## SPECweb99 Result

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

**Red Hat: Red Hat Content Accelerator 3.2.18-2**

### SPECweb99 = 25000

| Test Date: | Jan-2005 |
| Tester: | IBM |

| 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:** 64KB+32KB (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

### 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.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_max_reuse_port = 1048576, maximum receive socket buffer size, default 131071
- 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)
### 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