



## SCS Engineering Release Notice

---

*Phase14 GCA Release Version 07.21.01.00 - UEFI\_BSD\_HII\_SAS2\_Phase14.0 (SCGCQ00301324)*

*(SCGCQ00301324) - Phase14 GCA Release Version 07.21.01.00 -  
UEFI BSD HII SAS2 Phase14.0*

*(SCGCQ00297104) - Phase14 Beta Release Version 07.21.00.04 -  
UEFI BSD HII SAS2 Phase14.0*

*(SCGCQ00286956) - Phase14 Beta Release Version 07.21.00.03 -  
UEFI BSD HII SAS2 Phase14.0*

*(SCGCQ00279881) - Phase14 Alpha Release Version 07.21.00.02 -  
UEFI BSD HII SAS2 Phase14.0*

*(SCGCQ00271416) - Phase14 Alpha Release Version 07.21.00.01 -  
UEFI BSD HII SAS2 Phase14.0*

*(SCGCQ00265939) - Phase14 Alpha Release Version 07.21.00.00 -  
UEFI BSD HII SAS2 Phase14.0*



## SCS Engineering Release Notice

---

*Phase14 GCA Release Version 07.21.01.00 - UEFI\_BSD\_HII\_SAS2\_Phase14.0 (SCGCQ00301324)*

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



## SCS Engineering Release Notice

---

*Phase14 Beta Release Version 07.21.00.04 - UEFI\_BSD\_HII\_SAS2\_Phase14.0 (SCGCQ00297104)*

### **Change Summary ( Defects=1)**

SCGCQ00289551 (DFCT) - Assigning a global hotspare to a redundant volume is not possible when a drive failing READ CAPACITY is present in the topology.



## SCS Engineering Release Notice

Phase14 Beta Release Version 07.21.00.04 - UEFI\_HII\_SAS2\_Phase14.0 (SCGCQ00297104)

### Total Defects Resolved (1)

(SCGCQ00289551)		Defect 1/1
<b>HEADLINE:</b>	Assigning a global hotspare to a redundant volume is not possible when a drive failing READ CAPACITY is present in the topology.	
<b>DESC OF CHANGE:</b>	When a drive which did not return READ CAPACITY successfully is part of the configuration, we were seeing issue in Global Hotspare assignment. The function vfr_GetBareDrivesCompatibleforVolume() has been updated properly to take care of these drives properly.	
<b>TO REPRODUCE:</b>	Step1: Have a configuration with a bad drive which shows the drive size as N/A in Physical disk Properties UEFI HII Form. Step2: Create a redundant volume Step3: Navigate to Manage Global Hotspare disks screen	
<b>ISSUE DESC:</b>	UEFI HII when there is a bad drive with the drive size shown as N/A in the physical disk properties, assigning a global hotspare to a redundant volume is not possible.	



## SCS Engineering Release Notice

---

Phase14 Beta Release Version 07.21.00.03 - UEFI\_BSD\_HII\_SAS2\_Phase14.0 (SCGCQ00286956)

### **Change Summary ( Defects=5)**

SCGCQ00276112 (DFCT) - Sas2flash hangs while completely erasing the controller flash under uefi shell.

SCGCQ00282807 (DFCT) - 512b sector hotspare shown as compatible under manage Hotspare UEFI HII form for a 4k sector volume

SCGCQ00283827 (DFCT) - Code Review defect: Add additional check fo non equivalent SAS addresses for checking multipathed devices

SCGCQ00283828 (DFCT) - Remove boot related options and dissallow Changing of Controller Properties in some cases

SCGCQ00284847 (DFCT) - "Manage Virtual Disk Properties" UEFI HII form Virtual Disk Capacity shown blank after the hotspare failover.



