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J4060-02 12G JBOD With BMC Functionality DVT Test Report

DOC No. :FD180418A2- P4JSB000

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Originate Date	Revision	Report Status
2018/3/26	A2	DVT

Revision History

Revisions			
REV.	DESCRIPTION	DATE	Engineer
A0	**J4060-02 12G JBOD With BMC Functionality DVT Test Report** **F/W:** HUB :04/13/2017 10:01 Left Edge :4/13/17 10:47 Center Edge:4/13/17 10:47 Right Edge:4/13/17 10:47 **MFG:** HUB :4/13/17 3:54 Left Edge: 4/13/17 3:56 Center Edge:4/13/17 3:56 Right Edge:4/13/17 3:56 **MCU:** 1.1.0 **BMC:** 2.0.4 Jun 6 2017 09:27:13 CST	2017/6/16	Jeffery Lu
A1	**J4060-02 12G JBOD With BMC Functionality DVT Test Report** **Backplane Board:** **B40-4AAITMXX00C00(PCB 邑昇)** **F/W:** HUB :04/13/2017 10:01 Left Edge :4/13/17 10:47 Center Edge:4/13/17 10:47 Right Edge:4/13/17 10:47 **MFG:** HUB :4/13/17 3:54 Left Edge: 4/13/17 3:56 Center Edge:4/13/17 3:56 Right Edge:4/13/17 3:56 **MCU:** 1.1.0 **BMC:** 2.0.4 Jun 6 2017 09:27:13 CST	2017/7/28	Jeffery Lu

Revision History

Revisions			
REV.	DESCRIPTION	DATE	Engineer
A2	**J4060-02 12G JBOD With BMC Functionality DVT Test Report** **Backplane Board:** B40-4AAITMXX00C00(PCB 邑昇) **F/W:** **HUB :1.12.41.2** **Left Edge :1.12.42.1** **Center Edge:1.12.42.1** **Right Edge:1.12.42.1** **MFG:** **HUB :1:41:0:2** **Left Edge: 1:42:0:1** **Center Edge:1:42:0:1** **Right Edge:1:42:0:1** **MCU:** **1.2** **BMC:** **3.0.5 Apr 12 2018 16:06:35 CST**	2018/3/26	Luke Chen

Date of Test:	
Test Started	Test Completed
2018/3/26	2018/4/18

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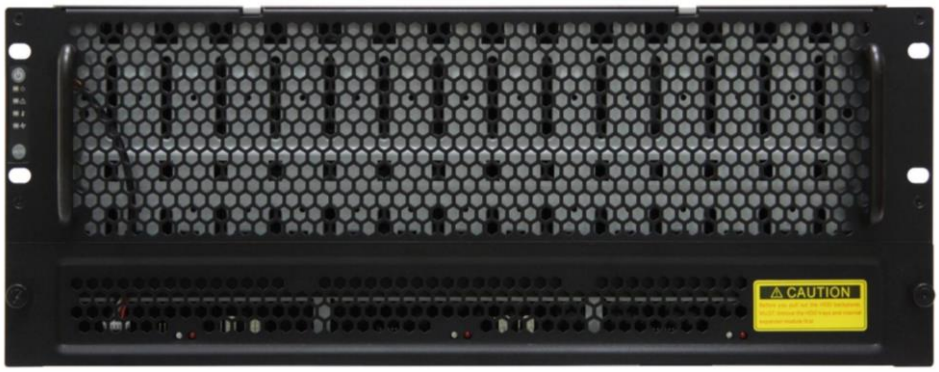
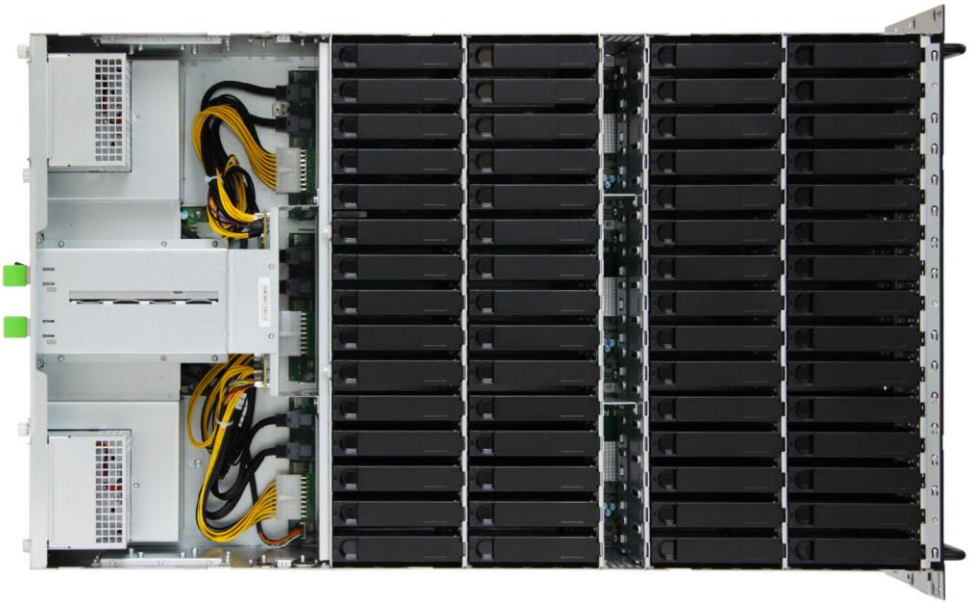
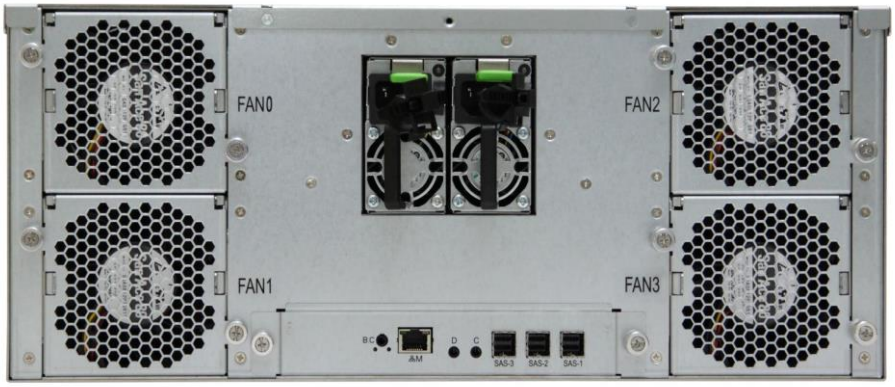
1. DUT Images



