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