Release notes for the ASC-29320LPE dated: February 27, 2007

This release notes contains the following:

1. Description of the release
2. Supported hardware
3. Supported Operating Systems
4. Major functional changes
5. Prerequisites of using the Software
6. Tested Configuration
7. Known Issues
8. Windows Registry Parameters

1. Description of the Release:
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Date of release: February 27, 2007

This is the official software release containing the list of software components listed in the section 3 of the release note.

2. Supported Hardware:
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The software release supports the following hardware listed below:

a. Adaptec SCSI Card 29320LPE Ultra320 PCIe SCSI Controller

The operating system drivers listed under 3.1 also support the following hardware:

b. Adaptec SCSI Card 29320ALP-R Ultra320 PCI-X SCSI Controller
c. Adaptec SCSI Card 29320A-R Ultra320 PCI-X SCSI Controller
d. Adaptec SCSI Card 39320A-R Dual Channel Ultra320 PCI-X SCSI Controller
e. Adaptec SCSI Card 39320-R Ultra320 PCI-X SCSI Controller
f. Adaptec SCSI Card 39320D-R Dual Channel Ultra320 PCI-X SCSI Controller
g. Adaptec SCSI Card 39320D-R Dual Channel Ultra320 PCI-X SCSI Controller
h. Adaptec SCSI Card 29320LP-R Ultra320 PCI-X SCSI Controller
i. AIC-7901B Single Channel 64-bit PCI-X Ultra320 SCSI ASIC
j. AIC-7901B Single Channel 64-bit PCI-X Ultra320 SCSI ASIC
k. AIC-7902B Dual Channel 64-bit PCI-X Ultra320 SCSI ASIC
l. AIC-7901A Single Channel 64-bit PCI-X Ultra320 SCSI ASIC
m. AIC-7902A4 Dual Channel 64-bit PCI-X Ultra320 SCSI ASIC

3. List of Software deliverables:
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These are the following set of deliverables for this release:

3.1 Operating System Drivers:
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Windows Driver 32-bit and 64-bit (AMD & EM-64T) - v7.0.0.6

Supported OS:
- Windows Server 2003 x64 Edition Service Pack 1
- Windows XP Professional Service Pack 2
- Windows XP Professional x64 Edition Service Pack 1
- Windows Vista x86, x64

Linux Driver - v2.0.25

Supported OS:
- Red Hat Enterprise Linux 4.0, IA-32 and x64, OOB and QU4
- SUSE Linux Enterprise Server 9, IA-32 and x64, OOB and SP3
- SUSE Linux Enterprise Server 10, IA-32 and x64, OOB

Netware Driver - v3.03.13

Supported OS:
- Netware 6.5 SP5

3.2 BIOS and DOS Tools:
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1. Expansion ROM BIOS for ASC-29320LPE only - v4.31.2
2. Flash Utility (Flash6.exe) - v6.0

4. Major Functional changes:
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1. added support for Adaptec ASC-29320LPE Ultra320 PCIe SCSI Controller

5. Prerequisites of Using the Software:
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- BIOS and the driver should use above stated software version.

6. Tested Configuration:
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The software was tested with the Hardware Supported list on the motherboard with the IBM PC/AT compatible PCIe platforms. These are the various components used during the testing:
- IBM x86 PC/AT compatible platforms with Intel Xeon, Intel Pentium, or AMD Opteron
- Tested with direct attached Ultra160 and Ultra320 disk drives, tape devices and enclosures

7. Known Issues/Limitations:
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1. Multi-initiator configurations are supported with Ultra160 and previous generation hard drives:
   Current generation Ultra320 hard drives do not support this configuration.

2. An Event 9 in the Event Viewer may occur with a DLT 7000 or 8000 tape device:
   If this occurs, install the registry fix (MAXIO64K.REG) located in the Windows Driver directory.
3. Ultra320 hard disk drive support
   Adaptec only supports Ultra320 hard drives that have the latest firmware available. Please check with your hard drive manufacturer to ensure you have the latest version.

4. Linux SLES 9 Installation:
   During SLES 9 installation and during reboots, the following messages appears:
   "kernel BUG at include/linux/dcache.h:285!"
   Workaround: Use the following boot option during installation
   broken_modules=aic7xxx

5. Linux - lspci command reports the wrong controller
   The Device ID for 29320LPE and 29320ALP is same "0x8017". lspci prints the controller info based on the Device IDs. Since lspci tool in its list of pci.ids has 0x8017 marked as "Adaptec ASC-29320ALP", it prints it as ASC-29320ALP instead of ASC-29320LPE.

6. Linux - rmmod aic79xx failure
   rmmod aic79xx fails with the following error:
   ERROR: aic79xx module is in use
   On some Linux OSs, the dmraid stamps its metadata on the scsi disks which are attached to Adaptec SCSI controllers. This is evident when we look into "used by" column in the output of lsmod command. The "used by" column shows a number more than "0".
   Use the following as a workaround:
   $dmraid -r -E /dev/sda
   Here "/dev/sda" is the device attached to Adaptec SCSI 29320LPE controller.

8. Windows REGISTRY PARAMETERS:
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8.1 Driver Specific Registry Parameters

WARNING: Altering or adding these driver parameters incorrectly can render your system inoperable. Use them with caution.

