SPECweb99 Result

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Dell: PowerEdge 4600
Red Hat: Red Hat Content Accelerator 2

SPECweb99 = 4460

Test Date: Feb-2002
Tester: Dell

Hardware Avail:	Feb-2002	OS Avail:	Oct-2001	HTTP Software Avail:	Jan-2002	Sup. Software Avail:	Jan-2002	SPEC license #:	55

Hardware

Vendor:	Dell
Model:	PowerEdge 4600
Processor:	2.20 GHz Pentium 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:	8 18GB 10KRPM drives
Disk Controllers:	Onboard Adaptec 7899
Other Hardware:	4 Dell PowerConnect 5012, 4 Nortel ACEswitch 180

Software

Operating System:	Red Hat Linux 7.2
File System:	ext2
Other Software:	RHSA-2002-007, Intel 3.6.8 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:	Feb-2002
Tested By:	Dell
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Network

# of Controllers:	4
Network Controllers:	Intel PRO/1000 XT
# 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:	20
Model:	Dell Precision 410
Processor:	450MHz Pentium II
# of Processors:	2
Memory:	128MB
Network Controller:	3Com 3C985B-SX
Operating System:	Red Hat Linux 7.2
Compiler:	gcc 2.96

Notes/Tuning Information

SUT Notes

1 disk for OS and logs
7 disk software RAID0 stripe for fileset

Operating System Notes

ulimit -n 10000, sets number of open files, default 1024
One NIC bound per logical CPU (Hyper-Threading enabled)
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 = 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.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:
idle=poll, idle threads poll reschedule flag, default is to use HLT instruction

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Notes/Tuning Information (Continued)

Operating System Notes (Continued)

acpismp=force, use ACPI tables for processor information, default MP table

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
RHCA 2 available as kernel 2.4.9-21 and tux 2.2.0-1 from http://www.redhat.com/support/errata/RHSA-2002-007.html

Client Notes

net.ipv4.ip_local_port_range = 1024 65535

Other Notes

Tuning Disclosure: See above.
Dynamic API and kernel config: Dell-20020204-RHCA.tar.gz