

SPECweb99 Result

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IBM: Netfinity 8500R
Red Hat: TUX 1.0

SPECweb99 = 6407

Test Date: Dec-2000
Tester: IBM

Hardware Avail: Jun-2000 OS Avail: Sep-2000 HTTP Software Avail: Sep-2000 Sup. Software Avail: Sep-2000 SPEC license #: 11

Hardware

Vendor: IBM
Model: Netfinity 8500R
Processor: 700 MHz Pentium III Xeon
Processors: 8 cores, 8 chips, 1 core/chip
Primary Cache: 16KBI+16KBD on chip
Secondary Cache: 2MB
Other Cache: none
Memory: 32GB
Disk Subsystem: 5 X 18GB (IBM 19K1638)
Disk Controllers: Onboard Adaptec
Other Hardware: 8 X ALTEON ACESwitch 180 GbE Switch

Software

Operating System: RedHat Linux 7.0
with Threaded Web Server Add-On
File System: ext2
Other Software: Red Hat 2.4.0-38 Kernel

HTTP Software

Vendor: Red Hat
HTTP Software: TUX 1.0
API: TUX user API
Server Cache: none
Log Mode: Binary CLF

Test Sponsor

Test Date: Dec-2000
Tested By: IBM
SPEC License: 11

Network

of Controllers: 8
Network Controllers: Alteon ACEnic PCI
of Nets: 8
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: 32
Model: Intellistation Z Pro
Processor: 450Mhz Pentium II Xeon
of Processors: 2
Memory: 256MB
Network Controller: Alteon ACEnic PCI
Operating System: Windows 2000 Professional
Compiler: Microsoft Visual C++ 6.0

Notes/Tuning Information

SUT Notes

- 1 disk for OS and logfiles
- 4 disk software RAID0, using 2MB chunk size, for web pages

Operating System Notes

- Tuning parameters:
- net.ipv4.ip_forward=1, 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.tcp_sack = 0, turns SACK support off, default 1
 - net.ipv4.tcp_window_scaling = 0, turn TCP window scaling support off, default 1
 - net.ipv4.tcp_max_tw_buckets = 2000000, sets TCP time-wait buckets pool size, default 180000
 - net.ipv4.tcp_mem = 10000000 10000000 10000000, maximum total TCP buffer-space allocatable.
 - net.ipv4.tcp_wmem = 10000000 10000000 10000000, maximum TCP write-buffer space allocatable.
 - net.ipv4.tcp_rmem = 30000000 30000000 30000000, maximum TCP read-buffer space allocatable.
 - net.ipv4.ip_local_port_range = 16384 65535, default 32768 61000
 - net.core.rmem_max = 10485760, maximum receive socket buffer size, default 65535
 - net.core.rmem_default = 10485760, default receive socket buffer size, default 65535
 - net.core.wmem_max = 10485760, maximum send socket buffer size, default 65535
 - net.core.wmem_default = 10485760, default send socket buffer size, default 65535
 - net.core.optmem_max = 10000000, default 10240
 - net.core.hot_list_length = 102400, maximum number of skb-heads to be cached, default 128
 - fs.file-max = 40960, maximum number of open files, default 8192
 - vm.bdflush = 100 5000 640 2560 150 30000 5000 1884 2 (see tux tuning and setup file)
- Alteon NIC settings in /usr/src/linux/drivers/net/acenic.c
- tx_coal_tick = 300, default 400

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Notes/Tuning Information (Continued)

Operating System Notes (Continued)

- rx_coal_tick = 300, default 120
 - max_tx_desc = 64, default 32
 - max_rx_desc = 32, default 16
- Network adapters affinitized 1 per CPU
See config file for kernel build information

HTTP Software Notes

- TUX Configuration
- net.tux.threads = 8, sets number of TUX threads, default 2
 - net.tux.logging = 1, turns on logging, default 0
 - net.tux.mode_allowed = 255, allowed file-permission bits, default 00004
 - net.tux.mode_forbidden = 2, forbidden file-permission bits, default 00000
 - net.tux.max_cached_filesize = 100000000, maximum size of cached object, default 100000
 - net.tux.serverport = 80
 - net.tux.max_backlog = 6000, maximum per-listening-socket TCP backlog size, default 2048
 - net.http.logentry_align_order = 0, sets alignment of log entry records in logfile, default 5

HTTP API Notes

Dell Tux API from Dell-20000626.zip