# SCS Engineering Release Notice

Phase14 Beta Release Version 07.21.00.03 - UEFI\_BSD\_HII\_SAS2\_Phase14.0 (SCGCQ00286956)

## Total Defects Resolved (5)

(SCGCQ00276112)		Defect 1/5
HEADLINE:	Sas2flash hangs while completely erasing the controller flash under uefi shell.	
DESC OF CHANGE:	In the start() routine of driverbinding.c, we do BOFM related processing. BOFM related processing uses "PciDevice". If the "PciDevice" is NULL (when the card is completely erased), system hangs. Check for (PciDevice != NULL) has been extended to the BOFM processing which will avoid sending a NULL "PciDevice" to BOFM processing.	
TO REPRODUCE:	1) Connect a Falcon controller to the UEFI System 2) Using sas2flash.efi, flash the controller with the latest firmware, bios and UEFI driver. 3) Reboot the machine and boot into the UEFI shell. 4) Without unloading the existing UEFI driver, erase the entire flash region using 'sas2flash.efi -o -e 7' command.	
ISSUE DESC:	Without unloading the UEFI driver, attempt to completely erase the controller flash under uefi shell, causes system hang.	
(SCGCQ00282807)		Defect 2/5
HEADLINE:	512b sector hotspare shown as compatible under manage Hotspare UEFI HII form for a 4k sector volume	
DESC OF CHANGE:	Additional check has been added to compare the Volume BlockSize and the hotspare block Size. This check determines if the hotspare in question is compatible with the Volume or not.	
TO REPRODUCE:	1. Create a RAID1 volume using 512b drives. 2. Create a RAID1 volume using 4K sector drives. 3. Assign a 512b drive as hotspare for the 512b drive volume. 4. Go into the Manage hotspare screen of the 4K sector volume.	
ISSUE DESC:	On creating a 4K sector volume and a 512b drive volume, and assigning a 512b drive as hotspare, shows it as compatible for the 4K sector volume as well.	
(SCGCQ00283827)		Defect 3/5
HEADLINE:	Code Review defect: Add additional check fo non equivalent SAS addresses for checking multipathed devices	
DESC OF CHANGE:	Added check to compare the SAS Address of the device to devices that have previously been discovered so that multipathed devices can be filtered out. Previous check was for EnclosureLogicalID and Slot Number. The SAS Address check is in addition to those. The SAS Addresses must be different in order to be a multipathing device.	
TO REPRODUCE:	N/A	
ISSUE DESC:	While comparing BIOS CU and HII code, it is found that the While considering two devices as multipath, HII code is not checking whether the SAS address of a device is different when the slot and enclosure ID are matched. We need to check the uniqueness of SAS address across multipathed devices otherwise the device might not be really multipathed (having a possibility of single path failure causing drive failure). So the additional check has to be added in HII code.	
(SCGCQ00283828)		Defect 4/5
HEADLINE:	Remove boot related options and disallow Changing of Controller Properties in some cases	
DESC OF CHANGE:	Removed all boot related functionality.	
TO REPRODUCE:	In IT mode, there should be no options that can change in Controller Properties because boot related items are no longer used. In IR mode, boot related items should not be displayed or changable, so the only IR Controller Property is to save the log information.	
ISSUE DESC:	When the legacy BIOS related options are removed from HII, in some cases setting boot devices option is left out, and that needs to be removed and when that option is removed, with IT firmware (or when there is no physical disk is present) there is no need of controller management screen. So the HII has to be updated properly to remove setting legacy boot device option and to remove controller management option when not required.	
(SCGCQ00284847)		Defect 5/5
HEADLINE:	"Manage Virtual Disk Properties" UEFI HII form Virtual Disk Capacity shown blank after the hotspare failover.	
DESC OF CHANGE:	Vfr_GetVolumeBlockSize() was not returning proper block size when the primary HDD of the Volume is removed. This is fixed by checking the active HDD member of the Volume and providing its block size as the Volume block size.	



## SCS Engineering Release Notice

---

*Phase14 Beta Release Version 07.21.00.03 - UEFI\_HII\_SAS2\_Phase14.0 (SCGCQ00286956)*

---

**TO REPRODUCE:**

Step1: Create a Redundant volume along with a hotspare.  
Step2: Pull a drive from the volume, hotspare starts to failover and resync begins.  
Step3: In "Manage Virtual Disk Properties" UEFI HII form, virtual disk capacity is blank.

