
README.TXT

Adaptec Storage Manager (ASM)
as of April 12, 2010

Please review this file for important information about issues and erratas that were discovered after completion of the standard product documentation. In the case of conflict between various parts of the documentation set, this file contains the most current information.

The following information is available in this file:

1. Software Versions and Documentation
 - 1.1 Adaptec Storage Manager
 - 1.2 Documentation
2. Installation and Setup Notes
 - 2.1 Supported Operating Systems
 - 2.2 Minimum System Requirements
 - 2.3 General Setup Notes
 - 2.4 Linux Setup Notes
 - 2.5 VMware Setup Notes
3. General Cautions and Notes
 - 3.1 General Cautions
 - 3.2 General Notes
4. Operating System-Specific Issues and Notes
 - 4.1 windows - All
 - 4.2 windows 64-Bit
 - 4.3 windows Vista Business and Ultimate
 - 4.4 Linux
 - 4.5 FreeBSD
 - 4.6 Linux and FreeBSD
 - 4.7 VMware
 - 4.8 Unixware and Openserver (SCO)
5. RAID Level-Specific Notes
 - 5.1 RAID 1 and RAID 5 Notes
 - 5.2 RAID 10 Notes
 - 5.3 RAID x0 Notes
 - 5.4 JBOD Notes
 - 5.5 RAID-Level Migration Notes
6. Power Management Issues and Notes
7. ARCCONF Notes
8. Other Issues and Notes

1. Software Versions and Documentation

- 1.1. Adaptec Storage Manager Version 6.5
- 1.2. Documentation on this DVD

PDF format*:

- Adaptec Storage Manager User's Guide for Direct Attached Storage
- Adaptec RAID Controller Command Line Utility User's Guide

*Requires Adobe Acrobat Reader 4.0 or later

HTML and text format:

- Adaptec Storage Manager Online Help
- Adaptec Storage Manager README.TXT file

2. Installation and Setup Notes

- The Adaptec RAID Controllers Installation and User's Guide contains complete installation information for direct attached RAID controllers and drivers. The Adaptec Storage Manager User's Guide contains complete instructions for all utilities and Adaptec Storage Manager software for direct attached storage.

2.1 Supported Operating Systems

- Microsoft windows*:

- o Windows Server 2008, Enterprise, Standard, Datacenter (32-bit, 64-bit)
- o Windows Server 2008 R2, Enterprise, Standard, Datacenter (64-bit)

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- o Windows Server 2003, Enterprise, Standard, Datacenter (32-bit, 64-bit)
- o Windows Server 2003 R2, Enterprise, Standard, Datacenter (32-bit, 64-bit)
- o Windows XP Professional (32-bit, 64-bit)
- o Windows Vista, Premium, Ultimate, Business (32-bit, 64-bit)
- o Windows 7, All versions (32-bit, 64-bit)

*Out-of-box and current service pack

- Linux:

- o Red Hat Enterprise Linux 4.8, IA-32 and x64
- o Red Hat Enterprise Linux 5.4, IA-32 and x64
- o SuSE Linux Enterprise Server 10 SP3, IA-32 and x64
- o SuSE Linux Enterprise Server 11, IA-32 and x64
- o VMware ESX Server 3.5, 4.0

- Unixware:

- o SCO UnixWare 7.1.4

- OpenServer:

- o SCO OpenServer 6.0

- Solaris:

- o Sun Solaris 10 Update 4

- FreeBSD:

- o FreeBSD 6.4, 7.2, 8.0

2.2 Minimum System Requirements

- o Intel Pentium Compatible 1.2 GHz processor
- o 512 MB RAM
- o 135 MB hard disk drive space
- o Greater than 256 color video mode

2.3 General Setup Notes

- You can configure Adaptec Storage Manager settings on other servers exactly as they are configured on one server. To replicate the Adaptec Storage Manager Enterprise view tree and notification list, do the following:

1. Install Adaptec Storage Manager on one server.
2. Start Adaptec Storage Manager. Using the 'Add remote system' action, define the servers for your tree.
3. Open the Notification Manager. Using the 'Add system' action, define the notification list.
4. Exit Adaptec Storage Manager.
5. Copy the following files onto a diskette from the directory where the Adaptec Storage Manager is installed:
 - RaidMSys.ser --> to replicate the tree
 - RaidNLst.ser --> to replicate the notification list
 - RaidSMTP.ser --> to replicate the SMTP e-mail notification list
 - RaidJob.ser --> to replicate the jobs in the Task Scheduler
6. Install Adaptec Storage Manager on the other servers.
7. Copy the files from the diskette into the directory where Adaptec Storage Manager is installed on the other servers.

