# SPECweb99_SSL Result

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

SPECweb99_SSL =1000

Test Date: Jul-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 server rx2600 |
| Processor: | 1.5 GHz Intel Itanium 2 6M |
| # Processors: | 1 core, 1 chip, 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: | 1xAlteon 180e Switches |

### Software

| | |
|---|---|
| Operating System: | HP-UX 11i v2 |
| File System: | See SUT Notes |
| Other Software: | B3901BA HP C/ANSI 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: | Jul-2003 |
| Tested By: | Hewlett-Packard Company |
| SPEC License: | 3 |

### Network

| | |
|---|---|
| # of Controllers: | 1 |
| Network Controllers: | HP A6847A PCI Gigabit Ethernet |
| # of Nets: | 1 |
| 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

1 (36 GB) disk with vxfs used for OS
1 (36 GB) disk with hfs used for the file_set
1 (36 GB) 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
chatr +pd 64k +pi 64k zeus.cgi
chatr +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)
tcphashsz=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 asynchrous 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 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
compiled with HP C/ANSI C develpers Bundle (B3901BA)
CFLAGS=+Ofaster +DD64 +DSitanium2
LDFLAGS=+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)

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## Notes/Tuning Information (Continued)

### Network Notes (Continued)

send_coal_ticks=5000  Number of ticks to wait to trigger interrupt (0)

### 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