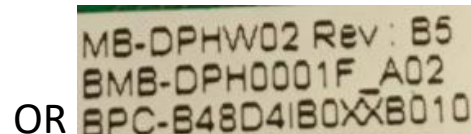


Need to check below:

Y:\RMA\Harmonic HA401 Upgrade Check Lists Rev. 01.pptx



Old Version BRIDGE BOARD: 14J

New Version Bridge Board: D1



BACKPLAN

ETH Cable must like that

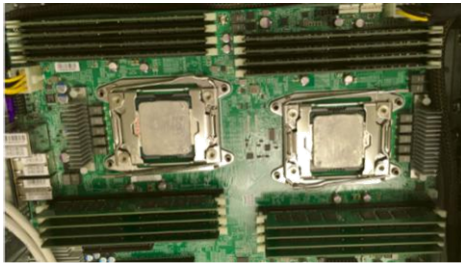


HDD Tray must like below:



If not, need to replace part.

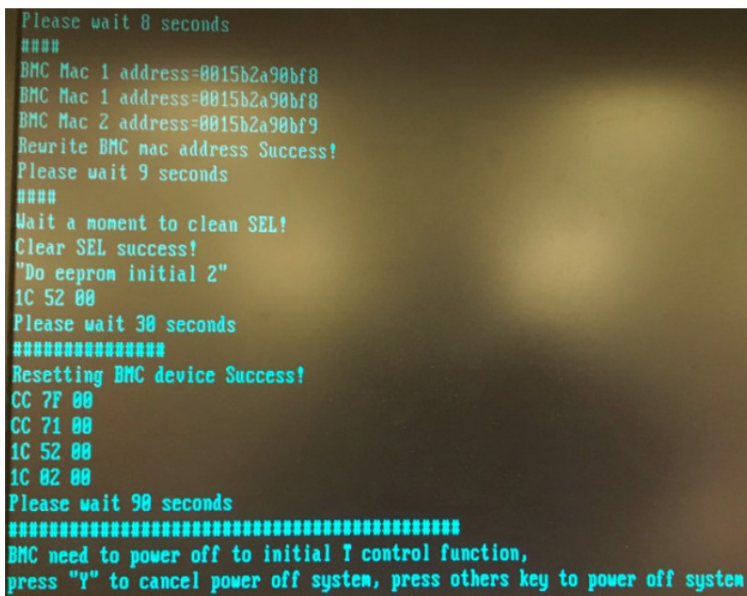
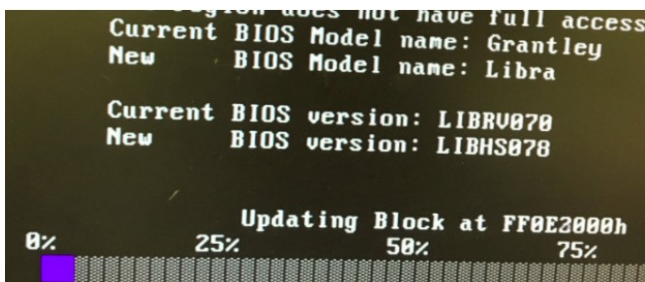
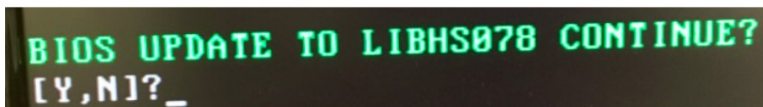
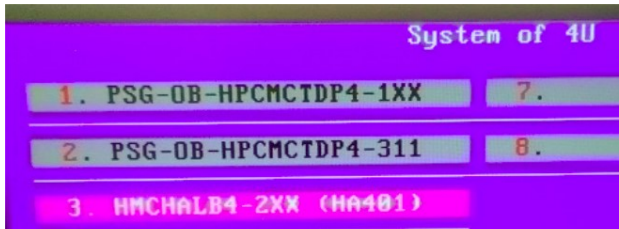
HOW TO FLASH BIOS AND BMC



Need to install 02 CPUs and all Memory slots. If no display it might be 1 of memories slot defective. Also Connecting the Eth Cable to Management Port. Will get display right away.



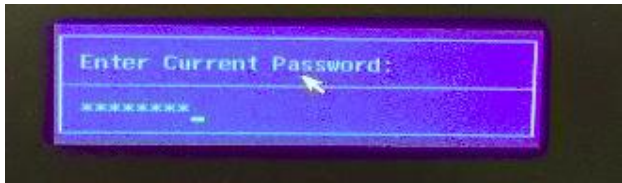
Will also take about 45 second to get display.



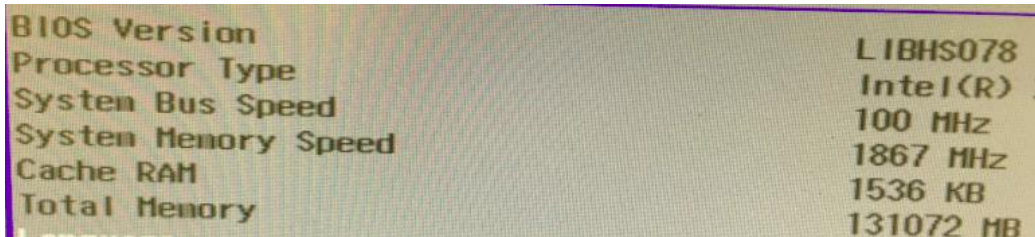
Then other key to turn the unit off.



