

Linux MPT SCSI OS Driver Release Notes

Driver Version: mptlinux-3.03.15

09/01/2006

Compatibility:

- 53C1020, 53C1030, 53C1035 (Scsi Mode)
- FC909, FC919, FC929
- FC919X, FC929X, FC929XL, FC939X, FC949X, FC949ES
- SAS 1064, 1068, 1078
- SAS 1064E, 1068E

Special Notes For This Build:

- No special notes available at this time.

Current Errata

- These drivers do not include disk dump support that is sometimes added by certain distro's. This appears to be replaced by kdump. Here is help for using kdump: <http://lse.sourceforge.net/kdump/>

Driver Release Package Contents

• *Source tarball*

Source tarball is named as: mptlinux-<version>-src.tar.gz

• *RPM Binaries:*

RPM images are named as: mptlinux-<version>-<release>-<os>.<arch>.rpm

where:

| | | |
|-----------|---|--|
| <version> | = | version tag for this rpm |
| <release> | = | release tag for this rpm |
| <os> | = | {rhel4, sles9, sles9sp1, sles9sp2, sles9sp3, nld9} |
| <arch> | = | ia64 – Itanium Processor x86_64 – Opteron Processor, w/ x86_64 install i686 – i686 or later processor (Red Hat) i586 – x86 installations (SuSE) |

• *Driver Update Disks*

dud images are named : mptlinux-<version>-<release>-<os>.<arch>.dd.gz

• *DKMS*

DKMS tarball is named : mptlinux-<version>-<release>.dkms.tar.gz

This is an rpm that provide prebuilt binaries for major releases, and will compile drivers on the fly for the other kernels. Here is help on dkms:
<http://linux.dell.com/dkms/dkms.html>

SuSE:

i686

SLES 10

Gold (2.6.16.21-0.8) (bigsmpt, debug, default, kdump, smpt, xen)

x86_64

SLES9

Gold (2.6.16.21-0.8) (debug, default, kdump, smpt, xen)

ia64

SLES9

Gold (2.6.16.21-0.8) (debug, default)

Major Changes For Version 03.03.15

Release Date: 09/01/2006

General Changes

Defect fixes

- **Issue:** csmitool – ioctl get_raid_config, doesn't display a sas address when drive is pulled.
Reported by: Customer.
To Reproduce: Create a IM volume, and pull a drive. Use csmitool to display raid_config, and notice the sas_address.
Description of Change: Add a link list inside the volume vtarget instance that maintains the sas address, target id, and channel for all the hidden raid components. When a drive is pulled, the old data is retained. When a new target is added to existing volume, the new raid component info is added into the link list. If there is an target id/channel that match's the new device, the old data is replaced with the new data.

Major Changes For Version 03.03.14

Release Date: 08/25/2006

General Changes

Functionality

- Add support to display driver version when using the modinfo utility.
- vdev sanity check in mptfc_qcmd.
- Added lsiutil version 1.46.06

- Added updated csmitest_oem v90 support

Defect fixes

- **Issue:** csmitool displays hotspare in IS volumes.
Reported by: Customer.
To Reproduce: Create two volumes that are IM and IS, and a hostpare. Then using csmitool to display select GET_RAID_CONFIG, verify that hotspare is only listed for the IM volume.
Description of Change: Added check for volume type.

Major Changes For Version 03.03.13-2

Release Date: 08/16/2006

General Changes

Functionality

- Removed xenpae configuration from the i686 build.
- Added Power PC `ppc64` driver update disks and rpms.

Defect fixes

- **Issue:** Unresolved symbols using driver update disks.
Reported by: Software test.
To Reproduce: Installing SLES10, with DUD, selecting F5 option. Cntrl^Alt^F3 will display unresolved symbols when the driver are loaded from DUD.
Description of Change: The Yast installer was unloading media drivers in incorrect order when attempting to load the DUD drivers. The unresolved symbols came because the media drivers were

never unloaded. The fix was adding a file on the dud called module.order, so the installer knows what order drivers need to be unloaded and loaded.

