SPECweb99 Result

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Hewlett-Packard: hp server rp8400
Zeus Technology Limited: Zeus 3.4r3 64bit

SPECweb99 = 9186

Test Date: Sep-2001
Tester: Hewlett-Packard Company

Hardware Avail:	Sep-2001	OS Avail:	Dec-2001	HTTP Software Avail:	Oct-2001	Sup. Software Avail:	Aug-2001	SPEC license #:	3

Hardware

Vendor:	Hewlett-Packard
Model:	hp server rp8400
Processor:	PA-8700 750MHz
# Processors:	8 cores, 8 chips, 1 core/chip
Primary Cache:	768KBI+1536KBD on chip
Secondary Cache:	None
Other Cache:	None
Memory:	64 GB
Disk Subsystem:	15x18GB 15Krpm, 1x18GB 10Krpm
Disk Controllers:	1xHP A5158A FC Card
Other Hardware:	HP VA7100 Disk Array

Software

Operating System:	HP-UX 11i (64-bit) + patches
File System:	HFS - Largefiles
Other Software:	HP A4926A PCI Gigabit Ethernet

HTTP Software

Vendor:	Zeus Technology Limited
HTTP Software:	Zeus 3.4r3 64bit
API:	ISAPI
Server Cache:	See Zeus parameters
Log Mode:	Binary Log Format

Test Sponsor

Test Date:	Sep-2001
Tested By:	Hewlett-Packard Company
SPEC License:	3

Network

# of Controllers:	8
Network Controllers:	HP A4926A PCI Gigabit Ethernet
# of Nets:	8
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:	90
Model:	HP 9000/A180C
Processor:	180MHz PA-7300LC
# of Processors:	1
Memory:	128MByte
Network Controller:	HP A5230A, PCI 100BaseT
Operating System:	HPUX 11.0 ACE
Compiler:	B3901BA B.11.11.02 HP C/ANSI C

Notes/Tuning Information

SUT Notes

Each Zeus instance bound to processor corresponding to its NIC
Bound Zeus cgi process to CPU that services the fewest clients
Processor binding performed by: mpsched -c <cpu> -p <pid>

Operating System Notes

HP-UX Internet Operating Environment with following patches:
PHCO_23094 - libc cumulative header file patch
PHCO_23772 - libc cumulative patch
PHNE_24506 - cumulative ARPA transport patch

HP-UX Tunable Parameters:
dbc_max_pct=80 Max buffer cache size as percent of RAM (50)
dbc_min_pct=80 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=0x40000000 Max stack size for 64-bit procs (0x00800000)
maxswapchunks=16384 Max number of swap chunks (256)
maxuprc=512 Max number of user processes (75)
maxusers=512 Value of MAXUSERS macro (32)
nfile=1000000 Max number of open files (790)
ninode=1000000 Max number of inodes (444)
nkthread=8000 Max number of kernel threads (499)
nproc=512 Max number of processes (276)
tcphashsz=16384 Relative scaling factor for TCP & IP int. tables (2048)
semmnu=256 Number of semaphore undo structures (10)

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Notes/Tuning Information (Continued)

Operating System Notes (Continued)

vps_ceiling=4096 Max system selected page size [KB] (16)
vps_pagesize=64 Default user page size [KB] (4)

Filesystem for logs created with following options:
behind - Queue writes for flusing when page is full
largefiles - Enable creation of files greater than 2 gigabytes in size
64KB block size (def. 8KB) and 8KB fragments (def. 1KB)

HTTP Software Notes

Zeus Global Parameters:
tuning!bind_any no
tuning!cache_cooling_time 0
tuning!cache_files 59990
tuning!cache_flush_interval 86400
tuning!cache_large_file 50000
tuning!cache_max_bytes 0
tuning!cache_small_file 0
tuning!cache_stat_expire 86400
tuning!cbuff_size 65536
tuning!keepalive yes
tuning!keepalive_timeout 1200
tuning!keepalive_max -1
tuning!listen_queue_size 8192
tuning!maxaccept 1024
tuning!multiple_accept yes
tuning!sendfile yes
tuning!sendfile_reservefd 57000
tuning!sendfile_minsize 0
tuning!sendfile_maxsize 1048576
tuning!softservers no
tuning!so_rbuff_size 0
tuning!so_wbuff_size 1048576
tuning!timeout 600
tuning!unique_bind yes
tuning!use_poll no
tuning!modules!cgi!cbuff_size 1048576
tuning!modules!cgi!cleansize 0
tuning!modules!isapi!enabled yes
tuning!modules!nsapi!enabled no
tuning!modules!stats!enabled no

HTTP API Notes

Zeus ISAPI interface used
Zeus PEPP Toolkit (0.6) used for SPECweb99 dynamic content
./Configure --sendfile=yes --checkconfig=yes --locking=semop

Network Notes

8 HP Procurve 1600M Switches
Network 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)
Gigabit Tunable Parameters:
send_max_bufs=32 Number of send buffers consumed to trigger interrupt (16)
recv_max_bufs=12 Number of send buffers consumed to trigger interrupt (1)
recv_coal_ticks=10000 Number of ticks to wait to trigger interrupt (0)

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Notes/Tuning Information (Continued)

Network Notes (Continued)

send_coal_ticks=1000 Number of ticks to wait to trigger interrupt (1000)

Client Notes

7 networks with 12 clients each, set load generator speed to 2
1 network with 6 clients, set load generator speed to 1
HP-UX Tunable Parameters:
max_thread_proc=800 Number of threads per process (64)
maxusers=256 Value of MAXUSERS macro (32)

Other Notes

Tuning Disclosure: HP-20010917.txt
Dynamic API: HP-20010917-API.tar.gz