**ISSUE DESC:**

UEFI HII, when hotspare fails over and starts to resync, the "Virtual Disk Size" is shown blank under "Manage Virtual Disk Properties" UEFI HII form. The issue is observed intermittently in a volume even with no hotspares. If the volume is degraded and then resync is started on it, this issue is observed.

---



## SCS Engineering Release Notice

---

*Phase14 Alpha Release Version 07.21.00.02 - UEFI\_BSD\_HII\_SAS2\_Phase14.0 (SCGCQ00279881)*

### **Change Summary ( Defects=2)**

SCGCQ00254464 (DFCT) - The BlockIO tests failed while SCT 2.31 is executed

SCGCQ00269129 (DFCT) - Booting OEM specific system with Virtual Disk created causes UEFI system hang



# SCS Engineering Release Notice

Phase14 Alpha Release Version 07.21.00.02 - UEFI\_HII\_SAS2\_Phase14.0 (SCGCQ00279881)

## Total Defects Resolved (2)

(SCGCQ00254464) Defect 1/2

**HEADLINE:** The BlockIO tests failed while SCT 2.31 is executed  
**DESC OF CHANGE:** Removed the validation of zero transfer size from Block IO read and write handlers.  
**TO REPRODUCE:** Run BlockIO test from SCT IHV suite and observer failures  
**ISSUE DESC:** The SCT is modified to execute BlockIORead and BlockIOWrite interfaces with zero transfer length and the test suite is expecting EFI\_STATUS\_SUCCESS, but due to validation in the handlers inside MPT2SAS BSD the EFI\_BAD\_BUFFER\_SIZE is returned which results in test failure.

(SCGCQ00269129) Defect 2/2

**HEADLINE:** Booting OEM specific system with Virtual Disk created causes UEFI system hang  
**DESC OF CHANGE:** While calculating the "pageSize" of Raid Volume Page 0, we were using the PTR\_MPI2\_CONFIG\_PAGE\_RAID\_VOL\_0 type as parameter for sizeof(), which is the size of the pointer. This used to cause Memory corruption in some of the UEFI platforms. Fixed it by passing the MPI2\_CONFIG\_PAGE\_RAID\_VOL\_0 as the parameter to sizeof() which provides the complete size of the structure.  
**TO REPRODUCE:** a) Connect a falcon controller to OEM specific UEFI system and flash the controller with the latest Ph13 GCA FW, BIOS and Ph14 Pre-Alpha UEFI driver.  
b) Connect some SAS+SATA drives to the controller.  
c) Go to "System Settings" and launch the LSI UEFI HII Configuration Application, and create a RAID1 virtual disk.  
d) Exit from the LSI UEFI HII Configuration Application, reboot the machine and try to launch the LSI UEFI HII Application again.  
**ISSUE DESC:** With Virtual Disk created, system hangs at the System's UEFI Initialization screen displaying the message "Connecting Boot Devices and Adapters.....".



## SCS Engineering Release Notice

---

*Phase14 Alpha Release Version 07.21.00.01 - UEFI\_BSD\_HII\_SAS2\_Phase14.0 (SCGCQ00271416)*

### **Change Summary ( Defects=3)**

SCGCQ00266006 (DFCT) - Informal Code Review defect: Wrong FormID passed to SH\_HF041\_Customize\_Warning.

SCGCQ00268430 (DFCT) - Code review defect: Use TARGET\_MAX\_BYTES instead of 0x10

SCGCQ00271325 (DFCT) - Check for NULL for SasAdapter pointer before using it in the function and optimize CheckforActiveVolumes function



# SCS Engineering Release Notice

Phase14 Alpha Release Version 07.21.00.01 - UEFI\_BSD\_HII\_SAS2\_Phase14.0 (SCGCQ00271416)

