SPECweb99 Result

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Dell: PowerEdge 1750
Red Hat: Red Hat Content Accelerator 2.2

SPECweb99 = 6638

Test Date: Aug-2003
Tester: Dell

Hardware Avail:	OS Avail:	HTTP Software Avail:	Sup. Software Avail:	SPEC license #:
Aug-2003	Nov-2002	Nov-2002	Jan-2003	55

Hardware

Vendor:	Dell
Model:	PowerEdge 1750
Processor:	3.06GHz Intel Xeon Processor DP
# Processors:	2 cores, 2 chips, 1 core/chip (Hyper-Threading enabled)
Primary Cache:	12KBI+8KBD on chip
Secondary Cache:	512KB
Other Cache:	1MB L3
Memory:	8 GB
Disk Subsystem:	2 36GB, 14 18GB 15KRPM Ultra320 drives
Disk Controllers:	Onboard SCSI, Dell PowerVault 220S
Other Hardware:	4 Dell PowerConnect 5012 switches

Software

Operating System:	Red Hat Linux 8.0
File System:	ext2
Other Software:	Intel e1000 5.1.11 LSI Fusion-MPT 2.05.00

HTTP Software

Vendor:	Red Hat
HTTP Software:	Red Hat Content Accelerator 2.2
API:	RHCA API
Server Cache:	None
Log Mode:	Binary CLF

Test Sponsor

Test Date:	Aug-2003
Tested By:	Dell
SPEC License:	55

Network

# of Controllers:	2
Network Controllers:	Intel PRO/1000 MT Dual Port Server Adapter
# of Nets:	4
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 1550
Processor:	1.26GHz Pentium III
# of Processors:	2
Memory:	256MB
Network Controller:	Intel PRO/1000 XT
Operating System:	Microsoft Windows XP
Compiler:	Microsoft Visual C++ 6.0

Notes/Tuning Information

SUT Notes

1 disk for OS, 1 disk logs (internal storage)
14-disk SW RAID-0 for file set (external storage attached to PowerVault 220S)
Hyper-Threading enabled, Sequential Memory Access disabled

Operating System Notes

ulimit -n 10000, sets number of open files, default 1024
One NIC IRQ bound per logical CPU
Each NIC's TX queue length set to 20000 via ifconfig, default 1000
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 = 1500000, 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_sack = 0, turn SACK support off, default on
net.ipv4.tcp_dsack = 0, turn DSACK support off, default on
net.ipv4.tcp_window_scaling = 0, turn TCP window scaling support off, default on
net.core.hot_list_length = 300000, maximum number of skb-heads to be cached, default 128
net.core.rmem_max = 10000000, maximum receive socket buffer size, default 131071
net.core.wmem_max = 10000000, maximum send socket buffer size, default 131071
net.core.rmem_default = 10000000, default receive socket buffer size, default 65535
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
net.core.netdev_max_backlog = 300000, number of unprocessed input packets before kernel starts dropping them, default 300
Kernel parameters:

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Notes/Tuning Information (Continued)

Operating System Notes (Continued)

idle=poll, idle threads poll reschedule flag, default is to use HLT instruction

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/
net.tux.cgi_uid = 99, uid 'nobody' for cgi scripts; default -1
net.tux.cgi_gid = 99, gid 'nobody' for cgi scripts; default -1
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.generate_last_mod = 0, don't generate Last-Modified header, default 0
net.tux.noid = 1, suppress the Server id string, default 0
net.tux.max_connect = 50000, maximum # simultaneous connections, default 1000
net.tux.cgi_inherit_cpu = 1, CGIs inherit CPU binding, default 0

Network Notes

e1000 parameter: TxIntDelay = 32, change transmit interrupt delay, default 64

Client Notes

Registry tunes:
- 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 to 100,000
- TcpipParametersTcpWindowSize=65535, sets TCP send eceive window size, default 8192

Other Notes

Tuning Disclosure: See above.
Dynamic API and compiler flags: Dell-20030527-RHCA.tgz
Kernel config: Dell-20030818-PE1750-config.txt