SPECweb99 Result

Sun Microsystems: Enterprise 420R
Zeus Technology Ltd.: Zeus 3.3.8.4

SPECweb99 = 1120
Test Date: Oct-2001
Tester: gcocco software, inc.

Hardware Avail:	Jun-2000	OS Avail:	Sep-2001	HTTP Software Avail:	Mar-2001	Sup. Software Avail:	--	SPEC license #:	76

Hardware

Vendor:	Sun Microsystems
Model:	Enterprise 420R
Processor:	450 MHz UltraSPARC II
# Processors:	4 cores, 4 chips, 1 core/chip
Primary Cache:	16KBI+16KBD on chip
Secondary Cache:	4MB(I+D) off chip
Other Cache:	None.
Memory:	4 GB
Disk Subsystem:	2x36GB(10,000RPM),6x18GB(10,000RPM)
Disk Controllers:	ultra-SCSI
Other Hardware:	HP ProCurve 4108gl Switch

Software

Operating System:	Solaris 8 4/01 + patches
File System:	UFS
Other Software:	Forte C/6.1

HTTP Software

Vendor:	Zeus Technology Ltd.
HTTP Software:	Zeus 3.3.8.4
API:	ISAPI - Zeus PEPP 0.6
Server Cache:	none
Log Mode:	Binary CLF

Test Sponsor

Test Date:	Oct-2001
Tested By:	gcocco software, inc.
SPEC License:	76

Network

# of Controllers:	2
Network Controllers:	Gigabit Ethernet-SX PCI
# 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:	4
Model:	Sun Enterprise 420R
Processor:	450MHz UltraSPARC II
# of Processors:	4
Memory:	2GB
Network Controller:	Sun Gigabit Adapter 2.0/P
Operating System:	Solaris 8 - 01/2001
Compiler:	Forte C/6.1

Notes/Tuning Information

SUT Notes

Solaris 8 - 4/01 + patches
__ 108813-06 Sun Gigabit Ethernet
__ 111293-04 libdevinfo
__ 108528-10 kernel update
__ 108991-13 libc
__ 108995-02 libproc
__ 109025-03 truss
__ 109472-07 TCP
__ 109234-06 NCA
__ 111295-01 pstack
__ 111297-01 libsendfile
__ 109279-15 ndd fix
Operating system changes in (/etc/system)
__ set sq_max_size = 0 (unlimited messages allowed on each IP queue)
__ set segmap_percent = 90 (def: 12, Size of kernel segmap segment)
__ set rlim_fd_max = 70000 (def: 1024 file descriptors)
__ set ge:ge_intr_mode=1 (1=bypass normal communication layer queuing)
__ set ge:ge_tx_fastdvma_min=512 (def: 1024, min packet size to use fast dvma interface)
__ set ge:ge_nos_tmds=2048 (def: 512, transmit descriptors)
__ set pcisch:pci_stream_buf_enable=0 (0=disable PCI cache streaming)
Network Tuning parameters (/usr/sbin/ndd)
__ ndd -set /dev/tcp tcp_time_wait_interval 60000 (def: 240000 ms = 4 mins.)
Network Switch - HP Procurve 4108gl
__ Single switch, two subnets
Disk Layout (c0t0d0 and c0t1d01 are Internal)
__ c0t0d0 - OS, paging and Zeus
__ c0t1d0 - /log filesystem (Zeus Webserver Binary CLF files)
Disk Array (SG-XDSK060C-109G - Ultra SCSI, 10K RPM drives)

Notes/Tuning Information (Continued)

SUT Notes (Continued)

```
__ c0t2d0 - /ex filesystem (r/w portion of docroot - eg post.log)
__ c0t3d0 to c0t7d0  - /ex/file_set (r/o docroot)
__   /ex/file_set - 20 GB striped filesystem over 5 devices using DiskSuite
```

