

ReleaseOrder ID:

SCGCQ01579217

Headline:

GCA Release: [LINUX_RH_SL_OEL_CTX_MPT_GEN35_PHASE6.0 - 25.00.00.00-1](#)

Release Version:

25.00.00.00-1

UCM Project:

LINUX_RH_SL_OEL_CTX_MPT_GEN35_PHASE6.0

UCM Stream:

LINUX_RH_SL_OEL_CTX_MPT_GEN35_PHASE6.0_Rel

Release Type:

GCA

State:

Deployed

Release Baseline:

LINUX_RH_SL_OEL_CTX_MPT_GEN35_PHASE6.0_Rel_2018-02-01_GCA@
ISAS35

Release Date:

07-FEB-18

Date Generated:

Apr 12, 2018

Release History

- SCGCQ01534371 - [IT SAS35 Beta Release: LINUX_RH_SL_OEL_CTX_MPT_GEN35_PHASE6.0 - 24.255.08.00-1](#)
- SCGCQ01524691 - [SAS3.5 Phase6 Beta Release- 24.255.07.00](#)
- SCGCQ01514864 - [SAS3.5 Phase6 Beta Release- 24.255.06.00](#)
- SCGCQ01510491 - [SAS3.5 Phase6 Beta Release- 24.255.05.00](#)
- SCGCQ01488224 - [SAS3.5 Phase6 PA4 Release- 24.255.04.00](#)
- SCGCQ01470402 - [SAS3.5 Phase6 PA3 Release- 24.255.03.00](#)
- SCGCQ01460308 - [SAS3.5 Phase6 PA2 Release- 24.255.02.00](#)
- SCGCQ01456049 - [SAS3.5 Phase6 PA1 Release- 24.255.01.00](#)

ReleaseOrder ID:

SCGCQ01534371 [_ Open In CQWeb](#)

Headline:

IT SAS35 Beta Release: [LINUX_RH_SL_OEL_CTX_MPT_GEN35_PHASE6.0 - 24.255.08.00-1](#)

Release Version:

24.255.08.00-1

UCM Project:

LINUX_RH_SL_OEL_CTX_MPT_GEN35_PHASE6.0

UCM Stream:

LINUX_RH_SL_OEL_CTX_MPT_GEN35_PHASE6.0_Rel

Release Type:

Beta

State:

Test_Complete

Release Baseline:

LINUX_RH_SL_OEL_CTX_MPT_GEN35_PHASE6.0-2017-12-15-24.255.08.00-1_REL_1513335750@
ISAS35

Release Date:

18-DEC-17

Date Generated:

Apr 12, 2018

Defects Fixed (1):

ID: SCGCQ01526190

Headline: use scsi_internal_device_block_nowait for RHEL distros greater than RHEL7.3

Description Of Change: RHEL7.4 kernel provides an ABI called scsi_internal_device_block_nowait() which is nonblocking version and could be called from interrupt context. The mpt3sas driver is modified to use the non-blocking versions of the scsi_internal_device_block() from interrupt context.

Issue Description: In RHEL7.4 kernel 3.10.0-657.el7.x86_64 the patch "Commit 669f044 scsi: srp_transport: Move queuecommand() wait code to SCSI core" is added which can make scsi_internal_device_block() sleep and the mpt3sas driver could call this function from an interrupt handler which in turn trigger an "IRQ handler enabled interrupts" complaint.

Steps To Reproduce: Install RHEL7.4 and latest driver in System Under Test.
Connect HBA and attached few drives
Remove drives periodically and observe the complaint "IRQ handler enabled interrupts" or system freeze or call trace.

ReleaseOrder ID:

SCGCQ01524691 [_ Open In CQWeb](#)

Headline:

SAS3.5 Phase6 Beta Release- 24.255.07.00

Release Version:

24.255.07.00-1

UCM Project:

LINUX_RH_SL_OEL_CTX_MPT_GEN35_PHASE6.0

UCM Stream:

LINUX_RH_SL_OEL_CTX_MPT_GEN35_PHASE6.0_Rel

Release Type:

Beta

State:

In_Review

Release Baseline:

LINUX_RH_SL_OEL_CTX_MPT_GEN35_PHASE6.0_Rel_2017-12-06@
ISAS35

Release Date:

15-DEC-17

Date Generated:

Apr 12, 2018

Defects Fixed (3):

ID: SCGCQ01524245

Headline: NVMe task management command is not executed as per NVDAT settings

Description Of Change: Updated driver code for NVMe devices to use proper bit field of Manufacturing page to decide upon whether custom TM method to be used or not.