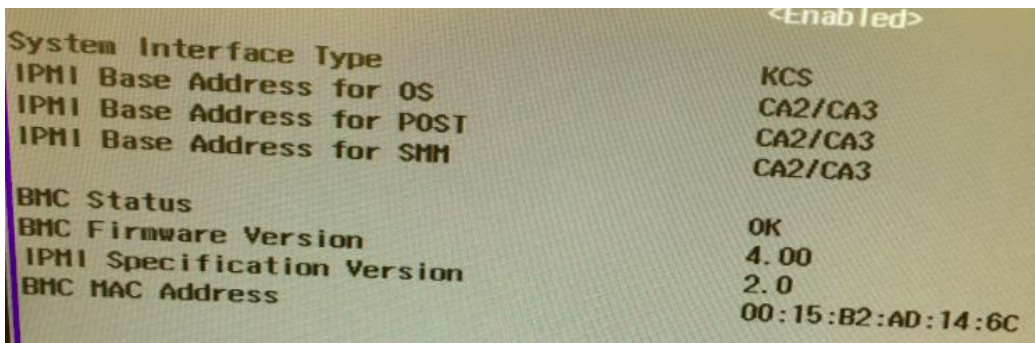
To going to Bios press ESC then click SCU



Password: 77447744

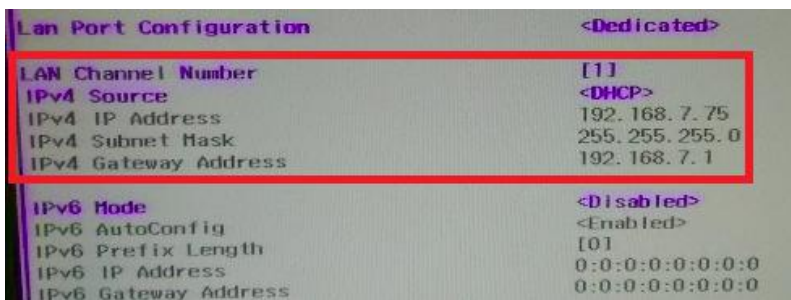


Advance → H2O IPMI Configuration



*** When going to CMOS first time if it does not show up BMC Firmware Version just rebooting the unit and going back few times to check again it should appear.

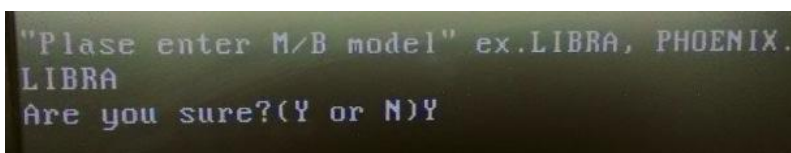
*** It auto detect IP Address. Go to BMC Configuration



HOW TO FLASH FRU

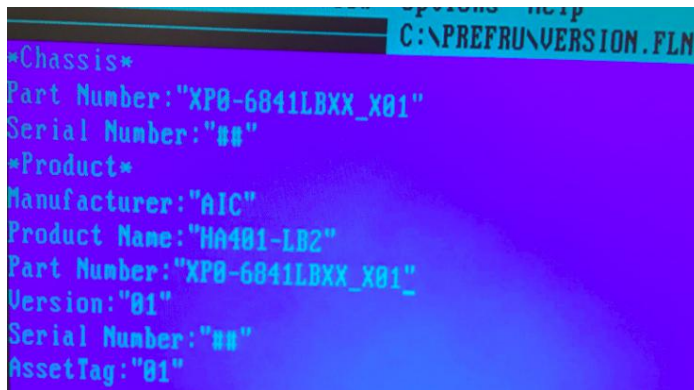


Press 2- M/B | PHEONIX...

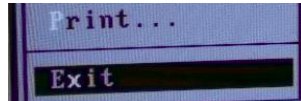


Enter: LIBRA

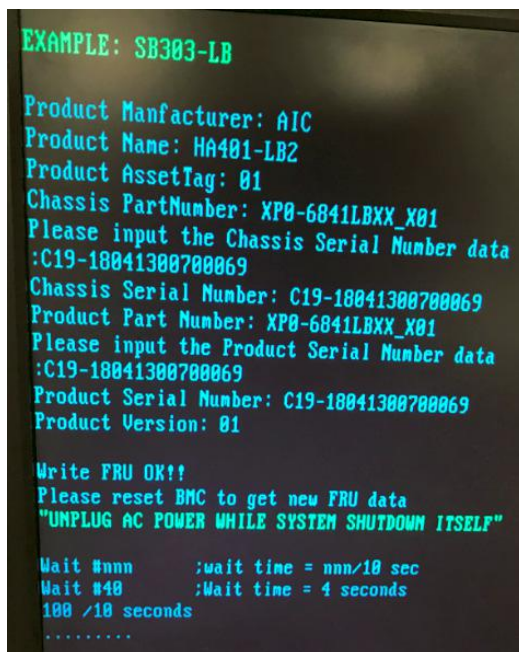
Then I will auto open file name: version.fln



```
C:\PREFRU\VERSION.FLN
*Chassis*
Part Number:"XP0-6841LBXX_X01"
Serial Number:"00"
*Product*
Manufacturer:"AIC"
Product Name:"HA401-LB2"
Part Number:"XP0-6841LBXX_X01"
Version:"01"
Serial Number:"00"
AssetTag:"01"
```