Front View



Top View



Rear View

2. Target Device Configuration and Environment

2.1 Table of Test Configuration

Host Configuration		
Item	Vender / Model	Detail
Motherboard	Intel S2600CP	Motherboard of the host
Operation System1	Microsoft Windows	Windows Server 2016 Standard
Operation System2	CentOS7.4 x64	3.10.0-693.21.1.el7.x86_64
CPU	Intel	E5-2643 3.30GHz *1
Memory	Kingston KVR1333D3N9	DDR3 1333 U-DIMM/ 8GB *2
Hard Disk Drive	WD / WD3000HLFS	SATA HDD / 300GB *1

RAID/HBA Card Configuration					
Card	Vender / Model	Firmware ver.	BIOS ver.	Driver ver.	GUI ver.
12G RAID	AVAGO 9380-4i4e	24.21.0-0025	6.36.00.2_4.19.08.00	6.714.5.0	17.05.00.02
12G HBA	AVAGO 9300-16e	14.00.00.00	08.31.00.00_15.00.00.00	2.51.18.0	NA
6G RAID	LSI 9280-24i4e	2.130.403-4660	3.30.02.2_.16.08.00	6.714.5.0	17.05.00.02
6G HBA	LSI 9206-16e	20.00.40.00	7.39.00.00	2.0.76.0	NA

HDD Configuration		
Vender / Model	Interface	Detail
Seagate / ST6000NM0014	SAS 12G	6TB/ FW:K001
Toshiba /MG04SCA40EE	SAS 12G	4TB/ FW:0103
Seagate / ST4000NM0023	SAS 6G	4TB/ FW:0003
Seagate / ST5000NM0024	SATA 6G	5TB/ FW:SN01
Toshiba /MG04ACA6	SATA 6G	6TB/ FW:FS2B

2.2 DUT Main Hardware Configuration

Item	Product Number	Quantity	Detail
Power House	B50-PMBWC02-00B00	1	A/W:PWR003-TY-B0 S/N: 504-16122200310016

Power Module	R1CH2801A	2	AC INPUT 220~240V,50/60Hz, 6.0A DC OUTPUT + 12.4V 64.7A + 12.4Vsb 2.9A S/N: 3300015300000049 3300015300000017
Firmware	HUB : 1.12.41.2 Center Edge: 1.12.42.1	Left Edge : 1.12.42.1 Right Edge: 1.12.42.1	
MFG	HUB : 1:41:0:2 Center Edge: 1:42:0:1	Left Edge: 1:42:0:1 Right Edge: 1:42:0:1	
BMC	3.0.5 Apr 12 2018 16:06:35 CST		
MCU	1.2		
Item	Vender/Product Number	Quantity	Detail
External Expander Board (Hub Expander)	B46-LISCXXE-00B00	1	DB-EXPD20-TY S/N: 504-16122200210004
Backplane Board	B40-4AAITMXX00C00 (PCB 邑昇)	3	BP-HD4E03-TY S/N: 504-1706090011001 504-1706090011007 504-1706090011010
BMC Board	B47-HMC4AXXX00C00	1	BMC001-TY-C1
MCU Board	B47-HTT2AXXX00B00	1	DB-MCU001-1Y

3. JBOD Functional Test

No.	Item Test	
3.01	**Redundant Power Module**	
Test Procedure	Criteria	Result
Perform Hot-swap the power module and power cord ten times, and verify the functions be listed on right side.	Hot-swap PSU under 'power on' state, check fail led, beeper, and console status that can work properly.	Pass
	Power cord interrupt, check fail led, beeper, and console status that can work properly.	Pass
	PSU status under GUI that can work properly.	Pass
	PSU status under console that can work properly.	Pass
	Mute button can work properly.	Pass

No.	Item Test	
3.02	**System Fan**	
Test Procedure	Criteria	Result
Perform the fan function, and verify the functions be listed on right side.	Remove the fan ten times, check fail led, GUI, and console status that can work properly.	Pass
	Fan status under GUI that can work properly.	Pass
	Fan status under console that can work properly.	Pass
	For Smart Fan feature, if temperature upgrade, the rotational speed of fan was increased (depend on spec.) that can work properly.	Pass

No.	Item Test	
3.03	**BackPlane Phy**	
Test Procedure	Criteria	Result
Check channel of BackPlane that phy is ok or not.	Check PHY state and negotiated link speed, confirm the PHY contents with actual HDD configuration are correct.	Pass
	All connectors were correct with table type.	Pass

