SPECsfs97 Result

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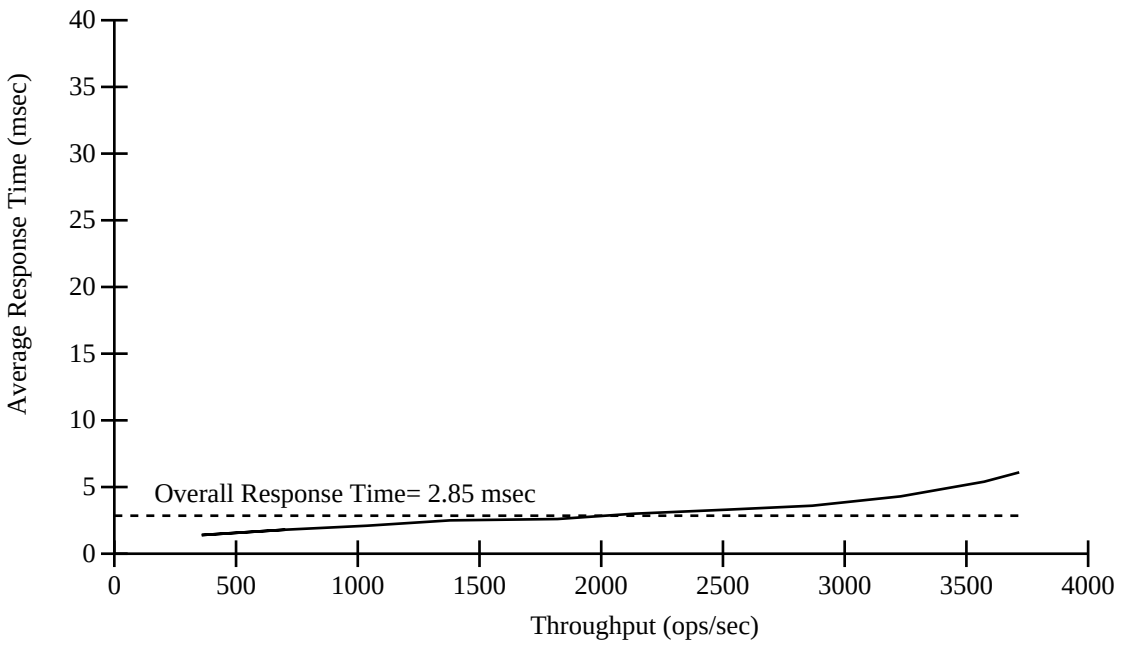
Network Appliance, Inc.
NetApp F85 (UDP, 18x36GB SCSI, GbE)

SPECsfs97.v3 =
3717 Ops/Sec (Overall Response Time = 2.85 msec)

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

Throughput (ops/sec)	Average Response (msec)
359	1.4
702	1.8
1039	2.1
1379	2.5
1820	2.6
2134	3.0
2514	3.3
2867	3.6
3230	4.3
3573	5.4
3717	**6.1**



CPU, Memory and Power

Model Name:	NetApp F85 (UDP, 18x36GB SCSI, GbE)
Processor:	866-MHz Intel Pentium III Coppermine
# of Processors:	1
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:	256 MB
NVRAM Size:	64 MB
NVRAM Type:	DIMM on PCI card
NVRAM Description:	22-day battery-backed shelf-life

Server Software

OS Name and Version:	Data ONTAP 6.0.1R1
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:	NetGear FS518
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:	36.2 GB

Disk Subsystem

Number Disk Controllers:	2
Number of Disks:	18
Number of Filesystems:	1
File System Creation Ops:	default
File System Config:	1 RAID-group of 17 disks
Disk Controller:	SP-2023 LVD SCSI adapter card (64 KB RAM standard)
# of Controller Type:	1
Number of Disks:	12
Disk Type:	X241A 36GB LVD SCSI
File Systems on Disks:	F1
Special Config Notes:	none
Disk Controller:	X2023A LVD SCSI adapter card (128 KB RAM standard)
# of Controller Type:	1
Number of Disks:	6
Disk Type:	X241A 36GB LVD SCSI
File Systems on Disks:	F1
Special Config Notes:	none

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Load Generator (LG) Configuration

Number of Load Generators:	4
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:	FreeBSD 4.0
Compiler:	gcc 2.95.2
Compiler Options:	-g -DNO_T_TYPES -DUSE_INTTYPES
Network Type:	integrated Intel Pro/100+ 100BASE-T

Testbed Configuration

LG #	LG Type	Network	Target File Systems	Notes
1/2/3/4	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 filesystem was striped across both disk controllers.
-The filesystem was composed of one RAID-4 group containing 16 data disks and 1 parity disk. One spare disk were present.
-Server tunings:
-options minra 1 -- minimize file read-ahead
-date 0801 -- set clock to 8:01am for reproducibility
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