
README.TXT

Adaptec Storage Manager (ASM)
as of June 7, 2007

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.

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1. Software Versions and Documentation

- 1.1. Adaptec Storage Manager Version 5.10
- 1.2. Documentation on this CD

PDF format*:

- Adaptec Storage Manager User's Guide for Direct Attached Storage
- Command Line Utility User's Guide for Direct Attached Storage
- SnapServer 700i Series User 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 and SnapServer 700i Series User Guide contain complete instructions for all utilities and Adaptec Storage Manager software for direct attached and iSCSI storage.

2.1 Supported Operating Systems

- Adaptec Storage Manager GUI - Direct Attached and iSCSI Storage:

Microsoft Windows 32-Bit:

- o Windows Vista - All versions
- o Windows Server 2003 Enterprise, Standard, and Web Edition
- o Windows XP Professional

NOTE: Although you can select the iSCSI Storage Setup option when installing ASM on Windows 2000, iSCSI storage is not supported on that operating system.

Microsoft Windows for EM64T and AMD-64:

- o Windows Vista Business and Ultimate
- o Windows Server 2003 Enterprise, Standard, and Web Edition*
- o Windows XP Professional

Linux 32-Bit:

- o Red Hat
 - o Red Hat EL 3.0 AS/ES/WS*
 - o Red Hat EL 4.0 AS/ES/WS*
 - o Red Hat EL 5.0 AS/ES/WS*
- o SuSE
 - o SuSE Linux Enterprise Server 9*
 - o SuSE Linux Enterprise Server 10*

Linux for EM64T and AMD-64:

- o Red Hat
 - o Red Hat EL 3.0 AS/ES/WS*
 - o Red Hat EL 4.0 AS/ES/WS*
 - o Red Hat EL 5.0 AS/ES/WS*
- o SuSE
 - o SuSE Linux Enterprise Server 9*
 - o SuSE Linux Enterprise Server 10*
- o VMware
 - o VMware ESX Server 3.0.0, 3.0.1

- Adaptec Storage Manager GUI - Direct Attached Storage only:

Microsoft Windows 32-Bit:

- o Windows 2000 Server and Advanced Server
- o Windows 2000 Professional

Netware:

- o Novell Netware 6.5*

UnixWare:

- o SCO UnixWare 7.1.4

OpenServer:

- o SCO OpenServer 6.0

Solaris:

- o Sun Solaris 10 Update 1

*Out-of-box and current quarterly update or service pack

- Adaptec Storage Manager Management Service:

- o Microsoft Windows - All versions
- o Red Hat EL 4.0, 5.0 (32-Bit/64-Bit)*
- o SuSE Linux Enterprise Server 9, 10 (32-Bit/64-Bit)

*Management service is a 32-bit application on 64-bit RHEL 5.0.

- Adaptec Storage Manager Provisioning agent:

- o Microsoft Windows Server 2003 (32-Bit/64-Bit)

- Adaptec Storage Manager multi-path I/O driver (DSM):

- o Microsoft Windows Server 2003 (32-Bit/64-Bit)

- Adaptec Storage Manager VDS provider:

- o Microsoft Windows Server 2003 R2 (32-Bit/64-Bit)
- o Microsoft Windows Vista (32-Bit/64-Bit)

- Adaptec Storage Manager VSS provider:

- o Microsoft Windows Server 2003 R2 (32-Bit/64-Bit)

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 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

- 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-1.0.0-8.386.rpm (32-Bit)
 - o libXp-1.0.0-8.x86_64.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 run Adaptec Storage Manager under Red Hat Enterprise Linux AS 3 Quarterly Update 3 for AMD64, you must add the 'noexec32=off' argument to the boot kernel command line. Then, restart the system.

2.5 VMware Setup Notes

- To install Adaptec Storage Manager on the VMware ESX Server:
 1. Insert the Adaptec Storage Manager application CD into the CD-ROM drive.
 2. Type the following command to install the 32-bit Linux Adaptec Storage Manager on the VMware ESX Server:

```
rpm -ivh RaidMan-8.40.i386.rpm
```
 3. Install Adaptec Storage Manager on a Windows or Linux machine.
 4. From the Windows or Linux client, connect to the Adaptec Storage Manager agent on the VMware ESX Server using the ASM GUI.
- The Adaptec Storage Manager agent on the VMware ESX Server cannot be monitored from a guest operating system.
- The VMware ESX Server firewall must have specific ports enabled for incoming and outgoing traffic. The default ports Adaptec Storage Manager uses for connection are 34570 to 34580.

