SPECsfs97 Result

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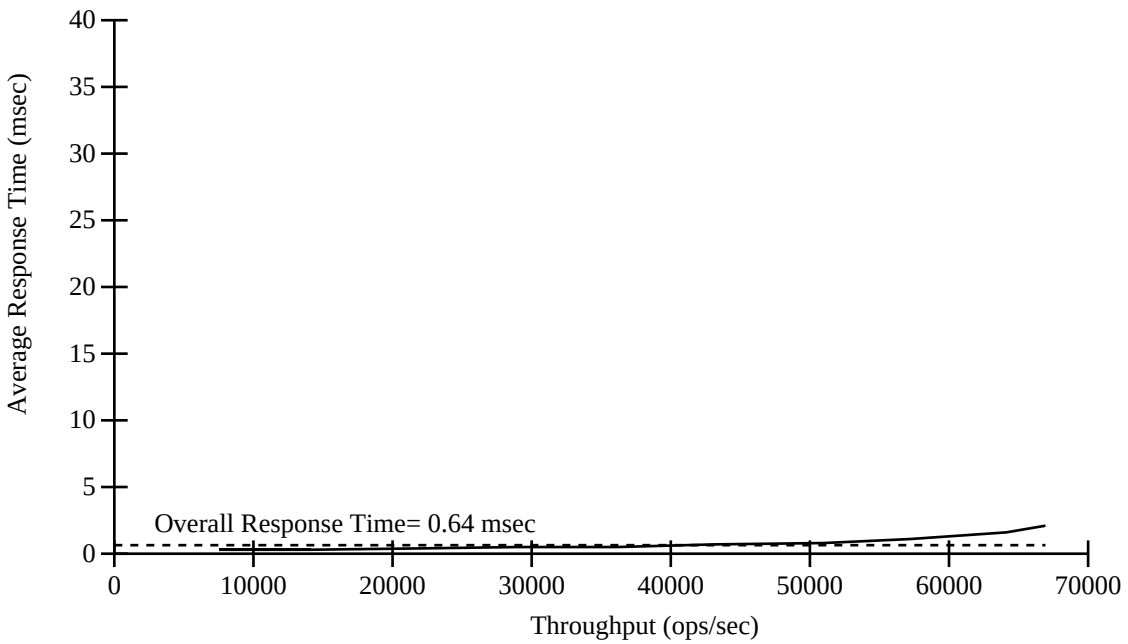
GlueSys Co, Ltd.
AnyStor GW-C (failover Cluster)

SPECsfs97_R1.v3 =

66932 Ops/Sec (Overall Response Time = 0.64 msec)

Tested:	Nov 2007	By:	GlueSys Co, Ltd.	License #:	3473	Hardware Avail:	Nov 2007	Software Avail:	Nov 2007

Throughput (ops/sec)	Average Response (msec)
7531	0.3
14126	0.3
22137	0.4
28983	0.5
36135	0.5
43183	0.7
50987	0.8
57201	1.1
64115	1.6
66932	**2.1**



CPU, Memory and Power

Model Name:	AnyStor GW-C (failover Cluster)
Processor:	Intel Xeon Process 5130 Dual Core 2.0GHz
# of Processors:	8 cores, 4 chips, 2 cores/chip (2 chips per node)
Primary Cache:	32KBI+32KBD on chip
Secondary Cache:	4MB(I+D) on chip
Other Cache:	N/A
UPS:	N/A
Other Hardware:	N/A
Memory Size:	8 GB (4 GB per node)
NVRAM Size:	256 GB
NVRAM Type:	DIMM
NVRAM Description:	48 hour battery backed

Server Software

OS Name and Version:	GBS4.1
Other Software:	N/A
File System:	GBFS
NFS version:	3

Network Subsystem

Network Type:	Gigabit Ethernet
Network Controller Desc.:	Jumbo Frame (mtu 9000), 2 port aggregated
Number Networks:	1 (N1)
Number Network Controllers:	8 (4 per node)
Protocol Type:	TCP
Switch Type:	Cisco 3650
Bridge Type:	N/A
Hub Type:	N/A
Other Network Hardware:	N/A

Server Tuning

Buffer Cache Size:	Dynamic
# NFS Processes:	256 (128 per node)
Fileset Size:	676.9 GB

Disk Subsystem

Number Disk Controllers:	6
Number of Disks:	260
Number of Filesystems:	32 (F1-F32)
File System Creation Ops:	default
File System Config:	noatime
Disk Controller:	LSI SAS controller
# of Controller Type:	2 (1 per node)
Number of Disks:	4 (2 per node)
Disk Type:	Seagate Cheetah 73GB 10K RPM
File Systems on Disks:	Operating System
Special Config Notes:	RAID 1 mirroring
Disk Controller:	QLA2422 (Dual port)
# of Controller Type:	4
Number of Disks:	256
Disk Type:	146GB 15K RPM FC (128), 146GB 10K RPM FC (128)
File Systems on Disks:	F1-F32
Special Config Notes:	RAID Level 10 with 8 disks, total 32 LUNs

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Load Generator (LG) Configuration

Number of Load Generators:	4
Number of Processes per LG:	32
Biod Max Read Setting:	2
Biod Max Write Setting:	2
LG Type:	LG1
LG Model:	Intel SE7520JR2
Number and Type Processors:	2.4GHz Xeon
Memory Size:	1GB
Operating System:	RHEL 4.3
Compiler:	precompiled binary
Compiler Options:	N/A
Network Type:	Integrated Intel Pro/1000 Gigabit

A line in your configuration is too long
or you have too many lines.
Please fix the problem and try again

Notes/Tuning Information

Other Notes
-The tested system was a Gluesys AnyStor GW-C 2 node cluster with an HDS Universal Storage Platform(USP1100/USP-V model) Storage array.
-AnyStor GW-C were directly connected with dual 1Gb Ethernet cluster links for Heart beat.
-AnyStor GW-C is a failover active/active cluster. The version is AS4.1.5.
-There are four gigabit ports in a NODE, which attached at PCI express BUS.
-Each 2 port nic was aggregated sigle link (round-robin mode) in each node.
-There are six disk controllers (Qlogic QLA2422 * 4, LSI SAS * 2) in each node.
-The QLA2422 is dual port HBA (4Gbps) in PCI-E slot, which connected to USP RAID controller.
-The LSI SAS controller is in onboard, which connected to SAS Disks for OS disk.
-USP1100 RAID Controller has totally 128GB NVRAM (48 hour battery backed).
-The RAID is comprised of 32 LUNs. Each LUN has 8 disks with RAID 10.
-Each disk controller serves 8 LUNs, respectively.
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-OS disks in each server are mirrored with software RAID 1 for failure protection.
-Uniform Access Rule:
-Each node has 2 network port(N1) for NFS service.
-Each Client has one network for NFS service.
-There are 32 LUNs in RAID storage. There are one file systems in each LUNs.
-Totally 32 filesystem (F1-F32) is used for NFS service. Each node serve 16 filesystems (F1-F16/F17-F32).
-Each LG has 32 processes: 32 processes of LG1 access F1-F32, respectively.
-Filesystem Setting:
-Filesystem was mounted with noatime option.
-Server tunning:
-- Disable block read-ahead "blkdev -ra 0".
-- Jumbo Frames were enabled "ifconfig mtu 9000".
-For "stable storage" requirement,
-The USP1100 cache is mirrored and battery backed for up to 48 hours, and from the USP1100 cache data is written to disk.
-In the event of power failure the USP will flush all data in cache to disk before battery is exhausted.