ReleaseOrder ID:	*SCGCQ01140808*
Headline:	*GCA Release: SAS3FW_Phase13.0 - 13.00.00.00 Firmw*
Release Version:	*13.00.00.00*
UCM Project:	*SAS3FW_MASTER_DEV*
Sub UCM Project:	*SAS3FW_Phase13.0*
UCM Stream:	*SAS3FW_Phase13.0_Rel*
Release Type:	*GCA*
State:	*Test_Complete*
Release Baseline:	*SAS3FW_Phase13.0-2016-07-20-13.00.00.00_REL_1469005660@ \SAS_CTRL_FW*
Release Date:	*29-JUL-16*
Date Generated:	*Aug 23, 2016*

Release History

ReleaseOrder ID:	*SCGCQ01140808* Open In CQWeb
Headline:	*GCA Release: SAS3FW_Phase13.0 - 13.00.00.00 Firmw*
Release Version:	*13.00.00.00*
UCM Project:	*SAS3FW_MASTER_DEV*
Sub UCM Project:	*SAS3FW_Phase13.0*
UCM Stream:	*SAS3FW_Phase13.0_Rel*
Release Type:	*GCA*
State:	*Test_Complete*
Release Baseline:	*SAS3FW_Phase13.0-2016-07-20-13.00.00.00_REL_1469005660@ \SAS_CTRL_FW*
Release Date:	*29-JUL-16*
Date Generated:	*Aug 23, 2016*

ReleaseOrder ID:	*SCGCQ01131468* Open In CQWeb
Headline:	*Beta Release: SAS3FW_MASTER_DEV - 12.250.07.00 Fi*
Release Version:	*12.250.07.00*
UCM Project:	*SAS3FW_MASTER_DEV*
Sub UCM Project:	*SAS3FW_Phase13.0*
UCM Stream:	*SAS3FW_MASTER_Invdr_Rel*
Release Type:	*Beta*
State:	*Test_Complete*
Release Baseline:	*SAS3FW_MASTER_DEV-2016-07-05-12.250.07.00_REL_1467711891@ \SAS_CTRL_FW*
Release Date:	*05-JUL-16*
Date Generated:	*Aug 23, 2016*

Defects Fixed (1):

ID:	SCGCQ01131412 (Port Of Defect SCGCQ01113324)
Headline:	PL: I/O could timeout if task management fails
Description Of Change:	The data miscompare fix (SCGCQ01047691) has bug where if a task management frame times out, we'll keep sending Open Reject (Protocol Not Supported) forever or until the a target reset is done to the device. The change was to poll every second to see if the device needs to be reset or not and don't just rely on discovery to make that check.
Issue Description:	After a task management frame times out and returns task management failed status, initiator could keep sending Open Reject (protocol not supported) until a target reset is done. This could cause I/Os to timeout.
Steps To Reproduce:	Issue an task management frame and use jammer to drop the response frame.

ReleaseOrder ID:	*SCGCQ01126356* Open In CQWeb
Headline:	*Beta Release: SAS3FW_MASTER_DEV - 12.250.06.00 Fi*
Release Version:	*12.250.06.00*
UCM Project:	*SAS3FW_MASTER_DEV*
Sub UCM Project:	*SAS3FW_Phase13.0*
UCM Stream:	*SAS3FW_MASTER_Invdr_Rel*
Release Type:	*Beta*
State:	*Superseded*
Release Baseline:	*SAS3FW_MASTER_DEV-2016-06-27-12.250.06.00_REL_1467027744@ \SAS_CTRL_FW*
Release Date:	*29-JUN-16*
Date Generated:	*Aug 23, 2016*

Defects Fixed (7):

ID:	SCGCQ01089693
Headline:	Source code uses tlbInitHDCW and HDCW instead of HCDW
Description Of Change:	Replaced all occurrences of HDCW to HCDW
Issue Description:	HCDW is mentioned in the MPI2.5 spec and it means Host Code and Data Window and it is referred to HCDW, but in the code defined as HDCW
Steps To Reproduce:	NA

ID:	SCGCQ01113946
Headline:	PL: SMR Report Zone Command was not failed for last LBA only
Description Of Change:	Modified the code to check the LBA OUT OF RANGE condition greater than the last LBA.
Issue Description:	The LBA OUT OF RANGE check was happening for last LBA+1 and not for last LBA.
Steps To Reproduce:	Connect a Host Aware SMR SATA drive to controller. To this SATA SMR drive execute a READ CAPACITY SCSI command to know about last LBA of drive.

