

SPECweb99 Result

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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_fastdma_min=512 (def: 1024, min packet size to use fast dvma interface)
__ set ge:ge_nos_tmids=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)

For more
Information
Contact

SPEC

info@spec.org
http://www.spec.org

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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

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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)

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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:

___ ./configure --enable-posix-threads --enable-gethostbyname_r \

___ --enable-pthread_scope_system --enable-rlimit \

___ --enable-safe-usleep=no --cache-file=./config.cache \

___ --prefix=/export/home/spec/web99

__ Typical client invocation:

___ "client.alt -g ayu -C ayu-ctrl -w work -d"

___ no usage of logical ip interfaces.

Other Notes

For more information, see the tester's website: <http://www.gcocco.com>

___ Tuning disclosure: Sun-20010412.txt

___ Dynamic API disclosure: gcocco-20010903.txt