

SPECweb99_SSL Result

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Hewlett-Packard: hp server rp5405
Zeus Technology Limited: Zeus 4.1r3

SPECweb99_SSL = 990

Test Date: Sep-2002
Tester: Hewlett-Packard Company

Hardware Avail: Sep-2002 OS Avail: Dec-2001 HTTPS Software Avail: Feb-2002 Sup. Software Avail: Jun-2002 SPEC license #: 3

Hardware

Vendor: Hewlett-Packard
Model: hp server rp5405
Processor: 650 Mhz PA-8700
Processors: 4 cores, 4 chips, 1 core/chip
Primary Cache: 768KBI+1536KBD on chip
Secondary Cache: None
Other Cache: None
Memory: 16 GB
Disk Subsystem: 1x18GB,1x36GB(10K rpm),15x18GB(15K rpm)
Disk Controllers: 1 HP A5158A FC Card
Other Hardware: HP VA7100 Disk Array

Software

Operating System: HP-UX 11i + Patches
File System: See SUT Notes
Other Software: B3913DB C.03.33.01 HP aC++ Compiler

HTTPS Software

Vendor: Zeus Technology Limited
HTTPS Software: Zeus 4.1r3
API: ISAPI
Server Cache: None
Log Mode: Binary Log Format

Test Sponsor

Test Date: Sep-2002
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: 4
Model: HP 9000/A500-5X
Processor: 550 Mhz PA-8600
of Processors: 2
Memory: 4 GB
Network Controller: HP A4926A PCI Gigabit Ethernet
Operating System: HP-UX 11i
Compiler: B3901BA B.11.11.04 HP C/ANSI C

Notes/Tuning Information

SUT Notes

Bound each zeus instance to processor corresponding to its NIC
Bound cgi instance to processor corresponding to NIC running at 95% load (see Client Notes)
Processor binding performed by: mpsched -c cpu# -p pid
Set page size attribute for all zeus binaries
chattr zeus.web +pd 64M +pi 64M
chattr zeus.cgi +pd 64K +pi 64K
All filesystems are HP-UX HFS
1 (18 GB) disk used for /(root)
1 (36 GB) disk used for logs
1 (HP VA7100 Disk Array) used for file_set

Operating System Notes

HP-UX Enterprise Operating Environment with following patches:
PHKL_25233 - select(2) and poll(2) hang
PHKL_25389 - Core PM, vPar, Psets Cumulative Patch
PHNE_25388 - LAN product cumulative patch
PHNE_26728 - Cumulative STREAMS Patch
PHNE_26939 - 1000Base-SX/T B.11.11.14 cumulative patch
PHNE_27063 - Cumulative ARPA Patch
HP-UX Tunable Parameters:
dbc_max_pct=20 Max Buffer Cache Size as Percent of RAM (50)
dbc_min_pct=20 Min bufer Cache Size as Percent of RAM (5)
maxfiles=50000 Soft File Limit per Process (60)
maxfiles_lim=50000 Hard File Limit per Process (1024)
maxssiz_64bit=0x180000000 Max Stack Size for 64-Bit Procs (0x800000)

For more
Information
Contact

SPEC

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http://www.spec.org

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Notes/Tuning Information (Continued)

Operating System Notes (Continued)

maxswapchunks=4868 Max number of swap chunks (256)
maxuprc=1000 Max number of user processes (75)
nfile=5000 Max number of open files (790)
ninode=40000 Max number of inodes (444)
nkthread=8000 Max number of kernel threads (499)
nproc=256 Max number of processes (276)
tcpshashsz=16384 Relative Scaling Factor for TCP & IP Int. Tables(2048)
vps_ceiling=4096 Maximum System_Selected Page Size (16)
vps_pagesize=64 Default User Page Size (4)

HTTPS Software Notes

Zeus Global Parameters:
tuning!cache_files 356750
tuning!cache_max_bytes 0
tuning!cache_small_file 0
tuning!cache_large_file 1048576
tuning!cache_stat_expire 86400
tuning!cache_flush_interval 86400
tuning!listen_queue_size 8192
tuning!multiple_accept yes
tuning!so_rbuff_size 0
tuning!so_wbuff_size 1048576
tuning!cbuff_size 65536
tuning!keepalive yes
tuning!keepalive_timeout 1200
tuning!keepalive_max -1
tuning!timeout 600
tuning!unique_bind yes
tuning!bind_any no
tuning!sendfile no
tuning!modules!cgi!cbuff_size 1048576
tuning!modules!cgi!cleansize 0
tuning!ssl_keepalive yes
tuning!ssl_diskcache no
tuning!ssl_sessioncache_size 251
tuning!softservers no
tuning!use_poll no
tuning!modules!stats!enabled no
tuning!modules!nsapi!enabled no
tuning!modules!isapi!enabled yes
tuning!cache_cooling_time 0
tuning!maxaccept 2048

HTTP API Notes

Zeus ISAPI interface used
Zeus PEPP Toolkit(0.8) used for SPECweb99_SSL dynamic content
./Configure --sendfile=no --checkconfig=yes --locking=semop --ssl=yes --64bit=yes

Network Notes

Clients were connected to the SUT via MMF Fiber Optic cables (point-to-point).
Networking 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)

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Notes/Tuning Information (Continued)

Client Notes

Client code generated with ./configure --enable-posix-threads
Use client speed setting in rc file to force a 95% load on one NIC.
i.e., CLIENTS=sweb741[20] sweb742[20] sweb743[20] sweb744[19]
HP-UX Tunable Parameters:
max_thread_proc=800 Number of threads per process (64)
maxfiles=5000 Sort file limit per process (60)
maxfiles_lim=5000 Hard File Limit per Process (1024)
maxusers=256 Value of MAXUSERS macro (32)
nfile=10000 Max number of open files (790)
ninode=10000 Max number of inodes (444)
nkthread=8000 Maximum number of system-wide threads (499)

Other Notes

Tuning Disclosure: HP-20020723.txt
Dynamic API: HP-20020723-API.tar.gz