

# 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  
Tested By: Dell  
SPEC License: 55

## 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\_MACHINE\SYSTEM\CurrentControlSet\Services\  
- Tcpip\Parameters\MaxUserPort=0xffff, sets maximum open ports to 65534  
- Tcpip\Parameters\TcpTimedWaitDelay=60, sets TIME\_WAIT parameter to 60 seconds (non-RFC 1122), default 240  
- Tcpip\Parameters\MaxFreeTWTcbs=100000, sets maximum number of TIME\_WAIT TCBS  
- Tcpip\Parameters\TcpWindowSize=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