# SPECweb99_SSL Result

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## IBM: eServer xSeries 335
## Zeus: Zeus V4.2r2

SPECweb99_SSL =1440

Test Date: Oct-2003
Tester: IBM

| Hardware Avail: | Nov-2003 | OS Avail: | Jun-2003 | HTTPS Software Avail: | Mar-2003 | Sup. Software Avail: | Mar-2003 | SPEC license #: | 11 |
|---|---|---|---|---|---|---|---|---|---|

### Hardware

| | |
|---|---|
| Vendor: | IBM |
| Model: | eServer xSeries 335 |
| Processor: | Intel Xeon 3.2GHz/533MHz Front-Side Bus |
| # Processors: | 2 cores, 2 chips, 1 core/chip |
| Primary Cache: | 12KBI+8KBD on chip |
| Secondary Cache: | 512KB |
| Other Cache: | 1MB L3 cache |
| Memory: | 8 GB |
| Disk Subsystem: | 2 36GB 15KRPM Ultra 320 SCSI Drives |
| Disk Controllers: | On-board LSI controller |
| Other Hardware: | 1 Nortel Networks Switch |

### Software

| | |
|---|---|
| Operating System: | Red Hat Linux 7.3 |
| File System: | ext2 |
| Other Software: | GCC 2.96 |

### HTTPS Software

| | |
|---|---|
| Vendor: | Zeus |
| HTTPS Software: | Zeus V4.2r2 |
| API: | Zeus PEPP 0.8 ISAPI used for Dynamic content |
| Server Cache: | None |
| Log Mode: | Zeus Binary CLF |

### Test Sponsor

| | |
|---|---|
| Test Date: | Oct-2003 |
| Tested By: | IBM |
| SPEC License: | 11 |

### Network

| | |
|---|---|
| # of Controllers: | 1 |
| Network Controllers: | Intel PRO 1000 MT Dual Port Server Adapter |
| # of Nets: | 2 |
| 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: | 8 |
| Model: | IBM eServer xSeries 330 |
| Processor: | 933Mhz Pentium III |
| # of Processors: | 1 |
| Memory: | 512MB |
| Network Controller: | IBM Netfinity Gigabit Ethernet Adapter |
| Operating System: | Red Hat Linux 7.3 |
| Compiler: | GCC 2.96 |

## Notes/Tuning Information

### SUT Notes

1 U320 15K 36GB SCSI disk with EXT2 for OS/Fileset
1 U320 15K 36GB SCSI disk with EXT2 for log
Memory configuration 4 x 2GB PC2100 DIMMs

### Operating System Notes

Tuning parameters:
- net.ipv4.ip_forward=1, default 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 = 360000, sets TCP time-wait buckets pool size, default 180000
- 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

Kernel is Red Hat Linux (2.4.20-20.7custom) see kernel config: IBM-20031110-config.txt
One NIC irq bound to logical processor 0 on physical processor 0 and second NIC irq bound to logical processor 0 on physical processor 1.
Each NIC's TX queue length set to 20000 via ifconfig, default 100
Log & fileset partition mounted with "noatime,nodiratime", no inode access time updating

### HTTPS Software Notes

Zeus Configuration
- tuning!so_wbuff_size 1048576
- tuning!softservers no
- tuning!cbuff_size 65536

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## Notes/Tuning Information (Continued)

### HTTPS Software Notes (Continued)

- tuning!clientfirst_optimise yes
- tuning!ssl_sessioncache_size 6037
- tuning!sendfile yes
- tuning!sendfile_minsize 1
- tuning!listen_queue_size 8192
- tuning!keepalive_timeout 20
- tuning!keepalive_max 2000
- tuning!maxaccept 64
- tuning!modules!cgi!enabled yes
- tuning!isapi!enabled yes

Virtual Server Configuration
- ip_name = server
- bindaddr = 192.0.1.100,192.0.2.100

See IBM-Zeus-tuning-20021224.txt for a description of the Zeus tuning parameters
ISAPI Source code is available in the SPECweb99_SSL support docs as HP-20020724-API.tar.gz

### HTTP API Notes

Zeus ISAPI interface used
Zeus PEPP 0.8 ISAPI used for Dynamic content
./Configure --sendfile=yes --checkconfig=yes --locking=lockf --ssl=yes --64bit=no

### Client Notes

Client code generated with ./configure --enable-posix-threads
net.ipv4.ip_local_port_range 1024 65535