2.4 Linux Setup Notes

- Because the RPM for Red Hat Enterprise Linux 5 is unsigned, the installer reports that the package is "Unsigned, Malicious Software". Ignore the message and continue the installation.
- To run Adaptec Storage Manager under Red Hat Enterprise Linux for x64, the Standard installation with "Compatibility Arch Support"

is required.

- To install Adaptec Storage Manager on Red Hat Enterprise Linux, you must install two packages from the Red Hat installation CD:

- o `compat-libstdc++-7.3-2.96.122.i386.rpm`
- o `compat-libstdc++-devel-7.3-2.96.122.i386.rpm`

NOTE: The version string in the file name may be different than above. Be sure to check the version string on the Red Hat CD.

For example, type:

```
rpm --install /mnt/compat-libstdc++-7.3-2.96.122.i386.rpm
```

where `mnt` is the mount point of the CD-ROM drive.

- To install Adaptec Storage Manager on Red Hat Enterprise Linux 4, you must install the following package from the Red Hat installation CD:

- o `xorg-x11-deprecated-libs-6.8.1-23.i386.rpm`

NOTE: The version string in the file name may be different than above. Be sure to check the version string on the Red Hat CD.

- To install Adaptec Storage Manager on Red Hat Enterprise Linux 5, you must install one of these packages from the Red Hat installation CD:

- o `libxp-1.0.0-8.i386.rpm` (32-Bit)
- o `libxp-1.0.0-8.x86.rpm` (64-Bit)

- To install Adaptec Storage Manager on Novell Linux Desktop 9 Service Pack 1 for 64-bit systems, you must install two packages from the Novell Linux installation CD:

- `liblcms-devel-1.12-55.2.x86_64.rpm`
- `compat-32bit-9-200502081830.x86_64.rpm`

NOTE: The version string in the file name may be different than above. Be sure to check the version string on the Novell Linux CD.

- To enable ASM's hard drive firmware update feature on RHEL 64-bit systems, you must ensure that the "sg" module is loaded in the kernel. To load the module manually (if it is not loaded already), use the command "modprobe sg".

2.5 VMware Setup Notes

- To install and use Adaptec Storage Manager on the VMware ESX Server:

1. Mount the Adaptec Storage Manager installation CD:

```
mount -r /dev/cdrom /mnt/linux/
```

2. Change to the manager directory on the CD-ROM:

```
cd /mnt/cdrom/linux/manager
```

3. Type one of the following commands to install the 32-bit or 64-bit Linux Adaptec Storage Manager on the VMware ESX Server:

```
rpm --install ./StorMan*.rpm [32-bit]
```

```
rpm --install --nodeps ./StorMan*.rpm [64-bit]
```

4. Type the following command to open the range of ports required by Adaptec Storage Manager to connect remotely:

```
esxcfg-firewall -o 34570:34581,tcp,in,"StorMan"
```

5. Install Adaptec Storage Manager on a Windows or Linux machine.

6. From the Windows or Linux client, connect to the Adaptec

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Storage Manager Agent on the VMware ESX Server using the
ASM GUI.

- On the VMware ESX Server, the Adaptec Storage Manager Agent cannot be monitored from a guest operating system.

3. Adaptec Storage Manager General Cautions and Notes

3.1 General Cautions

- This release supports a maximum of 8 concurrent online capacity expansion (OCE) tasks in the RAID array migration wizard.
- While building or clearing a logical drive, do not remove and re-insert any drive from that logical drive. Doing so may cause unpredictable results.
- Do not move disks comprising a logical drive from one controller to another while the power is on. Doing so could cause the loss of the logical drive configuration or data, or both. Instead, power off both affected controllers, move the drives, and then restart.
- When using Adaptec Storage Manager and the CLI concurrently, configuration changes may not appear in the Adaptec Storage Manager GUI until you refresh the display (by pressing F5).

3.2 General Notes

- Adaptec Storage Manager requires the following range of ports to be open for remote access: 34570-34580 (TCP), 34570 (UDP), 34577-34580 (UDP).
- Adaptec Storage Manager generates log files automatically to assist in tracking system activity. The log files are created in the directory where Adaptec Storage Manager is installed.
 - o RaidEvt.log - Contains the information reported in Adaptec Storage Manager event viewer for all local and remote systems.
 - o RaidEvtA.log - Contains the information reported in Adaptec Storage Manager event viewer for the local system.
 - o RaidNot.log - Contains the information reported in the Notification Manager event viewer.
 - o RaidErr.log - Contains Java messages generated by Adaptec Storage Manager.
 - o RaidErrA.log - Contains Java messages generated by the Adaptec Storage Manager agent.

Information written to these files is appended to the existing files to maintain a history. However, when an error log file reaches a size of 5 Mbytes, it is copied to a new file with the extension .1 and the original (that is, the .LOG file) is deleted and recreated. For other log files, a .1 file is created when the .LOG file reaches a size of 1 Mbyte. If a .1 file already exists, the existing .1 file is destroyed.

