SPEC SFS 1 Summary (Side 1 of 2) 097.LADDIS

Auspex Systems, Inc.
NS 7000 NetServer 150

Server Hardware

CPU, Memory, & Power

Model No.	NS 7000 Model 150
Network Proc. (NP-I)	40MHz dual CPU SPARC
Network Proc. (NP-II)	55MHz dual CPU HyperSPARC
# of NPs	2 (1 NP-I and 1 NP-II)
Host Processor	n/a for NFS
Memory	384MB
Other Cache	1 1MB NVRAM Write Accelerator
UPS	None
Other hardware	None

Server Software

OS Version	Release 1.8
Other software	None
File system	Auspex LFS (BSD FFS)

Load Generators (LGs)

Number of Load Generators:	5
Processes Per Load Generator:	6
Biod_Max_Reads:	2
Biod_Max_Writes:	2

Disk Subsystem & Filesystems

(Full Configuration on Side 2)

Num Disk Controllers	1 Storage Processors (SP)
Num Disks	17
Num File Systems	3 (F1 through F3)

Network Subsystem

(Full Configuration On Side 2)

Num Net Controllers	2 Network Processors (NP)
Num Networks	2 (N1 through N2)
Type Network	FDDI

Server Tuning

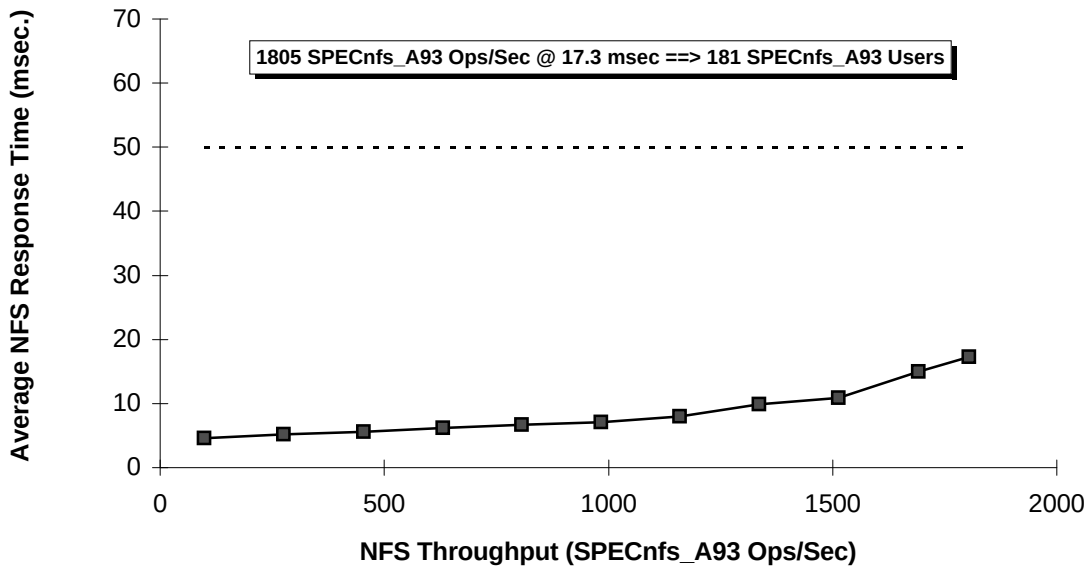
(Also see Notes/Tuning below)

Buffer Cache Size	264MB (Data Cache)
Num NFS Daemons	48 per NP
Fileset Size	10.1GB

NFS Throughput SPECnfs_A93 Ops/Sec	Avg. Response Time (NFS) Milliseconds
99	4.6
276	5.2
454	5.6
631	6.2
806	6.7
983	7.1
1159	8.0
1336	9.9
1513	10.9
1692	15.0
1805	17.3

Hardware Availability: Nov-95 **Software Availability:** Nov-95

License #: 29 **Tested:** Oct-95 **By:** Auspex **Of:** Santa Clara, CA



Notes/Summary Of Tuning Parameters: (Continued on Side 2 of 2)

The adb tool was used to enable UDP checksumming on all load generators:

```
adb -w /vmunix /dev/kmem
udp_cksum?W1
udp_cksum/W1
```

The Auspex NetServer responds to checksummed requests with checksummed replies, by default.

The LADDIS Prime Client was the Server's Host Processor (no router was needed).

All load generators used the same LADDIS mount points list with the same /etc/fstab entries.

The filesystems were mounted across the 2 NP's in a round-robin fashion (eg. F1 on NP1, F2 on NP0 etc.).

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Detailed Server Description

Network Subsystem

Network Processor (Model NP-I):
- Dual SPARC (40MHz), 128MB
- One processor does protocol processing, and the other processor does filesystem processing
- 1 MLT3 FDDI Adapter

Number of NP-I processors: 1

Network Processor (Model NP-II):
- Dual HyperSPARC (55MHz), 256MB
- One processor does protocol processing, and the other processor does filesystem processing
- 1 MLT3 FDDI Adapter

Number of NP-II processors: 1

Disk Subsystem & Filesystems

Storage Processor (Model SP-IV):
- M68030 (40MHz), 1MB local memory
- 1MB NVRAM Write Accelerator
- 5 SCSI Channels
- 15 data disks (4.29GB Seagate "Barracuda") configured
- 3 Virtual Partitions: Each Virtual Partition stripes across 5 disks (unit=128KB) on 5 different channels
- 3 Filesystems (1 Virtual Partition each)

Number of SP-IV processors: 1

SP0: Disks: 2 - 16; Filesystems: 1, 2, 3

SP0 also supported Disk0 (OS, Swap space) and Disk1 (LADDIS files).

Detailed Load Generator (LG) Description

Load Gen. Type	*Model*	*# of CPUs*	*RAM*	*OS*	*Compiler*
LG1	Sun SPARCstation 20 (Model 71)	1	64MB	SunOS 4.1.3	/bin/cc

Testbed Configuration

Load Gen. #	*Load Gen. Type*	*Network*	*Target File Systems*	*Notes*
1	LG1	N1	F1, F2, F3, F1, F2, F3	
2	LG1	N1	F1, F2, F3, F1, F2, F3	
3	LG1	N2	F1, F2, F3, F1, F2, F3	
4	LG1	N2	F1, F2, F3, F1, F2, F3	
5	LG1	N2	F1, F2, F3, F1, F2, F3	

Notes/Summary Of Tuning Parameters: (Continued from Side 1 of 2)

Each load generator mounted filesystems from 2 different NPs.
Network Processors: NP0 (NP-I), NP1 (NP-II); Storage Processors: SP0
On all the load generators, udp_sendspace = 32768 and udp_recvspace = 32768.