

# SPECweb99\_SSL Result

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Hewlett-Packard: hp server rx5670  
Zeus Technology Limited: Zeus 4.1r4

SPECweb99\_SSL =1520

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

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

## Hardware

Vendor: Hewlett-Packard  
Model: hp server rx5670  
Processor: 1 GHz Intel Itanium 2  
# Processors: 4 cores, 4 chips, 1 core/chip  
Primary Cache: 16KBI+16KBD on chip  
Secondary Cache: 256KB unified on chip  
Other Cache: 3072KB unified on chip  
Memory: 24 GB  
Disk Subsystem: 15x18GB(15K rpm), 2x36GB(10K rpm)  
Disk Controllers: 1xHP A6795A FC Card  
Other Hardware: HP VA7100 Disk Array

## Software

Operating System: HP-UX 11i v1.6  
File System: See SUT Notes  
Other Software: B3910B A.05.36 IPF HP aC++/C

## HTTPS Software

Vendor: Zeus Technology Limited  
HTTPS Software: Zeus 4.1r4  
API: ISAPI  
Server Cache: None  
Log Mode: Binary Log Format

## Test Sponsor

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

## Network

# of Controllers: 4  
Network Controllers: HP A6847A PCI Gigabit Ethernet  
# 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: 4  
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

vxfs used for OS  
1 (36 GB 10K rpm) disk used for OS  
All other file systems are HP-UX HFS  
1 (36 GB 10K rpm) disk used for the fileset  
1 (HP VA7100 Disk Array) used for logs  
Bound each Zeus instance to the processor corresponding to its NIC  
Processor binding is performed by: mpsched -c cpu# -p pid  
chattr +pd 16M +pi 16M on zeus.web binary to set page sizes

### Operating System Notes

HP-UX Tunable Parameters:  
dbc\_max\_pct=60 Max Buffer Cache Size as Percent of RAM (50)  
dbc\_min\_pct=60 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=10000 Max number of user processes (75)  
nfile=550000 Max number of open files (790)  
ninode=250000 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)

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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 1000000
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_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

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
ninode=5000 Maximum number of inodes (444)
nfile=4096 Maximum number of open files (790)
maxswapchunks=2048 Maximum number of swap chunks (256)
```

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## Notes/Tuning Information (Continued)

### Other Notes

Tuning Disclosure: HP-20020708.txt  
Dynamic API: HP-20010917-API.tar.gz