

SPECweb99_SSL Result

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Sun Microsystems: Sun Fire V40z
Zeus Technology Ltd.: Zeus Web Server 4.3r1 (64 bit)

SPECweb99_SSL =8832

Test Date: Sep-2005
Tester: Sun Microsystems

Hardware Avail: Oct-2005 OS Avail: Aug-2004 HTTPS Software Avail: Jan-2005 Sup. Software Avail: May-2005 SPEC license #: 6

Hardware

Vendor: Sun Microsystems
Model: Sun Fire V40z
Processor: AMD Opteron 880, 2.4 GHz
Processors: 8 cores, 4 chips, 2 cores/chip
Primary Cache: 64KBI + 64KBD on chip
Secondary Cache: 1MB per core on chip
Other Cache: none
Memory: 32 GB DDR400
Disk Subsystem: 3 x 73GB Internal ULTRA320 SCSI
Disk Controllers: Onboard SCSI
Other Hardware: 2 Cisco Systems Catalyst 3750G-24T Switch

Software

Operating System: SuSE Linux Enterprise Server 9 for x86_64 SP1
File System: ext2
Other Software: SuSE kernel patch-9962 Release 2030321

HTTPS Software

Vendor: Zeus Technology Ltd.
HTTPS Software: Zeus Web Server 4.3r1 (64 bit)
API: Zeus PEPP 0.9pre1 ISAPI for Dynamic content
Server Cache: none
Log Mode: Zeus Binary CLF

Test Sponsor

Test Date: Sep-2005
Tested By: Sun Microsystems
SPEC License: 6

Network

of Controllers: 2
Network Controllers: Intel Pro/1000 MT Quad Port Server Adapter
of Nets: 8
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: 24
Model: Sun Fire V240
Processor: 1280MHz UltraSPARC IIIi
of Processors: 2
Memory: 8192MB
Network Controller: Sun GigaSwift Ethernet
Operating System: Solaris 9 09/04
Compiler: Sun Workshop 6 update 2 C 5.3

Notes/Tuning Information

SUT Notes

2 U320 10K 73GB SCSI disk for OS, swap, and access log
1 U320 10K 73GB SCSI disk for fileset and post log

Intel PRO/1000 Quad port NICs installed in slots 4 and 6.

Operating System Notes

One NIC irq bound per CPU, default round-robin
irqbalancer disabled
powersaved disabled
Bound each Zeus process to CPU corresponding to NIC irq binding with taskset
timer irq bound to CPU 1
ulimit -n 500000, sets number of open files, default 1024
Each NIC's TX queue length set to 40000 via ifconfig, default 1000
Each NIC's RX descriptor size set to 4096, default 256
log, & fileset mounted with 'noatime, nodiratime, noacl', no inode access time updating, no access control lists
For information on SuSE patch-9962 Release 2030321(2.6.5-7.151-smp) refer to
"http://support.novell.com/cgi-bin/search/searchtid.cgi?psdb/2558830537429cdedb543926fd6344a8.html:
net.ipv4.ip_forward = 0, kernel should not attempt to forward packets. Off by default, 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_fin_timeout = 210, time to hold socket in state FIN-WAIT-2, default 60
net.ipv4.tcp_max_tw_buckets = 2000000, sets TCP time-wait buckets pool size, default 180000
vm.max_map_count = 131072, maximum number of active map areas, default 65536
net.core.rmem_max = 10000000, maximum receive socket buffer size, default 65535
net.core.rmem_default = 10000000, default receive socket buffer size, default 65535
net.core.wmem_max = 10000000, maximum send socket buffer size, default 65535
net.core.wmem_default = 10000000, default send socket buffer size, default 65535

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Notes/Tuning Information (Continued)

Operating System Notes (Continued)

net.core.optmem_max = 10000000, default 10240
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
fs.file-max = 1100000, maximum number of open files, default 1024

HTTPS Software Notes

Zeus Configuration

runningsite/wstest: bindaddr IP addr. 1 - IP addr. 8

global.cfg:

tuning!bind_any no

tuning!unique_bind yes

tuning!cache_cooling_time 0

tuning!cache_files 597585

tuning!cache_flush_interval 31536000

tuning!cache_small_file 4096

tuning!cache_large_file 1048576

tuning!cache_max_bytes 27769803776

tuning!cache_stat_expire 31536000

tuning!cbuff_size 65536

tuning!clientfirst_optimise yes

tuning!keepalive yes

tuning!keepalive_max -1

tuning!keepalive_timeout 3600

tuning!listen_queue_size 10240

tuning!maxaccept 4096

tuning!modules!cgi!cleansize 0

tuning!num_cgid 8

tuning!sendfile no

tuning!sendfile_minsize 0

tuning!sendfile_maxsize 0

tuning!so_wbuff_size 1048576

tuning!softservers no

tuning!ssl_sessioncache_size 2617

tuning!ssl_cbuff_size 32840

tuning!modules!stats!enabled no

tuning!modules!nsapi!enabled no

See SUN-20050815-Zeus-tunings.txt for a description of the Zeus tuning parameters.

HTTP API Notes

Zeus PEPP configured with command: ./Configure --ssl=yes

Zeus PEPP compiled with default gcc (v3.3.3-43.28)

Client Notes

set sq_max_size=0, set hires_tick=1

ndd -set /dev/tcp tcp_smallest_anon_port 2048

ndd -set /dev/tcp tcp_time_wait_interval 60000

Client code generated with: CFLAGS=-xO4 -xchip=ultra -xarch=v8plusa

./configure --enable-posix-threads --enable-gethostbyname_r --enable-pthread_scope_system --enable-rlimit --enable-safe-usleep=no

Other Notes

Tuning Disclosure: See above.

Dynamic API: HP-20020724-API.tgz

Client Tuning Disclosure: Sun-20020610.txt

2 Cisco Systems Catalyst 3750G-24T Switch used for 8 networks