# SPECweb99_SSL Result

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## Appro: 4144H

Zeus Technology Ltd.: Zeus Web Server V4.2r2 (64-bit)

SPECweb99_SSL =3800

Test Date: Nov-2003
Tester: Advanced Micro Devices

| Hardware Avail: | Dec-2003 | OS Avail: | Aug-2003 | HTTPS Software Avail: | Mar-2003 | Sup. Software Avail: | Aug-2003 | SPEC license #: | 49 |
|---|---|---|---|---|---|---|---|---|---|

### Hardware

| | |
|---|---|
| Vendor: | Appro |
| Model: | 4144H |
| Processor: | AMD Opteron 848, 2.2 GHz |
| # Processors: | 4 cores, 4 chips, 1 core/chip |
| Primary Cache: | 64KBI + 64KBD |
| Secondary Cache: | 1MB on chip |
| Other Cache: | none |
| Memory: | 32 GB pc2100 DDR |
| Disk Subsystem: | 3 18GB 15KRPM Ultra 320 SCSI Drives |
| Disk Controllers: | Onboard LSI SCSI |
| Other Hardware: | 2 Dell PowerConnect 5224 Gigabit switches |

### Software

| | |
|---|---|
| Operating System: | SuSE Linux Enterprise Server 8 for AMD64 SP2 |
| File System: | ext2 |
| Other Software: | gcc v3.2.2 |

### HTTPS Software

| | |
|---|---|
| Vendor: | Zeus Technology Ltd. |
| HTTPS Software: | Zeus Web Server V4.2r2 (64-bit) |
| API: | Zeus PEPP 0.8 ISAPI used for Dynamic content |
| Server Cache: | None |
| Log Mode: | Binary Common Log Format |

### Test Sponsor

| | |
|---|---|
| Test Date: | Nov-2003 |
| Tested By: | Advanced Micro Devices |
| SPEC License: | 49 |

### Network

| | |
|---|---|
| # of Controllers: | 4 |
| Network Controllers: | Intel Pro/1000 MT Server Adapter |
| # of Nets: | 4 |
| Type of Nets: | Gigabit Ethernet |
| Network Speed: | 1 Gb/s |
| MSL (sec): | 30 (Non RFC1122) |
| Time-Wait (sec): | 60 (Non RFC1122) |
| MTU: | 1500 |

### Clients

| | |
|---|---|
| # of Clients: | 16 |
| Model: | RackSaver RS-1100 |
| Processor: | AMD Athlon MP 2800+ |
| # of Processors: | 2 |
| Memory: | 1024MB |
| Network Controller: | Intel Pro/1000 MF Server Adapter |
| Operating System: | SuSE Linux Professional 8.2 |
| Compiler: | gcc v3.3 |

## Notes/Tuning Information

### SUT Notes

1 U320 15K 18GB SCSI disk for OS
1 U320 15K 18GB SCSI disk for log
1 U320 15K 18GB SCSI disk for fileset

### Operating System Notes

One NIC irq bound per CPU
ulimit -n 110490, sets number of open files, default 1024
Each NIC's TX queue length set to 20000 via ifconfig, default 100
log, & fileset partitions mounted with 'noatime, nodiratime', no inode access time updating

Tuning Parameters:
- net.ipv4.ip_forward = 0
- net.ipv4.conf.all.rp_filter = 1, enables source route verification, default 0
- net.ipv4.tcp_timestamps = 0, turns TCP timestamp support off, default 1
- net.ipv4.tcp_max_tw_buckets = 2000000, sets TCP time-wait buckets pool size, default 180000
- net.core.rmem_max = 10000000, maximum receive socket buffer size, default 65535
- net.core.rmem_default = 10000000, default receive socket buffer size, default 65535
- net.core.wmem_max = 10000000, maximum send socket buffer size, default 65535
- net.core.wmem_default = 10000000, default send socket buffer size, default 65535
- net.core.optmem_max = 10000000, default 10240
- net.core.hot_list_length = 10000, maximum number of skb-heads to be cached, default 128
- net.ipv4.tcp_rmem = 30000000 30000000 30000000, maximum TCP read-buffer space allocatable, default 4096 87380 174760
- net.ipv4.tcp_wmem = 30000000 30000000 30000000, maximum TCP write-buffer space allocatable, default 4096 16384 131072
- net.ipv4.tcp_mem = 30000000 30000000 30000000, maximum TCP buffer space, default 31744 32256 32768
- fs.file-max = 442961, maximum number of open files, default 1024

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## Notes/Tuning Information (Continued)

### HTTPS Software Notes

Zeus Configuration:
tuning!bind_any no
tuning!unique_bind yes
tuning!cache_cooling_time 0
tuning!cache_files 282011
tuning!cache_flush_interval 86400
tuning!cache_small_file 90000
tuning!cache_large_file 1048576
tuning!cache_max_bytes 12884901888
tuning!cache_stat_expire 86400
tuning!cbuff_size 65536
tuning!clientfirst_optimise yes
tuning!keepalive yes
tuning!keepalive_max -1
tuning!keepalive_timeout 3600
tuning!listen_queue_size 8192
tuning!maxaccept 2048
tuning!modules!cgi!cleansize 0
tuning!sendfile no
tuning!sendfile_maxsize 0
tuning!sendfile_minsize 0
tuning!so_wbuff_size 1048576
tuning!softservers no
tuning!ssl_diskcache no
tuning!ssl_sessioncache_size 2617
tuning!ssl_cbuff_size 32840
tuning!modules!stats!enabled no
tuning!modules!nsapi!enabled no
tuning!modules!isapi!enabled no

### HTTP API Notes

Zeus PEPP configured with command: ./Configure --ssl=yes
Zeus PEPP compiled with default gcc (v3.2.2)

### Client Notes

Client code configured with command: ./configure --enable-posix-threads
Client code compiled with default gcc (v3.3)
net.ipv4.ip_local_port_range 1024 65535

### Other Notes

Tuning Disclosure: See above
Dynamic API: HP-20020724-API.tgz
Server kernel config: AMD-20030808-server64.config
Client kernel config: AMD-20030808-client.config