

# SPECweb99\_SSL Result

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Hewlett-Packard: hp server rp7410  
Zeus Technology Limited: Zeus 4.1r3

SPECweb99\_SSL =2325

Test Date: Aug-2002  
Tester: Hewlett-Packard Company

Hardware Avail: Aug-2002 OS Avail: Mar-2002 HTTPS Software Avail: Jul-2002 Sup. Software Avail: Aug-2002 SPEC license #: 3

## Hardware

Vendor: Hewlett-Packard  
Model: hp server rp7410  
Processor: PA8700 875Mhz  
# Processors: 8 cores, 8 chips, 1 core/chip  
Primary Cache: 768KBI+1536KBD on chip  
Secondary Cache: None  
Other Cache: None  
Memory: 32 GB  
Disk Subsystem: 2x18GB (10K rpm)  
Disk Controllers: 1xA5158A FC Card, 2xSymbios SCSI Ultra 3  
Other Hardware: VA7100 Disk Array

## Software

Operating System: HP-UX 11i  
File System: See SUT Notes  
Other Software: B3913DB C.03.33.01 HP aC++ Compiler

## HTTPS Software

Vendor: Zeus Technology Limited  
HTTPS Software: Zeus 4.1r3  
API: ISAPI  
Server Cache: See Zeus parameters  
Log Mode: Binary Log Format

## Test Sponsor

Test Date: Aug-2002  
Tested By: Hewlett-Packard Company  
SPEC License: 3

## Network

# of Controllers: 8  
Network Controllers: HP A4926A PCI Gigabit Ethernet  
# 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: 8  
Model: HP 9000/A500-7X  
Processor: 750 Mhz PA-8700  
# of Processors: 2  
Memory: 4 GB  
Network Controller: HP A4926A PCI Gigabit Ethernet  
Operating System: HPUX 11i  
Compiler: B3901BA B.11.11.04 HP C/ANSI C

## Notes/Tuning Information

### SUT Notes

All filesystems are HP-UX HFS  
1 (18 GB) disk used for OS  
1 (18 GB) disk used for web server  
1 (HP VA7100 Disk Array) used for fileset and logs  
Bound each Zeus instance to the processor corresponding to its NIC  
Processor binding is performed by: mpsched -c cpu# -p pid  
chattr +pd 64M +pi 64M on zeus.web binary to set page sizes  
chattr +pd 4K +pi 4K on zeus.cgi binary to set page sizes

### Operating System Notes

HP-UX Internet Operating Environment with following patches:  
PHNE\_26728 - Cumulative STREAMS Patch  
PHNE\_25388 - Cumulative LAN Patch  
PHNE\_27063 - Cumulative ARPA Patch  
PHNE\_25233 - select(2) and poll(2) hang  
PHKL\_25389 - Core PM, vPar, Psets Cumulative Patch  
PHNE\_26939 - 1000Base-SX/T B.11.11.14 Cumulative Patch  
PHKL\_27278 - mmap io, VM-JFS ddlock, thread perf, user limit  
HP-UX Tunable Parameters:  
dbc\_max\_pct=45 Max Buffer Cache Size as Percent of RAM (50)  
dbc\_min\_pct=45 Min bufer Cache Size as Percent of RAM (5)  
maxfiles=60000 Soft File Limit per Process (60)  
maxfiles\_lim=60000 Hard File Limit per Process (1024)  
maxssiz\_64bit=0x0000000180000000 Max Stack Size for 64-Bit Procs (0x00800000)  
maxswapchunks=16000 Max number of swap chunks (256)

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## Notes/Tuning Information (Continued)

### Operating System Notes (Continued)

nfile=100000 Max number of open files (790)  
ninode=100000 Max number of inodes (444)  
nkthread=8000 Max number of kernel threads (499)  
nproc=1000 Max number of processes (276)  
tcpshasz=16384 Relative Scaling Factor for TCP & IP Int. Tables(2048)  
vps\_ceiling=4096 Max system selected page size [KB] (16)  
vps\_pagesize=64 Default user page size [KB] (4)

### HTTPS Software Notes

Zeus Global Parameters:

tuning!cache\_files 356750  
tuning!cache\_max\_bytes 0  
tuning!cache\_small\_file 8193  
tuning!cache\_large\_file 1048576  
tuning!cache\_stat\_expire 86400  
tuning!cache\_flush\_interval 86400  
tuning!listen\_queue\_size 8192  
tuning!multiple\_accept yes  
tuning!so\_rbuff\_size 0  
tuning!so\_wbuff\_size 1048576  
tuning!cbuff\_size 65536  
tuning!keepalive yes  
tuning!keepalive\_timeout 1200  
tuning!keepalive\_max -1  
tuning!timeout 600  
tuning!unique\_bind yes  
tuning!bind\_any no  
tuning!sendfile no  
tuning!modules!cgi!cbuff\_size 1048576  
tuning!modules!cgi!cleansize 0  
tuning!ssl\_keepalive yes  
tuning!ssl\_diskcache no  
tuning!ssl\_sessioncache\_size 251  
tuning!softservers no  
tuning!use\_poll no  
tuning!modules!stats!enabled no  
tuning!modules!nsapi!enabled no  
tuning!modules!isapi!enabled yes  
tuning!cache\_cooling\_time 0  
tuning!maxaccept 2048  
security!enabled yes

### HTTP API Notes

Zeus ISAPI interface used  
Zeus PEPP Toolkit(0.8) used for SPECweb99\_SSL dynamic content  
./Configure --sendfile=no --checkconfig=yes --locking=semop --ssl=yes --64bit=yes

### Network Notes

Networking Tunable Parameters:

tcp\_xmit\_hiwater\_def=2000000 Max unsent data triggers flow control(32768)  
tcp\_conn\_request\_max=1024 Max outstanding connection reqs (20)  
tcp\_conn\_strategy=1 Selects TCP connection strategy (0)

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## Notes/Tuning Information (Continued)

### Client Notes

HP-UX Tunable Parameters:

max\_thread\_proc=800 Number of threads per process (64)

maxusers=256 Value of MAXUSERS macro (32)

ncallout=5000 Increase number of pending timeouts

nkthread=8000 Maximum number of system-wide threads

### Other Notes

Tuning Disclosure: HP-20020723.txt

Dynamic API: HP-20020723-API.tar.gz