# SPECweb99 Result

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## IBM: RS/6000 7026-M80
## Zeus Technology Ltd.: Zeus 3.3.8

SPECweb99 = 5509

Test Date: Mar-2001
Tester: IBM

| Hardware Avail: | Jun-2000 | OS Avail: | Apr-2001 | HTTP Software Avail: | Feb-2001 | Sup. Software Avail: | Apr-2001 | SPEC license #: | 11 |
|---|---|---|---|---|---|---|---|---|---|

### Hardware

| | |
|---|---|
| Vendor: | IBM |
| Model: | RS/6000 7026-M80 |
| Processor: | 500MHz RS64 III |
| # Processors: | 8 cores, 8 chips, 1 core/chip |
| Primary Cache: | 128KBI+128KBD on chip |
| Secondary Cache: | 4MB(I+D) off chip |
| Other Cache: | None |
| Memory: | 32 GB |
| Disk Subsystem: | 1x9.1GB 16Bit SCSI Disk, 9x18.2 SSA Disk(fast-write enabled) |
| Disk Controllers: | Wide/Ultra-2 SCSI I/O Controller, IBM SSA 160 SerialRAID Adapter |
| Other Hardware: | 8 x Alteon ACESwitch 180 |

### Software

| | |
|---|---|
| Operating System: | AIX 4.3.3 + APAR IY17356 |
| File System: | JFS |
| Other Software: | None |

### HTTP Software

| | |
|---|---|
| Vendor: | Zeus Technology Ltd. |
| HTTP Software: | Zeus 3.3.8 |
| API: | ISAPI |
| Server Cache: | See Notes |
| Log Mode: | Binary Common Log Format |

### Test Sponsor

| | |
|---|---|
| Test Date: | Mar-2001 |
| Tested By: | IBM |
| SPEC License: | 11 |

### Network

| | |
|---|---|
| # of Controllers: | 8 |
| Network Controllers: | 8 Gigabit Ethernet-SX PCI Adapter |
| # of Nets: | 8 |
| Type of Nets: | Gigabit Ethernet |
| Network Speed: | 1 Gigabit/sec |
| MSL (sec): | 30 (Non RFC1122) |
| Time-Wait (sec): | 60 (Non RFC1122) |
| MTU: | 1500 |

### Clients

| | |
|---|---|
| # of Clients: | 24 |
| Model: | IBM RS/6000 7044-270 |
| Processor: | 375 MHz POWER3-II |
| # of Processors: | 4 |
| Memory: | 2048MB |
| Network Controller: | 1 Gigabit Ethernet-SX PCI Adapter |
| Operating System: | AIX 4.3.3 |
| Compiler: | IBM Cset++ Version 3.1.3 |

## Notes/Tuning Information

### SUT Notes

APAR IY17356: New hardware support for Apr-2001
bosdebug -H (enables secondary thread on the processor)
no(network option) tuning:
no -o send_file duration=180000(cached send_file expiration time, default=300)
somaxconn=8192(max listen backlog, default=1024)
nbc_max_cache=100(max file size for network buffer cache,default=1048576)
nbc_pseg=110000(max file entries in private segment,default=0)
tcp_timewait=5(ensure that TIME_WAIT is at least 60 seconds, default=1)
Interrupt affinity - bind 8 Ethernet interrupts to 8 cpu's(1 interrupt to 1 cpu)
Processor affinity - bind 8 Zeus instances to 8 cpu's(1 instance to 1 cpu)
maxpgahead=64(the maximum number of pages to be read ahead,default=8)
maxfree=304(the number of frames on the free list at which page stealing is to stop,default 256)
minperm=5%(the point below which the page-stealer will steal file of computational pages,default=20%)
maxperm=95%(the point above which the page stealing algorithm steals only file page,default=80%)
8 different logs for 8 zeus instances (1 log per zeus instance)
Disk layout: 1 disk for OS, 1 disk for webserver, 7 disks striped for file_set, 1 disk for logfile)
Set Gigabit Ethernet driver attribute copy_bytes=256 (copy packet from system memory to Gigabit Ethernet adapter if this many or less bytes, defalut=2048)
Used 1 external 7026-F/C6324 I/O drawer ( 4 adapters each ).
Used 1 external 7026-F/C6325 I/O drawer ( 4 adapters each ).

### HTTP API Notes

Zeus ISAPI interface used for dynamic content
FastCGI used as communication method to manage all the independent CGI processes
IBM-20001225.tar.gz dynamic API used

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## Notes/Tuning Information (Continued)

### Client Notes

no (network option) tuning:
no -o delayack=3(delay ack for connection setup and shutdown,default=0)
no -o delayackports={80}(delay ack ports,default={} )
tcp_timewait=5(ensure that TIME_WAIT is at least 60 seconds,default=1)

### Other Notes

Starts 8 instances of Zeus sharing a common docroot
The two children of each Zeus instance are bound to a unique IP address
Zeus 3.3.8 global.cfg:
tuning!bind_any no
tuning!cache_files 120011
tuning!cache_large_file 400000
tuning!cache_small_file 9216
tuning!cache_stat_expire 180000
tuning!cache_flush_interval 180000
tuning!cache_max_bytes 0
tuning!num_children 2
tuning!keepalive yes
tuning!keepalive_max -1
tuning!listen_queue_size 8192
tuning!cbuff_size 1048576
tuning!multiple_accept yes
tuning!sendfile yes
tuning!sendfile_maxsize 1048576
tuning!sendfile_minsize 400000
tuning!sendfile_reservefd 32000
tuning!so_nagle_off no
tuning!so_rbuff_size 65535
tuning!softservers no
tuning!unique_bind yes
tuning!use_poll no
tuning!cache_cooling_time 0
tuning!modules!cgi!cleansize 0
tuning!modules!stats!enabled no
tuning!modules!nsapi!enabled no
Zeus_Site_Configuration:
modules!cgi!enabled yes
modules!fastcgi!enabled yes
modules!isapi!enabled yes