Just Exit



```
EXAMPLE: SB303-LB
Product Manufacturer: AIC
Product Name: HA401-LB2
Product AssetTag: 01
Chassis PartNumber: XP0-6841LBXX_X01
Please input the Chassis Serial Number data
:C19-18041300700069
Chassis Serial Number: C19-18041300700069
Product Part Number: XP0-6841LBXX_X01
Please input the Product Serial Number data
:C19-18041300700069
Product Serial Number: C19-18041300700069
Product Version: 01

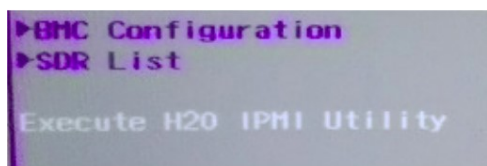
Write FRU OK!!
Please reset BMC to get new FRU data
"UNPLUG AC POWER WHILE SYSTEM SHUTDOWN ITSELF"

Wait #nnn      ;wait time = nnn/10 sec
Wait #40       ;Wait time = 4 seconds
100 /10 seconds
.....
```

Then unit will auto power off and need to unplug / replug the power cable too before turning back on.

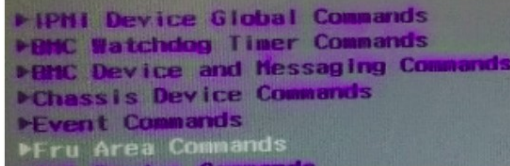
NEED TO CHECK FRU IN BIOS

H20 IPMI Configuration →

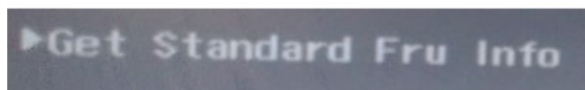


```
►BMC Configuration
►SDR List

Execute H20 IPMI Utility
```



```
►IPMI Device Global Commands
►BMC Watchdog Timer Commands
►BMC Device and Messaging Commands
►Chassis Device Commands
►Event Commands
►Fru Area Commands
►Power Device Commands
```



```
►Get Standard Fru Info
```

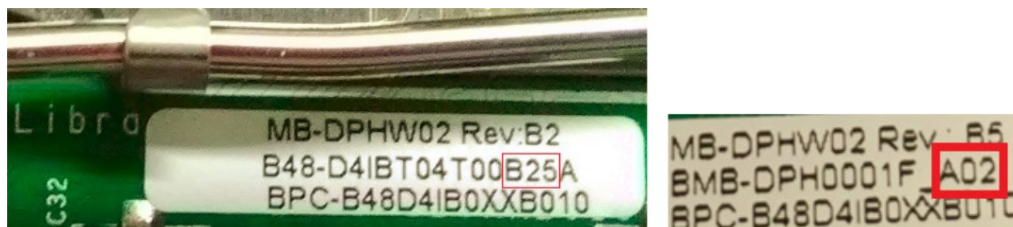
If it does not show Execute H2O IPMI need to reboot the unit until it shows the menu.

```
Chassis Type           : Main Server Chassis
Chassis Part Num       : XP0-6841LBXX_X01
Chassis Serial Num     : C19-18041300700069
Mfg Date/Time         : 2013/11/20 18:49:00
Board Manufacturer     : AIC
Board Product Name     : LIBRA
Board Serial Number    : 00477-1639-00064
Board Part Number      : B48-D4IBT04T00B45A
Product Manufacturer   : AIC
Product Name          : HA401-LB2
Product Part Model Number : XP0-6841LBXX_X01
Product Version        : 01
Product Serial Number  : C19-18041300700069
Product Asset Tag      : 01
```

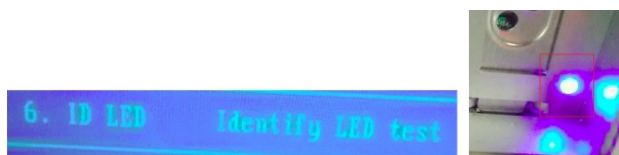
On Boot from USB to check FRU

```
BIOS Version =
BMC FIRMWARE Version = LIBRM039
Config Version = HA401LB039
DIP Switch value = 183
Hardware Version(EEPROM) =A02
Board Serial Number(EEPROM) =37692-1838-00087
Chassis Part Number(EEPROM) =X4BC0682A102000XXP
Chassis Serial Number(EEPROM) =C15-16102000400054
Product Part Number(EEPROM) =X4BC0682A102000XXP
Product Serial Number(EEPROM) =C15-16102000400054
Board Part Number(EEPROM) =BMB-DPH0001F
BMC Mac address in BMC flash=0015B2AD13EE
Press any key to continue
```

For Hardware Version (EEPROM) check on the MB label



Then Test ID led to make sure at the back having led light



For Final Burn Test it could not test Eth Loopback and could not test Power Module 1 Fail (0B Check Point) just Skip it.

But it should show both lans


```

NIC Bus Dev Fun Vendor-Device Branding
=== === ===
1 2 00 00 8086-1528 Intel(R)
2 2 00 01 8086-1528 Intel(R)

1: LAN MAC Address is 0015B2ACB702.
2: LAN MAC Address is 0015B2ACB703.
"Check all LANs MAC address" Right ?

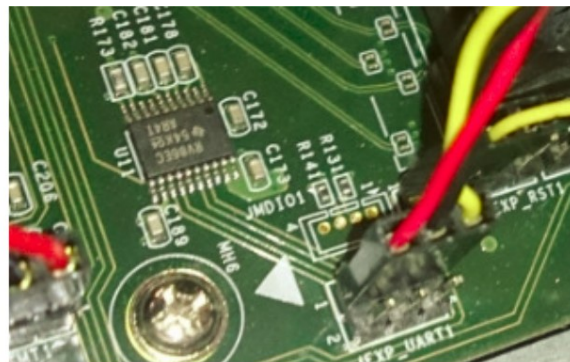
```

. Also could not test with QuickTech Pro.