Now execute a REPORT ZONES for LBA OUT OF RANGE (i.e.) LAST LBA + 1 which should fail but passes.
After the range LAST LBA + 1 onward, command correctly fails with LBA OUT OF RANGE error.

ID: SCGCQ01115136
Headline: SATA only: SANITIZE Command is Not Failed With Expected Sense Data for Service Action EXIT FAILURE MODE
Description Of Change: For Sanitize command with service action '1Fh', check and return sense key as illegal request and additional sense as Invalid Field In CDB if Parameter list length is non zero.
Issue Description: SANITIZE Command does not fail with 'INVALID FIELD IN CDB' for Service Action EXIT FAILURE MODE(1Fh) and non zero PARAMETER LIST LENGTH in CDB
Steps To Reproduce: Issue Sanitize command with Service Action EXIT FAILURE MODE(1Fh) and non zero PARAMETER LIST LENGTH in CDB to a SATA drive.
Command does not fail with ' INVALID FIELD IN CDB'

ID: SCGCQ01062420 (Port Of Defect SCGCQ01024976)
Headline: IR : FW panic (code: 0000265D) and ROM BIOS hung for SAS3FW IR raid10
Description Of Change: Adding a condition to check private member variable is valid and operation is allowed if condition is true.
Issue Description: While updating state of a volume after power cycle on controller, operate on non-existing private member variable causing data TLB error.
Steps To Reproduce: 1) use 5 drives to setup a raid10 in ROM BIOS, drive 0-3 are in the raid while drive 4 is spare;
2) power off the HBA controller, and plug out drive 0;
3) power on the HBA controller, FW will panic with code: 0000265D, and ROM BIOS will hang forever.

ID: SCGCQ01118587 (Port Of Defect SCGCQ01110070)
Headline: IOP: 'iop show cfg all' command is not listing all Expander's config pages
Description Of Change: Different variables are used as arguments to fetch expander config page 0 and config page 1 to
avoid corruption of arguments to fetch page 0.
Issue Description: 'iop show cfg all' command lists only 1 expander config pages even though more than 1 expanders are connected.

While fetching the Expander config pages, after fetching 1st expander config pages, incorrect arguments are passed to
fetch next expander's config pages.

Same variables are passed as arguments to fetch page 0 and page 1.
After fetching page 1 of 1st expander, the variables get updated.
The overwritten values are passed to fetch next instance of page 0(second expander)
Due to incorrect argument values, next expander's page 0 fetch fails.
Steps To Reproduce: Use more than 1 expander in the topology
Issue 'iop show cfg all'
All the connected expander config pages are not listed.

ID: SCGCQ01118728 (Port Of Defect SCGCQ01047691)
Headline: PL: Mid reuse may cause data miscompare
Description Of Change: Reset devices that went missing then came back.
Issue Description: A device behind an expander could retain old I/Os when the controller-expander link is dropped. When this happens, the controller firmware would clean up the outstanding I/Os on the controller side
and fail them back to the host. Because controller can't get to the device, task management for the device would fail. When the link comes back up, an I/O with the same MID could be sent to the same
device again for a different LBA. This would confuse the drive and cause data miscompare.
Steps To Reproduce: Attach SAS drives behind an expander and break the controller-expander link frequently while running I/Os.

ID: SCGCQ01122438 (Port Of Defect SCGCQ01116427)
Headline: PL: System Halt with Certain Expander Backplanes
Description Of Change: Made a change to the code in PL discovery where expanders are identified, so that these particular expander backplanes will be marked internal.
Issue Description: The system halts with certain backplanes. PL was not designed with these expander backplanes in mind. The customer had an expectation these would be marked as internal by PL, but they were not.
This is exposed by marking the SES devices as direct attached.
Steps To Reproduce: Boot up the system with the boot drive attached to one of the expander backplanes that causes the failure.

Enhancements Implemented (12):

ID: SCGCQ00477718
Headline: PL: Checking return status for Memory moves in the code.
Description Of Change: Added code to check the return status for memory moves in the code.
Changed the calling functions so that they fill error context if the memory move fails.

ID: SCGCQ00915256
Headline: MPI 2.6: Update Ventura family device ids to match latest EDS
Description Of Change: Change 0xAC (Crusader) and 0xAF (Tomcat) defines to match EDS.

