

# SPECweb99\_SSL Result

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Hewlett-Packard: hp server rx2600  
Zeus Technology Limited: Zeus 4.2

SPECweb99\_SSL =1002

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

Hardware Avail: Sep-2002 OS Avail: Aug-2002 HTTPS Software Avail: Nov-2002 Sup. Software Avail: Aug-2002 SPEC license #: 3

## Hardware

Vendor: Hewlett-Packard  
Model: hp server rx2600  
Processor: 1 GHz Intel Itanium 2  
# Processors: 2 cores, 2 chips, 1 core/chip  
Primary Cache: 16KBI+16KBD on chip  
Secondary Cache: 256KB unified on chip  
Other Cache: 3.0 MB unified on chip  
Memory: 8 GB (8x1GB DIMMs)  
Disk Subsystem: 2x36GB (10K RPM)  
Disk Controllers: SCSI C896 UW SE (internal)  
Other Hardware: 2xAlteon 180e Switches

## Software

Operating System: HP-UX 11i v1.6  
File System: See SUT Notes  
Other Software: B3913DB C.05.36 HP aC++/C

## HTTPS Software

Vendor: Zeus Technology Limited  
HTTPS Software: Zeus 4.2  
API: ISAPI  
Server Cache: None  
Log Mode: Binary Log Format

## Test Sponsor

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

## Network

# of Controllers: 2  
Network Controllers: HP A6847A PCI Gigabit Ethernet  
# of Nets: 2  
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: 6  
Model: HP 9000/A500-5X  
Processor: 550 Mhz PA-8600  
# of Processors: 2  
Memory: 4 GB  
Network Controller: HP A4926A Gigabit Ethernet  
Operating System: HP-UX 11i  
Compiler: B3901BA B.11.11.04 HP C/ANSI C

## Notes/Tuning Information

### SUT Notes

1 (36 GB 10K RPM) disk with vxfs used for OS and logs  
1 (36 GB 10K RPM) disk with hfs used for the file\_set  
Bound each Zeus instance to the processor corresponding to its NIC  
Bound cgi instance to the processor corresponding to NIC with lighter load (See Client Notes)  
Processor binding is performed by: mpsched -c cpu# -p pid  
Set page size attribute for zeus.web and zeus.cgi binaries  
chattr +pd 16k +pi 16k zeus.cgi  
chattr +pd 64M +pi 64M zeus.web

### Operating System Notes

HP-UX Tunable Parameters:  
dbc\_max\_pct=30 Max Buffer Cache Size as Percent of RAM (50)  
dbc\_min\_pct=30 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)  
maxuprc=1000 Max number of user processes (75)  
nfile=5000 Max number of open files (790)  
ninode=60000 Max number of inodes (444)  
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)

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## Notes/Tuning Information (Continued)

### HTTPS Software Notes

Zeus Global Parameters:

```
tuning!cache_files      356750
tuning!cache_max_bytes  0
tuning!cache_small_file 0
tuning!cache_large_file 1048576
tuning!cache_stat_expire 86400
tuning!cache_flush_interval 86400
tuning!listen_queue_size 1024
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_sessioncache_size 256
tuning!ssl_diskcache    no
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        1024
security!enabled        yes
```

### HTTP API Notes

Zeus ISAPI interface used  
Zeus PEPP Toolkit(0.6) used for SPECweb99\_SSL dynamic content  
./Configure --sendfile=no --checkconfig=yes --locking=semop

### 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)
```

### Client Notes

Client code generated with ./configure --enable-posix-threads

Use client speed setting in rc file to force lighter load on one NIC

i.e. CLIENTS=s1[10] s2[10] s3[10] s4[11] s5[11] s6[11]

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 (499)
ninode=5000 Maximum number of inodes (444)
nfile=4096 Maximum number of open files (790)
```

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## Notes/Tuning Information (Continued)

### Client Notes (Continued)

maxswapchunks=2048 Maximum number of swap chunks (256)

### Other Notes

Tuning Disclosure: HP-20020708.txt

Dynamic API: HP-20010917-API.tar.gz