. CVE on this one is CAN-2000-0359". Dell has determined that this warning is a false positive.

- Enabling Integrated Windows Authentication in Internet Explorer is not required to activate the Single Sign-On feature.
- The OMSA security settings are not applicable for Active Directory users. Active Directory users with read-only login can access OMSA, even after the access is blocked in the OMSA Preferences page.
- Dell SNMP MIB Files for Dell Systems

Dell SNMP MIB files for Dell systems allows you to obtain and verify information provided by supported software agents. The current MIB files supported by PowerEdge(TM) software agents are located at "\support\mib" on the "Dell Systems Management Tools and Documentation" DVD.

NOTE: A MIB-II-compliant, SNMP-supported network management station is required to compile and browse MIB files.

- OpenManage support for Encrypting File System (EFS)

To improve security, Microsoft provides the capability to encrypt files using EFS. Note that OMSA will not function if its dependent files are encrypted.

- Server Administrator GUI and CLI Response Time

On Dell PowerEdge x8xx and later systems, the response time for some parts of the Dell OMSA GUI and CLI have increased to several seconds because some of the iDRAC data is no longer cached by OMSA. The data must be retrieved from the iDRAC when users request for it.

Following are the OMSA GUI pages whose response time may have increased:

- Server Administrator home page on log in
- Remote Access -> Users
- Alert Management -> Platform Events

Following are the OMSA CLI commands whose response time may have increased:

- > omreport storage controller
- > omreport stroage vdisk
- > omreport system pedestinations

The amount of time varies depending on the hardware system and operating system.

## Fixed Issues/defects

None

## Known issues and Workarounds

This section provides information on open issues and workarounds with this release of OMSA.

## Open Issues and Resolutions

Issue 1 DF529750: Inconsistent reporting between iDRAC7 and Storage Management regarding HBA adapter batteries

### Description

“Battery Status reported by Storage Management is not consistent with the one reported by iDRAC7 interfaces (example, iDRAC7 Web interface, RACADM and so on) for PERC 8 controllers when a Learn Cycle is in progress. Storage Management reports the Battery status as Warning while iDRAC7 interfaces reports the Battery status as ok.”

### Resolution

Warning status is transient and does not warrant any action from the user. Battery status changes to ok once the Learn cycle is complete

### Recommendation

Ignore the warning

## Issue 2

### Description

View slot occupancy report shows 4 HDD slots on backplanes with just 2 HDD slots for any server.

## Issue 3

### Description

Physical disk clear operation is not available on PERC 8 family of controllers.

## Issue 4 DF489665: Max Config: OM on ESXi 4.1 U2 Experiences Timeouts and very poor performance

### Description

When using ESXi with a large number of directly attached disk drives, delays or timeouts in OpenManage Storage Manager may be encountered during VD creation. PowerEdge servers support up to 2 RAID controllers. Each array controller supports up to 8 MD1200/1220 enclosures. In the case of OMSA 7.0 and earlier with ESXi, max direct attach storage configs will timeout during VD creation. To create a VD using ESXi it could take up to 12 minutes to successfully build the xml output for up to 200 drives. If more than 200 drives are present in the direct attach enclosures you may encounter a timeout error during VD creation. "The action performed has failed."

### Resolution

Improvements are being investigated for the OM7.1 timeframe in Q1 of 2012. Until then the number of direct attached drives will need to be reduced to below 200 if the timeout is encountered. Please allow sufficient time for the VD to be created.

## Issue 5

### Description

Physical disk properties such as Manufacture day, Manufacture week and Manufacture year are available for the SAS drives only.

## Issue 6

### Description

Dell OpenManage Server Administrator Storage Management 7.0 does not support PERC 4 controllers and earlier versions on ESXi 4.x, ESXi 5.x, ESX 4.x and all 64 bit Linux Operating System.

## Issue 7

### Description

Hot removal of enclosure is not supported in Storage Management. It may result in unpredictable errors, such as stopping Storage Management service.

Issue 8: Creating many sliced span virtual disks using the spun-down drives through the command line or GUI result may be delayed.

### Resolution

After creating one sliced span virtual disk, wait for some time to create the next sliced span virtual disk.