No.	Item Test	
3.04	**Expander**	
Test Procedure	Criteria	Result
Check channel of expander that function is ok or not.	Check PHY state and negotiated link speed, confirm the PHY contents with actual HDD configuration are correct.	Pass

No.	Item Test	
3.05	**Burn-in Test**	
Test Procedure	Criteria	Result
Using performance assessment tool, let JBOD status was maintain full loading on 12 hours.	Adjust conf. to 100% read (in Iometer), the function can work properly after burn-in test.	Pass
	Adjust conf. to 100% write (in Iometer), the function can work properly after burn-in test.	Pass

No.	Item Test	
3.06	**Front Panel**	
Test Procedure	Criteria	Result
Check if the LED of Front Panel activity was conform with the current status.	Power Switch is worked properly.	Pass
	Mute Switch is worked properly.	Pass
	Power LED is worked properly.	Pass
	System Fail LED is worked properly.	Pass
	Fan Fail LED is worked properly.	Pass
	Temperature LED is worked properly.	Pass

No.	Item Test	
3.07	**Mute Button**	
Test Procedure	Criteria	Result
When the warning sound was activated, press the mute button to stop the warning sound.	Hot swap the power module ten times (Redundant), and warning sound can be stopped by mute button.	Pass
	Hot swap the fan module ten times, and warning sound can be stopped by mute button.	Pass
	Temperature was detected over default alarm value (over 55 degrees centigrade), and warning sound can be stopped by mute button.	Pass

No.	Item Test	
3.08	**Temperature Sensor**	
Test Procedure	Criteria	Result
When temperature sensor ≧ designated degree, the GUI will pop-up warning message, then check the sensor statuses (w/ fan speed) from the RS232 console that are showing normally or not.	T1, T2, warning, Alarm value configuration setting, that status are showing normally.	Pass
	Temperature detected status under GUI, that statuses are showing normally.	Pass
	Temperature detected status under HyperTerminal, that status are showing normally.	Pass

No.	Item Test	
3.09	**Enclosure Power-off**	
Test Procedure	Criteria	Result
Power off the enclosure via inband SAS	Referring to the specification to clear the bit of 'Power Supply control element' to power off the enclosure.	Pass

No.	Item Test	
3.10	**AC/DC Power cycling**	
Test Procedure	Criteria	Result
Perform JBOD power cycling for ten times	Power on/off by AC power core (plug-in/removed), that JBOD function can work properly.	Pass
	Power on/off by power button, that JBOD function can work properly.	Pass

No.	Item Test	
3.11	**Firmware Upgrade**	
Test Procedure	Criteria	Result
Upgrade the firmware, then check the upgrade is successful or not.	Upgrade via debug port, it can be done successfully.	Pass
	Upgrade via console port, it can be done successfully.	Pass

No.	Item Test	
3.12	**SES Lighting Signal**	
Test Procedure	Criteria	Result
To verify SES lighting signal, using sg3_utils tool to check lighting mode of each status is correct or not.	Request OK	Pass
	Request RSVD device	Pass
	Request hot spare	Pass
	Request consistency check	Pass
	Request in critical array	Pass
	Request in failed array	Pass
	Request rebuild/ remap	Pass
	Request rebuild/ remap aborted	Pass
	Request active	Pass
	Request do not remove	Pass
	Request device missing indication	Pass
	Request insert	Pass
	Request removal	Pass
	Request identify	Pass
	Request fault indication	Pass
	Request device off	Pass
	Request PRD fail	Pass
	Request DiskPowerSupply	Pass

No.	Item Test	
3.13	**Shake Test**	
Test Procedure	Criteria	Result
Power up the enclosure and use SAS Cable to plug in backplane connector, then shake SAS Cable with connector gently by hand, and check the PHY status is normally or not.	Bend the SFF-8644 cable, that the PHY status is showing normally.	Pass
	Shaking cable around the SFF-8644 junction, that the PHY status is showing normally.	Pass

No.	Item Test	
3.14	**HDD Hot-swap**	
Test Procedure	Criteria	Result
Perform hot-swap HDD ten times under operating of JBOD.	Plug-in HDD, that JBOD function can work properly.	Pass
	Remove HDD, that JBOD function can work properly.	Pass

No.	Item Test	
3.15	**External 8644 Hot-swap**	
Test Procedure	Criteria	Result
Perform external 8644 hot-swap ten times under operating of JBOD.	Plug-in external 8644, that JBOD function can work properly.	Pass
	Remove external 8644, that JBOD function can work properly.	Pass

No.	Item Test	
3.16	**SAS Zoning**	
Test Procedure	Criteria	Result
Applying SAS Zoning function to segment HDD group, and obtain benefit of dual host that could connect the same JBOD simultaneously.	Group8 and Group9 were run independently.	Pass
	Group1 can detect Group8 and Group9.	Pass
	All HDD of Group8 could build RAID and run Iometer properly.	Pass
	And all HDD of Group9 could build RAID and run Iometer properly.	Pass

No.	Item Test	
3.17	**JBOD Cascade**	
Test Procedure	Criteria	Result
Cascade two 12G JBOD, check substrate table and perform Diameter for 12 hrs.	check substrate table and Diameter for 12 hrs without error.	Pass

No.	Item Test	
3.18	**Manually PWM**	
Test Procedure	Criteria	Result
Under OS terminal, set up manual PWM function.	Check PWM % can be changed and FAN rpm will speed up or low down by manual setting that can work properly.	Pass

No.	Item Test	
3.19	**DD command stress JBOD**	
Test Procedure	Criteria	Result
Under Linux, use DD command to stress HDD	Stress JBOD without any CDB or error.	Pass

