SPECsfs97 Result

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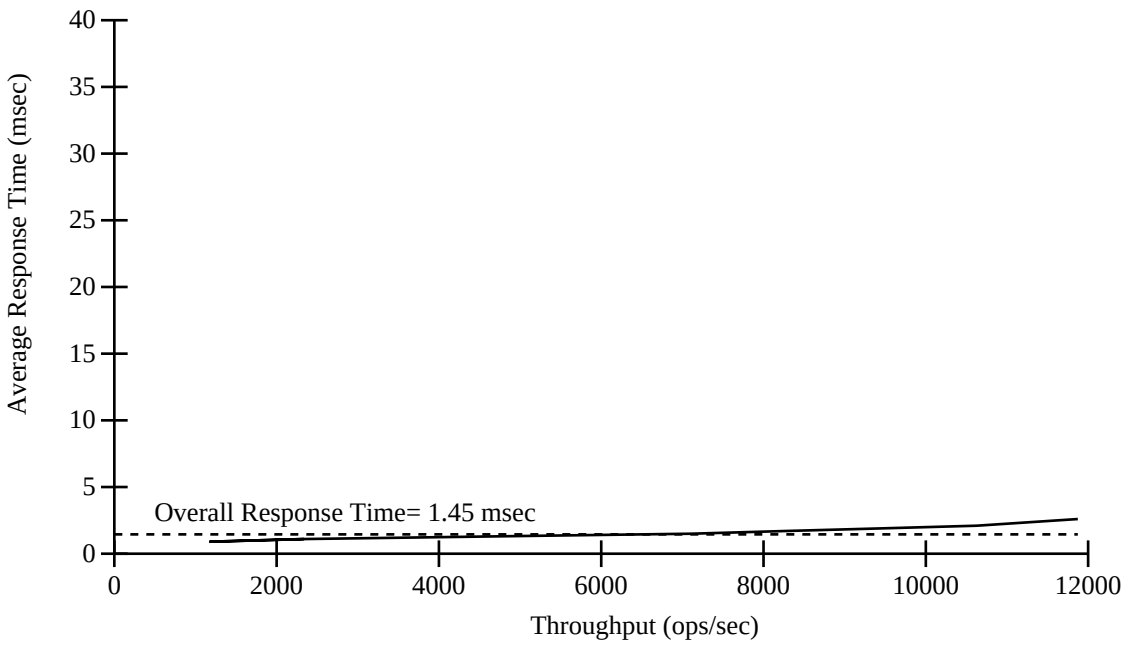
Network Appliance, Inc.
F840 (UDP, 42x36GB FCAL, GbE)

SPECsfs97_R1.v3 =
11873 Ops/Sec (Overall Response Time = 1.45 msec)

Tested:	By:	License #:	Hardware Avail:	Software Avail:
September 2001	Network Appliance, Inc.	33	December 2000	July 2001

Throughput (ops/sec)	Average Response (msec)
1173	0.9
2339	1.1
3530	1.2
4699	1.3
5892	1.4
7112	1.5
8255	1.7
9458	1.9
10627	2.1
11873	**2.6**



CPU, Memory and Power

Model Name:	F840 (UDP, 42x36GB FCAL, GbE)
Processor:	733-MHz Intel Pentium III Coppermine
# of Processors:	1 core, 1 chip, 1 core/chip
Primary Cache:	16 KB I + 16 KB D
Secondary Cache:	256 KB on-die
Other Cache:	N/A
UPS:	none
Other Hardware:	none
Memory Size:	3072 MB
NVRAM Size:	128 MB
NVRAM Type:	DIMM on PCI card
NVRAM Description:	15-day battery-backed shelf-life

Server Software

OS Name and Version:	Data ONTAP 6.1.1
Other Software:	none
File System:	WAFL
NFS version:	3

Network Subsystem

Network Type:	Gigabit Ethernet
Network Controller Desc.:	X1025B PCI adapter card
Number Networks:	1 (N1)
Number Network Controllers:	1
Protocol Type:	UDP
Switch Type:	Extreme Summit4 (N1)
Bridge Type:	N/A
Hub Type:	N/A
Other Network Hardware:	N/A

Server Tuning

Buffer Cache Size:	default
# NFS Processes:	N/A
Fileset Size:	112.2 GB

Disk Subsystem

Number Disk Controllers:	2
Number of Disks:	42
Number of Filesystems:	1
File System Creation Ops:	default
File System Config:	5 RAID-groups of 8 disks each
Disk Controller:	X2040B FC-AL adapter card (128 KB RAM standard)
# of Controller Type:	2
Number of Disks:	7,7,7/7,7,7
Disk Type:	X231A 36GB FC-AL
File Systems on Disks:	F1/F1
Special Config Notes:	none

For More Information contact

SPEC

info@spec.org
http://www.spec.org/

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Load Generator (LG) Configuration

Number of Load Generators:	8
Number of Processes per LG:	5
Biod Max Read Setting:	2
Biod Max Write Setting:	2
LG Type:	LG1
LG Model:	Intel ISP1100 Internet Server Platform
Number and Type Processors:	1x700-MHz Pentium III
Memory Size:	512 MB
Operating System:	Linux 2.2.18 (Red Hat 6.2)
Compiler:	gcc version egcs-2.91.66
Compiler Options:	-static -O -DNO_T_TYPES -DUSE_INTTYPES
Network Type:	integrated Intel Pro/100+ 100BASE-T

Testbed Configuration

LG #	LG Type	Network	Target File Systems	Notes
1/2/../8	LG1	N1	F1	N/A

Notes/Tuning Information

Other Notes

-NetApp's embedded operating system processes NFS requests from the network layer without any NFS daemons, and uses non-volatile memory to improve performance.

-The F1 filesystem was striped across both disk controllers.

-The F1 filesystem was striped across five RAID-4 groups; each RAID-group was composed of 7 data disks and 1 parity disk. Two spare disks were present.

-Server tunings:

-date 0801 -- set clock to 8:01am for reproducibility

-options minra 1 -- minimize file read-ahead

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