## SPECweb99_SSL Result

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### Hewlett-Packard: hp server rx5670
**Zeus Technology Limited: Zeus 4.2**

<table>
<thead>
<tr>
<th>SPECweb99_SSL = 990</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Date: Oct-2002</td>
</tr>
<tr>
<td>Tester: Hewlett-Packard Company</td>
</tr>
</tbody>
</table>

#### Hardware

<table>
<thead>
<tr>
<th>Vendor: Hewlett-Packard</th>
<th>Processor: 1 GHz Intel Itanium 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model: hp server rx5670</td>
<td># Processors: 2 cores, 2 chips, 1 core/chip</td>
</tr>
<tr>
<td>Primary Cache: 16KB+16KBD on chip</td>
<td>Secondary Cache: 256KB unified on chip</td>
</tr>
<tr>
<td>Other Cache: 3072KB unified on chip</td>
<td>Memory: 16 GB</td>
</tr>
<tr>
<td>Disk Subsystem: 2x36GB (10K rpm)</td>
<td>Disk Controllers: SCSI C896 UW SE (internal)</td>
</tr>
<tr>
<td>Other Hardware: 2 x Alteon 180e Switches</td>
<td></td>
</tr>
</tbody>
</table>

#### Software

**Operating System:** HP-UX 11i v1.6  
**File System:** See SUT Notes  
**Other Software:** B3913DB C.05.36 HP aC++/C  
**HTTPS Software:** Zeus Technology Limited  
**HTTPS Software:** Zeus 4.2  
**API:** ISAPI  
**Server Cache:** None  
**Log Mode:** Binary Log Format

#### Test Sponsor

<table>
<thead>
<tr>
<th>Test Sponsor: Hewlett-Packard Company</th>
</tr>
</thead>
</table>

#### Network

<table>
<thead>
<tr>
<th># of Controllers: 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network Controllers: HP A6847A PCI Gigabit Ethernet</td>
</tr>
<tr>
<td># of Nets: 2</td>
</tr>
<tr>
<td>Type of Nets: Gigabit Ethernet</td>
</tr>
<tr>
<td>Network Speed: 1 Gb/s</td>
</tr>
<tr>
<td>MSL (sec): 30 (Non RFC1122)</td>
</tr>
<tr>
<td>Time-Wait (sec): 60 (Non RFC1122)</td>
</tr>
<tr>
<td>MTU: 1500</td>
</tr>
</tbody>
</table>

#### Clients

<table>
<thead>
<tr>
<th># of Clients: 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model: HP 9000/A500-5X</td>
</tr>
<tr>
<td>Processor: 550 MHz PA-8600</td>
</tr>
<tr>
<td>Memory: 4 GB</td>
</tr>
<tr>
<td>Network Controller: HP A4926A Gigabit Ethernet</td>
</tr>
<tr>
<td>Operating System: HP-UX 11i</td>
</tr>
<tr>
<td>Compiler: B3901BA B.11.11.04 HP C/ANSI C</td>
</tr>
</tbody>
</table>

#### 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  
Processor binding is performed by: mpsched -c cpu# -p pid  
Set page size attribute for zeus.web and zeus.cgi binaries  
chatr +pd 4k +pi 4k zeus.cgi  
chatr +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 buffer 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=0x00000001800000000 Max Stack Size for 64-Bit Proc (0x008000000)  
maxuprc=10000 Max number of user processes (75)  
nfile=5000 Max number of open files (790)  
ninode=60000 Max number of inodes (444)  
nkthread=8000 Max number of kernel threads (499)  
nproc=10000 Max number of processes (276)  
tcphashsz=16384 Relative Scaling Factor for TCP & IP Int. Tables(2048)  
vsps_ceiling=4096 Max System selected page size [KB] (16)  
vspspagesize=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: 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!ssl_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
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
- nthread=8000 Maximum number of system-wide threads (499)
- minode=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-20020708.txt
Dynamic API: HP-20010917-API.tar.gz