## Total Defects Resolved (3)

(SCGCQ00266006)		Defect 1/3
HEADLINE:	Informal Code Review defect: Wrong FormID passed to SH_HF041_Customize_Warning.	
DESC OF CHANGE:	Part of the code was not merged from the original change described in CSET 255849. The CSET is to remove the extra confirmation screen when creating a configuration. The change that was missed would cause HII to go to the configuration options screen after confirmation instead of the the success/failure screen.	
TO REPRODUCE:	After the final confirmation when creating a volume, the next screen should be the success/failure screen where 'OK' can be selected. Instead, the configuration options screen is shown.	
ISSUE DESC:	Success/Failure screen is not shown after volume creation.	
(SCGCQ00268430)		Defect 2/3
HEADLINE:	Code review defect: Use TARGET_MAX_BYTES instead of 0x10	
DESC OF CHANGE:	The TARGET_MAX_BYTES Macro is used instead of 0x10.	
TO REPRODUCE:	None	
ISSUE DESC:	When the code is modified to clear the unused bytes in TargetID array a numeric value of 0x10 is used instead of EDK provided macro TARGET_MAX_BYTES. That needs to be fixed	
(SCGCQ00271325)		Defect 3/3
HEADLINE:	Check for NULL for SasAdapter pointer before using it in the function and optimize CheckforActiveVolumes function	
DESC OF CHANGE:	Added code to check if the SasAdapter is NULL before using it. Also updated the CheckforActiveVolume function to update the PersistentVolumeInfo Array to optimize the usage.	
TO REPRODUCE:	None	
ISSUE DESC:	SasAdapter pointer is passed to the function IsIRFirmware, in this function its being referenced without checking if its NULL or not.	



# SCS Engineering Release Notice

Phase14 Alpha Release Version 07.21.00.00 - UEFI\_HII\_SAS2\_Phase14.0 (SCGCQ00265939)

---

## **Change Summary ( Defects=6 Enhancements=8)**

SCGCQ00254465 (DFCT) - SCSIExtPassthru test failure observed while running IHV test suite from SCT

SCGCQ00257384 (CSET) - RAID Ext SPT's BuildDevicePath allocates less memory for the DevicePath returned to caller

SCGCQ00265814 (CSET) - Correcting BOFM Code

SCGCQ00265815 (CSET) - BOFM supplied addresses for external/switch attach Phys are being assigned to the internal/direct attach Phys.

SCGCQ00265817 (CSET) - BSD Calling RegisterSupport on Non-LSI Devices

SCGCQ00265822 (CSET) - SAS WWIDs not Reverting to Man Page 5 Default when Blade is moved back to non-BOFM slot

SCGCQ00228632 (ENHREQ) - Enhance UEFI BSD to be able to remove persistent mapping page entries for IR volumes that doesnt exist.

SCGCQ00239386 (ENHREQ) - In UEFI mode, HII HDDs located on Vela are displayed twice

SCGCQ00255848 (CSET) - HII: Add support to collect information for Physical drives connected behind expander.

SCGCQ00255849 (CSET) - request to change the way "Create Config" behaves

SCGCQ00255850 (CSET) - UEFI HII: Remove Legacy BIOS Enable/Disable option

SCGCQ00255851 (CSET) - Saved Controller Events Filename in HII

SCGCQ00265438 (CSET) - Do Not Show External RAID LUNs in HII RAID Configuration Page

SCGCQ00265440 (CSET) - Report NVDATA Version Consistently in Hex or Decimal



# SCS Engineering Release Notice

Phase14 Alpha Release Version 07.21.00.00 - UEFI\_BSD\_HII\_SAS2\_Phase14.0 (SCGCQ00265939)

## Total Defects Resolved (6)

### (SCGCQ00254465) Defect 1/6

**HEADLINE:** SCSIExtPassthru test failure observed while running IHV test suite from SCT

**DESC OF CHANGE:** The driver while building target structure from device path was not clearing all the unused bytes in the structure which was causing failure in the test suite and it is fixed by setting all the unused bytes upto 0x10 (specified by the uefi specification) to zero.

**TO REPRODUCE:** Run SCSIExtPassthru test from SCT IHV suite and observer failures.

**ISSUE DESC:** When running the SCSIExtPassthru from IHV test suite (part of SCT) GetTargetLun test case failed.

### (SCGCQ00257384 - Port of SCGCQ00219509) Defect 2/6

**HEADLINE:** RAID Ext SPT's BuildDevicePath allocates less memory for the DevicePath returned to caller

**DESC OF CHANGE:** Changed EFI\_DEVIPATH\_PROTOCOL to LSI\_SAS\_DEVICE\_PATH while using the size to allocate memory to build DevicePath . The latter includes size of SAS Device Path + End Device Path.