HOW TO CHECK BACKPLAN FIRMWARE VERSION First verify Backplane Has Version Rev: E



Opening the top cover chassis then Connecting Cable to the MB and PC



Bits per second: 38400

Data bits: 8

Parity: None

Stop bits: 1

Flow control: None

```

cmd >rev
=====

Firmware Revision Information:-
=====

Active Firmware:
Revision: 1.12.10.1
Version Name: SAS3xFW-01.12.10.01 09/18/14
Firmware Family: 0 OemFamily: 0
Fast Boot: Yes Image Address: 0x10000000

cmd >showmfg
=====:

Manufacturing Image Version Information:-
=====:

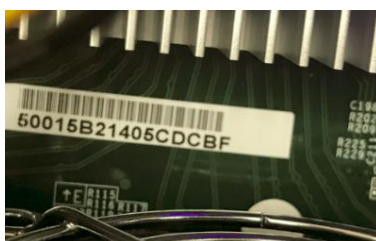
Mfg Revision: 1:10:0:1
Product Name: HA401 Expander
Platform Name: AIC 126

cmd >sasaddr

SAS address: 0x50015B21405CDCBF

```

Verify it from the label on Bridge Board



```
cmd >reset
```

```

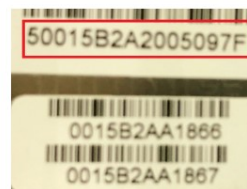
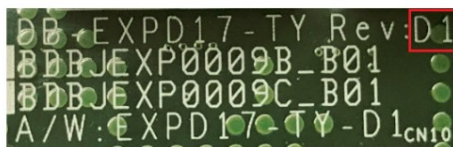
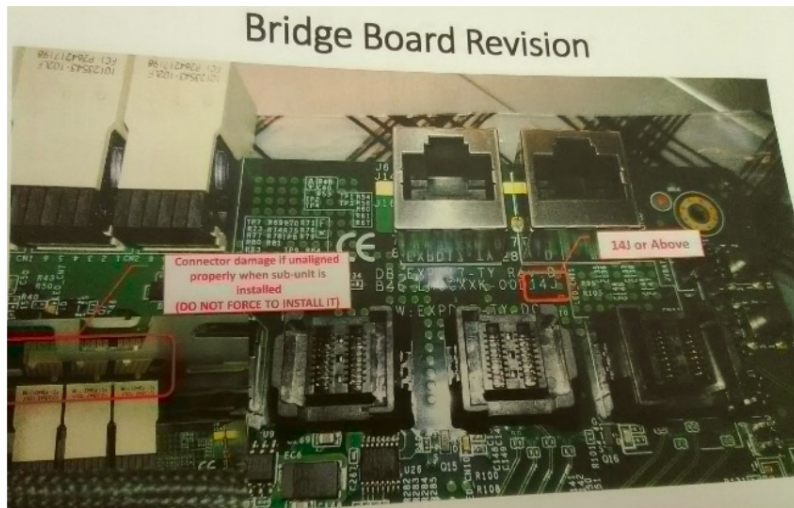
cmd >
=====
The drive on slot 1 is inserted.
The drive on slot 2 is inserted.
The drive on slot 3 is inserted.
The drive on slot 4 is inserted.
The drive on slot 5 is inserted.
The drive on slot 6 is inserted.
The drive on slot 7 is inserted.
The drive on slot 8 is inserted.
The drive on slot 9 is inserted.
The drive on slot 10 is inserted.
The drive on slot 11 is inserted.
The drive on slot 12 is inserted.
The drive on slot 13 is inserted.
The drive on slot 14 is inserted.
The drive on slot 15 is inserted.
The drive on slot 16 is inserted.
The drive on slot 17 is inserted.
The drive on slot 18 is inserted.
The drive on slot 19 is inserted.
The drive on slot 20 is inserted.
The drive on slot 21 is inserted.
The drive on slot 22 is inserted.
The drive on slot 23 is inserted.
The drive on slot 24 is inserted.

```

HOW TO CHECK AND UPDATE BRIDGE BOARD REVISION

It must be 14J or above and the Bios Version:

08 35 00.00

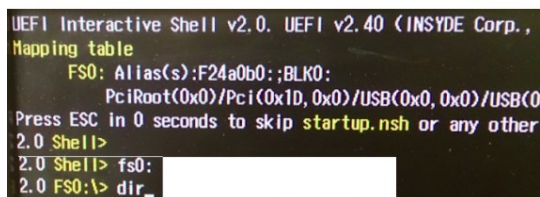
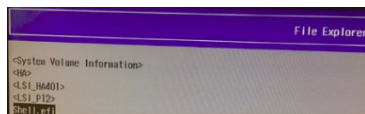
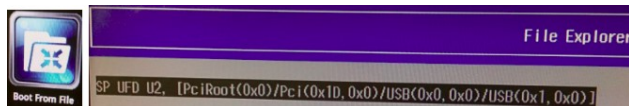