Issue Description: PL is executed the TM command on NVMe device according to MPI Architecture specification even after setting the custom NVMe TM handling bit in Manufacturing page-11. The expectation is that based on bit settings the command should be executed either via custom handling of NVMe task management or according to MPI Architecture specification.

Steps To Reproduce: NA

ID: SCGCQ01516020

Headline: sles 12 sp3 rpm was built but not named as required in VBAS

Description Of Change: VBAS issue, No code change required.
Works as expected in build server.

Issue Description: Since the build was from VBAS automated tool, the sles 12 sp3 rpm was built but not named as required in VBAS

Steps To Reproduce: NA

ID: SCGCQ01522289 (Port Of Defect SCGCQ01497972)

Headline: IO Timeouts observed while running IO and parallel TaskMgmt test with SATA drives

Description Of Change: Modified driver such that setting of ATA PT command pending flag is moved below the device removed or busy with TM checks and to properly clear the flag in all failure returns between the point of setting the flag and issuing the command to the controller.

Issue Description: In IO path ,Whenever any ATA Pass-through command is received by the driver then the driver will set ATA PT command pending flag to make sure only one ATA Pass-through command is outstanding at a time. Any new I/O command issued to the specific drive will be returned with SAM_STAT_BUSY until the ATA PT command is completed. This flag was set quite early before checking whether device has been removed or the device is busy with task management etc.,
When an ATA Pass-through command is recieved by the driver and if the driver sees the device is removed or busy with TM after setting the "ATA PT command flag then the driver returns the command back to upper layers without actually issuing the command to the firmware. However, the ATA PT command pending flag is not cleared before returning the command and this prevents the driver from sending any new commands to the drive. All new commands will be returned with SAM_STAT_BUSY until the upper layer time out is reached.

The possible use cases where this problem can hit are:

1. If a TM is issued to a SATA drive and before the TM completes if an ATA PT command is issued by some software above the driver (usually SMART monitoring tools in the stack) then the specific drive will be stuck in this state and any new I/O to the drive will get timed out until there is a diagnostic reset.
2. If an write cache enabled drive is disconnected and if a ATA PT command is issued during the short time window between time the drive is marked as removed and before the drive is actually removed, then the next synchornize cache command issued to the removed drive will be stuck for a very large timeout period (nearly 6 minutes) and during that timeout period no new driver addition or removal will be processed by the driver.

Setting of flag early before device removal, invalid dev handle etc., checks causes any new commands to be always returned with SAM_STAT_BUSY and when the driver removes the drive the SML issues SYNC Cache command and that command is always returned with SAM_STAT_BUSY and thus making SYNC Cache command to requeued.

2.If the driver gets an ATA PT command for a SATA drive then the driver set a flag in device specific data structure not to allow any further until the ATA PT command is completed,

Steps To Reproduce: Test Steps: (For case1 listed above)

1. Boot to Linux OS and start the script to issue heavy I/O and Task Mgmt in a loop for all the drives in the configuration.
2. Make sure the background applications are sending ATA PT command in regular interval to the SATA devices attached by checking the system log.
3. The test usually runs for about 5-6 hours and then fails with I/O timeouts.

ReleaseOrder ID: *SCGCQ01514864* [Open In CQWeb](#)
Headline: *SAS3.5 Phase6 Beta Release- 24.255.06.00*
Release Version: *24.255.06.00-1*
UCM Project: *LINUX_RH_SL_OEL_CTX_MPT_GEN35_PHASE6.0*
UCM Stream: *LINUX_RH_SL_OEL_CTX_MPT_GEN35_PHASE6.0_Rel*
Release Type: *Beta*
State: *In_Review*
Release Baseline: *LINUX_RH_SL_OEL_CTX_MPT_GEN35_PHASE6.0_Rel_2017-11-27-Beeta@
\\SAS35*
Release Date: *05-DEC-17*
Date Generated: *Apr 12, 2018*

Defects Fixed (2):

ID: SCGCQ01514520
Headline: Workaround in driver to post 64bit request descriptor to register at offset 0xC0/0xC4 to avoid hitting HW bug
Description Of Change: Driver now posts request descriptors to 0xC0 and 0xC4 offset registers only.
Issue Description: For Ventura series of controllers, driver will use 64 bit request descriptor to send IO to firmware. Earlier driver used to use 32 bit request descriptor for Ventura controllers.