No.	Item Test	
3.20	**diag_drive_led**	
Test Procedure	Criteria	Result
Key in "diag_drive_led" command under console, then enter diag mode to check LED indicator.	The "diag_drive_LED" function can work properly.	Pass

No.	Item Test	
3.21	**standby_timer**	
Test Procedure	Criteria	Result
Key in "standby_timer" command under console, and wait for a little time, then check current is diminished.	The power saving function can work properly.	Pass

No.	Item Test	
3.22	**Zone count**	
Test Procedure	Criteria	Result
Zone count 1	Three Zone Configurations supported are one zone,two zones,and three zones.The default Configuration is one zone.	Pass
Zone count 2		Pass
Zone count 3		Pass

No.	Item Test	
3.23	**MPIO**	
Test Procedure	Criteria	Result
While using MPIO feature which was one of Windows Server OS functions, if MPIO was enabled under OS, then check UUT mechanism supports this test item and is workable or not.	Single HBA card(at least 2 wide ports) was set upon motherboard, one piece of wide port cable connected primary expander board, another cable was connected secondary expander board. Enable MPIO feature, dual expander boards were worked properly at the same time. If one of cables was extracted and inserted into another wide port on same expander board, dual expander boards must still work properly. (It needs to wait for few minutes until MPIO was recovered.)	Pass
	Dual HBA cards were set upon the same motherboard, one piece of wide port cable connected primary expander board, another cable was connected secondary expander board. Enable MPIO feature, dual expander boards were worked properly at the same time. If one of cables was extracted and inserted into nearby wide port on same expander board, dual expander boards must still work properly. (It needs to wait for few minutes until MPIO was recovered.)	Pass

No.	Item Test	
3.24	**Check_wide_port on /off /standby**	
Test Procedure	Criteria	Result
Key in "Check_wide_port" command under console, and wait for a little time, then check current is diminished.	The power saving function can work properly.	Pass

No.	Item Test	
3.25	**sensor**	
Test Procedure	Criteria	Result
Key in "sensor" and check sensor items can be listed	The function of CLI sensor can work properly.	Pass

No.	Item Test	
3.26	**AT Switch test : by power cord**	
Test Procedure	Criteria	Result
Key in "power_setting keep_on" command under console, and AC power off by power cord removed, then wait 10 seconds to re-plug power cord to check JBOD can auto power on.	The function of "power_setting keep_on" can work properly.	Pass
Key in "power_setting keep_off" command under console, and AC power off by power cord removed, then wait 10 seconds to re-plug power cord to check JBOD can not auto power on.	The function of "power_setting keep_off" can work properly.	Pass
Key in "power_setting keep_last_state" command under console, and AC power off by power cord removed, then wait 10 seconds to re-plug power cord to check JBOD can auto power on.	The function of "power_setting keep_last_state" can work properly.	Pass

No.	Item Test	
3.27	**EDFB**	
Test Procedure	Criteria	Result
EDFB OFF	The default EDFB configuration is Off. Checkthe current configuration.	Pass
EDFB ON		Pass

No.	Item Test	
3.28	**AT Switch test : by front power SW**	
Test Procedure	Criteria	Result
Key in "power_setting keep_on" command under console, DC power off by front power SW, then unplug power cord and wait 10 seconds to re-plug power cord to check JBOD can auto power on.	The function of "power_setting keep_on" can work properly.	Pass
Key in "power_setting keep_off" command under console, DC power off by front power SW, then unplug power cord and wait 10 seconds to re-plug power cord to check JBOD can not auto power on.	The function of "power_setting keep_off" can work properly.	Pass
Key in "power_setting keep_last_state" command under console, AC power off by power cord, then wait 10 seconds to re-plug power cord to check JBOD can auto power on.	The function of "power_setting keep_last_state" can work properly.	Pass

No.	Item Test	
3.29	**enclosure addr**	
Test Procedure	Criteria	Result
Key in "enclosure_addr xxxxxxxxxxxxxxx" (x is number), and key in "enclosure addr" to check function under console.	The function of CLI enclosure addr function can work properly.	Pass

4. RAID Card Test

12G Raid Card	AVAGO 9380-4i4e

4.1 AVAGO 9380-4i4e with SAS 12G HDD config

SAS 12G configuration			
RAID Function	Test Procedure	Criteria	Result
AVAGO 9380-4i4e SAS RAID Card	Create a RAID 0 volume	The RAID function can work properly.	Pass
	Create a RAID 1 volume		Pass
	Create a RAID 5 volume		Pass
	Create a RAID 6 volume		Pass
	Create a RAID 00 volume		Pass
	Create a RAID 10 volume		Pass
	Create a RAID 50 volume		Pass
	Create a RAID 60 volume		Pass
	Remove a RAID 0 volume		Pass
	Remove a RAID 1 volume		Pass
	Remove a RAID 5 volume		Pass
	Remove a RAID 6 volume		Pass
	Remove a RAID 00 volume		Pass
	Remove a RAID 10 volume		Pass
	Remove a RAID 50 volume		Pass
	Remove a RAID 60 volume		Pass
AVAGO 9380-4i4e SAS RAID Card	Rebuild a RAID 1 volume	The RAID function can work properly.	Pass
	Rebuild a RAID 5 volume		Pass
	Rebuild a RAID 6 volume		Pass
	Rebuild a RAID 10 volume		Pass
	Rebuild a RAID 50 volume		Pass
	Rebuild a RAID 60 volume		Pass
	Full initialization a RAID 0 volume		Pass
	Full initialization a RAID 1 volume		Pass
	Full initialization a RAID 5 volume		Pass
	Full initialization a RAID 6 volume		Pass
	Full initialization a RAID 00 volume		Pass
	Full initialization a RAID 10 volume		Pass
	Full initialization a RAID 50 volume		Pass
	Full initialization a RAID 60 volume		Pass