Need to take picture SAS Address from MB

Booting from USB



Press ESC and Enter Boot From File




```

2.0 Shell> fs0:
2.0 FS0:\> dir
Directory of: FS0:\
02/02/2017 14:12 <DIR>          4,096 No
12/19/2016 15:43 <DIR>          4,096 LSI_HA401
11/12/2015 09:37                99 flash.bat
12/05/2014 10:43           136,896 H2OFFT-D.exe
11/02/2015 17:20           3,430,708 InsydeH2OFFT_x86_LINUX_100.00.05.00.tar.bz2
11/12/2015 09:38           168,448 Libra Linux Update Process.doc
11/12/2015 09:39           31,744 Libra dos Update_process.doc
11/12/2015 09:58          16,777,216 LIBRS060.bin
09/09/2014 16:56           15,644 message.ini
10/29/2014 10:35           28,871 platform.ini
11/12/2015 10:00           118,272 Release_Libra_BIOS.doc
11/03/2016 17:05           847,232 Shell.efi
09/23/2008 13:09           36,508 TGET.EXE
03/02/2017 12:19          949,880 rufus-2.12.exe
11/15/2016 18:23 <DIR>          4,096 LSI_P12
                12 File(s) 22,541,518 bytes
                3 Dir(s)
2.0 FS0:\> cd lsi_ha401_

```

cd lsi_ha401

```

2.0 FS0:\> cd lsi_ha401
2.0 FS0:\lsi_ha401> dir
Directory of: FS0:\lsi_ha401\
03/29/2017 09:34 <DIR>          4,096 .
03/29/2017 09:34 <DIR>          0 ..
10/06/2016 14:37           44,566 EFI_S0P.rtf
06/14/2016 10:52            23 erase7.nsh
10/05/2016 17:57            24 getsasadd.nsh
06/14/2016 11:40            45 installfw.nsh
06/07/2016 12:20          212,480 mptsas3.rom
06/14/2016 18:05          1,342,332 P12_IRM.fw
03/07/2016 05:33          227,552 sas3flash.efi
06/14/2016 11:39            29 sasadd.nsh
                8 File(s) 1,827,051 bytes
                2 Dir(s)
2.0 FS0:\lsi_ha401> getsasadd_

```

getsasadd

```

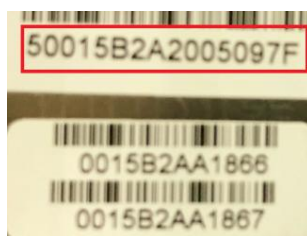
Advanced Mode Set
Adapter Selected is a Avago SAS: SAS3008(C0)

Controller Number          : 0
Controller                  : SAS3008(C0)
PCI Address                 : 00-05-00-00
SAS Address                 : 50015B2-A-2000-977F
NVDATA Version (Default)   : 08.02.00.00
NVDATA Version (Persistent) : 08.02.00.00
Firmware Product ID        : 08.02.00.00
Firmware Version           : 0x2721 (IR)
NVDATA Vendor              : 12.00.02.00
NVDATA Product ID          : LSI
BIOS Version               : Undefined
UEFI BSD Version           : 08.25.00.00
FCODE Version              : N/A
Board Name                 : N/A
Board Assembly             : Eval Board
Board Tracer Number        : N/A

Finished Processing Commands

```

For SAS Address check and verify on the MB Label.



```
2.0 FS0:\lsi_ha401> getsasadd
2.0 FS0:\lsi_ha401> sas3flash.efi -o -list
Avago Technologies SAS3 Flash Utility
Version 13.00.00.00 (2016.03.07)
Copyright 2008-2016 Avago Technologies. All rights reserved.

Advanced Mode Set

Adapter Selected is a Avago SAS: SAS3008(C0)

Controller Number      : 0
Controller             : SAS3008(C0)
PCI Address            : 00:05:00:00
SAS Address            : 500160200001E87F
WDATA Version (Default) : 00.02.00.00
WDATA Version (Persistent) : 00.02.00.00
Firmware Product ID    : 0x2721 (18)
Firmware Version       : 12.00.02.00
WDATA Vendor           : LSI
WDATA Product ID       : Undefined
BIOS Version           : 08.25.00.00
UEFI BIOS Version      : N/A
FCOE Version           : N/A
Board Name             : SAS3008
Board Assembly         : N/A
Board Tracer Number    : N/A

Finished Processing Commands Successfully.
Exiting SAS3Flash.
2.0 FS0:\lsi_ha401> -
```

→ 08.35.00.00

08.29.00.00-OK

If it is not current version, need to upgrade below:

erase7

*** sas3flash.efi -0 -e 7 no need to enter it auto run when entering command erase7

```
2.0 FS0:\lsi_ha401> erase7
2.0 FS0:\lsi_ha401> sas3flash.efi -o -e 7
Avago Technologies SAS3 Flash Utility
Version 13.00.00.00 (2016.03.07)
Copyright 2008-2016 Avago Technologies. All rights reserved.

Advanced Mode Set

Adapter Selected is a Avago SAS: SAS3008(C0)

Executing Operation: Erase Flash

Erasing Entire Flash Region (including HPB)...

Erase Flash Operation Successful

Resetting Adapter...
Reset Successful

Finished Processing Commands Successfully.
Exiting SAS3Flash.
2.0 FS0:\lsi_ha401> -
```

Then enter command: installfw

*** *** sas3flash.efi -0 -f p12_ no need to enter it auto run when entering command: installfw

```
Exiting SAS3Flash.
2.0 FS0:\lsi_ha401> installfw
2.0 FS0:\lsi_ha401> sas3flash.efi -o -f P12_1
Avago Technologies SAS3 Flash Utility
Version 13.00.00.00 (2016.03.07)
Copyright 2008-2016 Avago Technologies. All rights reserved.

Advanced Mode Set
```

```
BIOS Image Compatible with the SAS Controller.

Attempting to Flash BIOS Image...

Verifying Download...

Flash BIOS Image Successful.

Finished Processing Commands Successfully.
Exiting SAS3Flash.
2.0 FS0:\lsi_ha401> -
```