Follow the instructions below to enter the registry values that affect the configuration information for Adaptec SCSI Card drivers. All SCSI Cards supported by the installed driver are affected by the values you enter here.

Each driver has its own "key" reference. In this example, the Ultra320 key is used (adpu320).

To enter driver-specific parameters, follow these steps:

1) Select Run from the Start button.
2) Type "regedt32" and press Enter.
3) Open the registry list to the following location:
   HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\adpu320\Parameters\Device\

   If the \Parameters\Device\ keys already exist, skip to step 6 below to begin entering parameters.
   If the keys do not yet exist, you will need to create them by continuing with step 4.

4) Click on the adpu320 key. Select the Add Key from the Edit menu; Type "Parameters" in the Key Name edit box. Leave the Class edit box blank.
5) Click on the Parameters key. Select the Add Key from the Edit menu; Type "Device" in the Key Name edit box. Leave the Class edit box blank. To specify a certain host adapter, append Device with the number of the host adapter. For
example, type "Device0" for the first host adapter, "Device1" for the second, etc. If you omit the host adapter number, the configuration information applies to all supported host adapters.

6) Click on the Device key. Select Add Value from the Edit menu; type "DriverParameters" in the Value Name edit box. Enter the Data Type and press Enter. A String Editor text box appears. Enter valid parameters in the text box. When entering multiple parameters, each parameter must be separated by a space. To enter additional values, repeat step 6.

Note: Changes made with the Registry Editor do not take effect until you shut down and then restart your system.

------------------------------------------------------------------------
Option: /MAXTAGS=[value]
Definition: Specifies a tagged command queue depth per target.
Data Type: REG_SZ
Possible Values: 1-255
Default Value: 32
------------------------------------------------------------------------
Option: /INSTRUMENTATION
Definition: Enables instrumentation support in the driver.
Data Type: REG_SZ
Possible Values: N/A
Default Value: N/A
------------------------------------------------------------------------
Option: /INSTR_ERRLOG_Z=[value]
Definition: Specifies the length of the instrumentation error log.
Data Type: REG_SZ
Possible Values: 0-127
Default Value: 32
------------------------------------------------------------------------
Option: /RDSTRM
Definition: Enables read streaming to be negotiated for all drives.
Data Type: REG_SZ
Possible Values: N/A
Default Value: Off
------------------------------------------------------------------------
Option: /MAXIMUMSGLIST=[value]
Definition: Sets the maximum transfer size for an individual command. The formula is: 
TRANSFER SIZE = PAGE_SIZE * (number of elements -1)
Data Type: REG_SZ
Possible Values: 2-255
Default Value: 65
------------------------------------------------------------------------

8.2. Windows SCSI Driver Parameters

WARNING: Altering or adding these driver parameters incorrectly can render your system inoperable. Use them with caution.

Follow the instructions below to enter the registry values that affect how the Windows SCSI manager interprets the generic configuration information of SCSI device drivers. All SCSI Cards supported by the installed driver are affected by the values you enter here.
Follow the instructions below to enter the registry values that affect the configuration information for Adaptec SCSI Card drivers. All SCSI Cards supported by the installed driver are affected by the values you enter here.

Each driver has its own "key" reference. In this example, the Ultra320 key is used (adpu320). To enter Windows parameters, follow these steps:

1) Select Run from the start button.
2) Type "regedt32" and press Enter.
3) Open the registry list to the following location:

HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\adpu320\Parameters\Device\%

If the \Parameters\Device\ keys already exist, skip to step 6 below to begin entering parameters. If the keys do not yet exist, you will need to create them by continuing with step 4.

4) Click on the adpu320 key. Select the Add Key from the Edit menu; Type "Parameters" in the Key Name edit box. Leave the Class edit box blank.
5) Click on the Parameters key. Select the Add Key from the Edit menu; Type "Device" in the Key Name edit box. Leave the Class edit box blank. To specify a certain host adapter, append Device with the number of the host adapter. For example, type "Device0" for the first host adapter, "Device1" for the second, etc. If you omit the host adapter number, the configuration information applies to all supported host adapters.
6) Click on the Device key. Select Add Value from the Edit menu. In the Value Name edit box, enter one of the valid parameter values. Make sure to enter the appropriate Data Type for the value. To enter additional values, repeat step 6.

Note: Changes made with the Registry Editor do not take effect until you shut down and then restart your system.

----------------------------------------------------------------
Option: MaximumLogicalUnit
Definition: This command allows the user to specify how many LUNs the SCSI bus scans for during system initialization.
Data Type: REG_DWORD
----------------------------------------------------------------
Option: NumberOfRequests
Definition: Specifies the maximum number of outstanding or concurrent requests that can be delivered to the SCSI adapter.
Data Type: REG_DWORD
Possible Values: 16-512
Default Value: 255
----------------------------------------------------------------
Option: DisableTaggedQueuing
Definition: If present, tells the SCSI adapter to disable tagged queuing for all devices.
Data Type: REG_DWORD
Possible Values: N/A
Default Value: N/A
----------------------------------------------------------------
Option: DisableDisconnects
Definition: If present, tells the SCSI adapter not to allow any target device disconnect privileges for I/O.
Data Type: REG_DWORD
Possible Values: N/A
Option: DisableMultipleRequests
Definition: Limits the number of commands to each logical
unit to one.
Data Type: REG_DWORD
Possible Values: N/A
Default Value: N/A