Issue 9: In ESX4 Classic, 'deprecated SCSI ioctl' message is displayed on the console

#### Description

In VMware ESX 4.0 Classic system, the following warning message(s) is displayed on the console:

“Program dsm\_sa\_datamgrd is using the deprecated SCSI ioctl, Please convert it to SG\_IO.” This is a kernel warning message displayed when storage operations are in progress. This is only a deprecation warning and not an indication of a failing operation.

#### Resolution

Reduce the kernel logging level. By default, VMware ESX kernel logging level is set to '6' to print all the kernel messages with severity higher than 'information.' Reduce it to '4', so that messages with severity, 'error,' and above get printed to the console.

To do this, execute the following command as a 'root' user: `/proc/sys/kernel/printk`.

#### Issue 10

##### Description

A Security Key Identifier can contain numerals, lowercase alphabets, uppercase alphabets, non-alphanumeric characters (except space), or a combination of any of these.

Note: If you have used the special characters “/” (forward slash) or “'” (single quote) in the Security Key Identifier, they are displayed as “\_” (underscore) on the Change Security Key page and Import Secured Foreign Configurations page. This is applicable only to the Security Key Identifier and not to the Passphrase.

#### Issue 11

##### Description

If Storage Management displays a path failure message for a Logical Connector after a reboot, use the "Clear Redundant Path View" provided in the "Change Controller Properties" controller task, and restart the system.

NOTE: Use this command only if you have intentionally removed the multipath connection during reboot of the system.

#### Issue 12

##### Description

In the VMware ESX 4.x and ESX 5.x environment, when you create a virtual disk using Storage Management, you may see an error message "The task failed to complete : The create virtual disk task was successful but the operating system may not be aware of the new virtual disk." However, the virtual disk is available for all operations on rebooting of the system.

#### Issue 13

##### Description

Patrol Read is not supported on SSD media. The Patrol Read feature will fail for any controller that has SSD media on a virtual disk.

## Issue 14

### Description

Hot plug of enclosures takes time to enumerate the enclosure and its components. During this time, there will be a delay in the response time of tasks, such as displaying the physical disks on the physical disk page and in the virtual disk selection page.

## Issue 15

### Description

All virtual disks from the SAS/iR controller display the name "IR Virtual Disk" on the "Preview" page. On successful import, another name is assigned to these virtual disks and the "IR Virtual Disk" name is not displayed on the "Preview" page.

## Issue 16

### Description

Storage Management supports assignment of only one dedicated hot spare for a virtual disk on SCSI Controllers.

## Issue 17

### Description

Storage Management does not permit connecting the first enclosure in single path and attaching the subsequent enclosures in multipath. All enclosures must be connected in multipath to enable the multipath view.

**Issue 18:** An error message may not display when "Import Foreign Configuration" task is not successful.

### Description

The "Import Foreign Configuration" task can only import virtual disks that have consistent data. A virtual disk with inconsistent data cannot be imported. When importing multiple virtual disks in a single operation, however, the "Import Foreign Configuration" task may report successful completion even when inconsistent virtual disks are present and have not been imported successfully.

### Resolution

If the "Import Foreign Configuration" task is unable to import an inconsistent virtual disk, then the physical disks that belong to the virtual disk continue to display a "Foreign" state after the "Import Foreign Configuration" task completes. In this case, repeat the "Import Foreign Configuration" task until one of the following occurs:

- There are no longer any physical disks in "Foreign" state after the "Import Foreign Configuration" task completes.
- You receive an error stating that the "Import Foreign Configuration" task has not completed successfully. This error indicates that there are no longer any consistent virtual disks available to be imported. Therefore, all unimported virtual disks are inconsistent and you can either perform a "Clear Foreign Configuration" to remove the virtual disks or remove the physical disks from the controller.

**Issue 19 60696:** Storage Management responds slowly when using Internet Explorer 7.x, 8.x on a system with mixed SAS and SATA physical disks.

### Description

When using the "Create Virtual Disk" wizard from the Storage Management graphical user interface (GUI), you may notice decreased performance when using Internet Explorer 7.x, 8.x on a system with multiple Dell PowerVault(TM) MD1000 storage enclosures that are heavily populated with mixed SAS and SATA physical disks.