Input the SAS address

Sas3flash -o -sasadd 50015B2A2005097F " from MB

```
Finished Processing Commands Successfully.
Exiting SAS3Flash.
2.0 FS0:\LSI_HA401\> sas3flash -o -sasadd 50015B2A2005097F
```

```
Exiting SAS3Flash.
2.0 FS0:\lsi_ha401\> sas3flash -o -sasadd 50015B2A2005097F
Avago Technologies SAS3 Flash Utility
Version 13.00.00.00 (2016.03.07)
Copyright 2008-2016 Avago Technologies. All rights reserved.

Advanced Mode Set

Adapter Selected is a Avago SAS: SAS3008(C0)

Executing Operation: Program SAS Address

SAS Address Successfully Programmed!

Resetting Adapter...
Adapter Successfully Reset

Finished Processing Commands Successfully.
Exiting SAS3Flash.
2.0 FS0:\lsi_ha401\> _
```

To check the SAS Address already
input Sas3flash.efi -o -list

```
FS0:\lsi_ha401\> getsasadd
FS0:\lsi_ha401\> sas3flash.efi -o -list
Avago Technologies SAS3 Flash Utility
Version 13.00.00.00 (2016.03.07)
Copyright 2008-2016 Avago Technologies. All rights reserved.

Advanced Mode Set

Adapter Selected is a Avago SAS: SAS3008(C0)

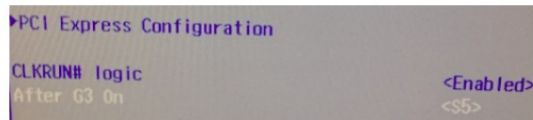
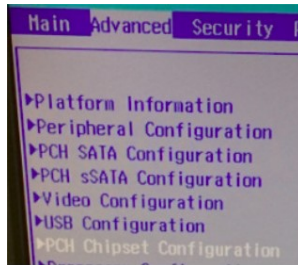
Controller Number      : 0
Controller             : SAS3008(C0)
PCI Address            : 00:05:00:00
SAS Address            : 50015B2-A-2005-097F
NVDATA Version (Default) : 0E.00.00.00
NVDATA Version (Persistent) : 0E.00.00.00
Firmware Product ID    : 0x2721 (IR)
Firmware Version       : 15.00.00.00
NVDATA Vendor          : LSI
NVDATA Product ID      : Undefined
BIOS Version           : 08.35.00.00
UEFI BSD Version       : N/A
FCODE Version          : N/A
Board Name             : SAS3008
Board Assembly         : N/A
Board Tracer Number    : N/A
```

Then just turn off the unit from the Power Switch.

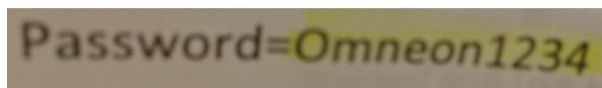
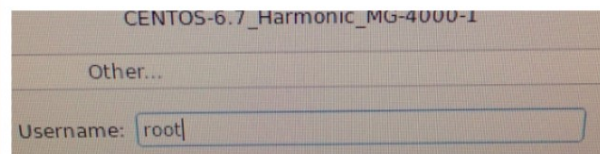
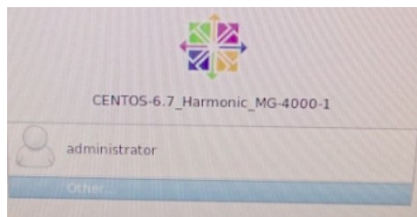
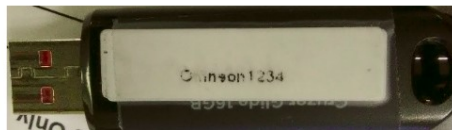
HOW TO TEST BACKPLAN



Going to Bios, loading Default-



Boot from USB



To Test Back Plane

Right Click to open Terminal- Then Click



Then copy the command to run in terminal.

Run following command:

```
#Go to root
cd|

#Change to DISK_EXERCISER directory
cd DISK_EXERCISER

#Run test script for 20 mins
sh ./START__WT_RD__Drive_Exercise_and_SAS_PHY_verification__
__Model__Time__WRITE-ENABLE.sh 00NM0034 00:20:00 WRITE-ENABLE
```

```

root@CENTOS-6.7 ~ MG-4K-1#>cd
root@CENTOS-6.7 ~ MG-4K-1#>cd DISK_EXERCISER
root@CENTOS-6.7 ~/DISK_EXERCISER MG-4K-1#>sh ./START WT RD
and SAS PHY verification Model Time WRITE-ENABLE.sh
RITE-ENABLE

Clearing SEL. Please allow a few seconds to erase.
No ATTO PCIe SAS HBA's installed in this system, will bypass
king

```

Waiting about 1 mins the HDDs led keep flashing and running the test

```

root@CENTOS-6.7 ~/Desktop MG-4K-0#>cd /root/disk exerciser
bash: cd: /root/disk exerciser: No such file or directory
root@CENTOS-6.7 ~/Desktop MG-4K-0#>cd
root@CENTOS-6.7 ~ MG-4K-0#>cd DISK_EXERCISER
root@CENTOS-6.7 ~/DISK_EXERCISER MG-4K-0#>sh START WT RD Drive Exercise_a
nd SAS PHY verification Model Time WRITE-ENABLE.sh 00NM0034 00:10:00 WRI
TE-ENABLE

Clearing SEL. Please allow a few seconds to erase.
No ATTO PCIe SAS HBA's installed in this system, will bypass ATTO SAS PHY chec
king
Mon Aug 28 03:04:31 PDT 2017
run time will be 00:20:00

NOTICE WRITING DISKS ENABLED

starting target number 1 device sda
starting target number 2 device sdb