Sending IOs through 32 bit request descriptors to Ventura series of controller results in IO timeout on certain conditions. This error only occurs on systems with high I/O activity on Ventura series controllers.
Steps To Reproduce: NA

ID: SCGCQ01516020
Headline: sles 12 sp3 rpm was built but not named as required in VBAS
Description Of Change: VBAS issue, No code change required.
Works as expected in build server.
Issue Description: Since the build was from VBAS automated tool, the sles 12 sp3 rpm was built but not named as required in VBAS
Steps To Reproduce: NA

ReleaseOrder ID: *SCGCQ01510491* [Open In CQWeb](#)
Headline: *SAS3.5 Phase6 Beta Release- 24.255.05.00*
Release Version: *24.255.05.00-1*
UCM Project: *LINUX_RH_SL_OEL_CTX_MPT_GEN35_PHASE6.0*
UCM Stream: *LINUX_RH_SL_OEL_CTX_MPT_GEN35_PHASE6.0_Rel*
Release Type: *Beta*
State: *Superseded*
Release Baseline: *LINUX_RH_SL_OEL_CTX_MPT_GEN35_PHASE6.0_Rel_2017-11-22-Ph6_Beeta@
\\SAS35*
Release Date: *28-NOV-17*
Date Generated: *Apr 12, 2018*

Defects Fixed (4):

ID: SCGCQ01494556
Headline: OS crashes when drives are hot plugged while loading driver
Description Of Change: As Event enable and Port enable have to be issued as much as close possible, so modified driver to reduce window between issuing of event_unmask and port_enable request being sent to firmware.
Issue Description: During driver load when drives are hot plugged we are observing its corresponding device/drive discovery events before sending port_enable request to firmware.
Steps To Reproduce: Have a setup with DELL based Fury card along with 9400-16e, Cutlass, Falcon

Steps 1: Have the latest driver installed
Step 2: unload the driver using modprobe -r mpt3sas
Step 3: While loading the driver using modprobe mpt3sas logging_level=0x3f8, unplug the drives connected to the 9400-16e card.

ID: SCGCQ01497725
Headline: Memory leak when unloading driver with NVMe flashed SAS35 controller in the system
Description Of Change: While removing NVMe drives - reference count should reach to zero but it was not happening and hence driver was not freeing pcie_device structure's.
Updated driver to fix this reference count mismatch.
Issue Description: Memory leak seen in driver logs for pcie_device.
Steps To Reproduce: 1) Have 9400-16e, 9400-8i, Cutlass and Falcon card in the setup
2) Connect SAS/SATA drives and NVMe drives to SAS35 controllers.
3) Install the latest driver
4) Unload the latest driver.

Observation: Memory leak seen in driver logs.

ID: SCGCQ01509274
Headline: Memory leak, after cable pull and push of SAS/SATA drives with DMD set
Description Of Change: While removing SAS drives - reference count should reach to zero but it was not happening and hence driver was not freeing sas_device structure.
Updated driver to fix this reference count mismatch.
Issue Description: Memory leak seen.
Steps To Reproduce: Step 1 : Have a SAS35 card with an enclosure attached behind an expander

HBA --> Expander --> Enclosure

Step 2 : Set DMD, Run IOs to all the drives attached to the controller
Step 3 : Perform cable pull and push

Observation : Memory leak is observed while unloading driver after performing these tasks.

ID: SCGCQ01504666 (Port Of Defect SCGCQ01496368)
Headline: RHEL7.x: Crash occurred while loading mpt3sas driver with module parameter smp_affinity_enable set to 0
Description Of Change: Check smp_affinity_enable module param before accessing reply_q->affinity_hint.
Issue Description: Crash occurred while loading mpt3sas driver with module parameter smp_affinity_enable set to 0.
Steps To Reproduce: load mpt3sas driver with module parameter smp_affinity_enable set to 0