## Resolution

Use a supported browser other than Internet Explorer 7.x, 8.x or use the Storage Management command line interface (CLI) to create the virtual disk. See the Server Administrator readme for information on supported browsers. See the Storage Management online help or the "Server Administrator Command Line Interface User's Guide" for information on using the Storage Management CLI.

**Issue 20 152362:** Storage Management may not display controllers installed with the Service and Diagnostics utility.

## Description

Storage Management may not recognize devices that are installed after Storage Management is already running.

## Resolution

If Storage Management does not recognize a newly-added device and this problem has not been corrected with a Global Rescan, then reboot the system.

**Issue 20 120475:** Storage Management SNMP traps are not filtered by Server Administrator.

## Description

Server Administrator allows you to filter SNMP traps that you do not want to receive. To implement SNMP trap filtering, select the "System" tree-> "Alert Management" tab-> "SNMP Traps" subtab. The "SNMP Traps" subtab has options for enabling and disabling SNMP traps based on severity or the component that generates the trap. Even when the SNMP traps are disabled, Storage Management will generate SNMP traps.

## Resolution

SNMP trap filtering will be provided in a future release of Storage Management.

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Firmware for PERC 4/SC, 4/DC, 4e/DC, 4/Di,  
4/IM, 4e/Si, 4e/Di, CERC ATA100/4ch, PERC 5/E, PERC 5/i Integrated,  
PERC 5/i Adapter, SAS 5/iR Integrated, SAS 5/iR Adapter,  
SAS 5/i Integrated, SAS 5/E Adapter, PERC 6/E Adapter,  
PERC 6/i Integrated, PERC 6/i Adapter, SAS 6/iR Integrated,  
SAS 6/iR Adapter, SAS 6/int. Modular, LSI 1020, LSI 1030,  
PERC H800 Adapter, PERC H700 Integrated, PERC H700 Adapter,  
PERC H700 Modular, PERC H200 Adapter, PERC H200 Integrated,  
PERC H200 Modular, 6Gbps SAS HBA Controllers, PERC H310 Adapter,  
PERC H310 Mini Blades, PERC H310 Mini Monolithic, PERC H710 Adapter,  
PERC H710 Mini Blades, PERC H710 Mini Monolithic, PERC H710P Adapter,  
PERC H710P Mini Blades, PERC H710P Mini Monolithic and  
PERC H810 Adapter Controllers\*\*\* Controller | Firmware/ BIOS |

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| PERC 4/SC | 352D |

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| PERC 4/DC 32-bit | 352D |

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| PERC 4/DC 64-bit | 352D |

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| PERC 4e/DC | 5B2D |

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| PERC 4e/Si | 5B2D |

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| PERC 4e/Di | 5B2D |

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| PERC 4/Di on a | 252D |

| 2-Processor | |

| 5U System-XP | |

| PERC 4/Di | 422D |

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| PERC 4/IM | 1.00.12.00 |

| on an | |

| ES3005 | |

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| PERC 4/IM | 1.03.23.90 |

| on a | |

| 2 Processor | |

| 7U Modular | |

| System | |

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| PERC 5/E | 5.2.2-0076 |

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| PERC 5/i | 5.2.3-0074 |

| Integrated | |

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| PERC 5/i | 5.2.3-0074 |

| Adapter | |

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| SAS 5/iR | 00.10.51.00/ |

| Integrated | 06.12.05.00 |

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| SAS 5/iR | 00.10.51.00/ |

| Adapter | 06.12.05.00 |

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| SAS 5/i | 00.10.51.00/ |

| Integrated | 06.12.05.00 |

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| SAS 5/E | 00.10.51.00/ |

| Adapter | 06.12.05.00 |

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| PERC 6/E | 6.3.0-0001 |

| Adapter | |

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| PERC 6/i | 6.3.0-0001 |

| Integrated | |

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| PERC 6/i | 6.3.0-0001 |

| Adapter | |

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| SAS 6/iR | 00.25.47.00/ |

| Integrated | 06.22.03.00 |

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| SAS 6/iR | 00.25.47.00/ |

| Adapter | 06.22.03.00 |

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| SAS 6/int. | 00.25.47.00/ |

