# SPECsfs97 Result

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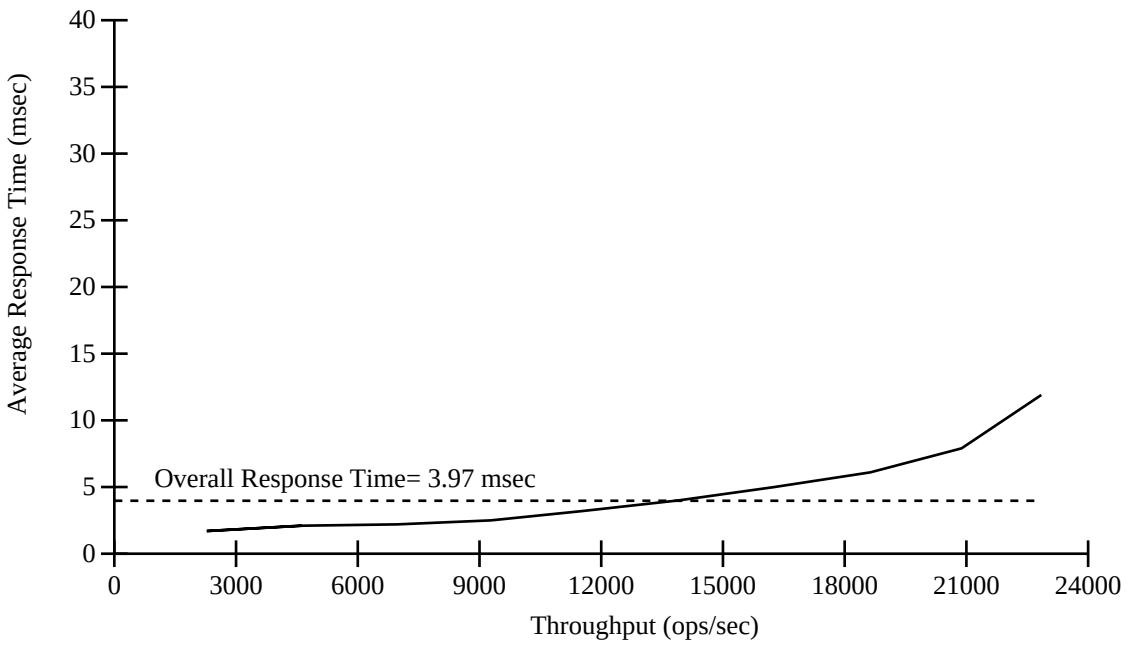
## Maxxan Systems Inc.
## SG100 Failover Cluster

SPECsfs97_R1.v3 =

**22845 Ops/Sec (Overall Response Time = 3.97 msec)**

| Tested: | By: | License #: | Hardware Avail: | Software Avail: |
|---|---|---|---|---|
| January 2003 | Maxxan Systems Inc. | 2581 | December 2002 | December 2002 |

| Throughput (ops/sec) | Average Response (msec) |
|---|---|
| 2279 | 1.7 |
| 4619 | 2.1 |
| 6974 | 2.2 |
| 9282 | 2.5 |
| 11540 | 3.2 |
| 13912 | 4.0 |
| 16269 | 5.0 |
| 18632 | 6.1 |
| 20881 | 7.9 |
| **22845** | **11.9** |




## CPU, Memory and Power

| | |
|---|---|
| Model Name: | SG100 Failover Cluster |
| Processor: | 2.4 GHz Pentium IV Xeon |
| # of Processors: | 4 (2 per node) |
| Primary Cache: | 12K uops + 8KB D |
| Secondary Cache: | 512KB on-die |
| Other Cache: | N/A |
| UPS: | N/A |
| Other Hardware: | Brocade 2400 Silkworm Fibre Channel Switch |
| Memory Size: | 8 GB (4 GB per node) |
| NVRAM Size: | N/A |
| NVRAM Type: | N/A |
| NVRAM Description: | N/A |

## Server Software

| | |
|---|---|
| OS Name and Version: | VxOS - based on Red Hat Linux 7.2 |
| Other Software: | Veritas ServPoint NAS 1.2 for Linux |
| File System: | VxFS |
| NFS version: | 3 |