2.6 iSCSI Storage Setup Notes

- For proper operation of Adaptec Storage Manager and the Management Service on Windows XP, you must unblock 'javaw' in the Windows XP firewall:
 1. Unblock 'javaw' in the Windows firewall.
 2. Under Windows firewall -> Exceptions, click Add port. Enter name. In the port field enter 8003. Select TCP. Then, click OK.
 3. Restart the Windows firewall.
- For the Management Service to operate properly, TCP port 8080 and 8003 must be open.
- For a VMware initiator, the 'Uses permanent discovery session' option (in the initiator Advanced settings) is required.
- You can only add a Management Service from an Adaptec Storage Manager GUI running on Windows or Linux. The iSCSI Storage node does not even appear in the GUI on operating systems other than Windows and Linux.

3. Adaptec Storage Manager General Cautions and Notes

3.1 General Cautions

- While building a pool or (for direct attached storage) clearing

a pool, do not remove and reinsert any drive from that pool. Doing so may cause unpredictable results.

- Do not move drives containing a pool or volume from one controller to another while the power is on. Doing so could cause the loss of the pool 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 the Adaptec Storage Manager is installed.
 - o RaidEvt.log - Contains the information reported in the Adaptec Storage Manager event viewer for all local and remote systems.
 - o RaidEvtA.log - Contains the information reported in the 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, if any of the files reach a size of 200,000 bytes, the file is copied to a new file with the extension .OLD and the original (that is, the LOG file) is deleted and recreated. If a .OLD file already exists, the existing .OLD file is destroyed.

- The blink LED feature is supported for management-processor-enabled enclosures only.
- In the Event viewer, Adaptec Storage Manager reports both the initial build task for a pool and a subsequent Verify/Fix as a "Build/Verify" task.
- Task priority is not retained after rebooting. If you change a priority to LOW or MEDIUM, and reboot, the controller resets the priority to the default (HIGH).
- 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

pool, information about the hot spare drive may not display as expected. Adaptec Storage Manager may continue to display it as a global hot spare.

4. Operating System-Specific Issues and Notes

4.1 All

- Adaptec Storage Manager will not start on a system that uses only 16 colors. Adaptec Storage Manager supports a minimum of 256 colors. See section 4.2 for a special note about Windows color requirements.
- If the Adaptec Storage Manager GUI does not repaint correctly, select the View->Refresh menu item to repaint the screen.

4.2 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.
- If the network connection is disconnected while the Adaptec Storage Manager agent is running, the agent cannot communicate with the Adaptec Storage Manager GUI. As a result, Adaptec Storage Manager will not report task status in the Event viewer. Reestablish network communication; then, restart the Adaptec Storage Manager agent and GUI.
- 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.

4.3 Windows 2000

- More event notifications are generated than degraded pools. Example: in a configuration with four RAID 5s sharing three drives, one failed drive causes six notifications--one for each of the affected pools, plus two extra for the second pool.

4.4 Windows for EM64T and AMD-64

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

4.5 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 run the image update wizard from Adaptec Storage Manager on a Windows Vista 64-bit system, the wizard does not run to completion.

4.6 Linux

- When you delete a pool, the operating system can no longer see the last pool. WORKAROUND: To allow Linux to see the last pool, restart your system. For iSCSI Storage (only), you can restart the iSCSI daemon or reload the iSCSI HBA driver.
- The controller does not support attached CD drives during OS installation.
- To remotely manage a Linux system from a Windows system, you must use the standalone GUI.
- If you cannot connect to a local or remote Adaptec Storage Manager installed on a Linux 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 changes to take effect.

