

# SPECweb99\_SSL Result

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Hewlett-Packard: HP Integrity rx2600  
Zeus Technology Limited: Zeus 4.2r2

SPECweb99\_SSL =1930

Test Date: Jun-2003  
Tester: Hewlett-Packard Company

Hardware Avail: Jul-2003 OS Avail: Sep-2003 HTTPS Software Avail: Mar-2003 Sup. Software Avail: Sep-2003 SPEC license #: 3

## Hardware

Vendor: Hewlett-Packard  
Model: HP Integrity rx2600  
Processor: 1.5 GHz Intel Itanium 2 6M  
# Processors: 2 cores, 2 chips, 1 core/chip  
Primary Cache: 16KBI+16KBD on chip  
Secondary Cache: 256KB unified on chip  
Other Cache: 6144KB unified on chip  
Memory: 12 GB (12x1GB)  
Disk Subsystem: 3x36GB (15K RPM)  
Disk Controllers: SCSI C896 UW SE (internal)  
Other Hardware: 2xAlteon 180e Switches

## Software

Operating System: HP-UX 11i v2  
File System: See SUT Notes  
Other Software: B3913DB C.05.36 HP aC++/C

## HTTPS Software

Vendor: Zeus Technology Limited  
HTTPS Software: Zeus 4.2r2  
API: ISAPI  
Server Cache: None  
Log Mode: Binary Log Format

## Test Sponsor

Test Date: Jun-2003  
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: 8  
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  
1 (36 GB 10K RPM) disk with hfs used for the file\_set  
1 (18 GB 15K RPM) disk with hfs with largefiles, behind used for logs  
Bound each Zeus instance to the processor corresponding to its NIC  
Processor binding is performed by: mpsched -c cpu# -p pid  
Set page size attribute for zeus.web, zeus.cgi binaries and zeus.cgi in zeus-kit  
chattr +pd 64k +pi 64k zeus.cgi  
chattr +pd 64M +pi 64M zeus.web

### Operating System Notes

HP-UX Tunable Parameters:  
dbc\_max\_pct=25 Max Buffer Cache Size as Percent of RAM (50)  
dbc\_min\_pct=25 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)  
nfile=120000 Max number of open files (790)  
ninode=120000 Max number of inodes (444)  
tphashsz=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)  
fs\_async=1 Enables asynchronous writes of file-system data structures Boolean (0)  
vxfs\_ifree\_timelag=3600000 VxFS Free Inode minimum existence time (0)  
scsi\_max\_qdepth=64 Maximum number of concurrent requests to a SCSI device (8)  
create\_fastlinks=1 Enables storage of symbolic links in HFS inode structures (Boolean) (0)  
maxdsiz\_64bit 274877906944 Maximum size of the data segment of a 64-bit process (bytes) (4294967296)

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## Notes/Tuning Information (Continued)

### HTTPS Software Notes

Zeus Global Parameters in global.cfg:  
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 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 5011  
tuning!ssl\_sessioncache\_expiry 120  
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 no  
tuning!cache\_cooling\_time 0  
tuning!maxaccept 2048  
Zeus runningsite configuration:  
modules!security!enabled yes  
modules!cgi!enabled yes  
modules!isapi!enabled yes

### HTTP API Notes

Zeus PEPP Toolkit(0.8) used for SPECweb99\_SSL dynamic content  
./Configure --checkconfig=yes --locking=semop --ssl=yes --64bit=yes --sendfile=no  
compiled with HP C/ANSI C developer's Bundle (B3901BA)  
CFLAGS=+Ofaster +DD64 +DSitanium2  
LDLFLAGS = +DSitanium2,+pd,64k,+pi,64k

### Network Notes

Networking Tunable Parameters:

tcp\_xmit\_hiwater\_def=2000000 Max unsent data triggers flow control(32768)  
tcp\_conn\_request\_max=2048 Max outstanding connection reqs (20)  
socket\_caching\_tcp=4096 Controls socket caching for TCP sockets (512)

Gigabit Tunable Parameters:

send\_max\_bufs=128 Number of sending buffers consumed to trigger interrupt (16)  
recv\_max\_bufs=128 Number of receiving buffers consumed to trigger interrupt (16)  
recv\_coal\_ticks=12000 Number of ticks to wait to trigger interrupt (0)  
send\_coal\_ticks=5000 Number of ticks to wait to trigger interrupt (0)

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## Notes/Tuning Information (Continued)

### Client Notes

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

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)

maxswapchunks=2048 Maximum number of swap chunks (256)

### Other Notes

Tuning Disclosure: HP-20030626.txt

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