# SPEC® CINT2006 Result

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## Fujitsu Siemens Computers

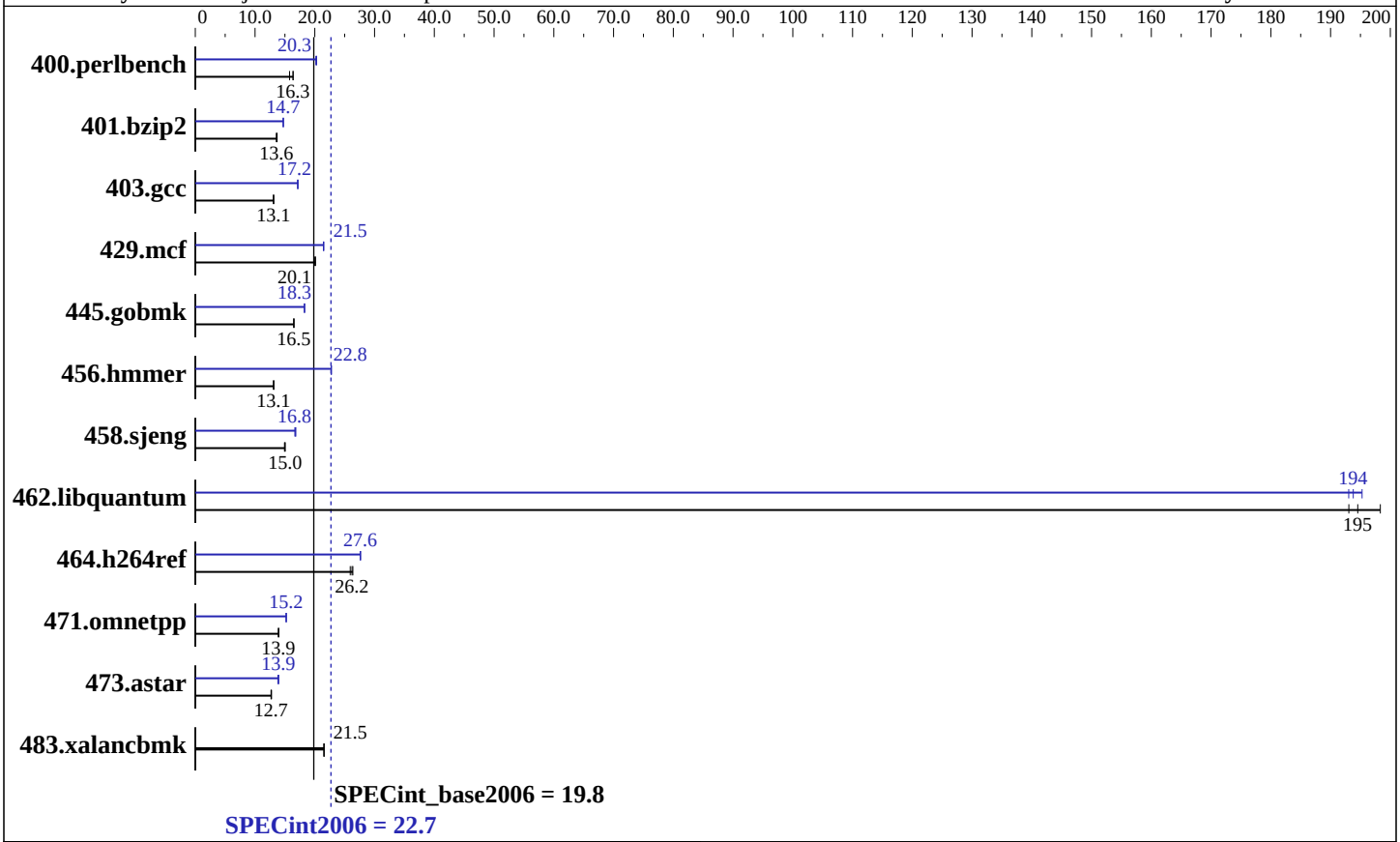
PRIMERGY RX200 S4, Intel Xeon E5420, 2.50 GHz

SPECint®2006 = 22.7

SPECint_base2006 = 19.8

**CPU2006 license:** 22
**Test sponsor:** Fujitsu Siemens Computers
**Tested by:** Fujitsu Siemens Computers

**Test date:** May-2008
**Hardware Availability:** Dec-2007
**Software Availability:** Nov-2007




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E5420 |
| CPU Characteristics: | 1333 MHz system bus |
| CPU MHz: | 2500 |
| FPU: | Integrated |
| CPU(s) enabled: | 8 cores, 2 chips, 4 cores/chip |
| CPU(s) orderable: | 1,2 chips |
| Primary Cache: | 32 KB I + 32 KB D on chip per core |
| Secondary Cache: | 12 MB I+D on chip per chip, 6 MB shared / 2 cores |
| L3 Cache: | None |
| Other Cache: | None |
| Memory: | 16 GB (8x2 GB PC2-5300F, 2 rank, CL 5-5-5, ECC) |
| Disk Subsystem: | 1x SAS, 73 GB, 15000 rpm |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | SUSE Linux Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smp |
| Compiler: | Intel C++ Compiler for Linux32 and Linux64, Version 10.1, Build 20070913 |
| Auto Parallel: | Yes |
| File System: | ext2 |
| System State: | Multi-User Run Level 3 |
| Base Pointers: | 32-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | MicroQuill SmartHeap Library, Version 8.1<br>binutils-2.17.50.0.5-0.1.x86_64 |

