Enclosure Interoperability Test Configuration Report

Test Report Name: IcyDock_MB998SP-B_Enclosure_12GMR_int-sm6027R-001

Test Project ID: SCGCQ00917617

The following tables detail the hardware configuration, software configuration and testing performed to verify interoperability.

NOTE: The highlighted RED device is the device under test.

Updated: Mar 08 2016

Testing Result: Passed

RAID Controllers:

Manufacturer	Model	Part Number
Broadcom	MegaRAID SAS9361-8i	03-25420-01C

HDD/SSDs:

Manufacturer	Type	Protocol	Link Speed	Model	FW Version	Capacity	Size	RPM	SectorSize	Self-Encrypting
Samsung	SSD	SATA	6Gb/s	850 PRO, MZ7KE128HMGA	2B6Q	128GB	2.5"	NA	512	No

Servers:

Manufacturer	Model	System Bios	CPU Information	Motherboard	Number of CPUs	Memory
SuperMicro	SSG-6027R-E1R12T	3.0b	Intel(R) Xeon(R) CPU E5-2660 v2 @ 2.20GHz	X9DRH	1	128

Enclosures:

Manufacturer	Model	Type	Expander Manufacturer	FW Rev	Slots	Protocol	Link Speed	Form Factor
ICY Dock	MB998SP-B	1U Backplane	N/A	N/A	8	SATA	6Gb/s	2.5"

SW, FW and Utilities:

Vendor	Name	Version
Oracle	vdbench	50403
Broadcom	MegaCli	8.07.09
N/A	sg3utils	1.28-4-el6
Broadcom	MR FW	6.9 - 24.10.0-0020

Broadcom	Linux driver	06.809.18.00
Broadcom	msm	15.08.01.02
Broadcom	storcli	1.17.08

Cables:

Vendor	Model Number	Length (M)	Description
SerialCables	SA-F43S7P-1M	1	Int. HD MiniSAS (SFF-8643) to 4 7-pin SATA breakout

Operating Systems:

Vendor	Name	32/64 bit
RedHat	rhel6.6	64

Cache Modules

Model	Part Number	Capacity
Ptolemy	03-25444-00 C	4G

Offload Power:

Model	Part Number	Type
FBU02	LSI 49571-17C	SuperCap

Other Equipment Used:

Vendor	Model	Part Number	Description
Quarch	Torridon Array Controller	QTL 1461-04-037	Drive Push/Pull Module

Testcase to RAID Volumes:

For Test Case Default

Number of Drives	RAID Level	Strip Size	Read Cache	Write Cache	VDs
3	5	64kb	Read Ahead	Write Back	1
3	6	64kb	No Read Ahead	Write Back	1
2	1	64kb	Read Ahead	Write Back	1

For Test Case SCGCQ00735554

Number of Drives	RAID Level	Strip Size	Read Cache	Write Cache	VDs
4	5	64kb	Read Ahead	Write Back	1
2	Unconfigured Good	NA	NA	NA	1
2	1	64kb	Read Ahead	Write Back	1

For Test Case SCGCQ00758562

Number of Drives	RAID Level	Strip Size	Read Cache	Write Cache	VDs
4	5	64kb	Read Ahead	Write Back	1
4	10	64kb	Read Ahead	Write Back	1

For Test Case SCGCQ00735560

Number of Drives	RAID Level	Strip Size	Read Cache	Write Cache	VDs
2	1	64kb	Read Ahead	Write Back	1
3	5	64kb	Read Ahead	Write Back	1
3	Unconfigured Good	NA	NA	NA	1

For Test Case SCGCQ00738117

Number of Drives	RAID Level	Strip Size	Read Cache	Write Cache	VDs
6	5	64kb	Read Ahead	Write Back	1

Testcase to HDD/SSDs:

For Test Case Default

Manufacturer	Type	Protocol	Link Speed	Model	FW Version	Capacity	Size	RPM	SectorSize	Self-Encrypting
Samsung	SSD	SATA	6Gb/s	850 PRO, MZ7KE128HMGA	2B6Q	128GB	2.5"	NA	512	No