```

```

starting target number 23 device sdw
starting target number 24 device sdx

```

All Drives Passed the IO Transfer Tests

Thu Jan 17 01:02:48 PST 2019

drive count = 24

Number of drives picking up PHY errors OR Grown Defects 0

Number of LSI SAS controller PHY links having error indications is 0

Number of LSI SAS expander PHY links having error indications is 0

```

#-----
#-----
# CHECK to be sure no IPMI EVENT LOG entries have been posted since test start
#-----
#-----

```

SEL has no entries

```

#####
PHY ERROR CHECKER END
#####

```

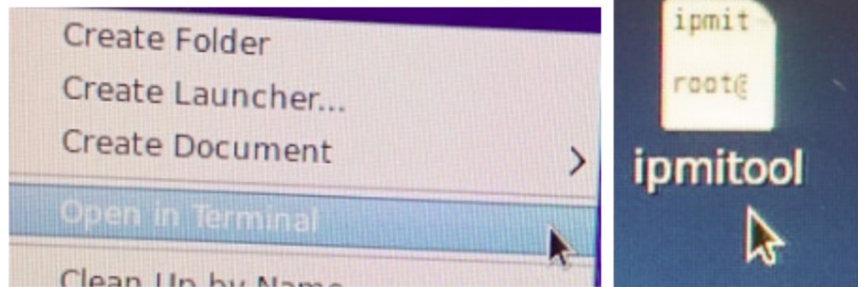
```

root@CENTOS-6.7 ~/DISK_EXERCISER MG-4K-0#>

```

When tested Pass save the file to USB

IPMITOOL CHECK



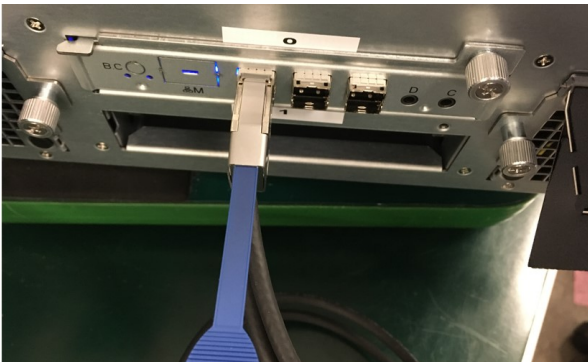
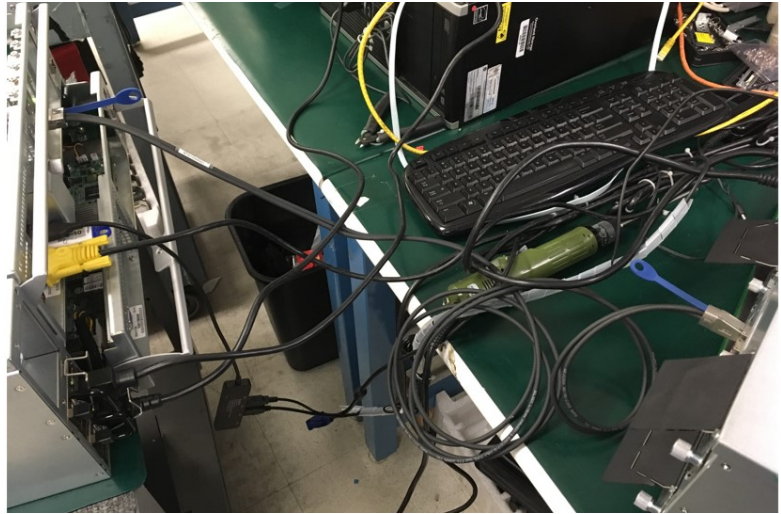
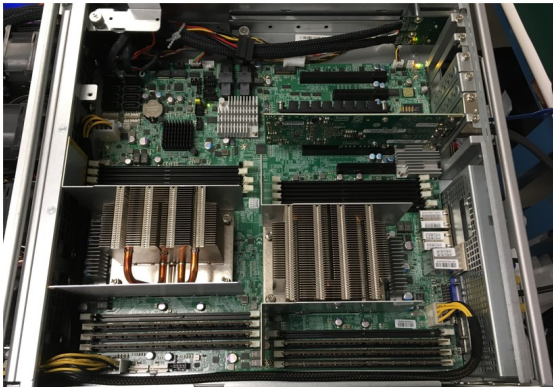
```
root@CENTOS-6.7 ~/Desktop MG-4K-1#>ipmitool
FAN1A      | 12400 RPM      | ok
FAN1B      | 11500 RPM      | ok
FAN2A      | 12900 RPM      | ok
FAN2B      | 11300 RPM      | ok
FAN3A      | 12700 RPM      | ok
FAN3B      | 11100 RPM      | ok
FAN4A      | 12000 RPM      | ok
FAN4B      | 11800 RPM      | ok
CPU0       | no reading     | ns
CPU1       | no reading     | ns
CPU0_VR    | 28 degrees C   | ok
CPU1_VR    | 26 degrees C   | ok
X540       | 36 degrees C   | ok
RearIO     | 27 degrees C   | ok
LSI_SAS    | 38 degrees C   | ok
PCH        | 31 degrees C   | ok
Inlet1     | 27 degrees C   | ok
Inlet2     | 27 degrees C   | ok
CHA_DIM0   | no reading     | ns
CHA_DIM1   | no reading     | ns
CHB_DIM0   | no reading     | ns
CHB_DIM1   | no reading     | ns
CHC_DIM0   | no reading     | ns
CHC_DIM1   | no reading     | ns
CHH_DIM1   | no reading     | ns
CPU0_VCORE | 1.94 Volts     | ok
CPU1_VCORE | no reading     | ns
VBAT       | 2.99 Volts     | ok
+3.3V      | 3.33 Volts     | ok
PVCCIO     | 1.12 Volts     | ok
+5V        | 5.07 Volts     | ok
+12V_2     | 12.03 Volts    | ok
RamABVolt  | 1.21 Volts     | ok
RamCDVolt  | 1.22 Volts     | ok
RamEFVolt  | no reading     | ns
RamGHEVolt | no reading     | ns
+1.05V_PCH | 1.08 Volts     | ok
+1.5V_PCH  | 1.47 Volts     | ok
+1.05V_STBY_PCH | 1.06 Volts | ok
+12V_1     | 12.09 Volts    | ok
PSU1_Status | 0x00          | ok
PSU2_Status | 0x00          | ok
PSU_Watt    | 330 Watts      | ok
Watchdog    | 0x00          | ok
root@CENTOS-6.7 ~/Desktop MG-4K-1#>
```