- In the Event viewer, Adaptec Storage Manager reports both the initial build task for a logical drive and a subsequent Verify/Fix as a "Build/verify" task.
- When displaying information about a physical device, the device, vendor and model information may be displayed incorrectly.
- After using a hot spare to successfully rebuild a redundant logical drive, Adaptec Storage Manager will continue to show the drive as a global hot spare. To remove the hot spare designation, delete it in Adaptec Storage Manager.

4. Operating System-Specific Issues and Notes

4.1 Windows - All

- The Java Virtual Machine has a problem with the 256-color palette. (The Adaptec Storage Manager display may be distorted or hard to read.) Set the Display Properties Settings to a color mode with greater than 256 colors.
- When you shut down windows, you might see the message "unexpected shutdown". windows displays this message if the Adaptec Storage Manager Agent fails to exit within 3 seconds. It has no affect on file I/O or other system operations and can be ignored.

4.2 Windows 64-Bit

- RAID controllers do not produce an audible alarm on the following 64-bit windows operating systems:
 - o Windows XP Professional x64 Edition
 - o Windows Server 2003 x64 Edition (all versions)

4.3 Windows Vista Business and Ultimate (64-bit versions)

- Flashing a RAID controller on Windows Vista 64-bit systems is not supported in this release of Adaptec Storage Manager.

NOTE: Although you can start the image update wizard with Adaptec Storage Manager on a Windows Vista 64-bit system, the wizard does not run to completion.

4.4 Linux

- When you delete a logical drive, the operating system can no longer see the last logical drive. WORKAROUND: To allow Linux to see the last logical drive, restart your system.
- The controller does not support attached CD drives during OS installation.
- On certain versions of Linux, you may see messages concerning font conversion errors. Font configuration under X-Windows is a known JVM problem. It does not affect the proper operation of the Adaptec Storage Manager software. To suppress these messages, add the following line to your .Xdefaults file:

```
stringConversionWarnings: False
```

4.5 FreeBSD

- Due to an issue with the Java JDialog Swing class, the 'Close' button may not appear in Adaptec Storage Manager windows or dialog boxes under FreeBSD.
- On FreeBSD systems, JBOD disks created with Adaptec Storage Manager are not immediately available to the OS. You must reboot the system before you can use the JBOD.

4.6 Linux and FreeBSD

- If you cannot connect to a local or remote Adaptec Storage Manager installed on a Linux or FreeBSD system, verify that the TCP/IP hosts file is configured properly.

1. Open the /etc/hosts file.

NOTE: The following is an example:

```
127.0.0.1 localhost.localdomain localhost matrix
```

2. If the hostname of the system is identified on the line with 127.0.0.1, you must create a new host line.
3. Remove the hostname from the 127.0.0.1 line.

NOTE: The following is an example:

```
127.0.0.1 localhost.localdomain localhost
```

4. On a new line, type the IP address of the system.

5. Using the Tab key, tab to the second column and enter the fully qualified hostname.
6. Using the Tab key, tab to the third column and enter the nickname for the system.

NOTE: The following is an example of a completed line:

```
1.1.1.1 matrix.localdomain matrix
```

where 1.1.1.1 is the IP address of the server and matrix is the hostname of the server.

7. Restart the server for the changes to take effect.

4.7 VMware

- If you are unable to connect to the VMware ESX server from a remote ASM GUI, even though it appears in the Enterprise View as a remote system, most likely, some required ports are open and others are not. (The ESX server firewall blocks most ports, by default.) Check to make sure that all ports 34570 thru 34581 are opened on the ESX server, as described in Section 2.5, VMware Setup Notes.
- After making array configuration changes in VMware, you must run the "esxcfg-rescan" tool manually at the VMware console to notify the operating system of the new target characteristics and/or availability. Alternatively, you can rescan from the Virtual Infrastructure Client: click on the host in the left panel, select the Configuration tab, choose "Storage Adapters", then, on the right side of the screen, click "Rescan".

4.8 Unixware and Openserver (SCO)

- Firmware update is not supported from ARCCONF (CLI) for SCO operating systems (Unixware, Openserver). To update the firmware on these platforms, you must use the BIOS utility or Adaptec Storage Manager.
- With SCO operating systems, you must create the '/var/log' directory manually to get log files from ARCCONF. If you do not create this directory, ARCCONF will issue the error message "could not open log file: /var/log/..." whenever it tries to create a log file.

5. RAID Level-Specific Notes

5.1 RAID 1 and RAID 5 Notes

- During a logical device migration from RAID 1 or RAID 5 to RAID 0, if the original logical drive had a spare drive attached, the resulting RAID 0 retains the spare drive. Since RAID 0 is not redundant, you can remove the hot spare.

