



SCS Engineering Release Notice

Phase14 GCA Release Version 14.00.00.00 - MPS_LSI_Phase14.0 (SCGCQ00300787)

(SCGCQ00300787) - Phase14 GCA Release Version 14.00.00.00 - MPS LSI Phase14.0

(SCGCQ00285736) - Phase14 Beta Release Version 13.255.00.04 - MPS LSI Phase14.0

(SCGCQ00276011) - Phase14 Alpha Release Version 13.255.00.03 - MPS LSI Phase14.0

(SCGCQ00262535) - Phase14 Pre-Alpha Release Version 13.255.00.01 - MPS LSI Phase14.0



SCS Engineering Release Notice

Phase14 GCA Release Version 14.00.00.00 - MPS_LSI_Phase14.0 (SCGCQ00300787)

Defects=0, Enhancements=0 (Version Change Only)



SCS Engineering Release Notice

Phase14 Beta Release Version 13.255.00.04 - MPS_LSI_Phase14.0 (SCGCQ00285736)

Change Summary (Defects=1)

SCGCQ00281477 (DFCT) - NO SLEEP when Thread is prohibited to sleep



SCS Engineering Release Notice

Phase14 Beta Release Version 13.255.00.04 - MPS_LSI_Phase14.0 (SCGCQ00285736)

Total Defects Resolved (1)

(SCGCQ00281477)		Defect 1/1
HEADLINE:	NO SLEEP when Thread is prohibited to sleep	
DESC OF CHANGE:	In FreeBSD ISR are acted like threads and these threads should not sleep when they are running. So, for ISR threads sleep_flag is set to NO_Sleep value. HBA Reset called when FW is fault called from ISR context.	
TO REPRODUCE:	<p>Procedure:</p> <p>-----</p> <ol style="list-style-type: none">1. Boot the system with 4 drives to the freeBSD OS and load the drivers.2. Create the RAID1 volume with 2 hotspare using sas2ircu and allow the BGI to complete.3. Power down the enclosure and swap the primary and secondary within themselves and power on the enclosure. verify the volume members and hotspare enumeration. The resync between the volume member starts and completes successfully.4. After the resync is complete power down the enclosure. Move the primary volume member to any other slot of the enclosure and power on the enclosure again. <p>Expected result: The volume members and hotspare drives must be enumerated successfully. The volume must start resyncing process and complete the same successfully.</p> <p>-----</p> <p>Actual result: The kernal panic is hit.</p> <p>-----</p>	
ISSUE DESC:	Kernel panic will be observed as msleep is called from thread which should not sleep.	



SCS Engineering Release Notice

Phase14 Alpha Release Version 13.255.00.03 - MPS_LSI_Phase14.0 (SCGCQ00276011)

Change Summary (Enhancements=1)

SCGCQ00252997 (ENHREQ) - Support for FreeBSD v8.3



SCS Engineering Release Notice

Phase14 Alpha Release Version 13.255.00.03 - MPS_LSI_Phase14.0 (SCGCQ00276011)

Total Enhancements Implemented (1)

(SCGCQ00252997)		Enhancement 1/1
HEADLINE:	Support for FreeBSD v8.3	
NEW FUNCTIONALITY:	Added support for FreeBSD v8.3	
	(1) buildall.sh file is updated to include FreeBSD v8.3	



SCS Engineering Release Notice

Phase14 Pre-Alpha Release Version 13.255.00.01 - MPS_LSI_Phase14.0 (SCGCQ00262535)

Change Summary (Enhancements=10)

- SCGCQ00235000 (ENHREQ) - Remove redudant contens from Copyright (c) 2011 LSI Corp*
- SCGCQ00235002 (ENHREQ) - Check for 12-byte read/write CDBs*
- SCGCQ00235005 (ENHREQ) - Check Drive type before calling mpssas_check_eedp*
- SCGCQ00235010 (ENHREQ) - Remove DELAY in a loop and use msleep(9)*
- SCGCQ00235013 (ENHREQ) - Make Driver code Endian Safe.*
- SCGCQ00235016 (ENHREQ) - Findout memory leaks in FreeBSD Driver and resolve those*
- SCGCQ00247137 (ENHREQ) - Add loginfo prints as debug message*
- SCGCQ00249012 (ENHREQ) - Recover Controller doing mps_reinit from config request timeout context*
- SCGCQ00250904 (ENHREQ) - cdb length check is required for 32 byte CDB*
- SCGCQ00250906 (ENHREQ) - Check the actual status of Message unit reset (mps_message_unit_reset)*



SCS Engineering Release Notice

Phase14 Pre-Alpha Release Version 13.255.00.01 - MPS_LSI_Phase14.0 (SCGCQ00262535)

Total Enhancements Implemented (10)

(SCGCQ00235000) Enhancement 1/10

HEADLINE: Remove redundant contents from Copyright (c) 2011 LSI Corp
NEW FUNCTIONALITY: Copyright contents has been changed in all respective .c and .h files

(SCGCQ00235002) Enhancement 2/10

HEADLINE: Check for 12-byte read/write CDBs
NEW FUNCTIONALITY: Support for WRITE12 and READ12 for direct-io (warpdrive only) has been added.

