

# SPECweb99 Result

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IBM: IBM eServer pSeries 660 Model 6H1 (750MHz)  
Zeus Technology Ltd.: Zeus 4.0

SPECweb99 = 5480

Test Date: Mar-2002  
Tester: IBM

Hardware Avail: Apr-2002 OS Avail: Apr-2002 HTTP Software Avail: Oct-2001 Sup. Software Avail: Apr-2002 SPEC license #: 11

## Hardware

Vendor: IBM  
Model: IBM eServer pSeries 660 Model 6H1 (750MHz)  
Processor: 750MHz RS64 IV  
# Processors: 4 cores, 4 chips, 1 core/chip  
Primary Cache: 128KBI+128KBD on chip  
Secondary Cache: 8MB(I+D) off chip  
Other Cache: None  
Memory: 32 GB  
Disk Subsystem: 1x9.1GB 16Bit SCSI Disk  
12x18.2 SSA Disk(fast-write enabled)  
Disk Controllers: Wide/Ultra-2 SCSI I/O Controller,  
IBM SSA 160 SerialDisk Adapter  
Other Hardware: 5 x Alteon ACESwitch 180

## Software

Operating System: AIX 5L V5.1(64bit)  
File System: JFS  
Other Software: None

## HTTP Software

Vendor: Zeus Technology Ltd.  
HTTP Software: Zeus 4.0  
API: ISAPI  
Server Cache: FRCA (Fast Response Cache Accelerator)  
Log Mode: Binary CLF for Zeus, CLF for FRCA

## Test Sponsor

Test Date: Mar-2002  
Tested By: IBM  
SPEC License: 11

## Network

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

## Clients

# of Clients: 24  
Model: IBM eServer pSeries 640 Model B80  
Processor: 375 MHz POWER3-II  
# of Processors: 4  
Memory: 4096MB  
Network Controller: 1 IBM Gigabit Ethernet-SX PCI Adapter  
Operating System: AIX 4.3.3  
Compiler: IBM VAC 5.0.1

## Notes/Tuning Information

### SUT Notes

APAR IY28102 was applied to AIX 5L V5.1  
bosdebug -H (enables secondary thread on the processor)  
bindintcpu [interrupt level] [cpu] (Interrupt affinity - bind 8 Ethernet interrupts to 4 cpu's(2 interrupt to 1 cpu))  
maxpgahead=32(the maximum number of pages to be read ahead,default=8)  
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%)  
4 different logs for 4 zeus instances (1 log per zeus instance) for dynamic requests  
frca-log.N (once the frca-log.N reaches 1GB, a new frca-log.N+1 is generated) for static requests  
Disk layout: 1 disk for OS, 1 disk for webserver, 10 disks striped for file\_set, 1 disks for web logfile)  
Set Gigabit Ethernet driver attribute copy\_bytes=256 (copy packet into contiguous buffer on transmit if this many or less bytes, default=2048)  
Set Gigabit Ethernet driver attribute large\_send=yes (turn on large\_send capability of TCPIP, default=no)  
fractrl pconintr 100 (frca set to allow 100% cpu time on interrupt, default=90)  
fractrl revaltimeout 100000 (set frca revalidation timeout to 100,000 seconds, default=300 seconds)  
no(network option) tuning:  
no -o tcp\_sendspace=131072(default socket send buffer size, default=16384)  
no -o tcp\_recvspace=65536(default socket receive buffer size, default=16384)  
no -o send\_file duration=100000(cached send\_file expiration time, default=300)  
no -o somaxconn=10240(max listen backlog, default=1024)  
no -o nbc\_max\_cache=409600(max file size for network buffer cache, default=131072)  
no -o nbc\_pseg=800000(max file entries in private segment,default=0)  
no -o tcp\_timewait=5(ensure that TIME\_WAIT is at least 60 seconds, default=1)  
no -o tcp\_newreno=0 (disables the modification to TCP's Fast Recovery algorithm as described in RFC 2582, default=1)

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## Notes/Tuning Information (Continued)

### HTTP API Notes

Zeus PEPP-06 SPECweb99 toolkit used for dynamic content  
Compiled with IBM VAC 5.0.1  
post.log in /weblog directory instead of doc\_root  
./Configure --sendfile=no --locking=semop

### Client Notes

APAR IY17356 was applied to AIX 4.3.3  
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)  
no -o tcp\_sendspace=65536(default socket send buffer size, default=16384)  
no -o tcp\_recvspace=65536(default socket receive buffer size, default=16384)

### Other Notes

Starts 4 unique instances of Zeus sharing a common docroot  
The 2 child iprocesses of each Zeus instance bind to two unique IP address  
Zeus 4.0 global.cfg (one per instance)  
tuning!bind\_any no  
tuning!cache\_files 100003  
tuning!cache\_large\_file 9216  
tuning!cache\_small\_file 4096  
tuning!cache\_stat\_expire 180000  
tuning!cache\_flush\_interval 180000  
tuning!cache\_max\_bytes 0  
tuning!num\_children 2  
tuning!keepalive yes  
tuning!keepalive\_timeout 1000  
tuning!keepalive\_max -1  
tuning!listen\_queue\_size 9216  
tuning!cbuff\_size 1048576  
tuning!multiple\_accept yes  
tuning!sendfile yes  
tuning!sendfile\_maxsize 1048576  
tuning!sendfile\_minsize 4096  
tuning!sendfile\_reservefd 31991  
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  
tuning!accelerator!frca!enabled yes  
tuning!accelerator!frca!log!enabled yes  
tuning!accelerator!frca!log!filename /weblog/log/frca-log  
tuning!accelerator!frca!log!format CLF  
tuning!accelerator!frca!maxsize 1048576  
tuning!accelerator!frca!minsize 100  
Zeus\_Site\_Configuration (one per instance):  
modules!cgi!enabled yes  
modules!isapi!enabled yes  
bindaddr ip\_addr1, ip\_addr2  
Tuning Disclosure: IBM-20011019.txt  
Dynamic API: IBM-20011019\_2-API.tar.gz