

# SPECweb99 Result

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IBM: IBM eServer xSeries 370  
Red Hat: TUX 2.0

SPECweb99 = 3999

Test Date: Feb-2001  
Tester: IBM

Hardware Avail: Mar-2001 OS Avail: Feb-2001 HTTP Software Avail: Feb-2001 Sup. Software Avail: Feb-2001 SPEC license #: 11

## Hardware

Vendor: IBM  
Model: IBM eServer xSeries 370  
Processor: 900 MHz Pentium III Xeon  
# Processors: 2 cores, 2 chips, 1 core/chip  
Primary Cache: 16KBI+16KBD on chip  
Secondary Cache: 2MB  
Other Cache: none  
Memory: 16GB  
Disk Subsystem: 5 X 18GB (IBM 19K1638)  
Disk Controllers: Onboard Adaptec  
Other Hardware: 4 X ALTEON ACESwitch 180 GbE Switch

## Software

Operating System: RedHat Linux 7.0 with  
Threaded Web Server Add-On  
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: Feb-2001  
Tested By: IBM  
SPEC License: 11

## Network

# of Controllers: 4  
Network Controllers: Alteon ACEnic PCI  
# of Nets: 4  
Type of Nets: Gigabit Ethernet  
Network Speed: 1Gb/s  
MSL (sec): 30 (Non RFC1122)  
Time-Wait (sec): 60 (Non RFC1122)  
MTU: 1500

## Clients

# of Clients: 20  
Model: Intellistation Z Pro  
Processor: 450Mhz Pentium II Xeon  
# of Processors: 2  
Memory: 256MB  
Network Controller: Alteon ACEnic PCI  
Operating System: Windows 2000 Professional  
Compiler: Microsoft Visual C++ 6.0

## Notes/Tuning Information

### SUT Notes

1 disk for OS  
3 disk software RAID0, using 2MB chunk size, for web pages  
1 disk for logs

### Operating System Notes

Tuning parameters:  
- net.ipv4.ip\_forward=1, default 0  
- net.ipv4.conf.all.rp\_filter = 1, enables source route verification, default 0  
- net.ipv4.tcp\_timestamps = 0, turns TCP timestamp support off, default 1  
- net.ipv4.tcp\_max\_tw\_buckets = 2000000, sets TCP time-wait buckets pool size, default 180000  
- net.core.rmem\_max = 10000000, maximum receive socket buffer size, default 65535  
- net.core.rmem\_default = 10000000, default receive socket buffer size, default 65535  
- net.core.wmem\_max = 10000000, maximum send socket buffer size, default 65535  
- net.core.wmem\_default = 10000000, default send socket buffer size, default 65535  
- net.core.optmem\_max = 10000000, default 10240  
- net.core.hot\_list\_length = 10000, maximum number of skb-heads to be cached, default 128  
- net.ipv4.tcp\_rmem = 3000000 30000000 30000000, maximum TCP read-buffer space allocatable, default 4096 87380 174760  
- net.ipv4.tcp\_wmem = 30000000 30000000 30000000, maximum TCP write-buffer space allocatable, default 4096 16384 131072  
- net.ipv4.ip\_nonlocal\_bind = 1, allow nonlocal IP addresses, default 0  
Alteon NIC settings in /usr/src/linux/drivers/net/acenic.c  
- tx\_coal\_tick = 300, default 400  
- rx\_coal\_tick = 300, default 120  
- max\_tx\_desc = 64, default 32  
- max\_rx\_desc = 32, default 16  
See config file for kernel build information

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## Notes/Tuning Information (Continued)

### HTTP Software Notes

TUX Configuration

- net.tux.threads = 2, sets number of TUX threads, default 2
- net.tux.logging = 1, turns on logging, default 0
- net.tux.mode\_allowed = 255, allowed file-permission bits, default 00004
- net.tux.mode\_forbidden = 2, forbidden file-permission bits, default 00000
- net.tux.max\_cached\_filesize = 100000000, maximum size of cached object, default 100000
- net.tux.serverport = 80

### HTTP API Notes

Tux API from Compaq-20010122-DL320-API.tar.gz