

# SPECweb99 Result

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IBM Corporation: IBM eServer p5 570 (1900 MHz, 8 CPU, Linux)

SPECweb99 = 25000

Red Hat: Red Hat Content Accelerator 3.2.18-2

Test Date:  
Tester:

Jan-2005  
IBM

Hardware Avail: Sep-2004 OS Avail: Feb-2005 HTTP Software Avail: Feb-2005 Sup. Software Avail: Feb-2005 SPEC license #: 11

## Hardware

Vendor: IBM Corporation  
Model: IBM eServer p5 570 (1900 MHz, 8 CPU, Linux)  
Processor: 1900 MHz POWER5  
# Processors: 8 cores, 4 chips, 2 cores/chip (SMT on)  
Primary Cache: 64KBI+32KBD (on chip)/core  
Secondary Cache: 1920KB unified (on chip)/chip  
Other Cache: 36MB unified (off chip)/DCM, 4 DCM/SUT  
Memory: 128GB (32x4GB)  
Disk Subsystem: 7x73.4GB 15K Ultra320 SCSI disks  
Disk Controllers: PCI-X Dual Channel Ultra320 SCSI Adapter  
Other Hardware: 8 Cisco Catalyst 3550 Switches

## Software

Operating System: Red Hat Enterprise Linux AS 4  
File System: ext3 for OS ext2 for raids/mounts  
Other Software: none

## HTTP Software

Vendor: Red Hat  
HTTP Software: Red Hat Content Accelerator 3.2.18-2  
API: RHCA API  
Server Cache: None  
Log Mode: Binary CLF

## Test Sponsor

Test Date: Jan-2005  
Tested By: IBM  
SPEC License: 11

## Network

# of Controllers: 16  
Network Controllers: 16 IBM 10/100/1000 Base-TX Ethernet PCI-X Adapter  
# of Nets: 16  
Type of Nets: Gigabit Ethernet  
Network Speed: 1 Gb/sec  
MSL (sec): 30 (Non RFC1122)  
Time-Wait (sec): 60 (Non RFC1122)  
MTU: 1500

## Clients

# of Clients: 48  
Model: IBM eServer xSeries 335  
Processor: Intel(R) Xeon(TM) CPU 2.80GHz  
# of Processors: 2  
Memory: 1.5GB  
Network Controller: Integrated Broadcom NetXtreme BCM5703X Gigabit Ethernet  
Operating System: Red Hat Linux release 9  
Compiler: gcc-3.2.2-5

## Notes/Tuning Information

### SUT Notes

1 disk for OS 1 disk for docroot 2 disks for tux log and 3 disks for fileset internal raid0 raids  
SMT enabled - smt-enabled=on  
TSO disabled on network adapters  
InterruptThrottlingRate set to 1900 on network adapters  
4 external 7311-D11 I/O drawers used for 16 Gigabit adapters (4 adapters per drawer)

### Operating System Notes

Tuning parameters:  
ulimit -n 1000000, sets number of open files, default 1024  
One NIC IRQ bound per logical CPU  
File systems mounted with "noatime,nodiratime,nobh", no inode access time updating  
net.ipv4.nonlocal\_bind = 1, allows processes to bind to non-local IP addresses  
net.ipv4.tcp\_timestamps = 0, turns TCP timestamp support off, default on  
net.ipv4.tcp\_max\_tw\_buckets = 6500000, 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\_window\_scaling = 0, turn TCP window scaling support off, default on  
net.ipv4.tcp\_tso\_win\_divisor = 8, allows control over what percentage of the congestion window can be consumed by a single TSO frame, default 8  
net.core.rmem\_max = 1048576, maximum receive socket buffer size, default 131071  
net.core.wmem\_max = 1048576, maximum send socket buffer size, default 131071  
net.core.rmem\_default = 1048576, default receive socket buffer size, default 65535  
net.core.wmem\_default = 1048576, default send socket buffer size, default 65535  
net.core.optmem\_max = 10000000, maximum amount of option memory buffers, default 20480  
net.core.netdev\_max\_backlog = 300000, number of unprocessed input packets before kernel starts dropping them, default 300  
net.ipv4.conf.all.arp\_filter=1, default=0  
DCM: Acronym for "Dual-Chip Module" (one dual-core processor chip + one L3-cache chip)

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## Notes/Tuning Information (Continued)

### Operating System Notes (Continued)

SMT: Acronym for "Simultaneous Multi-Threading". A processor technology that allows the simultaneous execution of - multiple thread contexts within a single processor core. (Enabled by default)

### HTTP Software Notes

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/

CGI\_UID=root, userid for cgi scripts; default: 0

CGI\_GID=root, groupid for cgi scripts; default: 0

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 1

net.tux.noid = 1, suppress the Server id string, default 0

### Client Notes

./configure --enable-posix-threads

ulimit -n 1000000, sets number of open files, default 1024

net.ipv4.ip\_local\_port\_range = 1024 65535

### Other Notes

Other Notes

Tuning Disclosure: See above.

Dynamic API, flag descriptions, kernel config: IBM-20040617-RHCA.tgz

Dynamic API renamed to f.tux, CGI renamed to x.cgi