SPECweb99 Result

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Hewlett-Packard: hp server rp5470
Zeus Technology Limited: Zeus 3.4r3 64bit

SPECweb99 = 4646

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

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

Hardware

Vendor:	Hewlett-Packard
Model:	hp server rp5470
Processor:	PA-8700 750Mhz
# Processors:	4 cores, 4 chips, 1 core/chip
Primary Cache:	768KBI+1512KBD on chip
Secondary Cache:	None
Other Cache:	None
Memory:	16 GB
Disk Subsystem:	15x18GB 15Krpm, 2x32GB (10K rpm)
Disk Controllers:	1xHP A5158A FC Card
Other Hardware:	HP VA7100 Disk Array

Software

Operating System:	HP-UX 11i (64-bit) + patch
File System:	See SUT Notes
Other Software:	B3929CA HP OnLineJFS

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:	Oct-2001
Tested By:	Hewlett-Packard Company
SPEC License:	3

Network

# of Controllers:	4
Network Controllers:	HP A4926A PCI Gigabit Ethernet
# of Nets:	4
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:	15
Model:	HP 9000/A500-5x
Processor:	550Mhz PA-8600
# of Processors:	2
Memory:	4 GB
Network Controller:	HP A5230A, PCI 100BaseT
Operating System:	HPUX 11.0 ACE
Compiler:	B3901BA B.11.02.02 HP C/ANSI C

Notes/Tuning Information

SUT Notes

Bound two Zeus instances to processor corresponding to its NIC
Bound Zeus cgi process to the processor that services the fewest clients
Processor binding performed by: mpsched -c cpu# -p pid
OnLineJFS with largefiles option used for logs
All other filesystems are HP-UX HFS
15 (18GB) disks (disk array) used for file_set
1 (32GB) disk used for logs
1 (32GB) disk for OS

Operating System Notes

HP-UX 11i Internet Operating Environment with following patch:
PHNE_24506 - cumulative ARPA transport patch

HP-UX Tunable Parameters:
dbc_max_pct=81 Max buffer cache size as percent of RAM (50)
dbc_mim_pct=81 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=0x180000000 Max stack size for 64-bit procs (0x00800000)
maxswapchunks=4868 Max number of swap chunks (256)
maxuprc=10000 Max number of user processes (75)
nfile=550000 Max number of open files (790)
ninode=150000 Max number of inodes (444)
nkthread=8000 Max number of kernel threads (499)
nproc=1000 Max number of processes (276)

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Notes/Tuning Information (Continued)

Operating System Notes (Continued)

tcphashsz=16384 Relative scaling factor for TCP&IP int. tables (2048)
vps_ceiling=4096 Max system selected page size [KB] (16)
vps_pagesize=64 Default user page size [KB] (4)
maxdsiz_64bit=0x180000000 (0x40000000)
maxssiz=0x10000000 (0x800000)
maxtsiz=0x10000000 (0x4000000)
ncallout=8000 Max number of pending timeouts (515)

HTTP Software Notes

Zeus Global Parameters:
tuning!bind_any no
tuning!cache_cooling_time 0
tuning!cache_files 356750
tuning!cache_flush_interval 86400
tuning!cache_large_file 512001
tuning!cache_max_bytes 0
tuning!cache_small_file 1000
tuning!cache_stat_expire 86400
tuning!cbuff_size 65536
tuning!keepalive_timeout 1200
tuning!keepalive_max -1
tuning!listen_queue_size 8192
tuning!maxaccept 1024
tuning!modules!cgi!cbuff_size 1048576
tuning!modules!isapi!enabled 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!num_children 8
tuning!multiple_accept yes
tuning!sendfile yes
tuning!modules!cgi!cleansize 0
tuning!modules!stats!enabled no
tuning!modules!nsapi!enabled no
tuning!keepalive yes

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

4 HP Procurve 1600M Switches used

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:

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Notes/Tuning Information (Continued)

Network Notes (Continued)

send_max_bufs=32 Number of sending buffers consumed to trigger interrupt (16)
recv_max_bufs=12 Number of receiving buffers consumed to trigger interrupt (16)
recv_coal_ticks=10000 Number of ticks to wait to trigger interrupt (0)
send_coal_ticks=1000 Number of ticks to wait to trigger interrupt (1000)

Client Notes

3 networks with 4 clients each
1 network with 3 clients

HP-UX Tunable Parameters:
max_thread_proc=800 Number of threads per process (64)
maxusers=256 Value of MAXUSERS macro (32)
ncallout=500 Increase number of pending timeouts
nkthread=8000 Maximum number of system-wide threads

Other Notes

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