SPECweb99_SSL Result

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Dell: PowerEdge 1855 (2-blade cluster)

Zeus Technology Ltd.: Zeus Web Server 4.2r4 (64 bit)

SPECweb99_SSL =3589

Test Date: Oct-2004
Tester: Dell

Hardware Avail:	Dec-2004	OS Avail:	Aug-2004	HTTPS Software Avail:	Nov-2003	Sup. Software Avail:	Nov-2003	SPEC license #:	55

Hardware

Vendor:	Dell
Model:	PowerEdge 1855 (2-blade cluster)
Processor:	3.6GHz Intel Xeon
# Processors:	4 cores, 4 chips, 1 core/chip (Hyper-Threading enabled)
Primary Cache:	12KBI+16KBD on chip
Secondary Cache:	1MB(I+D) on chip
Other Cache:	N/A
Memory:	24GB (12GB per blade)
Disk Subsystem:	4 36GB 15KRPM drives (2 per blade)
Disk Controllers:	Onboard SCSI
Other Hardware:	PowerEdge 1855 blade chassis 2 Gb pass-through I/O modules Dell PowerConnect 5224 switch

Software

Operating System:	SUSE LINUX Enterprise Server 9
File System:	ext2
Other Software:	None

HTTPS Software

Vendor:	Zeus Technology Ltd.
HTTPS Software:	Zeus Web Server 4.2r4 (64 bit)
API:	Zeus PEPP 0.9pre2 ISAPI for Dynamic content
Server Cache:	None
Log Mode:	Zeus Binary CLF

Test Sponsor

Test Date:	Oct-2004
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Network

# of Controllers:	2
Network Controllers:	Dual On-board NICs on each blade
# of Nets:	2
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:	16
Model:	Dell PowerEdge 1650
Processor:	1.4GHz Pentium III
# of Processors:	2
Memory:	1024MB
Network Controller:	Onboard NIC
Operating System:	Microsoft Windows XP Professional
Compiler:	Microsoft Visual C++ 6.0

Notes/Tuning Information

SUT Notes

Each blade has OS on first disk; 2-disk RAID0 stripe for access log and file set
Each blade had first interface connected to the PowerConnect switch
Blades used ntpd to synchronize time to a central clock
Second blade accessed first blade's User.Personality, Custom.Ads, post.log via NFS

Operating System Notes

ulimit -n 10000, sets number of open files, default 1024
Each NIC's TX queue length set to 40000 via ifconfig, default 100
Each NIC's InterruptThrottleRate set to 3000 via modprobe, default 1
File systems mounted with "noatime,nodiratime,noacl", no inode access time updating, no access control lists
net.ipv4.tcp_timestamps = 0, turns TCP timestamp support off, default on
net.ipv4.tcp_max_tw_buckets = 456000, sets TCP time-wait buckets pool size, default 180000
net.ipv4.tcp_rmem = 30000000 30000000 30000000, sets min/default/max TCP read buffer, default 4096 87380 174760
net.ipv4.tcp_wmem = 30000000 30000000 30000000, sets min/pressure/max TCP write buffer, default 4096 16384 131072
net.ipv4.tcp_mem = 30000000 30000000 30000000, sets min/pressure/max TCP buffer space, default 31744 32256 32768
net.ipv4.tcp_max_syn_backlog = 8192, sets maximum queued connection requests before kernel drops them, default 1024
net.core.wmem_max = 10000000, maximum send socket buffer size, default 131071
net.core.wmem_default = 10000000, default send socket buffer size, default 65535
net.core.optmem_max = 10000000, maximum amount of option memory buffers, default 10240
fs.file-max = 508216, increases number of open file handles kernel allocates, default 4096

HTTPS Software Notes

Two instances of Zeus per blade, one with HTTPS virtual server, one with HTTP virtual server
HTTPS virtual server settings (global.cfg):
tuning!listen_queue_size 8192

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Notes/Tuning Information (Continued)

HTTPS Software Notes (Continued)

tuning!so_wbuff_size 1048576
tuning!so_rbuff_size 0
tuning!maxaccept 2500
tuning!clientfirst_optimise yes
tuning!unique_bind no
tuning!cache_stat_expire 31536000
tuning!cache_max_bytes 0
tuning!cache_flush_interval 31536000
tuning!cache_files 282011
tuning!cache_cooling_time 0
tuning!sendfile yes
tuning!sendfile_minsize 1
tuning!softservers no
tuning!keepalive_timeout 30
tuning!keepalive_max -1
tuning!ssl_sessioncache_size 7507
tuning!cbuff_size 65536
tuning!isapi!enabled yes
tuning!modules!stats!enabled no
tuning!modules!cgi!enabled yes
tuning!modules!cgi!cleansize 0
tuning!modules!security!enabled yes
tuning!num_children 8
HTTP virtual server settings (global.cfg):
tuning!cbuff_size 65536
tuning!chunk no
tuning!clientfirst_optimise yes
tuning!keepalive_max 2100
tuning!keepalive_timeout 3600
tuning!listen_queue_size 8192
tuning!maxaccept 64
tuning!modules!stats!enabled no
tuning!sendfile_minsize 1
tuning!so_wbuff_size 1048576
tuning!softservers no
modules!cgi!enabled yes
modules!isapi!enabled yes
tuning!num_children 1

Network Notes

Each blade connected to clients via pass-through module 1 to the switch
7 clients accessed first blade, 9 clients accessed second blade
Blades connected together via crossover cable on pass-through module 2

Client Notes

manager.ssl.rcp.alt.WIN32, alt.WIN32 client used
Registry tunes: (HKEY_LOCAL_MACHINESYSTEMCurrentControlSetServices\
- TcpipParametersMaxUserPort=0xfffe, sets maximum open ports to 65534
- TcpipParametersTcpTimedWaitDelay=60, sets TIME_WAIT parameter to 60 seconds (non-RFC 1122), default 240
- TcpipParametersMaxFreeTWTcbs=100000, sets maximum number of TIME_WAIT TCBs
- TcpipParametersTcpWindowSize=65535, sets TCP send/receive window size, default 8192

Other Notes

Tuning Disclosure: See above.
Dynamic API: Dell-20030916-API.tgz
API configured with --ssl=yes