For Test Case SCGCQ00735554

Manufacturer	Type	Protocol	Link Speed	Model	FW Version	Capacity	Size	RPM	SectorSize	Self-Encrypting
Samsung	SSD	SATA	6Gb/s	850 PRO, MZ7KE128HMGA	2B6Q	128GB	2.5"	NA	512	No

For Test Case SCGCQ00758562

Manufacturer	Type	Protocol	Link Speed	Model	FW Version	Capacity	Size	RPM	SectorSize	Self-Encrypting
Samsung	SSD	SATA	6Gb/s	850 PRO, MZ7KE128HMGA	2B6Q	128GB	2.5"	NA	512	No

For Test Case SCGCQ00735560

Manufacturer	Type	Protocol	Link Speed	Model	FW Version	Capacity	Size	RPM	SectorSize	Self-Encrypting
Samsung	SSD	SATA	6Gb/s	850 PRO, MZ7KE128HMGA	2B6Q	128GB	2.5"	NA	512	No

For Test Case SCGCQ00738117

Manufacturer	Type	Protocol	Link Speed	Model	FW Version	Capacity	Size	RPM	SectorSize	Self-Encrypting
Samsung	SSD	SATA	6Gb/s	850 PRO, MZ7KE128HMGA	2B6Q	128GB	2.5"	NA	512	No

Test Results:

CQ ID	Title	Description	Test Result	Comments
SCGCQ00735554	Interop Test : CopyBack & Patrol Read - To verify IOs complete without error during while copyback is in progress followed by a PR	To verify that IOs run successfully while a copyback is on progress on every VD connected to the controller. Once copyback complete, a PR is started on all the volumes and the server is rebooted in between to ensure that PR resumes on all the VDs after the reboot without any issues. Test performs IO and copy-back (i.e. drive replacement) operations, followed by a patrol read, and reboots the server. The intent being to verify that these background operations continue across a reboot cycle and successfully complete.	Passed	
SCGCQ00735971	Interop Test : IO's - To run long duration heavy IOs on Fully Initialized volumes with multiple RAID levels configured followed by CC on all the VDs	To configure multiple RAID level volumes, perform Full Initialization on all the volumes, run long duration (24 hrs) heavy IOs on all the configured volumes followed by a CC	Passed	
SCGCQ00737198	Interop Test: System Configuration	To setup the system by bringing up the server with the OS, installing all the required Software/Hardware utilities and update to the latest firmware version to perform further testing.	Passed	
SCGCQ00738117	Interop Test : BGI - To verify that Reconstruction completes successfully from a R5 to R6 volume followed by a successful BGI completion	This Test case is to verify that BGI starts and completes successfully on a R5 volume. Perform a reconstruction operation from a R5 to R6, verify that the recon operation completes successfully followed by a successfuly BGI completion	Passed	

SCGCQ00758562	Interop Test: Drive Pull/Push - To verify rebuild starts/resumes successfully when drives are being pulled/pushed with IOs in the background	To verify that rebuild starts sucessfully on all the drives when being interrupted (by being pulled and pushed) during a rebuild process and that it completes sucessfully at the end of 25 iterations.	Passed	
SCGCQ00758604	Interop Test : Power Cycle - To perform multiple power cycles with server powered on within 30 sec of power off (150 cycles)	To perform multiple power cycles (N cycles) on the server without running IOs and checking for status of controller, VDs, PDs, BBU and verifying that the controller comes up at the expected PCIe speed and width during every cycle. N is defined for every test accordingly default is 150 cycles	Passed	
SCGCQ00776857	Interop Test : Manual Enclosure Power Cycle - To manually perform multiple power cycles with enclosure powered on within 60 sec of power off (10 cycles)	To manually perform multiple power cycles (10 cycles) on the Enclosure without running IOs and checking for status of enclosure, controller, VDs, PDs, BBU at every cycle.	Passed	
SCGCQ00735560	Interop Test : Rebuild & Drive Erase - To verify the rebuild completes successfully on global and dedicated hot spares followed by Drive Erase operation	To verify that rebuild starts on global hotspare for one VD and on a dedicated hotspare for the second VD	Passed	