4.2 AVAGO 9380-4i4e with SAS 6G HDD config

SAS 6G configuration			
RAID Function	Test Procedure	Criteria	Result
AVAGO 9380-4i4e SAS RAID Card	Create a RAID 0 volume	The RAID function can work properly.	Pass
	Create a RAID 1 volume		Pass
	Create a RAID 5 volume		Pass
	Create a RAID 6 volume		Pass
	Create a RAID 00 volume		Pass
	Create a RAID 10 volume		Pass
	Create a RAID 50 volume		Pass
	Create a RAID 60 volume		Pass
	Remove a RAID 0 volume		Pass
	Remove a RAID 1 volume		Pass
	Remove a RAID 5 volume		Pass
	Remove a RAID 6 volume		Pass
	Remove a RAID 00 volume		Pass
	Remove a RAID 10 volume		Pass
	Remove a RAID 50 volume		Pass
	Remove a RAID 60 volume		Pass
AVAGO 9380-4i4e SAS RAID Card	Rebuild a RAID 1 volume	The RAID function can work properly.	Pass
	Rebuild a RAID 5 volume		Pass
	Rebuild a RAID 6 volume		Pass
	Rebuild a RAID 10 volume		Pass
	Rebuild a RAID 50 volume		Pass
	Rebuild a RAID 60 volume		Pass
	Full initialization a RAID 0 volume		Pass
	Full initialization a RAID 1 volume		Pass
	Full initialization a RAID 5 volume		Pass
	Full initialization a RAID 6 volume		Pass
	Full initialization a RAID 00 volume		Pass
	Full initialization a RAID 10 volume		Pass
	Full initialization a RAID 50 volume		Pass
	Full initialization a RAID 60 volume		Pass

4.3 AVAGO 9380-4i4e with SATA 6G HDD config

SAS 6G configuration			
RAID Function	Test Procedure	Criteria	Result
AVAGO 9380-4i4e SAS RAID Card	Create a RAID 0 volume	The RAID function can work properly.	Pass
	Create a RAID 1 volume		Pass
	Create a RAID 5 volume		Pass
	Create a RAID 6 volume		Pass
	Create a RAID 00 volume		Pass
	Create a RAID 10 volume		Pass
	Create a RAID 50 volume		Pass
	Create a RAID 60 volume		Pass
	Remove a RAID 0 volume		Pass
	Remove a RAID 1 volume		Pass
	Remove a RAID 5 volume		Pass
	Remove a RAID 6 volume		Pass
	Remove a RAID 00 volume		Pass
	Remove a RAID 10 volume		Pass
	Remove a RAID 50 volume		Pass
	Remove a RAID 60 volume		Pass
AVAGO 9380-4i4e SAS RAID Card	Rebuild a RAID 1 volume	The RAID function can work properly.	Pass
	Rebuild a RAID 5 volume		Pass
	Rebuild a RAID 6 volume		Pass
	Rebuild a RAID 10 volume		Pass
	Rebuild a RAID 50 volume		Pass
	Rebuild a RAID 60 volume		Pass
	Full initialization a RAID 0 volume		Pass
	Full initialization a RAID 1 volume		Pass
	Full initialization a RAID 5 volume		Pass
	Full initialization a RAID 6 volume		Pass
	Full initialization a RAID 00 volume		Pass
	Full initialization a RAID 10 volume		Pass
	Full initialization a RAID 50 volume		Pass
	Full initialization a RAID 60 volume		Pass

6G Raid Card	LSI 9280-24i4e

4.4 LSI 9280-24i4e with SAS 12G HDD config

SAS 12G configuration			
RAID Function	Test Procedure	Criteria	Result
LSI 9280-24i4e SAS RAID Card	Create a RAID 0 volume	The RAID function can work properly.	Pass
	Create a RAID 1 volume		Pass
	Create a RAID 5 volume		Pass
	Create a RAID 6 volume		Pass
	Create a RAID 00 volume		Pass
	Create a RAID 10 volume		Pass
	Create a RAID 50 volume		Pass
	Create a RAID 60 volume		Pass
	Remove a RAID 0 volume		Pass
	Remove a RAID 1 volume		Pass
	Remove a RAID 5 volume		Pass
	Remove a RAID 6 volume		Pass
	Remove a RAID 00 volume		Pass
	Remove a RAID 10 volume		Pass
	Remove a RAID 50 volume		Pass
	Remove a RAID 60 volume		Pass
LSI 9280-24i4e SAS RAID Card	Rebuild a RAID 1 volume	The RAID function can work properly.	Pass
	Rebuild a RAID 5 volume		Pass
	Rebuild a RAID 6 volume		Pass
	Rebuild a RAID 10 volume		Pass
	Rebuild a RAID 50 volume		Pass
	Rebuild a RAID 60 volume		Pass
	Full initialization a RAID 0 volume		Pass
	Full initialization a RAID 1 volume		Pass
	Full initialization a RAID 5 volume		Pass
	Full initialization a RAID 6 volume		Pass
	Full initialization a RAID 00 volume		Pass
	Full initialization a RAID 10 volume		Pass
	Full initialization a RAID 50 volume		Pass
	Full initialization a RAID 60 volume		Pass

