

SPECweb99 Result

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IBM: RS/6000 7044-170
Zeus Technology Ltd.: Zeus 3.3.8.4

SPECweb99 = 816

Test Date: Aug-2001
Tester: gcocco software, inc.

Hardware Avail: Feb-2001 OS Avail: Jun-2001 HTTP Software Avail: May-2001 Sup. Software Avail: -- SPEC license #: 76

Hardware

Vendor: IBM
Model: RS/6000 7044-170
Processor: 450 MHz POWER3-II
Processors: 1 core, 1 chip, 1 core/chip
Primary Cache: 32KBI+64KBD on chip
Secondary Cache: 4MB(I+D) off chip
Other Cache: None
Memory: 2 GB
Disk Subsystem: 1x9GB, 1x18GB, 14x9GB
16Bit Ultra2 SCSI Disk
Disk Controllers: Internal Ultra SCSI, External Ultra-2 SCSI
Other Hardware: HP ProCurve 6208m Switch

Software

Operating System: AIX 4.3.3 ML_8
File System: JFS
Other Software: None

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 Common Log Format

Test Sponsor

Test Date: Aug-2001
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SPEC License: 76

Network

of Controllers: 1
Network Controllers: Gigabit Ethernet-SX PCI
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: 2
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 - 04/2001
Compiler: Forte C/6.1

Notes/Tuning Information

SUT Notes

AIX 4.3.3 Maintenance Level 8
Network Tuning options (/usr/sbin/no)
__ no -o send_file_duration = 180,000 (cache time for sendfile, def: 300)

__ no -o somaxconn = 8,192 (max connections, def: 1024)
__ no -o tcp_timewait = 5 (ensure TIMEWAIT 60 secs)
__ no -o nbc_limit = 0 (turn off Network Buffer Cache)
Network Switch - HP Procurve6208m
__ Single switch, one subnet
Disk Layout (hdisk0 and 1 are Internal)
__ hdisk0 - OS, paging and Zeus
__ hdisk1 - /log filesystem (Zeus Webserver Binary CLF files)
Disk Array (2104-DL1 Ultra3 SCSI, 10K RPM drives)
__ hdisk2 - AIX journaled file system (jfs) log for /log filesystem
__ hdisk3 - AIX jfs log for /ex filesystem
__ hdisk4 - /ex filesystem (R/W portion of docroot - eg. post.log)
__ hdisk5 - AIX jfs log for /ex/file_set (only necessary in R/W mode)
__ hdisk6-15 - /ex/file_set (R/O docroot) - 210 16MB partions spread across 10 volumes

HTTP Software Notes

Zeus 3.3.8.4 Global.cfg performance parameters
__ Refer to: <http://support.zeus.com/faq/entries/tuning.html>

__ tuning!num_children 1

__ tuning!cache_files 120123

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Notes/Tuning Information (Continued)

HTTP Software Notes (Continued)

```
__ 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!keepalive           yes
__ tuning!keepalive_max       -1
```

```
__ tuning!sendfile             yes
__ tuning!sendfile_maxsize     1048576
__ tuning!sendfile_minsize     1
__ tuning!sendfile_reservefd   3276
```

```
__ tuning!listen_queue_size   8192
__ tuning!multiple_accept     yes
__ tuning!bind_any             yes
__ tuning!use_poll             no
```

```
__ 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
```

```
__ 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
```

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Notes/Tuning Information (Continued)

HTTP Software Notes (Continued)

```
__ 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 **
```

HTTP API Notes

Zeus PEPP SPECweb99 toolkit (0.6) used for dynamic content
__ ./Configure --sendfile=no --locking=semop

Client Notes

Solaris 8 - 4/01 + patch 108813-06 (Sun Gigabit fix)
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 = 50000 (def: 1024 file descriptors)
__ set rlim_fd_cur = 50000 (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)
__ ndd -set /dev/tcp tcp_rexmit_interval_min 40 (def: 400 ms)
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-cntl -w work -d"

Other Notes

For more information, see the tester's website: <http://www.gcocco.com>
Tuning Disclosure: gcocco-20010903.txt
Dynamic API: SUN-20010402-API.tar.gz