ID: SCGCQ00915336
Headline: MPI 2.6: update Marlin-class device IDs
Description Of Change: Added device id defines for Marlin products.

ID: SCGCQ00922213
Headline: MPI 2.6: PCIe IO Unit Page 0 and 1 tweaks
Description Of Change: Updated MPI 2.6 text and added define for MAX_RATE shift.

ID: SCGCQ00925839
Headline: MPI 2.6: Remove all SOP references
Description Of Change: Removed all defines and structure fields related to SOP support.

ID: SCGCQ00948258
Headline: MPI 2.6: Remove all AHCI references
Description Of Change: Removed all defines and structure fields related to AHCI support.

ID: SCGCQ00948955
Headline: MPI 2.6: Add support for SAS-4 and PCIe-4
Description Of Change: Added defines for SAS 4 and PCIe 4 speeds.

ID: SCGCQ00949638
Headline: MPI 2.6: Add Enclosure Level and Connector name to PCIe device page 0
Description Of Change: Added EclosureLevel and ConnectorName fields to PCIe Device Page 0 with the same meaning as SAS Device Page 0.

ID: SCGCQ00954619
Headline: MPI 2.6: add LinkNum field to the PCIe Link configuration pages

Description Of Change: Modified PCIe Link config pages to include a link field.

ID: SCGCQ01015826
Headline: MPI2.6: Fix defines that are not unique within the first 32 characters
Description Of Change: Changed defines to be unique within first 32 characters.

ID: SCGCQ01017027
Headline: MPI 2.6: direct reporting of negotiated PCIe link width and speed
Description Of Change: Add Negotiated Link Rate and Negotiated Port Width to PCIe Device page 0.

ID: SCGCQ01020473
Headline: MPI2.6: Reserve ExtPageTypes for Dragon
Description Of Change: Added comment to header file to indicate reserved ranges.

ReleaseOrder ID: *SCGCQ01113064* Open In CQWeb
Headline: *Alpha Release: SAS3FW_MASTER_DEV - 12.250.05.00 F*
Release Version: *12.250.05.00*
UCM Project: *SAS3FW_MASTER_DEV*
Sub UCM Project: *SAS3FW_Phase13.0*
UCM Stream: *SAS3FW_MASTER_Invdr_Rel*
Release Type: *Alpha*
State: *Test_Complete*
Release Baseline: *SAS3FW_MASTER_DEV-2016-06-10-12.250.05.00_REL_1465540308@ \SAS_CTRL_FW*
Release Date: *22-JUN-16*
Date Generated: *Aug 23, 2016*

Defects Fixed (3):

ID: SCGCQ01094926
Headline:
Description Of Change: The ReportZones command is now completed to host only after receiving the last D2H_FIS in all cases. This makes sure the pended commands are not started until all the previous callbacks are pushed out of the stack.
Issue Description: As part of SMR ReportZones command completion in UNDERRUN case and certain error cases, the command was completed to host even before the last device to host FIS had arrived. This caused the pended commands to be started and more than Maximum number of callbacks to be pushed on the stack.
Steps To Reproduce: Connect a Host Managed SMR SATA drive to controller.
To this SATA drive execute a REPORT ZONES command with larger ALLOCATION_LENGTH when compared to the DataLength.
Also execute LSIUtils option 8 in parallel, which initiates SCSI INQUIRY commands.
REPORT ZONES command passes but fault is seen.

ID: SCGCQ01089445 (Port Of Defect SCGCQ01087653)
Headline: IOP: MCTP: I2C slave with high MPI request rate from host and BMC can cause a host request timeout
Description Of Change: Modified the firmware's I2C interrupt to not clear slave interrupts before processing the interrupts.

Added code to check and flush the I2C receive FIFO before setting up the hardware to receive an I2C packet to account for possibly missed packets.

Modified the FC_RESUME code to not add the Packet Exception AppMsgTag Does Not Exist if a Packet Exception for that AppMsgTag is already on the queue. This avoids generating unnecessary packet exceptions and sending them to the BMC to process.
Issue Description: When in slave response mode (I2C slave) with MCTP over I2C, a high MPI request rate from a host and a BMC can cause the firmware to spin on I2C interrupts that were incorrectly cleared by the firmware. That then can cause a host request to time out, and the natural response is for the host to reset the controller.

This condition can also cause the controller to miss some request packets, which then generates extra packet exceptions for the BMC to process.

