SPECweb99 Result

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Dell: PowerEdge 2500
Red Hat: TUX 2.0

SPECweb99 = 3435

Test Date: Aug-2001
Tester: Dell

Hardware Avail:	Aug-2001	OS Avail:	Apr-2001	HTTP Software Avail:	Apr-2001	Sup. Software Avail:	Jun-2001	SPEC license #:	55

Hardware

Vendor:	Dell
Model:	PowerEdge 2500
Processor:	1.13GHz 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:	8 18gig 15K RPM drives
Disk Controllers:	Onboard Adaptec 7899
Other Hardware:	4 Alteon ACEswitch 180

Software

Operating System:	Red Hat Linux 7.1
File System:	ext2
Other Software:	None

HTTP Software

Vendor:	Red Hat
HTTP Software:	TUX 2.0
API:	TUX user API
Server Cache:	None
Log Mode:	Binary CLF

Test Sponsor

Test Date:	Aug-2001
Tested By:	Dell
SPEC License:	55

Network

# of Controllers:	4
Network Controllers:	Alteon AceNIC 1000SX
# 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:	Alteon AceNIC 1000SX
Operating System:	Windows 2000 Professional
Compiler:	Microsoft Visual C++ 6.0

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
Two NIC IRQs bound per CPU
Each NIC's TX queue length set to 20000 via ifconfig, default 1000
File systems mounted with "noatime,check=none"; no inode access time updating, no check on mount
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 = 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_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
See .config file for kernel build information
Alteon NIC settings in drivers/net/acenic.c:
DEF_TX_COAL = 300, default 400

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Notes/Tuning Information (Continued)

Operating System Notes (Continued)

DEF_RX_COAL = 300, default 120
DEF_TX_MAX_DESC = 64, default 60
DEF_RX_MAX_DESC = 32, default 25
Kernel update patch (RHSA-2001-084)

HTTP Software Notes

Each TUX thread's listening address bound to 2 NIC's associated networks
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

HTTP API Notes

TUX API from Compaq-20010709-ml370-tux.tar.gz

Client Notes

Tcpip/Parameters/MaxUserPort = 0xfffe, sets maximum open ports to 65534.