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## Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | 619 | 15.8 | **598** | **16.3** | 596 | 16.4 | 481 | 20.3 | **482** | **20.3** | 484 | 20.2 |
| 401.bzip2 | **709** | **13.6** | 705 | 13.7 | 711 | 13.6 | **655** | **14.7** | 655 | 14.7 | 656 | 14.7 |
| 403.gcc | 615 | 13.1 | **615** | **13.1** | 614 | 13.1 | 470 | 17.1 | 469 | 17.2 | **469** | **17.2** |
| 429.mcf | **454** | **20.1** | 455 | 20.0 | 454 | 20.1 | 424 | 21.5 | 425 | 21.4 | **425** | **21.5** |
| 445.gobmk | **636** | **16.5** | 636 | 16.5 | 636 | 16.5 | **574** | **18.3** | 574 | 18.3 | 574 | 18.3 |
| 456.hmmer | 711 | 13.1 | 712 | 13.1 | **712** | **13.1** | 410 | 22.8 | 410 | 22.8 | **410** | **22.8** |
| 458.sjeng | 805 | 15.0 | 811 | 14.9 | **805** | **15.0** | 720 | 16.8 | **721** | **16.8** | 726 | 16.7 |
| 462.libquantum | 107 | 193 | 104 | 198 | **107** | **195** | **107** | **194** | 107 | 193 | 106 | 195 |
| 464.h264ref | 854 | 25.9 | **844** | **26.2** | 839 | 26.4 | 801 | 27.6 | 800 | 27.7 | **801** | **27.6** |
| 471.omnetpp | 449 | 13.9 | 448 | 14.0 | **449** | **13.9** | **411** | **15.2** | 410 | 15.2 | 411 | 15.2 |
| 473.astar | 550 | 12.8 | **553** | **12.7** | 553 | 12.7 | 508 | 13.8 | 504 | 13.9 | **504** | **13.9** |
| 483.xalancbmk | 320 | 21.5 | 320 | 21.5 | **320** | **21.5** | 320 | 21.5 | 320 | 21.5 | **320** | **21.5** |

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
OMP_NUM_THREADS set to number of cores (default)

## Platform Notes

BIOS configuration:
Hardware Prefetch = Enable, Adjacent Sector Prefetch = Enable

## General Notes

All binaries were built with 32-bit Intel compiler except:
401.bzip2 and 456.hmmer in peak were built with 64-bit Intel
compiler by changing the path for include and library files.

For information about Fujitsu Siemens Computers please see:
http://www.fujitsu-siemens.com

## Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

## Base Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

## Base Optimization Flags

C benchmarks:
-fast -vec-guard-write -parallel -par-runtime-control

C++ benchmarks:
-xT -ipo -O3 -no-prec-div -Wl,-z,muldefs
-L/opt/SmartHeap_8.1/lib -lsmartheap

## Base Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):
icc

401.bzip2: /opt/intel/cce/10.1.008/bin/icc
-L/opt/intel/cce/10.1.008/lib
-I/opt/intel/cce/10.1.008/include

456.hmmer: /opt/intel/cce/10.1.008/bin/icc
-L/opt/intel/cce/10.1.008/lib
-I/opt/intel/cce/10.1.008/include

C++ benchmarks:
icpc

## Peak Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX

Continued on next page

## Peak Portability Flags (Continued)

483.xalancbmk: -DSPEC_CPU_LINUX

## Peak Optimization Flags

C benchmarks:

400.perlbench: -prof-gen(pass 1) -prof-use(pass 2) -fast -ansi-alias -prefetch

401.bzip2: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch -auto-ilp32

403.gcc: -fast -inline-calloc -opt-malloc-options=3

429.mcf: -fast -prefetch

445.gobmk: -prof-gen(pass 1) -prof-use(pass 2) -xT -O2 -ipo -no-prec-div -ansi-alias

456.hmmer: -fast -unroll2 -ansi-alias -opt-multi-version-aggressive -auto-ilp32

458.sjeng: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4

462.libquantum: -fast -unroll4 -Ob0 -prefetch -opt-streaming-stores always -vec-guard-write -opt-malloc-options=3 -parallel -par-runtime-control

464.h264ref: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp: -prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo -no-prec-div -ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib -lsmartheap

473.astar: -prof-gen(pass 1) -prof-use(pass 2) -xT -O3 -ipo -no-prec-div -ansi-alias -opt-ra-region-strategy=routine -Wl,-z,muldefs -L/opt/SmartHeap_8.1/lib -lsmartheap

483.xalancbmk: basepeak = yes

## Peak Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/Intel-ic10-ia32-intel64-linux-flags.20090713.01.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic10-ia32-intel64-linux-flags.20090713.01.xml`


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