| Modular | 06.22.03.00 |

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| PERC H800 | |

| Adapter | 12.10.2-0004 |

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| PERC H700 | |

| Integrated | 12.10.2-0004 |

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| PERC H700 | |

| Adapter | 12.10.2-0004 |

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| PERC H700 | |

| Modular | 12.10.2-0004 |

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| PERC H200 | |

| Adapter | 07.03.05.00 |

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| PERC H200 | |

| Integrated | 07.03.05.00 |

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| PERC H200 | |

| Modular | 07.03.05.00 |

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| PERC H200 | |

| Embedded | 07.03.05.00 |

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| 6Gbps SAS | |

| HBA | 07.03.05.00 |

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| PERC H310 | |

| Adapter | 20.10.1-0080 |

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| PERC H310 | |

| Mini | 20.10.1-0080 |

| Monolithic | |

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| PERC H310 | |

| Mini | 20.10.1-0080 |

| Blades | |

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| PERC H710 | |

| Adapter | 21.0.1-0131 |

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| PERC H710 | |

| Mini | 21.0.1-0132 |

| Blades | |

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| PERC H710 | |

| Mini | 21.0.1-0132 |

| Monolithic | |

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| PERC H710P | |

| Adapter | 21.0.1-0132 |

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| PERC H710P | |

| Mini | 21.0.1-0132 |

| Blades | |

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| PERC H710P | |

| Mini | 21.0.1-0132 |

| Monolithic | |

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| PERC H810 | |

| Adapter | 21.0.1-0132 |

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| PERC S110 | 3.0.0.0135 |

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| PERC S100 | 2.0.0-0162 |

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| PERC S300 | 2.0.0-0162 |

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\*\*\* Windows Drivers for PERC 4/SC, 4/DC, 4e/DC,  
4/Di, 4/IM, 4e/Si, 4e/Di, CERC ATA100/4ch, PERC 5/E,  
PERC 5/i Integrated, PERC 5/i Adapter, SAS 5/iR Integrated,  
SAS 5/iR Adapter, SAS 5/i Integrated, SAS 5/E Adapter,  
PERC 6/E Adapter, PERC 6/i Integrated, PERC 6/i Adapter,  
SAS 6/iR Integrated, SAS 6/iR Adapter, SAS 6/int. Modular,  
LSI 1020, LSI 1030, PERC H800 Adapter, PERC H700 Integrated,  
PERC H700 Adapter, PERC H700 Modular, PERC H200 Adapter,  
PERC H200 Integrated, PERC H200 Modular, 6Gbps SAS HBA ,  
PERC H310 Adapter,PERC H310 Mini Blades, PERC H310 Mini Monolithic,  
PERC H710 Adapter,PERC H710 Mini Blades, PERC H710 Mini Monolithic,  
PERC H710P Adapter,PERC H710P Mini Blades,  
PERC H710P Mini Monolithic and PERC H810 Adapter Controllers\*\*\*

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| Controller | Windows | Windows | Windows |

	Server	Server	Server
	2008	2008	2008 R2
	32-bit	64-bit	Driver
	Driver	Driver	

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PERC 4/SC	Native	Native	Native
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PERC 4/DC 32-bit	Native	Native	Native
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PERC 4/DC 64-bit	Native	Native	Native
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PERC 4e/DC	Native	Native	Native
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PERC 4e/Si	Native	Native	Native
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PERC 4e/Di	Native	Native	Native
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PERC 4/Di	Native	Native	Native
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on a			
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2-Processor			
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5U System-XP			
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PERC 4/Di	Native	Not	Not
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on a		Applicable	Applicable
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PowerEdge			
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2600			
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PERC 4/Di	Native	Native	Native
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on a			
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| 2-Processor/ | | | |  
| 5U System-XP | | | |

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PERC 4/Di	Native	Not	Not	
on a		Applicable	Applicable	
PowerEdge				
1750				

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PERC 4/IM	Not	Not	Not	
on an	Supported	Supported	Supported	
ES3005				

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PERC 4/IM	Not	Not	Not	
on a	Supported	Supported	Supported	
PowerEdge				
1655MC				