While the firmware is spinning on the I2C interrupts, the BMC may experience I2C bus problems until the controller is either reset or times out on the I2C operation.
Steps To Reproduce: Configure the controller for MCTP over I2C with the slave response mode (I2C slave only operation).

Transmit many MPI requests from both a host and BMC. This requires sustained MPI requests on both sides.

Eventually a host request may timeout. A BMC will see I2C bus failures until the controller completes reset or times out the I2C operation and cleans up the I2C hardware.

ID: SCGCQ01112415 (Port Of Defect SCGCQ01076294)
Headline: Unable to un-register a device because of outstanding Task Set Full MID
Description Of Change: PL firmware now cleans out outstanding Task Set Full MIDs before un-registering a device when a target device goes away.
Issue Description: PL Firmware is not cleaning out local mids allocated with Task Set Full Events during failover testing when the Task Set Full fails with an OPEN_FAIL.
Steps To Reproduce: Setup controller in Target Mode. From a secondary Initiator, send heavy IOs to the target controller such that I/O count is very larger to force Task Set Full Events to get sent from the target mode firmware back to the initiator. While doing the above, perform random cable breaks on the link between the initiator and the target.

Enhancements Implemented (2):

ID: SCGCQ01107315 (Port Of EnhancementRequest SCGCQ01095744)
Headline: IOP: Initialize new fields in IOCFacts to 0
Description Of Change: IOC Facts Reply contains four new fields which are not initialized. As such, there is the potential for these fields to contain stale/garbage values. These fields were initialized to 0.

ID: SCGCQ01112068 (Port Of EnhancementRequest SCGCQ01107729)
Headline: PL: Hardware automated DATA FIS(s) DMA for SMR ReportZone SATL for faster proccessing
Description Of Change: As part of this new design, Firmware will send the ATA command to SMR ZAC drive with same request size as requested in the SCSI request. Firmware will also configure the Hardware to automate all the Report Zone Data FIS(s) to host memory for any size requested by host. Firmware will only get interrupt to handle the Device to Host FIS as part of completion.

ReleaseOrder ID: *SCGCQ01096672* Open In CQWeb
Headline: *Alpha Release: SAS3FW_MASTER_DEV - 12.250.04.00 F*
Release Version: *12.250.04.00*
UCM Project: *SAS3FW_MASTER_DEV*
Sub UCM Project: *SAS3FW_Phase13.0*
UCM Stream: *SAS3FW_MASTER_Invdr_Rel*
Release Type: *Alpha*
State: *Superseded*
Release Baseline: *SAS3FW_MASTER_DEV-2016-05-27-12.250.04.00_REL_1464348537@ \SAS_CTRL_FW*
Release Date: *09-JUN-16*
Date Generated: *Aug 23, 2016*

ReleaseOrder ID: *SCGCQ01093314* Open In CQWeb
Headline: *Pre-Alpha Release: SAS3FW_MASTER_DEV - 12.250.03.*
Release Version: *12.250.03.00*
UCM Project: *SAS3FW_MASTER_DEV*

Sub UCM Project: **SAS3FW_Phase13.0**
UCM Stream: **SAS3FW_MASTER_Invdr_Rel**
Release Type: **Pre-Alpha**
State: **Superseded**
Release Baseline: **SAS3FW_MASTER_DEV-2016-05-23-12.250.03.00_REL_1464000357@\SAS_CTRL_FW**
Release Date: **23-MAY-16**
Date Generated: **Aug 23, 2016**

Defects Fixed (9):

ID: SCGCQ01073728
Headline: Non-zero check for LUN field in commands that SAM specifies to return ILLEGAL REQUEST
Description Of Change: Integrated CDB check for commands apart from INQUIRY, REQUEST SENSE and REPORT LUN and non-zero LUN, command failed and returned with SK = ILLEGAL REQUEST and ASC = LOGICAL_UNIT_NOT_SUPPORTED.
Issue Description: The SAM specifies that apart from INQUIRY, REQUEST SENSE and REPORT LUN commands, the rest of the non-IO commands should be failed and returned with SK = ILLEGAL REQUEST and ASC = LOGICAL_UNIT_NOT_SUPPORTED.
Steps To Reproduce: Issue READ CAPACITY [CDB =0x25]with LUN = 1 to SATA target connected to Invader IT.