- 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
```

- On rare occasions, the online help system may generate a Java exception. This is due to a known problem in the HTML rendering section of JFC/Swing.

4.7 Novell NetWare

- When starting the NetWare operating system, the Adaptec Storage Manager agent may fail to start. A message "The Storage Manager

agent failed to start" displays when starting the server.

The server is unable to load the Storage Manager agent. This is usually caused by loading Java before the Storage Manager agent. In the file Autoexec.ncf, move the line "LOAD RAIDAGNT -BOOT" so that it is before any lines that reference Java.

- A NetWare system can run only one instance of the Adaptec Storage Manager agent.
- Under Novell NetWare 6.5, you cannot initialize a drive using Adaptec Storage Manager. You must use the BIOS Array Configuration Utility (ARC).

5. RAID Level-Specific Notes

5.1 RAID 1 and RAID 5 Notes

- During pool migration from a RAID 1 or RAID 5 to a RAID 0, if the original pool had a spare drive attached, the resulting RAID 0 retains the spare drive.

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 pool of pool 'Pool_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 pool 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 pool, the status of the second-level pool is displayed as a "Quick Initialized" pool.

6. Other Issues and Notes

6.1 Direct Attached Storage Notes

- While a drive is being cleared, do not try to include it in a new pool. Doing so may cause unpredictable results.
- If you initialize one or more drives in a snapshot source pool, the snapshot target cannot be deleted. To avoid creating a snapshot drive that cannot be deleted, you must delete the snapshot drive first, before you initialize the drives in the source pool. Note that you can only delete a snapshot with the CLI.

- 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.

6.2 iSCSI Storage Notes

- When no pool space is available, all snapshots within the pool go offline.
- If you create a pool, reboot your iSCSI Storage appliance with an alternative image, then delete the pool, the pool appears with an offline status when you reboot with the original image. You cannot delete an offline pool.
- If you change the IP address of a controller used in a mirror, you may see the error message "N-way mirroring not supported" when you try to create a mirror on that controller. To avoid this error, use the CLI to update the corresponding entry in the controller list for each mirror partner controller to reflect the address change. If the controller is no longer a mirror partner, remove the entry.
- In a configuration with multiple iSCSI storage appliances, if you remove a drive used in a pool, all remaining drives in the pool may disappear from the GUI and CLI device list. To refresh the GUI and CLI device list, you must power down and power up the appliance.
- Under rare conditions, configuration changes made with the Adaptec Storage Manager GUI or CLI may be lost when you reboot your iSCSI storage appliance with an alternate image.
- When you export multiple pools, Adaptec Storage Manager displays only the most recent one in the Logical devices view. When you import a RAID configuration, the next most recent foreign pool is displayed; and so on.
- When setting advanced options for an iSCSI initiator, Adaptec Storage Manager and the CLI use different names for the same option: 'Separate status PDU' and 'Piggybacking of SCSI status', respectively.
- Drive numbering in Adaptec Storage Manager and the CLI is not consistent. Adaptec Storage Manager uses the drive's WWN (World Wide Name). The CLI uses the drive's device ID.
- When creating snapshots of one or more volumes, the Microsoft VSS provider may timeout, resulting in an incomplete snapshot set.
- Do not export a pool with the CLI EXPORT command while it is rebuilding or synchronizing. It will appear as an 'alien' pool when you move it to a new iSCSI storage appliance. You cannot import an alien pool.
- Be patient when importing a foreign pool with the CLI IMPORT command. It may take up to 3 minutes for the system to recognize the drives and verify the meta data before the pool appears in the pool list.
- In the Adaptec Storage Manager Properties panel, some properties

for enclosure management devices (JBODs) are blank (unpopulated).

- On rare occasions, Adaptec Storage Manager may report that there is insufficient space to create a mirror plex. WORKAROUND: Press F5 to refresh; then, try again.
- A recurring job that creates and mounts a snapshot on the same drive will fail on the second and all subsequent attempts. WORKAROUND: Free the drive before the next attempt.
- When you create or reassign a volume, Adaptec Storage Manager includes network drives (mapped by all users of the same machine) in the list of mount points. If the drive is already in use, the mount operation fails.
- For an iSCSI storage appliance configured with UPS, if the UPS broadcasts that it's about to shut down, the iSCSI storage appliance will only shutdown if it is monitoring the UPS via SNMP.
- If authentication is set on an exported pool, it must be re-set when you import the pool. The original authentication settings are not retained when the pool is imported.
- A management service with two NICs can be added to the Adaptec Storage Manager Enterprise view twice.

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