SPECweb99 Result

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Dell: PowerEdge 1650
Red Hat: Red Hat Content Accelerator 2

SPECweb99 = 3442

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 1650
Processor:	1.4GHz Pentium III
# Processors:	2 cores, 2 chips, 1 core/chip
Primary Cache:	16KBI+16KBD on chip
Secondary Cache:	512KB ATC
Other Cache:	None
Memory:	4 GB
Disk Subsystem:	3 72GB 10KRPM drives
Disk Controllers:	Onboard Adaptec SCSI
Other Hardware:	2 Nortel ACEswitch 180, Intel NetStructure 470T

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
SPEC License:	55

Network

# of Controllers:	2
Network Controllers:	Onboard Intel 82544EI XT
# of Nets:	2
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:	10
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
2 disk software RAID0 stripe for file set

Operating System Notes

ulimit -n 10000, sets number of open files, default 1024
One NIC bound per 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 = 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)

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