ID: SCGCQ01079905
Headline: SATA Only: Unsupported Log Sense commands fail with incorrect additional sense
Description Of Change: Corrected the additional sense to 'INVALID FIELD IN CDB' if the command is not supported
Issue Description: When an unsupported log sense command is issued, it fails with 'INVALID COMMAND OPERATION CODE' instead of 'INVALID FIELD IN CDB'
Steps To Reproduce: Execute a LOG SENSE command for PAGE CODE=0x00 which will provide all supported log pages.
Execute a number of LOG SENSE command to various supported log pages and observe that command fails with 'INVALID COMMAND OPERATION CODE' if the SATA drive does not support the command.

ID: SCGCQ01080499
Headline: PL: GPIO lines Vman and Vact are not getting turned off when the Active Cable is unplugged.
Description Of Change: Added the respective code change in active cable management code for turning off the GPIO lines.
Issue Description: Currently the Active cable management code does not turn off the GPIO lines Vman and Vact when the Active Cable is unplugged.
Steps To Reproduce: 1. Insert the active cable
2. Unplug the active cable
3. Read the status of GPIO lines from uart using - <iop gpio r GpioNum>

ID: SCGCQ01081163
Headline: SATA Only: Power On Reset Observed While Executing LOG SENSE Command to SATA Drive.
Description Of Change: In Error handling of drive reported errors, clean up flags were not correctly updated.
Updated the clean up flags with appropriate values.
Issue Description: Power on Reset occurs for any command issued after drive fails a log sense command
(any of page code 0x03, 0x0d, 0x11, 0x15, 0x19) .
Steps To Reproduce: Issue log sense command(any of page code 0x03, 0x0d, 0x11, 0x15, 0x19) that fails as unsupported by drive
Drive aborts the command.

After the failure, issue any command.
The command hangs and then fails with Driver Error msg .

Issue one more command.
Unit attention occurs for this command.

ID: SCGCQ01081316
Headline: Copyright information changed to 2016 from 2015 for nvdata XML files.
Description Of Change: Copyright information changed from 2015 to 2016 for NVDATA XML files.
Issue Description: Copyright information section in xml files of NVDATA was showing year 2015 instead of 2016
Steps To Reproduce: NA

ID: SCGCQ01091106
Headline: Coverity defect: Dereference after null check
Description Of Change: Added a new null check
Issue Description: A null check was missing
Steps To Reproduce: NA

ID: SCGCQ01062410 (Port Of Defect SCGCQ01047773)
Headline: Fast back-to-back or parallel PCIe configuration requests after certain addresses can generate bad Config Read data
Description Of Change: Re-ordered code in the firmware handling of Configuration Requests to eliminate a fast back-to-back serial read of a non-firmware handled read from becoming a firmware handled one.

Added code that guards the Configuration Space during firmware writes to it, which momentarily causes all PCIe Config Space operations to be firmware handled. This is then disabled when firmware is done with the write. Then all ordinarily non-firmware handled reads are back to not being firmware handled. This is for the parallel PCIe Config operation case.
Issue Description: Certain PCIe Configuration Space Addresses are handled by firmware (MSI-X Capabilities at 0xC0 and PCIe Link Status/Control 2 at 0x98). Very fast back-to-back or parallel reads of the PCIe Configuration Space after or during the firmware handled addresses can cause the data firmware is writing to be picked up by the next Configuration Read, which is a problem in the hardware. This only occurs when firmware has to write to its Configuration Space.

The main symptom at a PCIe Configuration Space level is after reading MSI-X Capabilities, a read of MSI-X Table Offset has a value of 0x00 or 0x10, which is not the true value of the table offset. This is a transient occurrence, so register dumps of the Configuration Space in the host or from the controller will not show the result.

When a bad MSI-X Table Offset value is returned, the symptoms seen so far include:
1. The MPT3 driver times out while doing the doorbell handshake and drops the controller
2. The PCIe layer in the OS writes to a reserved area of BAR0 while enabling MSI-X table entries, which generates a Completer Abort in the controller, and that results in fault 0x2622.
Steps To Reproduce: Scan the Configuration Space over and over while including one or more of the firmware handled registers. If the CPU chipset and/or PCIe root complex chip set is fast enough between the reads, then eventually the incorrect data from the next read after a firmware handled read of an address will be seen.

PCIe traces should always show the incorrect data.

OS level logs may or may now show the incorrect data, and this depends upon the OS logging when enabling MSI-X.