5.2 RAID 10 Notes

- You cannot change the priority of a RAID-10 verify. Setting the priority at the start of a verify has no effect. The priority is still shown as high. Changing the priority of a running verify on a RAID-10 changes the displayed priority until a rescan is done, then the priority shows as high again.
- Performing a Verify or Verify/Fix on an RAID 10 displays the same message text in the event log: "Build/Verify started on second level logical drive of 'LogicalDrive_0.'" You may see the message three times for a Verify, but only once for a Verify/Fix.
- During a migration from a RAID 0 to any redundant logical drive, like RAID 5 or 10, Adaptec Storage Manager shows the status as "Degraded Reconfiguring" for a moment, then the status changes to "Reconfiguring." The "Degraded" status does not appear in the event log.

5.3 RAID x0 Notes

- After building or verifying a leg of a second-level logical drive, the status of the second-level logical drive is displayed as a

"Quick Initialized" drive.

5.4 JBOD Notes

- In this release, ASM deletes partitioned JBODs without issuing a warning message.
- When migrating a JBOD to a Simple Volume, the disk must be quiescent (no I/O load). Otherwise the migration will fail with an I/O Read error.

5.5 RAID-Level Migration Notes

- Always allow a RAID-level migration (RLM) to complete before gathering support archive information (Support.zip). Otherwise, Support.zip will report incorrect partition information. Once the RLM is complete, the partition information will be reported correctly.
- When migrating a RAID 5EE, be careful not to remove and re-insert a drive in the array. If you do, the drive will not be included when the array is rebuilt. The migration will stop and the drive will be reported as Ready (not part of array).

NOTE: Adaptec does not recommend removing and re-inserting any drive during a RAID-level migration.
- When migrating a RAID 6 to a RAID 5, the migration will fail if the (physical) drive order on the target logical device differs from the source; for instance, migrating a four-drive RAID 6 to a three-drive RAID 5.
- Migrating a RAID 5 with greater than 2TB capacity to RAID 6 or RAID 10 is not supported in this release. Doing so may crash the system.
- During a RAID-level migration, ASM and the CTRL+A/BIOS utility show different RAID levels while the migration is in progress. ASM shows the target RAID level; the BIOS utility shows the current RAID level.

6. Power Management Issues and Notes

- You must use a compatible combination of Adaptec Storage Manager and controller firmware and driver software to use the power management feature. All software components must support power management. You can download the latest controller firmware and drivers from the Adaptec web site at www.adaptec.com.
- Power management is not supported under FreeBSD.
- Power management settings apply only to logical drives in the Optimal state. If you change the power settings on a Failed logical drive then force the drive online, the previous settings are reinstated.

7. ARCCONF Notes

- ARCCONF requires the latest drivers to operate properly. Failure to update the drivers may result in the console hanging after a command is issued.
- With Linux kernel versions 2.4 and 2.6, the ARCCONF DELETE <logical_drive> command may fail with a Kernel Oops error message. Even though the drives are removed from the Adaptec Storage Manager GUI, they may not really be deleted. Reboot the controller; then, issue the ARCCONF DELETE command again.

8. Other Issues and Notes

- Cache settings for RAID Volumes, including Read/write cache and MaxIQ cache, have no affect. The cache settings for the underlying logical devices take priority.
- On rare occasions, ASM will report invalid medium error counts on a SATA hard drive or SSD. To correct the problem, use ARCCONF to clear the device counts. The command is:

arcconf getlogs <Controller_ID> DEVICE clear

- Hard Drive Firmware Update Wizard:
 - o Firmware upgrade on western Digital WD5002ABYS-01B1B0 hard drives is not supported for packet sizes below 2K (512/1024).
 - o After flashing the firmware of a Seagate Barracuda ES ST3750640NS hard drive, you MUST cycle the power before ASM will show the new image. You can pull out and re-insert the drive; power cycle the enclosure; or power cycle the system if the drive is attached directly.
- You can perform a "Secure Erase" on a Solid State Drive (SSD) to remove the metadata. However, the drive will move to the Failed state when you reboot the system. To use the SSD, reboot to the BIOS, then initialize the SSD. After initialization, the SSD will return to the Ready state. (A SSD in the Failed state cannot be initialized in ASM.)
- The Repair option in the ASM Setup program may fail to fix a corrupted installation, depending on which files are affected. The repair operation completes successfully, but the software remains unfixed.
- Adaptec Storage Manager may fail to exit properly when you create 64 logical devices in the wizard. The logical devices are still created, however.
- The "Clear logs on all controllers" action does not clear events in the ASM Event Viewer (GUI). It clears device events, defunct drive events, and controller events in the controllers' log files. To clear events in the lower pane of the GUI, select Clear configuration event viewer from the File menu.

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