SPECweb99 Result

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Dell: PowerEdge 2650
Red Hat: Red Hat Content Accelerator 2

SPECweb99 = 5530

Test Date: Apr-2003
Tester: Dell

Hardware Avail:	May-2003	OS Avail:	Sep-2002	HTTP Software Avail:	Sep-2002	Sup. Software Avail:	Feb-2003	SPEC license #:	55

Hardware

Vendor:	Dell
Model:	PowerEdge 2650
Processor:	3.06 GHz Intel Xeon
# Processors:	2 cores, 2 chips, 1 core/chip (Hyper-Threading enabled)
Primary Cache:	12KBI+8KBD on chip
Secondary Cache:	512KB ATC
Other Cache:	None
Memory:	12 GB
Disk Subsystem:	5 36GB 15K RPM drives
Disk Controllers:	Onboard Adaptec 7899
Other Hardware:	1 Dell PowerConnect 5224

Software

Operating System:	Red Hat Linux 8.0
File System:	ext2,ext3
Other Software:	RHBA-2003:069, e1000 5.0.43 driver

HTTP Software

Vendor:	Red Hat
HTTP Software:	Red Hat Content Accelerator 2
API:	RHCA API
Server Cache:	None
Log Mode:	Binary CLF

Test Sponsor

Test Date:	Apr-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:	12
Model:	Dell PowerEdge 1650
Processor:	1.4GHz Pentium III
# of Processors:	2
Memory:	256MB
Network Controller:	Intel 82544EI LOM
Operating System:	Red Hat Linux 8.0
Compiler:	gcc 3.2

Notes/Tuning Information

SUT Notes

1 disk for OS and logs, ext3
5 disk software RAID1 mirror for file set, ext2
"Sequential Memory Access" disabled in BIOS, default enabled

Operating System Notes

Root filesystem mounted with "data=writeback", journal only ext3 metadata, default ordered
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
Each NIC's TxDescriptors set to 4096 via modules.conf, default 256
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 = 2000000, sets TCP time-wait buckets pool size, default 180000
net.ipv4.tcp_rmem = 10000000 10000000 10000000, sets min/default/max TCP read buffer, default 4096 87380 174760
net.ipv4.tcp_wmem = 10000000 10000000 10000000, sets min/pressure/max TCP write buffer, default 4096 16384 131072
net.ipv4.tcp_mem = 10000000 10000000 10000000, 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_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
fs.file-max = 32768, increases file handle kernel allocates, default 4096
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

HTTP API Notes

gcc 3.2-7 compiler used
Compile flags: -fomit-frame-pointer -mcpu=i686 -march=i686 -O2 -Wall -fPIC -shared

Client Notes

net.ipv4.ip_local_port_range = 1024 65535

Other Notes

Tuning Disclosure: See above.
Dynamic API, flag descriptions, kernel .config: Dell-20030527-RHCA.tgz