ID: SCGCQ01082975 (Port Of Defect SCGCQ01075828)
Headline: Build failure if MCTP is enabled and Config trap Hardware WorkAround is disabled.
Description Of Change: Error was due to an optimization that had replaced code with a function call.
The function is defined only if Hardware Workaround is enabled.
This caused build error if Hardware Workaround is disabled.

Reverted the optimization with the code instead of function call.
Issue Description: Code breaks if MCTP is enabled and Config trap Hardware Workaround is disabled
Steps To Reproduce: MCTP is enabled and Config trap Hardware Workaround is disabled

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ID: SCGCQ01090984 (Port Of Defect SCGCQ01089094)
Headline: PL: CPU hang due to out of bound access of Timer wheel RAM while manually adding FPE timer.
Description Of Change: When PL manually adds a new IO to a FPE timer bucket, recalculated the FPE timer bucket number to be restricted within the maximum timer wheel size of 256.
Issue Description: If FPE timeout had occurred for an IO, then any new manual addition of an IO to a new timer bucket could cause out of bound Timer wheel array access, leading to CPU Hang. This is because the previous timed out bucket is taken as base bucket number for any new manual FPE timer addition, plus the new timeout value specified for new IO, which was not always bound within the maximum FPE timer wheel size of 256.
Steps To Reproduce: CPU hang is observed in PL code for IOPs that use FPE timer while trying to add FPE timer manually.
The hang is seen when running a test that has frequent IO timeouts and timer error scenarios.

Defects Fixed (4):

ID: SCGCQ01059924 (Port Of Defect SCGCQ01052686)
Headline: PL: Fault 0xD073 during heavy IO
Description Of Change: Rearranged code to ensure there is no race condition between hardware completing the IO and firmware handling the IO as being timed out.
Issue Description: When using an IOP which utilizes the IO timing hardware, firmware may fault with code 0xD073 with well timed timeouts.
Steps To Reproduce: Use the timing functionality and send heavy IO to the topology. The problem will reproduce when a timed out IO is completed at a specific point in time when firmware is handling the timeout.

ID: SCGCQ01073184 (Port Of Defect SCGCQ01070850)
Headline: SMR SATL: SCSI VPD pages updated with Peripheral Device Type of 0x14 for SMR Host Managed ZAC drives
Description Of Change: Updating the Peripheral Device Type in VPD pages for SMR Host Managed ZAC drives with 0x14.
Issue Description: As part of SATL, Peripheral Device Type field in the VPD Page HEADER, for any of the supported Inquiry VPD pages, was always set to 0x00.
For SMR Host Managed ZAC drives with new InitialFIS signature of 0xABCD, the Peripheral Device Type field should be set to 0x14.
Steps To Reproduce: Fire any of the supported inquiry VPD log page commands to SMR Host Managed ZAC drive.
Observe the Peripheral_Device_Type = 0x00, instead of 0x14

ID: SCGCQ01077457 (Port Of Defect SCGCQ01071132)
Headline: PL: SATL: With VALID bit set INFORMATION field in Sense data is not populated when REPORT ZONES Command fails for LBA out of range
Description Of Change: Modified REPORT ZONES command handling in SATL to populate INFORMATION field with the LBA information for the out of range LBA case.
Issue Description: As part of sense data the VALID bit is set to 1 but corresponding INFORMATION field is not populated when REPORT ZONES Command fails for LBA out of range.
Steps To Reproduce: Connect a Host Aware SMR SATA drive to Intruder controller. To this SATA drive execute a REPORT ZONES command for LBA out of range, command fails with LBA out of range but fixed format sense is provided instead of descriptor sense data format.

ID: SCGCQ01078585 (Port Of Defect SCGCQ01077555)
Headline: PL: SMR: Enhance the error handling conditions of SMR ReportZones SATL
Description Of Change: Enhance the error handling conditions of SMR Report Zones SATL by handling all known error conditions of bad Status, SATL callback stack cleanup and failing the command appropriately.
Issue Description: During internal testing with SMR enabled Linux kernel (development Kernel not yet released), found many Task Managements called by host in different instances of the Report Zone command, and also found Fault-4300 in some cases of Task Management.
Steps To Reproduce: With a SMR supported Linux Kernel, drive push pull will cause many Task Managements.
This can sometimes cause Fault-4300 or command timeout with no pending frames from the drive.