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PERC 4/IM	Native	Native	Native	
on a				
2 processor/				
7U Modular				
System				

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PERC 4/IM	Native	Native	Native	
on a				
PowerEdge				
1855				

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| CERC | Not | Not | Not | |  
| ATA 100/4CH | Supported | Supported | Supported | |



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| PERC 5/E | 2.24.0.32 | 2.24.0.64 | 2.24.0.64 |  
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| PERC 5/i | 2.24.0.32 | 2.24.0.64 | 2.24.0.64 |  
| Integrated | | | |  
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PERC 5/i	2.24.0.32	2.24.0.64	2.24.0.64
Adapter			
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| SAS 5/iR | 1.28.03.01 | 1.28.03.01 | 1.28.03.01 |  
| Integrated | | | |  
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| SAS 5/iR | 1.28.03.01 | 1.28.03.01 | 1.28.03.01 |  
| Adapter | | | |  
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| SAS 5/i | 1.28.03.01 | 1.28.03.01 | 1.28.03.01 |  
| Integrated | | | |  
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| SAS 5/E | 1.28.03.01 | 1.28.03.01 | 1.28.03.01 |  
| Adapter | | | |  
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PERC 6/E			
	2.24.0.32	2.24.0.64	2.24.0.64
Adapter			
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PERC 6/i			
	2.24.0.32	2.24.0.64	2.24.0.64
Integrated			
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PERC 6/i			
	2.24.0.32	2.24.0.64	2.24.0.64
Adapter			

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| SAS 6/iR | | | |  
| Integrated | 1.28.03.01 | 1.28.03.01 | 1.28.03.01 |

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| SAS 6/iR | | | |  
| Adapter | 1.28.03.01 | 1.28.03.01 | 1.28.03.01 |

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| SAS 6/iR | | | |  
| Modular | 1.28.03.01 | 1.28.03.01 | 1.28.03.01 |

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LSI 1020 on	Not	Not	Not
a PowerEdge	Applicable	Applicable	Applicable
1600SC			

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LSI 1030 on	Not	Not	Not
a PowerEdge	Applicable	Applicable	Applicable
1750			

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| PERC H800 | 4.31.1.32 | 4.31.1.64 | 4.31.1.64 |  
| Adapter | | | |

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| PERC H700 | 4.31.1.32 | 4.31.1.64 | 4.31.1.64 |  
| Integrated | | | |

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| PERC H700 | 4.31.1.32 | 4.31.1.64 | 4.31.1.64 |  
| Adapter | | | |

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| PERC H700 | 4.31.1.32 | 4.31.1.64 | 4.31.1.64 |  
| Modular | | | |

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| PERC H200 | 2.0.12.10 | 2.0.12.10 | 2.0.12.10 |  
| Adapter | | | |

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| PERC H200 | 2.0.12.10 | 2.0.12.10 | 2.0.12.10 |  
| Integrated | | | |

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| PERC H200 | 2.0.12.10 | 2.0.12.10 | 2.0.12.10 |  
| Modular | | | |

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| 6Gbps SAS | 2.0.12.10 | 2.0.12.10 | 2.0.12.10 |  
| HBA | | | |

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| PERC H310 | | | |  
| Adapter | 5.1.90.32 | 5.1.90.64 | 5.1.90.64 |

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| PERC H310 | | | |  
| Mini | 5.1.90.32 | 5.1.90.64 | 5.1.90.64 |

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| Monolithic | | | |

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| PERC H310 | | | |  
| Mini | 5.1.90.32 | 5.1.90.64 | 5.1.90.64 |

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| Blades | | | |

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| PERC H710 | | | |  
| Adapter | 5.1.90.32 | 5.1.90.64 | 5.1.90.64 |