4.5 LSI 9280-24i4e with SAS 6G HDD config

SAS 12G configuration			
RAID Function	Test Procedure	Criteria	Result
LSI 9280-24i4e SAS RAID Card	Create a RAID 0 volume	The RAID function can work properly.	Pass
	Create a RAID 1 volume		Pass
	Create a RAID 5 volume		Pass
	Create a RAID 6 volume		Pass
	Create a RAID 00 volume		Pass
	Create a RAID 10 volume		Pass
	Create a RAID 50 volume		Pass
	Create a RAID 60 volume		Pass
	Remove a RAID 0 volume		Pass
	Remove a RAID 1 volume		Pass
	Remove a RAID 5 volume		Pass
	Remove a RAID 6 volume		Pass
	Remove a RAID 00 volume		Pass
	Remove a RAID 10 volume		Pass
	Remove a RAID 50 volume		Pass
	Remove a RAID 60 volume		Pass
LSI 9280-24i4e SAS RAID Card	Rebuild a RAID 1 volume	The RAID function can work properly.	Pass
	Rebuild a RAID 5 volume		Pass
	Rebuild a RAID 6 volume		Pass
	Rebuild a RAID 10 volume		Pass
	Rebuild a RAID 50 volume		Pass
	Rebuild a RAID 60 volume		Pass
	Full initialization a RAID 0 volume		Pass
	Full initialization a RAID 1 volume		Pass
	Full initialization a RAID 5 volume		Pass
	Full initialization a RAID 6 volume		Pass
	Full initialization a RAID 00 volume		Pass
	Full initialization a RAID 10 volume		Pass
	Full initialization a RAID 50 volume		Pass
	Full initialization a RAID 60 volume		Pass

4.6 LSI 9280-24i4e with SATA 6G HDD config

SAS 12G configuration			
RAID Function	Test Procedure	Criteria	Result
LSI 9280-24i4e SAS RAID Card	Create a RAID 0 volume	The RAID function can work properly.	Pass
	Create a RAID 1 volume		Pass
	Create a RAID 5 volume		Pass
	Create a RAID 6 volume		Pass
	Create a RAID 00 volume		Pass
	Create a RAID 10 volume		Pass
	Create a RAID 50 volume		Pass
	Create a RAID 60 volume		Pass
	Remove a RAID 0 volume		Pass
	Remove a RAID 1 volume		Pass
	Remove a RAID 5 volume		Pass
	Remove a RAID 6 volume		Pass
	Remove a RAID 00 volume		Pass
	Remove a RAID 10 volume		Pass
	Remove a RAID 50 volume		Pass
	Remove a RAID 60 volume		Pass
LSI 9280-24i4e SAS RAID Card	Rebuild a RAID 1 volume	The RAID function can work properly.	Pass
	Rebuild a RAID 5 volume		Pass
	Rebuild a RAID 6 volume		Pass
	Rebuild a RAID 10 volume		Pass
	Rebuild a RAID 50 volume		Pass
	Rebuild a RAID 60 volume		Pass
	Full initialization a RAID 0 volume		Pass
	Full initialization a RAID 1 volume		Pass
	Full initialization a RAID 5 volume		Pass
	Full initialization a RAID 6 volume		Pass
	Full initialization a RAID 00 volume		Pass
	Full initialization a RAID 10 volume		Pass
	Full initialization a RAID 50 volume		Pass
	Full initialization a RAID 60 volume		Pass

5. HBA Card Test

12G HBA Card	AVAGO 9300-16e
6G HBA Card	LSI 9206-16e

5.1 AVAGO 9300-16e with SAS 12G HDD Config

SAS 12G configuration			
HBA Function	Test Procedure	Criteria	Result
AVAGO 9300-16e HBA Card	Perform AVAGO BIOS utility to verify HDD information.	All hard drives can be detected by AVAGO BIOS utility.	Pass
	Perform Disk management of OS to verify HDD information.	All hard drives can be detected by OS Disk management.	Pass

5.2 AVAGO 9300-16e with SAS 6G HDD Config

SAS 12G configuration			
HBA Function	Test Procedure	Criteria	Result
AVAGO 9300-16e HBA Card	Perform AVAGO BIOS utility to verify HDD information.	All hard drives can be detected by AVAGO BIOS utility.	Pass
	Perform Disk management of OS to verify HDD information.	All hard drives can be detected by OS Disk management.	Pass

5.3 AVAGO 9300-16e with SATA 6G HDD Config

SAS 12G configuration			
HBA Function	Test Procedure	Criteria	Result
AVAGO 9300-16e HBA Card	Perform AVAGO BIOS utility to verify HDD information.	All hard drives can be detected by AVAGO BIOS utility.	Pass
	Perform Disk management of OS to verify HDD information.	All hard drives can be detected by OS Disk management.	Pass

6G HBA Card	AVAGO9206-16e

5.4 LSI 9206-16e with SAS 12G HDD Config

SAS 12G configuration			
HBA Function	Test Procedure	Criteria	Result
LSI 9206-16e HBA Card	Perform LSI BIOS utility to verify HDD information.	All hard drives can be detected by LSI BIOS utility.	Pass
	Perform Disk management of OS to verify HDD information.	All hard drives can be detected by OS Disk management.	Pass

5.5 LSI 9206-16e with SAS 6G HDD Config

SAS 12G configuration			
HBA Function	Test Procedure	Criteria	Result
LSI 9206-16e HBA Card	Perform LSI BIOS utility to verify HDD information.	All hard drives can be detected by LSI BIOS utility.	Pass
	Perform Disk management of OS to verify HDD information.	All hard drives can be detected by OS Disk management.	Pass