Enhancements Implemented (3):

ID: SCGCQ01020836
Headline: SMR : Implement PARTIAL bit option for ReportZones command as part of ZBC-ZAC SATL
Description Of Change: As part of ZBC-ZAC SATL, the PARTIAL bit option for ReportZones command is implemented to update ZONE_LIST_LENGTH value.
When PARTIAL bit is set in the ReportZones command, the same will be translated to ATA ReportZones PARTIAL bit and the ZONE LIST LENGTH in the SCSI ReportZone Data will be updated accordingly.

ID: SCGCQ01064599
Headline: Add the Command line support to send the MCTP commands
Description Of Change: This is to enhance the debugging of the MCTP module by sending the MCTP commands through the command line interface.

ID: SCGCQ01074276 (Port Of EnhancementRequest SCGCQ01067698)
Headline: PL: Support Translation of Additional Log Pages
Description Of Change: Support provided for SATL translation of below log pages.

1. Solid State Media Log (page code 11h/00h)   -- SAT3 section 10.2.9
2. Temperature Log (page code 0Dh/00h)   -- SAT3 section 10.2.8
3. Read Error Counters Log (page code 03h/00h)   -- SAT3 section 10.2.7
4. Background Scan Results Log (page code 15h/00h)   -- SAT3 section 10.2.10
5. General Statistics and Performance Log (page code 19h/00h) -- SAT3 section 10.2.11

The pages are also added to the list of supported pages.

Defects Fixed (2):

ID: SCGCQ01052359 (Port Of Defect SCGCQ01024976)
Headline: IR : FW panic (code: 0000265D) and ROM BIOS hung for SAS3FW IR raid10
Description Of Change: Adding a condition to check private member variable is valid and operation is allowed if condition is true.
Issue Description: While updating state of a volume after power cycle on controller, operate on non-existing private member variable causing data TLB error.
Steps To Reproduce: 1) use 5 drives to setup a raid10 in ROM BIOS, drive 0-3 are in the raid while drive 4 is spare;
2) power off the HBA controller, and plug out drive 0;
3) power on the HBA controller, FW will panic with code: 0000265D, and ROM BIOS will hang forever.

ID: SCGCQ01057474 (Port Of Defect SCGCQ00896512)
Headline: The INQUIRY command over MCTP did not return the expected response data for a DA-SEP backplane

Description Of Change: A field that was expected to be unchanged in a request submitted to PL was changed by the direct attached I2C SEP code. The change is MCTP to MPI code is no longer depending upon the request submitted to PL for processing the response and instead using the original request structure that came over MCTP. This eliminates similar possible issues with SCSI IOs over MCTP to other areas of PL instead of just addressing this specific instance.

Issue Description: The INQUIRY command sent via MCTP from the BMC to the controller, in which the controller did not respond with INQUIRY data after communicating to a customer specific DA-SEP back-plane.

Steps To Reproduce: Send the INQUIRY command from BMC to a customer specific DA-SEP back-plane.

Enhancements Implemented (4):

ID: SCGCQ01052367

Headline: PL: Enhance PLI_CTRL_REQ_GET_SATA_HINT_INFO to also provide information of an active SATA Hinting discovery at a given time

Description Of Change: Enhance PLI Control request - PLI_CTRL_REQ_GET_SATA_HINT_INFO such that PL would also provide information if SATA Hinting discovery is active at a given time through the unused parameter. SATA Hinting Active value would be set in PL if an active discovery is running at a given time due to SATA Hinting.

ID: SCGCQ01057508

Headline: To assign the enclosure level index for direct attached enclosures ie., the controller itself.

Description Of Change: For the direct attached enclosures (ie., the controller itself) the enclosure level index is updated as part of the enclosure information based upon the manufacturing page 7 configuration.

ID: SCGCQ01064581

Headline: Increase BIOS flash region from 512KB to 1MB for additional Boot Components

Description Of Change: The BIOS flash region in the Flash layout is increased from the present 512KB to 1MB to accommodate the additional Boot Components.
Some customers download many boot components like UEFI, BIOS and FCODE together and this totally consumes more than the present 512KB space, causing flash failure. Thus increasing the BIOS flash size to 1MB would provide additional space for future use.
NOTE- Post this change, any downgrade to previous phase firmware and/or boot components would require complete Erase and flash.

ID: SCGCQ01067662

Headline: PL's SATL fixes to SCSI Write Buffer modes 0xD, 0xE, and 0xF

Description Of Change: Enabled SATL for Write Buffer modes 0xD/0xE/0xF