Major Changes For Version 03.03.13

Release Date: 08/08/2006

General Changes

Functionality

- Added debug printks for new events
MPI_EVENT_SAS_BROADCAST_PRIMITIVE
MPI_EVENT_SAS_INIT_DEVICE_STATUS_CHANGE
MPI_EVENT_SAS_INIT_TABLE_OVERFLOW
MPI_EVENT_SAS_SMP_ERROR
- removed obsolete flag ioc->reload_fw

Defect fixes

- **Issue:** Path is not being added in a Controller Offline/Online, No REPORT_LUNS command was sent in the Ctlr Plug-back
Reported by: Customer.
To Reproduce: By adding/removing/adding cables, offline/online target mode controllers using serial console commands `rdacMgrAltCtlResetHold` and `rdacMgrAltCtlResetRelease`
Description of Change: Fix's surrounding issuing TUR during device add. The driver needed to send the TUR's on one sec intervals, and only retry on sam_status_busy, unit_attention, and device becoming ready.
- **Issue:** The LSI HBA driver gives a Panic after a Cable Pull
Reported by: Customer.

To Reproduce:

1. It's a 1x1 setup with one host connected to one array (ksystone)
2. Install HBA driver & MPP
3. Map 32 LUNs to the host
4. Reboot the host
5. After the host boots up, start I/O's to all the 32 LUNs
6. Pull the Cable on CtrlB
7. After the FW timer of 144secs expires, the HBA driver started removing the devices and that's when the HBA driver gave a Panic and the Panic stack is as follows with the EIP at "mptsas_qcmd+0x8/0x28 [mptsas]"

Description of Change: Added a pointer sanity check in mptsas_qcmd.

- **Issue:** Deletion/Creation of volumes after reboots results in doubled volume entries in SG

Reported by: Software Test

To Reproduce:

```
cfggen 0 create im 2000 0 1 qsync noprompt
cfggen 0 create ime 2000 2 3 4 5 noprompt
cfggen 0 hotspare 6
```

Reboot, and then run:

```
cfggen 0 delete noprompt
```

Then run the volume creation commands again.

View the SG device listing using "sg_map -i -x". Where the primary drives should be listed will be listings for the volumes, in addition to the normal entries for the volumes later down in the list.

Description of Change: Additional handling of MPI_EVENT_RAID_RC_PHYSDISK events.

- **Issue:** After deleting an inactive volume, the driver does not re-add the disks

Reported by: Software Test

To Reproduce: Delete an inactive volume, the drives that were in that volume are not added by the driver.

According to 'dmesg', we receive the events for it, but they are just not added.

/proc/scsi/scsi and 'sg_map -i -x' do not show any of the disks that were in the inactive volume.

Description of Change: Additional handling of MPI_EVENT_RAID_RC_PHYSDISK events.

- **Issue:** Taking way too long to recover from FAULT STATE

Reported by: Software Test

To Reproduce: Make filesystems on both volumes and start copies/compares between the two.

Pull the primary on the IM volume, wait 30 seconds after the volume has started resyncing with the hotspare and then pull the first drive of the IME volume. Wait for the IM volume to finish resyncing and then pull the third drive of the IME volume.

30 seconds later, pull the old hotspare. After pulling the old hotspare, the card blinks a 801f fault. Linux takes anywhere from 10–20 minutes to recover from the fault (entered as separate Linux issue #392). IO does not fail, and resumes after recovery from the fault.

Description of Change: In error handling threads, issue hard reset when this is not operational.

- **Issue:** CSMI: SAS Address of hot spare drive is all zero's in the data returned from CSMI GET_RAID_CONFIG ioctl call

Reported by: Customer

To Reproduce: Create an IM volume with a hot spare drive and using csmitest tool issue CC_CSMI_SAS_GET_RAID_CONFIG call to display Drives information and note the SAS Address field for the hot spare drive

Description of Change: Moved memset of buffer before filling in SAS Address for a hot spare drive

- **Issue:** CSMI Some of the fields returned by GET_RAID_CONFIG CSMI ioctl call are not filled-in or returns default values for hot spare drives

