SPECweb99 Result

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IBM Corporation: IBM eServer p5 570 (1900 MHz, 4 CPU, Linux)

Red Hat: Red Hat Content Accelerator 3.2

SPECweb99 = 13500

Test Date: Jul-2004
Tester: IBM

Hardware Avail:	Sep-2004	OS Avail:	Sep-2004	HTTP Software Avail:	Aug-2003	Sup. Software Avail:	Aug-2004	SPEC license #:	11

Hardware

Vendor:	IBM Corporation
Model:	IBM eServer p5 570 (1900 MHz, 4 CPU, Linux)
Processor:	1900 MHz POWER5
# Processors:	4 cores, 2 chips, 2 cores/chip (SMT on)
Primary Cache:	64KBI+32KBD (on chip)/core
Secondary Cache:	1920KB unified (on chip)/chip
Other Cache:	36MB unified (off chip)/DCM, 2 DCM/SUT
Memory:	64GB (16x4GB)
Disk Subsystem:	5x36GB 15K rpm SCSI disks
Disk Controllers:	PCI-X Dual Channel Ultra320 SCSI Adapter
Other Hardware:	4 Cisco Catalyst 3550 Switches

Software

Operating System:	Red Hat Enterprise Linux 3 Update3
File System:	ext3 for OS ext2 for raid/mounts
Other Software:	none

HTTP Software

Vendor:	Red Hat
HTTP Software:	Red Hat Content Accelerator 3.2
API:	RHCA API
Server Cache:	None
Log Mode:	Binary CLF

Test Sponsor

Test Date:	Jul-2004
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Network

# of Controllers:	8
Network Controllers:	8 IBM 10/100/1000 Base-TX Ethernet PCI-X Adapter
# of Nets:	8
Type of Nets:	Gigabit Ethernet
Network Speed:	1 Gb/sec
MSL (sec):	30 (Non RFC1122)
Time-Wait (sec):	60 (Non RFC1122)
MTU:	1500

Clients

# of Clients:	32
Model:	IBM pSeries p630
Processor:	1450 MHz
# of Processors:	4
Memory:	4GB
Network Controller:	IBM 10/100/1000 Base-TX Ethernet PCI-X Adapter
Operating System:	SLES 8 SP3a
Compiler:	gcc 3.2.2

Notes/Tuning Information

SUT Notes

1 disk for OS 1 disk for docroot 1 disk for tux log and 2 disks for fileset internal raid0
SMT enabled - smt=on
2 external 7311-D11 I/O drawers used for 8 Gigabit adapters (4 adapters per drawer)

Operating System Notes

Tuning parameters:
ulimit -n 1000000, sets number of open files, default 1024
One NIC IRQ bound per logical CPU
Each NIC's ITR set to 1900 via insmod InterruptThrottleRate=1900, default=dynamic
File systems mounted with "noatime,nodiratime", no inode access time updating
net.ipv4.nonlocal_bind = 1, allows processes to bind to non-local IP adresses
net.ipv4.tcp_timestamps = 0, turns TCP timestamp support off, default on
net.ipv4.tcp_max_tw_buckets = 3000000, 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_window_scaling = 0, turn TCP window scaling support off, default on
net.core.hot_list_length = 5000, maximum number of skb-heads to be cached, default 128
net.core.rmem_max = 1048576, maximum receive socket buffer size, default 131071
net.core.wmem_max = 1048576, maximum send socket buffer size, default 131071
net.core.rmem_default = 1048576, default receive socket buffer size, default 65535
net.core.wmem_default = 1048576, default send socket buffer size, default 65535
net.core.optmem_max = 10000000, maximum amount of option memory buffers, default 20480
net.core.netdev_max_backlog = 300000, number of unprocessed input packets before kernel starts dropping them, default 300
net.ipv4.conf.all.arp_filter=1, enable source route verification, default=0
DCM: Acronym for "Dual-Chip Module" (one dual-core processor chip + one L3-cache chip)
SMT: Acronym for "Simultaneous Multi-Threading". A processor technology that allows the simultaneous execution of -

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Notes/Tuning Information (Continued)

Operating System Notes (Continued)

- multiple thread contexts within a single processor core. (Enabled by default)

HTTP Software Notes

HTTP Software Notes
One network bound per TUX thread
net.tux.logging = 1, turns on logging of requests, default 0
net.tux.cgiroot = /, cgi root check, default /var/www/tux/cgiroot/
CGI_UID=root, userid for cgi scripts; default: 0
CGI_GID=root, groupid for cgi scripts; default: 0
net.tux.max_backlog = 3000, maximum per-listening-socket TCP backlog size, default 2048
net.tux.generate_etags = 0, don't generate ETag header, default 1
net.tux.noid = 1, suppress the Server id string, default 0

Client Notes

./configure --enable-posix-threads
ulimit -n 1000000, sets number of open files, default 1024
net.ipv4.ip_local_port_range = 1024 65535

Other Notes

Other Notes
Tuning Disclosure: See above.
Dynamic API, flag descriptions, kernel config: IBM-20040617-RHCA.tgz
Dynamic API renamed to f.tux, CGI renamed to x.cgi