Info on how to test:
Currently FreeBSD does not send READ(12) and WRITE(12), so we cannot test this feature without any user space applications like sg_utils.
We can send READ(12)/WRITE(12) using sg_raw command. Also, LSIUTIL Option 90 can be used to send a 12-byte CDB. Then, the UART output can be checked to see if a 12-byte CDB was sent and then see if that 12-byte CDB is sent using direct IO or not, depending on where that IO is sent (WarpDrive Volume or bare disk).

(SCGCQ00235005) Enhancement 3/10

HEADLINE: Check Drive type before calling mpssas_check_eedp
NEW FUNCTIONALITY: Driver has added checks to see if Drive has READ_CAP_16 support before sending it down to the device. If SPC3_SID_PROTECT flag is set in the inquiry data, the device supports protection information, and must support the 16 byte read capacity command, otherwise continue without sending read cap 16. This will optimize driver performance, since it will not send READ_CAP_16 to the drive which does not have support of READ_CAP_16.

(SCGCQ00235010) Enhancement 4/10

HEADLINE: Remove DELAY in a loop and use msleep(9)
NEW FUNCTIONALITY: With new approach, "MPTIOCTL_RESET_ADAPTER" IOCTL will not use DELAY() which is busy loop implementation. It will use <msleep>.
(Better way to sleep without busy loop)
Also from the HBA reset code path and some other places, DELAY() is replaced with msleep() or "pause()" which is based on sleep/wakeup style calls.
Driver use msleep()/pause() instead of DELAY based on CAN_SLEEP/NO_SLEEP flags to avoid busy loop which is not required all the time.
e.a
1. While driver is getting loaded, driver calls most of the commands with NO_SLEEP.
2. When Driver is functional and it needs Reinit of HBA, CAN_SLEEP flag is used.

(SCGCQ00235013) Enhancement 5/10

HEADLINE: Make Driver code Endian Safe.
NEW FUNCTIONALITY: <mpslsi> driver is not Endian safe. It will not work on Big Endian machines
Like Sparc and PowerPC platforms because it assumes it is running on a Little Endian machine.
Driver code is modified such way that it does not assume CPU arch is Little Endian.
1. All places where Driver interacts from HBA to Host, it converts Little Endian format to CPU format.
2. All places where Driver interacts from Host to HBA, it converts CPU format to Little Endian.

(SCGCQ00235016) Enhancement 6/10

HEADLINE: Findout memory leaks in FreeBSD Driver and resolve those
NEW FUNCTIONALITY: 1. Driver has added additional checks to see memory allocation success/fail.
2. Currently there were memory leak in targ's luns creation/deletion. handled those memory allocation/free.



SCS Engineering Release Notice

Phase14 Pre-Alpha Release Version 13.255.00.01 - MPS_LSI_Phase14.0 (SCGCQ00262535)

(SCGCQ00247137)

Enhancement 7/10

HEADLINE: Add loginfo prints as debug message

NEW FUNCTIONALITY: When FW sends any loginfo, Driver should print those as debug message. This will help for debugging purpose.
Sample Loginfo prints.
mpslsi: log_info(0x31120100): originator(PL), code(0x12), sub_code(0x0100)
(da1:mpslsi0:0:10:0): WRITE(6). CDB: a 2 29 e2 1 0 length 512 SMID 555 terminated ioc 804b scsi 0 state c xfer 0

(SCGCQ00249012)

Enhancement 8/10

HEADLINE: Recover Controller doing mps_reinit from config request timeout context

NEW FUNCTIONALITY: It is possible to get config request timeout. Current driver is able to detect config request timeout, but it does not do anything on config_request timeout.
Driver should call mps_reinit() if any request_poll (which is called as part of config_request) is time out.

(SCGCQ00250904)

Enhancement 9/10

HEADLINE: cdb length check is required for 32 byte CDB

NEW FUNCTIONALITY: cdb length check is required for 32 byte CDB. Add correct mpi control value for 32 bit CDB as below while submitting SCSI IO Request to controller.
mpi_control |= 4 << MPI2_SCSIIO_CONTROL_ADDCDBLEN_SHIFT;

(SCGCQ00250906)

Enhancement 10/10

HEADLINE: Check the actual status of Message unit reset (mps_message_unit_reset)

NEW FUNCTIONALITY: FreeBSD Driver just writes MPI2_FUNCTION_IOC_MESSAGE_UNIT_RESET and never check the ack. (it just wait for 50 millisecond)
Driver now check the status of "MPI2_FUNCTION_IOC_MESSAGE_UNIT_RESET" after writing it to the FW.
Also checking for doorbell ack is now uses msleep with proper sleep flags, instead of <DELAY>.