Reported by: Customer

To Reproduce: Create an IM volume with a hot spare drive and using csmitest tool issue CC_CSMI_SAS_GET_RAID_CONFIG call to display Drives information and note that usBlockSize, uDriveIndex are returned zero and bDriveType is returned UNKNOWN

Description of Change: Filled in usBlockSize, uDriveIndex, and bDriveType fields for hot spare drives in GET_RAID_CONFIG ioctl

Major Changes For Version 03.03.12

Release Date: 07/28/2006

General Changes

Functionality

- Added CSMI IOCTL Support, v90
 - CSMI_SAS_GET_CNTLRL_CONFIG – updated uControllerFlags
 - CSMI_SAS_GET_RAID_INFO – updated uMaxDriverPerSet and implemented new fields
 - CSMI_SAS_GET_RAID_CONFIG – updated bDriveCount, bStatus, bInformation, union.Drives and implemented new fields
 - CSMI_SAS_GET_RAID_FEATURES – new IOCTL
 - CSMI_SAS_GET_RAID_CONTROL – new IOCTL
- Updated CSMI_SAS_GET_CONNECTOR_INFO ioctl by filling in data from Manufacturing Page 7

Major Changes For Version 03.03.11

Release Date: 07/14/2006

General Changes

Functionality

- Adding v1.5.13 MPI Headers Updates.
- Adding 1078 Support.
- Transport Layer Retries support added – OEM specified cdb only for tape devices.
- Adding sas nexus loss support, also known as port down retry support.
- Adding support for sas enclosures with smart drives.
- Adding mpt_cmd_retry_count – during hotadding device, the driver will issue test_unit_ready for waiting for end device to get into state to accept commands. The retry count is to specify how many retries.
- Adding mpt_qas command line option – for disabling Quick Arbitration Select feature for entire host (only mptspi).
- Adding new debug prints for new sas loginfo : internal device reset, abort task set internal, clear task set internal, query task internal. Also adding new strings in iop_code_str[] and pl_code_str[].
- Initializing aen_event_read_flag to zero after host reset.
- SAS hot plug remove handling: the target reset is moved from slave destroy to hotplug threads. The vtarget->deleted flag is used to prevent further IO to device.
- Removing 1066/1066E support pci device recognition.
- Removing mpt_pq_filter command line option.
- Converting pci device id's using the MPI_MANUFACTURE_DEVICEID_XXX and MPI_MANUFACTURE_DEVID_XXX defined in lsi/mpi_cnfh.h.
- Remove MPI_TARGET_FLAGS_VALID_INQUIRY flag.
- Converting define SASDEBUG to MPT_DEBUG_SAS.
- Removing oem references.
- Returning IRQ_NONE from interrupt handler to let upper layers know when driver didn't process the interrupt.

- SendEventAck, called when firmware sends an asyn event to driver. This routine was cleaned up.
- Fix's to insure download boot could occur when either channel of 1030 is reset. Necessary in order for onboard controller in flashless environment to become operational.

Defect fixes

- **Issue:** Lack of Wide Port Support
Reported by: Developer
To Reproduce: Add wide target. The end device reported for each phy.
Description of Change: Wide Port Support (detection of wide/narrow ports, reporting end device once for every phy), adding debug level MPT_DEBUG_SAS_WIDE, adding target alloc and destroy entry points.
- **Issue:** panic when loading mptctl at the same time as one of the fusion llds (mptsas/mptfc/mptspi)
Reported by: Customer
To Reproduce: Add wide target. The end device reported for each phy.
Description of Change: Fix in mpt_device_driver_register, check for NULL pointer pcidev->driver.
- **Issue:** abort_task reported success, when it actually failed.
Reported by: Developer
To Reproduce: Added hd->tm_iocstatus flag in interrupt routine, and returns proper status
Description of Change: Additional sanity checks added to prevent scsi cmd from being double completed during error recovery.

Major Changes For Version 03.03.11

Release Date: 07/14/2006

General Changes

Functionality

- SAS Transport Support
- SPI Transport Support (using generic domain validation)
- FC Transport Support

(This driver base stream created from 3.02.63)