SPECweb99 Result

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Hewlett-Packard Company: HP9000 Model A500
Zeus Technology Ltd.: Zeus 3.3.6

SPECweb99 = 1750

Test Date: May-2000
Tester: Hewlett-Packard Company

Hardware Avail:	Aug-2000	OS Avail:	Mar-2000	HTTP Software Avail:	Apr-2000	Sup. Software Avail:	Apr-2000	SPEC license #:	3

Hardware

Vendor:	Hewlett-Packard Company
Model:	HP9000 Model A500
Processor:	440 MHz PA-8500
# Processors:	2 cores, 2 chips, 1 core/chip
Primary Cache:	512KBI+1024KBD
Secondary Cache:	None
Other Cache:	None
Memory:	8 GB
Disk Subsystem:	2 A5574A (18GB)
Disk Controllers:	Internal LVD SCSI
Other Hardware:	None

Software

Operating System:	HP-UX 11.ACE
File System:	HFS
Other Software:	None

HTTP Software

Vendor:	Zeus Technology Ltd.
HTTP Software:	Zeus 3.3.6
API:	ISAPI
Server Cache:	See Notes
Log Mode:	Common Log Format

Test Sponsor

Test Date:	May-2000
Tested By:	Hewlett-Packard Company
SPEC License:	3

Network

# of Controllers:	2
Network Controllers:	HP A4926A PCI 1000Base-SX
# of Nets:	2
Type of Nets:	Gigabit Ethernet
Network Speed:	1Gb/s
MSL (sec):	30 (Non RFC1122)
Time-Wait (sec):	60 (Non RFC1122)
MTU:	1500

Clients

# of Clients:	22
Model:	HP B180L
Processor:	180MHz PA-7300LC
# of Processors:	1
Memory:	128MB
Network Controller:	HP PCI 100BT
Operating System:	HP-UX 11.ACE
Compiler:	HP C/ANSI C (B3899BA)

Notes/Tuning Information

Operating System Notes

HP-UX Parameters:
ninode 8000 (in-core inodes)
nfile 60000 (in-core filedescriptors)
maxfiles 60000 (max descriptors per process)
maxfiles_lim 60000 (absolute max descriptors per process)
nproc 500 (absolute number of processes)
tcphashsz 16384 (hash table scaling factor for TCP connections)
dbc_min_pct 75 (use at least 75% of memory for buffer cache)
dbc_max_pct 80 (use at most 80% of memory for buffer cache)
Network Transport Parameters (ndd):
tcp_xmit_hiwater_def 1048576 (bump highwater mark)
tcp_conn_request_max 1024 (bump connection limits)
tcp_conn_strategy 1 (allocate memory assuming reuse)
Network Interface Parameters (gbeutil):
recv_coal_ticks 10000 (max of 0.1 seconds before inbound interrupt)
send_coal_ticks 1000 (max of 0.01 seconds before outbound interrupt)
recv_max_bufs 12 (max of 12 inbound buffers before interrupt)
send_max_bufs 32 (max of 32 outbound buffers before interrupt)

HTTP Software Notes

Zeus Tuning Values:
cache_files 60000 (cache up to 60,000 files)
cache_max_bytes 0 (do not limit total size of cache)
cache_small_file 0 (keep any file no matter how small)
cache_large_file 1048576 (keep any file less than 1MB)
cache_stat_expire 864000 (check for file updates daily)
cache_flush_interval 864000 (flush cached files daily)

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Notes/Tuning Information (Continued)

HTTP Software Notes (Continued)

sendfile yes (use the HP-UX sendfile system call)
sendfile_reservefd 30001 (keep lots of descriptors available for sendfile)
sendfile_minsize 0 (no file is too small for a sendfile)
listen_queue_size 8192 (allow more connections to queue)
timeout 7200 (don't give up on a client easily)
keepalive_max -1 (no limit on number of keepalive connections)
unique_bind yes (dedicate one listener to each listed ip addr.)
bind_any no (don't bind the listen socket to IN_ADDR_ANY)
Zeus Site Configuration:
modules!stats!enabled no (don't bother to measure statistics)
modules!nsapi!enabled no (don't need any NSAPI support)
modules!isapi!enabled yes (we do rely on the ISAPI features)
modules!fastcgi!enabled yes (support the FastCGI interface)
Zeus Installation Notes:
Set LargePage attribute on all Zeus binaries [chatr +pi 16M +pd 16M]

HTTP API Notes

Zeus ISAPI interface used for most dynamic content
FastCGI used as communication method to manage all the independant CGI processes

Software Notes

HP-UX System Patches:

PHNE_20125 ndd general patch
PHNE_20316 Cumulative STREAMS Patch

Network Notes

All Clients wired via 100BT to one of two HP ProCurve 1600s
SUT wired to a 1000-SX module within each HP ProCurve 1600

Client Notes

Client's HP-UX Parameters:
ncallout 5000 (increase number of potential pending items)
max_thread_proc 800 (allow more threads per process)