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| PERC H710 | | | |

| Mini | 5.1.90.32 | 5.1.90.64 | 5.1.90.64 |

| Blades | | | |

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| PERC H710 | | | |

| Mini | 5.1.90.32 | 5.1.90.64 | 5.1.90.64 |

| Monolithic | | | |

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| PERC H710P | | | |

| Adapter | 5.1.90.32 | 5.1.90.64 | 5.1.90.64 |

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| PERC H710P | | | |

| Mini | 5.1.90.32 | 5.1.90.64 | 5.1.90.64 |

| Blades | | | |

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| PERC H710P | | | |

| Mini | 5.1.90.32 | 5.1.90.64 | 5.1.90.64 |

| Monolithic | | | |

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| PERC H810 | | | |

| Adapter | 5.1.90.32 | 5.1.90.64 | 5.1.90.64 |

-----  
| PERC S100 | | | |

| | 2.0.0-0162 | 2.0.0-0162 | 2.0.0-0162 |

-----  
| PERC S300 | | | |

| | 2.0.0-0162 | 2.0.0-0162 | 2.0.0-0162 |

-----  
| PERC S110 | | | |

| | 3.0.0.0134 | 3.0.0.0134 | 3.0.0.0134 |

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\*\*\* Linux Drivers for PERC 4/SC, 4/DC, 4e/DC, 4/Di,  
 4/IM, 4e/Si, 4e/Di, CERC ATA100/4ch, PERC 5/E, PERC 5/i Integrated,  
 PERC 5/i Adapter, SAS 5/iR Integrated, SAS 5/iR Adapter,  
 SAS 5/i Integrated, SAS 5/E Adapter, PERC 6/E Adapter,  
 PERC 6/i Integrated, PERC 6/i Adapter, SAS 6/iR Integrated,  
 SAS 6/iR Adapter, SAS 6/int. Modular, LSI 1020, LSI 1030,  
 PERC H800 Adapter, PERC H700 Integrated, PERC H700 Adapter,  
 PERC H700 Modular, PERC H200 Adapter, PERC H200 Integrated,  
 PERC H200 Modular, 6Gbps SAS HBA Controllers, PERC H310 Adapter,  
 PERC H310 Mini Blades, PERC H310 Mini Monolithic, PERC H710 Adapter,  
 PERC H710 Mini Blades, PERC H710 Mini Monolithic, PERC H710P Adapter,  
 PERC H710P Mini Blades, PERC H710P Mini Monolithic and  
 PERC H810 Adapter Controllers\*\*\*

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Controller	Red Hat	Red Hat	SUSE Linux	SUSE
	Linux	Linux	11 SP2	Linux
	Driver	Driver	64-Bit	10 64-bit
	6.1	5.7	Driver	Driver

-----

PERC 4/SC	Not	Native	Native	Not
	Applicable			Applicable

-----

PERC 4/DC	Not	Native	Native	Native
	Applicable			

-----

PERC 4/DC	Not	Native	Native	Native
	Applicable			

-----

PERC 4e/DC	Not	Native	Native	Native
------------	-----	--------	--------	--------