**TO REPRODUCE:** From an application calling driver's RAID Ext SPT to build a device path for a RAID physical disk, when the application calls free to deallocate memory, it was found to corrupt the memory.

**ISSUE DESC:** The Build Device Path call to RAID Extended SCSI PassThru Protocol allocates less memory to hold the SAS Device Path + End Device Path. However the header in Device Path returned tells the correct size, which is more than what's allocated to hold the entire device path. Also, a device path buffer of size greater than that allocated is copied to the location. This results in corrupting the memory while freeing the memory at the location.

### (SCGCQ00265814 - Port of SCGCQ00257560) Defect 3/6

**HEADLINE:** Correcting BOFM Code

**DESC OF CHANGE:** Added check before reading and writing BIOS Page 4. Written single function to read and Write all PHY information from BIOS Page 4 at once.

**TO REPRODUCE:** Code implementation. It does not impact the functionality.

**ISSUE DESC:** BOFM code uses multiple calls to read and write BIOS Page 4. The original code was written to use single PHY to read and write BIOS page 4. This would require multiple read and write to same page.

### (SCGCQ00265815 - Port of SCGCQ00252613) Defect 4/6

**HEADLINE:** BOFM supplied addresses for external/switch attach Phys are being assigned to the internal/direct attach Phys.

**DESC OF CHANGE:** In the routine HandleAdapter(). When PhyValue is initialized at the start of this routine, instead of being initialized to 0, it has been initialized to 2. When PhyValue is changed in this routine it has been changed to 3. Previously it was changed to 1.

**TO REPRODUCE:** None

**ISSUE DESC:** Controller Phys 0 and 1 are designated for direct-attach, and don't need to be BOFM controlled. Phys 2 and 3 are for switch attach, and are BOFM controlled.

### (SCGCQ00265817 - Port of SCGCQ00252619) Defect 5/6

**HEADLINE:** BSD Calling RegisterSupport on Non-LSI Devices

**DESC OF CHANGE:** There was no checking to ensure that the device that is being queried is an LSI device prior to calling the RegisterSupport() routine. Additional check has been added which will ensure that the RegisterSupport() is called if the device is LSI device.

**TO REPRODUCE:** None

**ISSUE DESC:** Issue reports that the LSI EFI BSD is calling RegisterSupport on controllers that are non LSI.

### (SCGCQ00265822 - Port of SCGCQ00254089) Defect 6/6

**HEADLINE:** SAS WWIDs not Reverting to Man Page 5 Default when Blade is moved back to non-BOFM slot

**DESC OF CHANGE:** Added code to clear BOFM settings where Adapter may have been configured with BOFM settings and now connected to non-BOFM system.



## SCS Engineering Release Notice

---

*Phase14 Alpha Release Version 07.21.00.00 - UEFI\_BSD\_HII\_SAS2\_Phase14.0 (SCGCQ00265939)*

---

**TO REPRODUCE:**

1. Connect Adapter to BOFM Slot
2. Configure SAS Address
3. Re-connect the same Adapter to non-BOFM slot
4. Adapter Retains the BOFM configured SAS address

**ISSUE DESC:**

We have an issue, where once a blade picks up a BOFM address, it keeps that address even when moved to a different slot, which should give it a new, different BOFM address. The same happens when the blade is moved to a different chassis - it doesn't pick up that chassis' BOFM assignment.

This also happens when the blade is moved to a slot that does not assign BOFM addresses, in which case it should resort to the default/internal address.

---



# SCS Engineering Release Notice

Phase14 Alpha Release Version 07.21.00.00 - UEFI\_BSD\_HII\_SAS2\_Phase14.0 (SCGCQ00265939)

## Total Enhancements Implemented (8)

(SCGCQ00228632) Enhancement 1/8

**HEADLINE:** Enhance UEFI BSD to be able to remove persistent mapping page entries for IR volumes that doesn't exist.  
**NEW FUNCTIONALITY:** Added functionality to remove Driver Persistent Mapping Entries (DPMP0) for IR volumes that no longer exist. The UEFI BSD will remove the Driver Persistent Mapping Entry for the IR volumes if volumes are found to be offline when the BSD driver connects to the controller.