ReleaseOrder ID: SCGCQ01488224 [Open In CQWeb](#)
Headline: SAS3.5 Phase6 PA4 Release- 24.255.04.00
Release Version: 24.255.04.00-1
UCM Project: LINUX_RH_SL_OEL_CTX_MPT_GEN35_PHASE6.0
UCM Stream: LINUX_RH_SL_OEL_CTX_MPT_GEN35_PHASE6.0_Rel
Release Type: Alpha
State: Superseded
Release Baseline: LINUX_RH_SL_OEL_CTX_MPT_GEN35_PHASE6.0_Rel_2017-10-26@
SAS35
Release Date: 30-OCT-17
Date Generated: Apr 12, 2018

Defects Fixed (6):

ID: SCGCQ01471650
Headline: Controller fault state 265d while loading latest merged driver for SAS2 card
Description Of Change: This issue got introduced because of newly added function, to fetch and display firmware package version.
Actually the request to display firmware package version was for SAS35 cards. But as we maintain generic code across gen2,gen3 and gen35, so this function was called for all the gen cards.
But according to SAS2 MPI spec the SGL needs to be framed in bit different way compared to presently how we are doing for sas3/sas35. And hence modified code to include check such that function to fetch firmware package version() will not be called for SAS2 cards.
Issue Description: Driver fails to load for sas2 card.
Steps To Reproduce: Step 1: Unload the latest driver
Step 2: Load the driver with parameter hbas_to_enumerate=0 or 1
Actual result: SAS2 controller is not enumerated with the latest driver

ID: SCGCQ01473759
Headline: Fix Timeout value and Reset method used for Target Reset issued on internal command Timeout. (Code Review fix)
Description Of Change: Fix is to use device specific Timeout value and Reset method used for NVME Target Reset.
Issue Description: In _scsih_pcie_add_device, Before adding PCIe device to the list, driver sends internal commands, On internal command failure, target reset is issued with Hot reset method with timeout value 30.
Steps To Reproduce: None

ID: SCGCQ01479414
Headline: Memory leak seen after using storcli and unloading the driver
Description Of Change: In ctl exit path we refer to ioc_list to free memory associated with diag buffers and event_log pointer used to save events by driver. If ctl_exit() func is called after unregistering driver, then ioc_list will be empty and hence driver will not be able to free the memory allocated which in turn causes memory leak.
So modified code to call ctl_exit() function before unregistering our driver.
Issue Description: Allocated memory was not being freed.
Steps To Reproduce: 1) Install the latest driver
2) Have kedr tool installed, load kedr
3)Use storcli/any application to list controller/drives connected behind controller.
4) Unload the driver
Observation: Memory leak is seen with kedr tool

ID: SCGCQ01484567
Headline: wrong sizeof argument being passed to sizeof() function.
Description Of Change: Modified code to use correct argument to be passed for sizeof().
Issue Description: Argument being passed to function was wrong.
Steps To Reproduce: NA

ID: SCGCQ01488142
Headline: Remove logically dead code
Description Of Change: Removed code which can never be reached by execution.
Issue Description: There is snippet of code which can never be reached by execution because of logical contradiction.
Steps To Reproduce: NA

ID: SCGCQ01488145
Headline: Update code to free intended memory pool.
Description Of Change: Modified code to free the intended memory pool.
Issue Description: Upon allocating memory pool driver checks if all the queues from this pool have the same MSB(upper 32bits) in their base memory address, if not then the allocated pool must be freed. Here instead of freeing intended memory pool, driver was trying to free some other pool which could be a typo mistake.
Steps To Reproduce: NA

Enhancements Implemented (1):

ID: SCGCQ01488170
Headline: Add CentOS 7.4 support.
Description Of Change: CentOS 7.4 OS support validated using RHEL7.4 binaries.

ReleaseOrder ID: SCGCQ01470402 [Open In CQWeb](#)
Headline: SAS3.5 Phase6 PA3 Release- 24.255.03.00
Release Version: 24.255.03.00-1
UCM Project: LINUX_RH_SL_OEL_CTX_MPT_GEN35_PHASE6.0
UCM Stream: LINUX_RH_SL_OEL_CTX_MPT_GEN35_PHASE6.0_Rel
Release Type: Pre-Alpha

State:	<i>Superseded</i>
Release Baseline:	<i>LINUX_RH_SL_OEL_CTX_MPT_GEN35_PHASE6.0_Rel_2017-10-09@\\SAS35</i>
Release Date:	<i>30-OCT-17</i>
Date Generated:	<i>Apr 12, 2018</i>

Enhancements Implemented (6):