|            | Applicable |            |            |            |

-----

| PERC 4e/Si | Not        | Native    | Native    | Not        |

|            | Applicable |            |            | Applicable |

-----

| PERC 4e/Di | Not        | Native    | Native    | Not        |

|            | Applicable |            |            | Applicable |

-----

| PERC 4/Di  | Not        | Native    | Native    | Not        |

| on a        | Applicable |            |            | Applicable |

| PowerEdge  |            |            |            |            |

| 2600/ on a  |            |            |            |            |

| 2-processor |            |            |            |            |

| 5U System-XP|            |            |            |            |

-----

| PERC 4/Di  | Not        | Native    | Native    | Not        |

| on a        | Applicable |            |            | Applicable |

| PowerEdge  |            |            |            |            |

| 1750        |            |            |            |            |

-----

| PERC 4/IM  | Not        | Not        | Native    | Not        |

| on a ES3005/| Applicable | Applicable |            | Applicable |

| PowerEdge  |            |            |            |            |

| 1655MC     |            |            |            |            |

-----

| PERC 4/IM  | Not        | Native    | Native    | Not        |

| on a        | Applicable |            |            | Applicable |

| 2 Processor |            |            |            |            |

| 7U Modular  |            |            |            |            |

| System      |            |            |            |            |

-----

| CERC | Not | 2.20.4.4 | Native | Not |

| ATA 100/4CH | | | | Applicable |

-----

| PERC 5/E | Native | Native | Native | Native |

-----

| PERC 5/i | Native | Native | Native | Native |

| Integrated | | | | |

-----

| PERC 5/i | Native | Native | Native | Native |

| Adapter | | | | |

-----

| SAS 5/iR | Native | 4.00.38.02-3 | Native | Native |

| Integrated | | | | |

-----

| SAS 5/iR | Native | 4.00.38.02-3 | Native | Native |

| Adapter | | | | |

-----

| SAS 5/i | Native | 4.00.38.02-3 | Native | Native |

| Integrated | | | | |

-----

| SAS 5/E | Native | 4.00.38.02-3 | Native | Native |

| Adapter | | | | |

| | | | | |

-----

| PERC 6/E | Native | Native | Native | Native |

| Adapter | | | | |

-----

| PERC 6/i | Native | Native | Native | Native |

| Integrated | | | | |

-----  
| PERC 6/i | Native | Native | Native | Native |  
| Adapter | | | | |  
-----

| SAS 6/iR | Native | 4.00.38.02-3 | Native | Native |  
| Integrated | | | | |  
-----

| SAS 6/iR | Native | 4.00.38.02-3 | Native | Native |  
| Adapter | | | | |  
-----

| SAS 6/int. | Native | 4.00.38.02-3 | Native | Native |  
| Modular | | | | |  
-----

LSI 1020 on	Native	Native	Native	Not
a PowerEdge				Applicable
1600SC				
-----

LSI 1030 on	Native	Native	Native	Not
a PowerEdge				Applicable
1750				
-----

| PERC H800 | Native | 00.00.04.27 | Native | Native |  
| Adapter | | | | |  
-----

| PERC H700 | Native | 00.00.04.27 | Native | Native |  
| Integrated | | | | |  
-----

| PERC H700 | Native | 00.00.04.27 | Native | Native |  
| Adapter | | | | |  
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| PERC H700 | Native | 00.00.04.27 | Native | Native |  
| Modular | | | | |

-----  
| PERC H200 | Native | 02.00.00.00 | Native | Native |  
| Adapter | | | | |

-----  
| PERC H200 | Native | 02.00.00.00 | Native | Native |  
| Integrated | | | | |

-----  
| PERC H200 | Native | 02.00.00.00 | Native | Native |  
| Modular | | | | |

-----  
| 6Gbps SAS | Native | 02.00.00.00 | Native | Native |  
| HBA | | | | |

-----  
| PERC H310 | Native | | | |  
| Adapter | | 00.00.05.38 | Native | Native |

-----  
PERC H310	Native			
Mini		00.00.05.38	Native	Native
Monolithic				

-----  
PERC H310	Native			
Mini		00.00.05.38	Native	Native
Blades				

-----  
PERC H710	Native			
Adapter		00.00.05.38	Native	Native

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PERC H710	Native				
Mini		00.00.05.38	Native	Native	
Blades					

---

PERC H710	Native				
Mini		00.00.05.38	Native	Native	
Monolithic					

---

PERC H710P	Native				
Adapter		00.00.05.38	Native	Native	

---

PERC H710P	Native				
Mini		00.00.05.38	Native	Native	
Blades					

---

PERC H710P	Native				
Mini		00.00.05.38	Native	Native	
Monolithic					

---

PERC H810	Native				
Adapter		00.00.05.38	Native	Native	

---

PERC S100	Not	Not	Not	Not	
	Supported	Supported	Supported	Supported	

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PERC S300	Not	Not	Not	Not	
	Supported	Supported	Supported	Supported	

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PERC S110	Not	Not	Not	Not	
	Supported	Supported	Supported	Supported	

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# Prerequisite Drivers and Firmware

You may find that controllers and their features are not displayed by Storage Management on a system that does not meet the driver and firmware requirements. At Storage Management runtime, you can determine whether the system meets the firmware requirements by checking your application log files for notifications on outdated firmware. On SCSI controllers, Storage Management displays the firmware version at runtime. On SAS controllers, Storage Management displays both the firmware and the driver version at runtime.

## Global Support

For information on technical support, visit [www.dell.com/contactus](http://www.dell.com/contactus).

For information on documentation support, visit [support.dell.com/manuals](http://support.dell.com/manuals). On the Manuals page, click Software ->Systems Management. Click on the specific product on the right-side to access the documents.

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