## Network Subsystem

| | |
|---|---|
| Network Type: | Gigabit Ethernet |
| Network Controller Desc.: | Intel 82546 GbEthernet controller |
| Number Networks: | 1 (N1) |
| Number Network Controllers: | 2 (1 per node) |
| Protocol Type: | UDP |
| Switch Type: | Cisco 4000 Switch |
| Bridge Type: | N/A |
| Hub Type: | N/A |
| Other Network Hardware: | N/A |

## Server Tuning

| | |
|---|---|
| Buffer Cache Size: | Dynamic |
| # NFS Processes: | 128 |
| Fileset Size: | 222.3 GB |

## Disk Subsystem

| | |
|---|---|
| Number Disk Controllers: | 10 (5 per node) |
| Number of Disks: | 98 |
| Number of Filesystems: | 8 (F1-F8) |
| File System Creation Ops: | default |
| File System Config: | default |
| | |
| Disk Controller: | IDE Compact Flash |
| # of Controller Type: | 2 (1 per node) |
| Number of Disks: | 2 (1 per node) |
| Disk Type: | 1GB IBM microdrive |
| File Systems on Disks: | Operating System |
| Special Config Notes: | N/A |
| | |
| Disk Controller: | Qlogic 2312 |
| # of Controller Type: | 8 (4 per node) |
| Number of Disks: | 96 |
| Disk Type: | SEAGATE ST318451 18GB 15K rpm |
| File Systems on Disks: | F1-4, F5-8 |
| Special Config Notes: | See "Other Notes" |

For More Information contact

SPEC

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

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### Load Generator (LG) Configuration

| | |
|---|---|
| Number of Load Generators: | 16 |
| Number of Processes per LG: | 16 |
| Biod Max Read Setting: | 2 |
| Biod Max Write Setting: | 2 |
| | |
| LG Type: | LG1 |
| LG Model: | Sun Netra X1 |
| Number and Type Processors: | 500MHz UltraSPARC(tm) - IIe |
| Memory Size: | 512 MB |
| Operating System: | Solaris 8 Operating Environment |
| Compiler: | used SPEC supplied pre-compiled binaries |
| Compiler Options: | none |
| Network Type: | Integrated 10/100BASE-T |

### Testbed Configuration

| LG # | LG Type | Network | Target File Systems | Notes |
|---|---|---|---|---|
| 1-16 | LG1 | 1 | /F1, /F5, /F2, /F6, /F3, /F7, /F4, /F8, /F1, /F5, /F2, /F6, /F3, /F7, /F4, /F8 | N/A |

### Notes/Tuning Information

Other Notes
-Each file system was configured on a Raid-0 volume with an 8k stripe unit size.
-Each file system contained 12 disks.
-Disks enclosed in a total of 10 Unisys JBOD Disk Array Enclosure (ESM702-JBD), with only 8 (out of 10) disks used in each of the last 2 enclosures.
-This was accomplished by zoning the disks with a Brocade 2400 FC Switch.
-The system benchmarked was a failover cluster of two nodes.
-Each node was the primary controller of four file systems, but the
-disks were dual attached and could be controlled by the other node in the event of a failure of the primary node.
-The nodes were connected via 2 crossover cables to two 10/100Mb Ethernet ports available on each node.
-These ports are separate from the GbE ports used by the clients. This provides signalling between the nodes, allowing for the detection of a node failure.
-The F1-4 file systems were controlled by the first node.
-The F5-8 file systems were controlled by the second node.
-
-File systems were exported with the following options:
-rw,sync,no_wdelay,insecure
-
-The number of nfsd process was limited to 128 by using the rpc.nfsd command.
-Because of a command behaviour issue, the user must first specify zero (0) processes and then repeat the command specifying 128 processes.
-
-The following products are included:
-VERITAS Volume Manager 3.2
-VERITAS File System 3.4
-
-The Qlogic 2312 controller used is a dual port controller. Though there are
-5 controllers in each unit, for a total of 10 ports per node, only 4 ports per node were used, one port was used out of each controller, utilizing 4 controllers per node.
-
-The Intel 82546 GbEthernet controller is a dual port controller, however only one port was used.