

SPECweb99_SSL Result

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IBM: eServer xSeries 360
Zeus: Zeus V4.2r2

SPECweb99_SSL =2174

Test Date: Jul-2003
Tester: IBM

Hardware Avail: Jun-2003 OS Avail: Jul-2002 HTTPS Software Avail: Mar-2002 Sup. Software Avail: May-2002 SPEC license #: 11

Hardware

Vendor: IBM
Model: eServer xSeries 360
Processor: 2.8 GHz Intel Xeon MP
Processors: 4 cores, 4 chips, 1 core/chip
Primary Cache: 12KBI+8KBD on chip
Secondary Cache: 512KB
Other Cache: 2MB L3
Memory: 16GB
Disk Subsystem: 14 18GB 15K rpm SCSI Drives
Disk Controllers: 1 IBM ServRaid 6M
Other Hardware: 1 Nortel Networks 8010 Switch,
IBM EXP300 Storage Expansion Unit

Software

Operating System: Red Hat Linux 7.3
File System: ext2
Other Software: GCC 2.96

HTTPS Software

Vendor: Zeus
HTTPS Software: Zeus V4.2r2
API: Zeus PEPP 0.8 ISAPI used for Dynamic content
Server Cache: None
Log Mode: Zeus CLF

Test Sponsor

Test Date: Jul-2003
Tested By: IBM
SPEC License: 11

Network

of Controllers: 1
Network Controllers: Intel Pro1000 Gigabit Ethernet Adapter
of Nets: 1
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: 9
Model: IBM eServer xSeries 330
Processor: 1133Mhz Pentium III
of Processors: 1
Memory: 512MB
Network Controller: IBM Netfinity Gigabit Ethernet Adapter
Operating System: Red Hat Linux 7.3
Compiler: GCC 2.96

Notes/Tuning Information

SUT Notes

- 7 disk Hardware RAID 0 for File Set
- 6 disk Hardware RAID 0 for logs
- 1 disk for OS
- Memory configuration 8 x 2GB DIMMs
- Network Adapter installed in Slot 5
- IBM ServRaid installed in Slot 3

Operating System Notes

Tuning parameters:

- net.ipv4.ip_forward=0, default 0
- net.ipv4.conf.all.rp_filter = 1, enables source route verification, default 0
- net.ipv4.tcp_timestamps = 0, turns TCP timestamp support off, default 1
- net.ipv4.tcp_max_tw_buckets = 400000, sets TCP time-wait buckets pool size, default 180000
- net.core.rmem_max = 10000000, maximum receive socket buffer size, default 65535
- net.core.rmem_default = 10000000, default receive socket buffer size, default 65535
- net.core.wmem_max = 10000000, maximum send socket buffer size, default 65535
- net.core.wmem_default = 10000000, default send socket buffer size, default 65535
- net.core.optmem_max = 10000000, default 10240
- net.core.hot_list_length = 10000, maximum number of skb-heads to be cached, default 128
- net.ipv4.tcp_rmem = 30000000 30000000 30000000, maximum TCP read-buffer space allocatable, default 4096 87380 174760
- net.ipv4.tcp_wmem = 30000000 30000000 30000000, maximum TCP write-buffer space allocatable, default 4096 16384 131072
- net.ipv4.tcp_mem=30000000 30000000 30000000, maximum TCP buffer space, default 31744 32256 32768

Kernel is Red Hat 2.4.18-27.7x

Kernel config is located in support docs as IBM-20030630-kernel.txt

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Notes/Tuning Information (Continued)

HTTPS Software Notes

Zeus Configuration

- tuning!so_wbuff_size 1048576
- tuning!softservers no
- tuning!cbuff_size 65536
- tuning!clientfirst_optimise yes
- tuning!ssl_sessioncache_size 6607
- tuning!sendfile_minsize 1
- tuning!listen_queue_size 8192
- tuning!keepalive_timeout 20
- tuning!keepalive_max 2100
- tuning!maxaccept 64
- modules!cgi!enabled yes
- modules!isapi!enabled yes

Virtual Server Configuration

- ip_name = server
- bindaddr = 192.0.1.100

See IBM-Zeus-tuning-20021224.txt for a description of the Zeus tuning parameters

ISAPI Source code is available in the SPECweb99_SSL support docs as HP-20020724-API.tar.gz

HTTP API Notes

Zeus ISAPI interface used

Zeus PEPP 0.8 ISAPI used for Dynamic content

./Configure --sendfile=yes --checkconfig=yes --locking=lockf --ssl=yes --64bit=no

Network Notes

txqueuelen=20000, transmit queue length, default 100

Client Notes

Client code generated with ./configure --enable-posix-threads

net.ipv4.ip_local_port_range 1024 65535