5.6 LSI 9206-16e with SATA 6G HDD Config

SAS 12G configuration			
HBA Function	Test Procedure	Criteria	Result
LSI 9206-16e HBA Card	Perform LSI BIOS utility to verify HDD information.	All hard drives can be detected by LSI BIOS utility.	Pass
	Perform Disk management of OS to verify HDD information.	All hard drives can be detected by OS Disk management.	Pass

6. BMC Functionality Test

NO.	Test Items	Result
1	BMC WEB UI Login function check	Pass
2	Device Information check (FW name/version)	Pass
3	Network Information check	Pass
4	Basic IOL connection check	Pass
5	Basic SOL connection check	Pass
6	Basic BMC embedded Webpage connection check by IE11.0	Pass
7	Basic BMC embedded Webpage connection check by Firefox	Pass
8	Basic BMC embedded Webpage connection check by Chrome	Pass
9	Check sensors name accuracy	Pass
10	Check webpage logo	Pass
11	Webpage System Information check	Pass
12	Fru data Accuracy check	Pass
13	Hard Disk Manager: SAS-12G HDD config, 30 times power on/off by primary BMC	Pass
14	Hard Disk Manager LED are Green status	Pass
15	Hard Disk Manager LED are Gray status	Pass
16	Hard Disk Manager LED are blue status	Pass
17	BMC Card Fail LED be turn on by Fan_0	Pass
18	BMC Card Fail LED be turn off by Fan_0	Pass
19	BMC Card Fail LED be turn on by Fan_1	Pass
20	BMC Card Fail LED be turn off by Fan_1	Pass
21	BMC Card Fail LED be turn on by Fan_2	Pass
22	BMC Card Fail LED be turn off by Fan_2	Pass
23	BMC Card Fail LED be turn on by Fan_3	Pass
24	BMC Card Fail LED be turn off by Fan_3	Pass
25	BMC Card Fail LED be turn on by Temp0	Pass
26	BMC Card Fail LED be turn off by Temp0	Pass
27	BMC Card Fail LED be turn on by Temp1	Pass
28	BMC Card Fail LED be turn off by Temp1	Pass
29	BMC Card Fail LED be turn on by Temp2	Pass
30	BMC Card Fail LED be turn off by Temp2	Pass
31	Fan_0 sensor reading	Pass
32	Fan_1 sensor reading	Pass
33	Fan_2 sensor reading	Pass

NO.	Test Items	Result
34	Fan_3 sensor reading	Pass
35	Temp0 sensor reading	Pass
36	Temp1 sensor reading	Pass
37	Temp2 sensor reading	Pass
38	PSU1_status sensor reading	Pass
39	PSU2_status sensor reading	Pass
40	PS_Watt sensor reading	Pass
41	PSU1_temp sensor reading	Pass
42	PSU2_temp sensor reading	Pass
43	BMC SEL event log be record by Fan_0	Pass
44	BMC SEL event log be record by Fan_1	Pass
45	BMC SEL event log be record by Fan_2	Pass
46	BMC SEL event log be record by Fan_3	Pass
47	BMC SEL event log be record by Temp0	Pass
48	BMC SEL event log be record by Temp1	Pass
49	BMC SEL event log be record by Temp2	Pass
50	BMC SEL event log be record by PSU1_status	Pass
51	BMC SEL event log be record by PSU2_status	Pass
52	PS1_Un-Present SDR value	Pass
53	PS2_Un-Present SDR value	Pass
54	PS1_Present event check	Pass
55	PS2_Present event check	Pass
56	PS1_ Present Fault LED(ON) (Red & Buzzer)	Pass
57	PS1_ Present Fault LED(OFF)	Pass
58	PS2_ Present Fault LED(ON) (Red & Buzzer)	Pass
59	PS2_ Present Fault LED(OFF)	Pass
60	Fan0 Fail 30 times event check	Pass
61	Fan1 Fail 30 times event check	Pass
62	Fan2 Fail 30 times event check	Pass
63	Fan3 Fail 30 times event check	Pass
64	Check Temp0 threshold	Pass
65	Check Temp1 threshold	Pass
66	Check Temp2 threshold	Pass
67	PS1_Present Fail 10 times event check	Pass

NO.	Test Items	Result
68	PS2_Present Fail 10 times event check	Pass
69	BMC Network setting check	Pass
70	Network Link check	Pass
71	NTP setting check	Pass
72	PEF Management function check	Pass
73	SMTP setting check	Pass
74	Schedule setting check	Pass
75	User Add/Remove/Modify setting check	Pass
76	BMC DC power Cycling and check HDD quantities for 30 times	Pass
77	BMC Power on storage and check HDD quantities for 30 times	Pass
78	BMC Power off storage and check HDD quantities for 30 times	Pass
79	JAVA SOL Function check	Pass
80	Print function check	Pass
81	Logout function check	Pass
82	Refresh function check	Pass
83	User login name check	Pass
84	Help function check	Pass
85	BMC Firmware update function check	Pass
86	Expander Firmware update function check	Pass
87	Protocol Configuration function check	Pass
88	BMC data reading for 30 times	Pass
89	Yafuflash Firmware update function check	Pass