(SCGCQ00239386) Enhancement 2/8

**HEADLINE:** In UEFI mode, HII HDDs located on Vela are displayed twice  
**NEW FUNCTIONALITY:** Modify GetBareDiskCount function to use Vfr\_GetBareDriveList instead of repeating work to get the driver count.  
Add CheckMultiPath function to each list gathering function (such as Vfr\_GetBareDriveList) which will check each drive to be put in the list with all other drives in the list and notify the caller if this drive is already in the list (multi-pathed). Then, the list function will not put the new drive in the list if it is multi-pathed. The EnclosureLogicalID and SlotNumber are used to compare drives.

(SCGCQ00255848 - Port of SCGCQ00238690) Enhancement 3/8

**HEADLINE:** HII: Add support to collect information for Physical drives connected behind expander.  
**NEW FUNCTIONALITY:** In Vfr\_GetBareDriverInfo, Vfr\_GetIRPhysDiskInfo, and Vfr\_GetHotSpareInfo functions, add a call to get Expander Page 1 for the Phy of the given drive. Only get this page if the device is attached to an expander, which is determined by getting SAS Device Page 0 for the device's ParentDevHandle. Expander Page 1 will have all of the information needed for the Physical Disk Properties page.

(SCGCQ00255849 - Port of SCGCQ00226575) Enhancement 4/8

**HEADLINE:** request to change the way "Create Config" behaves  
**NEW FUNCTIONALITY:** This change will remove the 'Create Configuration' option that was displayed after the 'Apply' button was pressed. Now, after selecting 'Apply', it goes directly to the confirmation screen. If 'No' is selected, it goes back to the original 'Create Configuration' screen.  
  
So, to create a volume the user will now take these steps:  
1) Select 'Create Configuration'  
2) Select Volume options and then select 'Apply Changes'  
3) Confirm creation by selecting 'Yes' at the confirmation screen

(SCGCQ00255850 - Port of SCGCQ00242825) Enhancement 5/8

**HEADLINE:** UEFI HII: Remove Legacy BIOS Enable/Disable option  
**NEW FUNCTIONALITY:** Removed the selection in Change Controller Properties to Enable or Disable the Legacy BIOS. There is no need for this since the Legacy BIOS can be enabled or disabled in the System BIOS.

(SCGCQ00255851 - Port of SCGCQ00243133) Enhancement 6/8

**HEADLINE:** Saved Controller Events Filename in HII  
**NEW FUNCTIONALITY:** Controller events will be saved to CtrlEvents.bin instead of CtrlEvents.txt since this file is not in human readable format. The help text was changed to give a better explanation about what this Events file is for.

(SCGCQ00265438 - Port of SCGCQ00257847) Enhancement 7/8

**HEADLINE:** Do Not Show External RAID LUNs in HII RAID Configuration Page  
**NEW FUNCTIONALITY:** In Vfr\_GetBareDriveList function, if the new parameter called FilterNonZeroLuns is TRUE, don't put LUNs into the bare drive list if it is not LUN 0. The device can be a non-zero lun only if MPTLIB2 sets the UseLun64 flag in the device info. This is set for multi-lun devices. Take the Addressing Method of the LUN into account when checking the LUN number. This is described in the SCSI Arch Model (SAM) spec.



## SCS Engineering Release Notice

---

*Phase14 Alpha Release Version 07.21.00.00 - UEFI\_BSD\_HII\_SAS2\_Phase14.0 (SCGCQ00265939)*

**(SCGCQ00265440 - Port of SCGCQ00257859)**

*Enhancement 8/8*

**HEADLINE:** Report NVDATA Version Consistently in Hex or Decimal

**NEW FUNCTIONALITY:** Print the NVData Default and Persistent versions in Hex instead of Decimal.

---