ID:	SCGCQ01445901
Headline:	NVMe Task Management - Controller Reset Support (SCS)
Description Of Change:	For Pcie devices, Based on AddlFlags, Drivers need to change to set the reset method (bits 4:3 in the MsgFlags field) to 3 - issue a protocol level reset or Hot reset. - Set device specific TR timeout value. - Set task abort timeout value. Current drivers uses 0 reset method, which does a PCIe hot reset.
ID:	SCGCQ01447640
Headline:	Upstream mpt3sas: Split scsi_internal_device_block()
Description Of Change:	Instead of passing a "wait" argument to scsi_internal_device_block(), splitted this function into a function that waits and a function that doesn't wait.
ID:	SCGCQ01447644
Headline:	Upstream mpt3sas: Create two versions of scsi_internal_device_unblock()
Description Of Change:	Splitted this function into a function that waits and a function that doesn't wait. This will make it easier to serialize SCSI device state changes through a mutex.
ID:	SCGCQ01454955
Headline:	Upstream mpt3sas: fix format overflow warning
Description Of Change:	We print the driver name into one string and then add ID and copy it into a second string of the same length, at which point gcc complains about a possible overflow. So modified code by declaring macro for driver name length, whose length < the second string length.
ID:	SCGCQ01454958
Headline:	Upstream mpt3sas: Fix memory allocation failure test in 'mpt3sas_base_attach()'
Description Of Change:	Memory allocation failure test/check was missing for port_enable_cmds.reply, so added memory allocation failure check for it.
ID:	SCGCQ01465762 (Port Of EnhancementRequest SCGCQ01465665)
Headline:	mpt3sas: Disable DIX support by default.
Description Of Change:	Disabled DIX support by default for all kernels(where in prior it was disabled by default only for < 3.18 kernels and SLES12 SP3 OS)

ReleaseOrder ID:	SCGCQ01460308 Open In CQWeb
Headline:	SAS3.5 Phase6 PA2 Release- 24.255.02.00
Release Version:	24.255.02.00-1
UCM Project:	LINUX_RH_SL_OEL_CTX_MPT_GEN35_PHASE6.0
UCM Stream:	LINUX_RH_SL_OEL_CTX_MPT_GEN35_PHASE6.0_Rel
Release Type:	Pre-Alpha
State:	Superseded
Release Baseline:	LINUX_RH_SL_OEL_CTX_MPT_GEN35_PHASE6.0_Rel_2017-09-27-PH06-PA1-24.255.02.00@\\SAS35
Release Date:	28-SEP-17
Date Generated:	Apr 12, 2018

Defects Fixed (1):

ID:	SCGCQ01458946
Headline:	Driver fails to load post installation.
Description Of Change:	In case of FWUpload request for error handling of timed out command driver was issuing host reset. If driver issue diag reset and if the same request again time's out and again we need to call diag reset and we will go into a recursive loop , which in turn will fail the driver load. Modified code to exit the driver initialization if this FWUpload request is getting timedout.
Issue Description:	Driver fails to load post installation.
Steps To Reproduce:	1) Install the driver rpm 2) Reboot the host 3) Verify for the loaded driver 4) Driver not loaded

ReleaseOrder ID:	SCGCQ01456049 Open In CQWeb
Headline:	SAS3.5 Phase6 PA1 Release- 24.255.01.00
Release Version:	24.255.01.00-1
UCM Project:	LINUX_RH_SL_OEL_CTX_MPT_GEN35_PHASE6.0
UCM Stream:	LINUX_RH_SL_OEL_CTX_MPT_GEN35_PHASE6.0_Rel
Release Type:	Pre-Alpha
State:	Superseded
Release Baseline:	LINUX_RH_SL_OEL_CTX_MPT_GEN35_PHASE6.0_Rel_2017-09-22-PH06-PA1-24.255.01.00@\\SAS35
Release Date:	30-OCT-17
Date Generated:	Apr 12, 2018

Enhancements Implemented (2):

ID:	SCGCQ01396745
Headline:	Driver support for OEL 7.4_UEK (4.1.12-94.3.9.el7uek)
Description Of Change:	RPM support for OEL 7.4_UEK
ID:	SCGCQ01445879
Headline:	Report Package Version from HBA Driver
Description Of Change:	Driver will print FW package version in addition to FW version if the PackageVersion is valid i.e. non zero.