7. Summary

Item	Descriptions	Result
Enclosure Function Test	Redundant Power Module	Pass
	System Fan	Pass
	BackPlane Phy	Pass
	Expander	Pass
	Burn-in Test	Pass
	Front Panel	Pass
	Mute Button	Pass
	Temperature Sensor	Pass
	Enclosure Power-off	Pass
	AC/DC Power cycling	Pass
	Firmware Upgrade	Pass
	SES Lighting Signal	Pass
	Shake Test	Pass
	HDD Hot-swap	Pass
	External 8644 Hot-swap	Pass
	SAS Zoning	Pass
	JBOD Cascade	Pass
	Manually PWM	Pass
	DD command stress JBOD	Pass
	diag_drive_led	Pass
	standby_timer	Pass
	Zone count	Pass
	MPIO	Pass
	Check_wide_port on /off /standby	Pass
	sensor	Pass
	AT Switch test : by power cord	Pass
	EDFB	Pass
	AT Switch test : by front power SW	Pass
	enclosure addr	Pass
RAID Card Test	AVAGO 9380-4i4e with SAS 12G HDD Config	Pass
	AVAGO 9380-4i4e with SAS 6G HDD Config	Pass
	AVAGO 9380-4i4e with SATA 6G HDD Config	Pass
HBA Card Test	AVAGO 9300-8e with SAS 12G HDD Config	Pass
	AVAGO 9300-8e with SAS 6G HDD Config	Pass
	AVAGO 9300-8e with SATA 6G HDD Config	Pass

Item	Descriptions	Result
BMC Functionality Test	BMC WEB UI Login function check	Pass
	Device Information check (FW name/version)	Pass
	Network Information check	Pass
	Basic IOL connection check	Pass
	Basic SOL connection check	Pass
	Basic BMC Webpage connection check by IE11.0	Pass
	Basic BMC Webpage connection check by Firefox	Pass
	Basic BMC Webpage connection check by Chrome	Pass
	Check sensors name accuracy	Pass
	Check webpage logo	Pass
	Webpage System Information check	Pass
	Fru data Accuracy check	Pass
	Hard Disk Manager:SAS-12G HDD config, 30 times power on/off by BMC	Pass
	Hard Disk Manager LED are Green status	Pass
	Hard Disk Manager LED are Gray status	Pass
	Hard Disk Manager LED are blue status	Pass
	BMC Card Fail LED be turn on by Fan_0	Pass
	BMC Card Fail LED be turn off by Fan_0	Pass
	BMC Card Fail LED be turn on by Fan_1	Pass
	BMC Card Fail LED be turn off by Fan_1	Pass
	BMC Card Fail LED be turn on by Fan_2	Pass
	BMC Card Fail LED be turn off by Fan_2	Pass
	BMC Card Fail LED be turn on by Fan_3	Pass
	BMC Card Fail LED be turn off by Fan_3	Pass
	BMC Card Fail LED be turn on by Temp0	Pass
	BMC Card Fail LED be turn off by Temp0	Pass
	BMC Card Fail LED be turn on by Temp1	Pass
	BMC Card Fail LED be turn off by Temp1	Pass
	BMC Card Fail LED be turn on by Temp2	Pass
	BMC Card Fail LED be turn off by Temp2	Pass
	Fan_0 sensor reading	Pass
	Fan_1 sensor reading	Pass
	Fan_2 sensor reading	Pass

Item	Descriptions	Result
BMC Functionality Test	Fan_3 sensor reading	Pass
	Temp0 sensor reading	Pass
	Temp1 sensor reading	Pass
	Temp2 sensor reading	Pass
	PSU1_status sensor reading	Pass
	PSU2_status sensor reading	Pass
	PS_Watt sensor reading	Pass
	PSU1_temp sensor reading	Pass
	PSU2_temp sensor reading	Pass
	BMC SEL event log be record by Fan_0	Pass
	BMC SEL event log be record by Fan_1	Pass
	BMC SEL event log be record by Fan_2	Pass
	BMC SEL event log be record by Fan_3	Pass
	BMC SEL event log be record by Temp0	Pass
	BMC SEL event log be record by Temp1	Pass
	BMC SEL event log be record by Temp2	Pass
	BMC SEL event log be record by PSU1_status	Pass
	BMC SEL event log be record by PSU2_status	Pass
	PS1_Un-Present SDR value	Pass
	PS2_Un-Present SDR value	Pass
	PS1_Present event check	Pass
	PS2_Present event check	Pass
	PS1_ Present Fault LED(ON) (Red & Buzzer)	Pass
	PS1_ Present Fault LED(OFF)	Pass
	PS2_ Present Fault LED(ON) (Red & Buzzer)	Pass
	PS2_ Present Fault LED(OFF)	Pass
	Fan0 Fail 30 times event check	Pass
	Fan1 Fail 30 times event check	Pass
	Fan2 Fail 30 times event check	Pass
	Fan3 Fail 30 times event check	Pass
	Check Temp0 threshold	Pass
	Check Temp1 threshold	Pass
	Check Temp2 threshold	Pass
	PS1_Present Fail 10 times event check	Pass

Item	Descriptions	Result
BMC Functionality Test	PS2_Fan Fail 10 times event check	Pass
	BMC Network setting check	Pass
	Network Link check	Pass
	NTP setting check	Pass
	PEF Management function check	Pass
	SMTP setting check	Pass
	Schedule setting check	Pass
	User Add/Remove/Modify setting check	Pass
	BMC DC power Cycling and check HDD quantities for 30 times	Pass
		Pass
	BMC Power on storage and check HDD quantities for 30 times	Pass
		Pass
	BMC Power off storage and check HDD quantities for 30 times	Pass
		Pass
	JAVA SOL Function check	Pass
	Print function check	Pass
	Logout function check	Pass
	Refresh function check	Pass
	User login name check	Pass
	Help function check	Pass
	BMC Firmware update function check	Pass
	Expander Firmware update function check	Pass
	Protocol Configuration function check	Pass
	BMC data reading for 30 times	Pass
	Yafuflash Firmware update function check	Pass