SPECweb99 Result

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Dell: PowerEdge 4600
Microsoft: IIS 5.0 and SWC 3.0

SPECweb99 = 4320

Test Date: Feb-2002
Tester: Dell

Hardware Avail:	Feb-2002	OS Avail:	Feb-2000	HTTP Software Avail:	May-2001	Sup. Software Avail:	Nov-2001	SPEC license #:	55

Hardware

Vendor:	Dell
Model:	PowerEdge 4600
Processor:	2.20 GHz Pentium Xeon
# Processors:	2 cores, 2 chips, 1 core/chip (Hyper-Threading enabled)
Primary Cache:	12KBI+8KBD on chip
Secondary Cache:	512KB ATC
Other Cache:	None
Memory:	8 GB
Disk Subsystem:	8 18GB 10KRPM drives
Disk Controllers:	Onboard Adaptec 7899
Other Hardware:	4 Dell PowerConnect 5012, 4 Nortel ACEswitch 180

Software

Operating System:	Windows 2000 Advanced Server
File System:	NTFS
Other Software:	SP2, Q298896, Intel 3.1 driver

HTTP Software

Vendor:	Microsoft
HTTP Software:	IIS 5.0 and SWC 3.0
API:	TWC 3.0
Server Cache:	None
Log Mode:	Binary CLF

Test Sponsor

Test Date:	Feb-2002
Tested By:	Dell
SPEC License:	55

Network

# of Controllers:	4
Network Controllers:	Intel PRO/1000 XT
# 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:	3Com 3C985B-SX
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 file set.

Operating System Notes

Tuning parameters:
- AFD/Parameters/TransmitWorker=32, adjusts system default thread, default 16.
- Control/FileSystem/NtfsDisableLastAccessUpdate=1, prevents updating LastAccess time stamp on NTFS directories.
- Control/Session Manager/Memory Management/LargeSystemCache=0, limits system cache, default 1.
- Control/Session Manager/Memory Management/SystemPages=0xffffffff, sets system pages.
- Tcpip/Parameters/DisableLargeSendOffload=0, enable large sends for TCP/IP.
- Tcpip/Parameters/MaxFreeTWTcbs=1098000, sets maximum number of TIME_WAIT tcbs to 1,098,000.
- Tcpip/Parameters/MaxHashTableSize=0x10000, sets TCB hash table size to 65,536 entries, default 512.
- Tcpip/Parameters/MaxSendSegments=0x1000, max TCP segments sent consecutively to a destination, default 64.
- Tcpip/Parameters/MaxUserPort=0xfffe, sets maximum open ports to 65534.
- Tcpip/Parameters/NumTcbTablePartitions=32, sets number of independent TCB table segments, default 4.
- Tcpip/Parameters/TcpTimedWaitDelay=60, sets TIME_WAIT parameter to 60 seconds (non-RFC 1122), default is 240.
- Tcpip/Parameters/TcpWindowSize=65535, sets TCP send/receive window size, default 8192.

3 NIC IRQs bound to CPU 1,2,3; 4th NIC IRQ across CPU1,2,3
Intel NIC settings:
- NumTxDescriptors=4096, number of descriptors to send packets, default 256.
- TcpSegmentation=1, enables TCP segmentation offload, default 0.
- NumCoalesceBuffers=768, number of coalesce buffers for transmit acceleration, default 128.
- FlowControl=0, disables flow control, default 1.
- ChecksumRxTcp=1, offloads RX checksums to NIC, default 0.

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Notes/Tuning Information (Continued)

HTTP Software Notes

- SWC/Parameters/LogDrive=D, puts log file on D: drive.
- SWC/Parameters/LogFileInitialSize=0xffffffff, sets initial log file size to 4 gigabytes.
- SWC/Parameters/VirtualRootName=spec99, sets virtual directory name to spec99.
- SWC/Parameters/VirtualRootPath=F:wwwroot99, sets physical path where files are located.
- SWC/Parameters/SmallCachingThreshold=50, max size for small files (bytes), default system-dependent.
- SWC/Parameters/LargeCachingThreshold=1200000, max size for cached files (bytes), default system-dependent.
- SWC/Parameters/SmallBufferSize=0x3a, memory for caching small files (MB), default system-dependent.
- SWC/Parameters/LargeBufferSize=0x1b58, memory for caching large files (MB), default system-dependent.
- SWC/Parameters/SwcLockedMemorySize=0x6c, size of locked memory for SWC ops (MB), default system-dependent.
- TWC CAD buffers=1024, default not set.
- CGI-Gateway buffers=64, default not set.

Client Notes

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

Other Notes

Tuning Disclosure: See above
Dynamic API: Dell-20001212-TWC.zip