Save the file.

NEED TO LOAD DEFAULT AFTER FINISHING

HOW TO TEST ITEM#

SSG-JBSA30S-4243T-00-A1



Only put Harmonic HDDs on JBOD



```
root@CENTOS-6.7 MG-4K-V62-0#>lsscsi -g | grep SEAGATE | wc -l
24
root@CENTOS-6.7 MG-4K-V62-0#>ls /dev/sd*
/dev/sda  /dev/sdc  /dev/sdg  /dev/sdk  /dev/sdo  /dev/sds  /dev/sdw
/dev/sda1 /dev/sdd  /dev/sdh  /dev/sdl  /dev/sdp  /dev/sdt  /dev/sdx
/dev/sda2 /dev/sde  /dev/sdi  /dev/sdm  /dev/sdq  /dev/sdu  /dev/sdy
/dev/sdb  /dev/sdf  /dev/sdj  /dev/sdn  /dev/sdr  /dev/sdv
```

```
root@CENTOS-6.7 MG-4K-V62-0#>cd /root/MG-4000/MG-4000__DISK_EXERCISER/
root@CENTOS-6.7 MG-4K-V62-0#>sh ./MAIN____START__SYSTEM_SCREEN____time_HH_MM_SS____.sh 00:10:00
```

Found 2 SCSI busses, 24 sg devices, 24 sd devices
Saved smartctl data for 20 disks

tested hard disk drive count = 24

TOTAL number of disk drives picking up NEW PHY errors OR
Grown Defects 0

Number of LSI SAS controller PHY links having error indications
is 0

Number of LSI SAS expander PHY links having error indications
is 0

cat: LSI Expander Phy ERROR: No such file or directory

```
tested hard disk drive count = 24
```

TOTAL number of disk drives picking up	NEW	PHY errors	OR	Grown Defects	1
--	-----	------------	----	---------------	---

```
cat: LSI Expander Phy ERROR: No such file or directory
```

When checking FRU at the Bios it shows like that it is not correct. Need to reflashing FRU

```
Chassis Type : Main Server Chassis
Chassis Part Num : X4BC0681A4020003XP
Chassis Serial Num : C15-15121800600030
Hfg Date/Time : 2013/11/20 18:49:00
Board Manufacturer :
Board Product Name :
Board Serial Number : 00478-1639-00005
Board Part Number : B48-D41BT04T00835A
Product Manufacturer :
Product Name :
Product Part Model Number : X4BC0681A4020003XP
Product Version :
Product Serial Number : C15-15121800600030
Product Asset Tag :
```

If just wrong product chassis part# and S/N just reentering FRU by blow:

1. M/B: I. Gemini II. Castor III. Aquila.

1. Re-program Chassis S/N	5. Re-program Product S/N
2. Re-program Chassis P/N	6. Re-program product P/N

```

BMC Status                                OK
BMC Firmware Version                      4.00
IPMI Specification Version                2.0
BMC MAC Address                          00:00:00:00:00:00

BMC Warmup Time                           [0]
Boot Option Support                        <Enabled>

```

```
Board Part Number(EEPROM) =B48-D41BT04T00B45A
BMC Mac address in BMC flash=000000000000
```

```
Adapter Selected is a Avago SAS: SAS3008(C0)

Controller Number      : 0
Controller             : SAS3008(C0)
PCI Address            : 00:05:00:00
SAS Address            : 50015B2-A-2005-16FF
NVDATA Version (Default) : 0E.01.00.00
NVDATA Version (Persistent) : 0E.01.00.00
Firmware Product ID    : 0x2721 (IR)
Firmware Version       : 16.00.10.00
NVDATA Vendor          : LSI
NVDATA Product ID      : Undefined
BIOS Version           : 08.37.00.00
UEFI BSD Version       : N/A
FCODE Version          : N/A
Board Name             : SAS3008
Board Assembly         : N/A
Board Tracer Number    : N/A
```

For the Bios Version 08.37.00 causing not detect HHD.