

# SPECweb99 Result

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IBM: pSeries 660 Model 6F1 (4-way)  
Zeus Technology Ltd.: Zeus 3.3.8.4

SPECweb99 = 3280

Test Date: May-2001  
Tester: IBM

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

## Hardware

Vendor: IBM  
Model: pSeries 660 Model 6F1 (4-way)  
Processor: 600MHz RS64 IV  
# Processors: 4 cores, 4 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: 9x18.2 SSA Disk(fast-write enabled)  
Disk Controllers: IBM SSA 160 SerialRAID adapter  
Other Hardware: 4 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 3.3.8.4  
API: ISAPI  
Server Cache: See notes  
Log Mode: Binary Common Log Format

## Test Sponsor

Test Date: May-2001  
Tested By: IBM  
SPEC License: 11

## Network

# of Controllers: 4  
Network Controllers: 4 Gigabit Ethernet-SX PCI 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: 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)  
Processor affinity - bind 4 Zeus instances to 4 cpu's(1 instance to 1 cpu)  
Interrupt affinity - bind 4 Ethernet interrupts to 4 cpu's(1 interrupt 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%)  
Set Gigabit Ethernet driver attribute copy\_bytes=256(copy packet into contiguous buffer on transmit if this many or less bytes, default=2048)  
4 different logs for 4 zeus instances (1 log per zeus instance)  
Disk layout: 1 disk for OS, 1 disk for webserver, 6 disks striped for file\_set, 1 disk for logfiles  
no (network option) tuning:  
no -o send\_file duration=180000(cached send\_file expiration time, default=300)  
no -o somaxconn=8192(max listen backlog, default=1024)  
no -o nbc\_max\_cache=100(max file size for network buffer cache,default=1048576)  
no -o nbc\_pseg=100000(max file entries in private segment,default=0)  
no -o tcp\_timewait=5(ensure that TIME\_WAIT is at least 60 seconds, default=1)

### HTTP API Notes

Zeus PEPP SPECweb99 toolkit used for dynamic content  
./Configure --sendfile=no --locking=semop

### 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={ } )  
no -o tcp\_timewait=5(ensure that TIME\_WAIT is at least 60 seconds,default=1)

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## Notes/Tuning Information (Continued)

### Other Notes

Starts 4 instances of Zeus sharing a common docroot  
The two children of each Zeus instance are bound to a unique IP address  
Zeus 3.3.8.4 global.cfg:  
tuning!bind\_any no  
tuning!cache\_files 120011  
tuning!cache\_large\_file 9216  
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 9216  
tuning!sendfile\_reservefd 32000  
tuning!so\_nagle\_off no  
tuning!so\_rbuff\_size 32768  
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!isapi!enabled yes