HTTP Software Notes

This result was tested with Zeus version 3.3.8.4. Minor performance neutral logging issues were noted with this version of Zeus and it was subsequently replaced by Zeus 3.3.8.6. If Zeus 3.3.8.4 is not available, Zeus 3.3.8.6 should be used to reproduce this result.

```
Zeus 3.3.8.4 Global.cfg performance parameters
__ Refer to: http://support.zeus.com/faq/entries/tuning.html
__
__ tuning!num_children            4
__
__ tuning!cache_files             98041
__ tuning!cache_large_file        1048576
__ tuning!cache_small_file        4096
__ tuning!cache_max_bytes         0
__ tuning!cache_cooling_time      0
__ tuning!cache_stat_expire       31536000
__ tuning!cache_flush_interval    31536000
__
__ tuning!use_nca                 no
__ tuning!keepalive               yes
__ tuning!keepalive_max           -1
__
__ tuning!sendfile                yes
__ tuning!sendfile_maxsize        1048576
__ tuning!sendfile_minsize        1
__ tuning!sendfile_reservefd      69000
__
__ tuning!listen_queue_size       8192
__ tuning!unique_bind             yes
__ tuning!bind_any                no
__ tuning!use_poll                yes
__
__ tuning!so_wbuff_size           1048576
__ tuning!so_rbuff_size           0
__ tuning!so_nagle_off            no
__
__ tuning!modules!cgi!cleansize   0
__ tuning!cbuff_size              1048576
__ tuning!softservers             no
__
Zeus 3.3.8.4 virtual_server performance parameters
__ dnslookup                      no
__ docroot                        /ex
__
__ modules!cgi!allowanywhere      yes
__ modules!cgi!allowcmd           yes
__ modules!cgi!enabled            yes
__ modules!get!enabled            yes
__ modules!isapi!enabled          yes
__ modules!log!enabled            yes
__ modules!log!filename           /log/binlog
__ modules!log!format             %B
__ modules!map!enabled            yes
__ modules!mime!enabled           yes
__ modules!index!enabled          yes
__ modules!index!files            index.html, index.htm, index.shtml, index.cgi
```

Notes/Tuning Information (Continued)

HTTP Software Notes (Continued)

```
__
__ modules!access!enabled       no
__ modules!access!ldap!enabled  no
__ modules!dirlist!enabled      no
__ modules!distributed!enabled  no
__ modules!errors!enabled       no
__ modules!fastcgi!enabled      no
__ modules!frontpage!enabled    no
__ modules!htaccess!enabled     no
__ modules!imagemap!enabled     no
__ modules!jserv!enabled        no
__ modules!map!homedir!enabled  no
__ modules!nsapi!enabled        no
__ modules!put!enabled          no
__ modules!put!save_as_user     no
__ modules!referrer!enabled     no
__ modules!search!enabled       no
__ modules!spelling!enabled     no
__ modules!stats!enabled        no
__ modules!subserver!enabled    no
__ modules!throttle!enabled     no
__ modules!throttle!subserver   no
__ modules!usertrack!enabled    no
__ modules!usertrack!expire     no
__
__ security!client_cert         0
__ security!enabled             no
__
__ modules!map!alias!/!filepath            /ex/
__ modules!map!alias!/!type                simple
__ modules!map!alias!/cgi-bin/!filepath    /ex/cgi-bin/
__ modules!map!alias!/cgi-bin/!type        cgi
__ modules!map!alias!/isapi-bin/!filepath  /ex/isapi-bin/
__ modules!map!alias!/isapi-bin/!type      isapi
__
__ modules!map!alias_types!cgi             application/x-httpd-cgi
__ modules!map!alias_types!fastcgi         application/x-httpd-fcgi
__ modules!map!alias_types!simple          application/x-httpd-alias
__
__ modules!mime!default      text/plain
__ modules!mime!types!       ** no changes to mime types **
__
__ bindaddr 192.1.1.59,192.2.3.59,192.1.1.59,192.2.3.59
```

HTTP API Notes

Zeus PEPP SPECweb99 toolkit (0.6) used for dynamic content

```
__ ./Configure --sendfile=no  --locking=semop
```

Client Notes

Solaris 8 - 4/01 + patches

Operating system changes in (/etc/system)

```
__ set sq_max_size  =     0  (unlimited messages allowed on each IP queue)
__ set hires_tick   =     1  (def: 0, 10 ms resolution, set to 1 ms resolution)
__ set rlim_fd_max  = 32760  (def: 1024 file descriptors)
__ set rlim_fd_cur  = 32760  (def: 256 or rlim_fd_max, whichever is smaller)
```

Network Tuning parameters (/usr/sbin/ndd)

```
__ ndd -set /dev/tcp tcp_time_wait_interval   60000 (def: 240000 ms = 4 mins.)
__ ndd -set /dev/tcp tcp_smallest_anon_port    5001 (def: 32768)
__ ndd -set /dev/tcp tcp_conn_req_max_q        1024 (def:   128)
```

Notes/Tuning Information (Continued)

Client Notes (Continued)

SPECweb99 V1.02 src.alt
__ Sun WorkShop 6 update 1 C 5.2 2000/09/11
__ Client build: