



# SPEC® CINT2006 Result

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## Fujitsu Siemens Computers

### SPECint®\_rate2006 = 37.9

### PRIMERGY RX330 S1, AMD Opteron 2210, 1.8 GHz

### SPECint\_rate\_base2006 = 34.3

CPU2006 license: 22

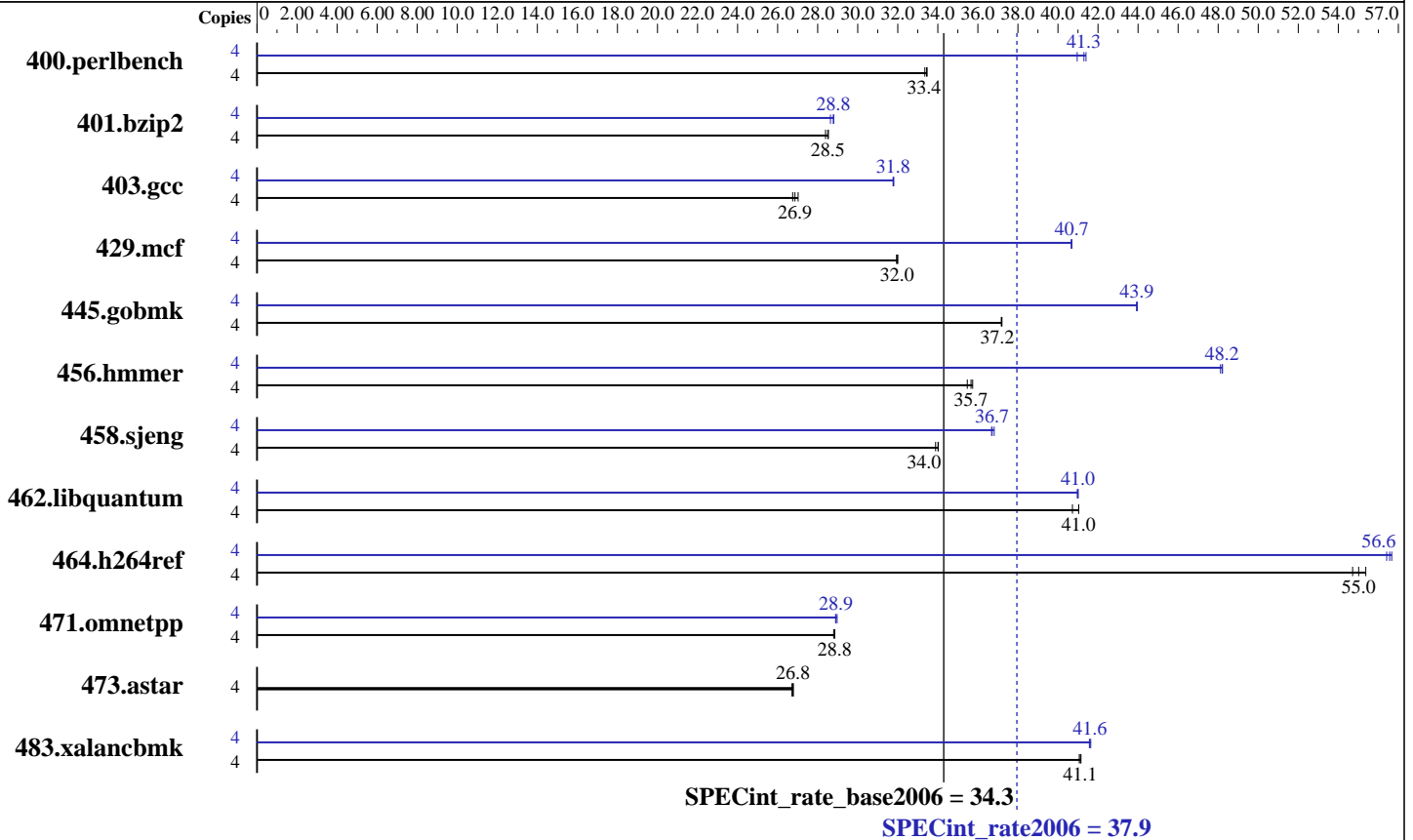
Test sponsor: Fujitsu Siemens Computers

Tested by: Fujitsu Siemens Computers

Test date: Apr-2007

Hardware Availability: May-2007

Software Availability: Mar-2007



### Hardware

CPU Name: AMD Opteron 2210  
 CPU Characteristics: 2210  
 CPU MHz: 1800  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip  
 CPU(s) orderable: 1,2 chips  
 Primary Cache: 64 KB I + 64 KB D on chip per core  
 Secondary Cache: 1 MB I+D on chip per core  
 L3 Cache: None  
 Other Cache: None  
 Memory: 32 GB (8x4 GB DDR2 PC2-5300P, 2 rank, CAS 5-5-5, with ECC)  
 Disk Subsystem: SAS (36GB 15.4 krpm)  
 Other Hardware: None

### Software

Operating System: SLES 10 for AMD64/EM64T  
 Compiler: QLogic PathScale Compiler Suite, - Release 3.0  
 Auto Parallel: No  
 File System: ReiserFS  
 System State: Multi-user run level 3  
 Base Pointers: 32/64-bit  
 Peak Pointers: 32/64-bit  
 Other Software: SmartHeap 8.1



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## Results Table

| Benchmark      | Base   |             |             |             |             |             |             | Peak   |             |             |             |             |             |             |
|----------------|--------|-------------|-------------|-------------|-------------|-------------|-------------|--------|-------------|-------------|-------------|-------------|-------------|-------------|
|                | Copies | Seconds     | Ratio       | Seconds     | Ratio       | Seconds     | Ratio       | Copies | Seconds     | Ratio       | Seconds     | Ratio       | Seconds     | Ratio       |
| 400.perlbench  | 4      | 1172        | 33.4        | 1168        | 33.5        | <u>1169</u> | <u>33.4</u> | 4      | 944         | 41.4        | <u>946</u>  | <u>41.3</u> | 954         | 41.0        |
| 401.bzip2      | 4      | 1353        | 28.5        | <u>1354</u> | <u>28.5</u> | 1360        | 28.4        | 4      | 1348        | 28.6        | 1340        | 28.8        | <u>1341</u> | <u>28.8</u> |
| 403.gcc        | 4      | 1191        | 27.0        | <u>1199</u> | <u>26.9</u> | 1204        | 26.8        | 4      | <u>1013</u> | <u>31.8</u> | 1014        | 31.8        | 1012        | 31.8        |
| 429.mcf        | 4      | 1140        | 32.0        | <u>1141</u> | <u>32.0</u> | 1142        | 31.9        | 4      | <u>897</u>  | <u>40.7</u> | 896         | 40.7        | 897         | 40.7        |
| 445.gobmk      | 4      | <u>1128</u> | <u>37.2</u> | 1128        | 37.2        | 1129        | 37.2        | 4      | <u>955</u>  | <u>43.9</u> | 955         | 43.9        | 954         | 44.0        |
| 456.hammer     | 4      | <u>1047</u> | <u>35.7</u> | 1052        | 35.5        | 1044        | 35.7        | 4      | <u>774</u>  | <u>48.2</u> | 776         | 48.1        | 774         | 48.2        |
| 458.sjeng      | 4      | 1428        | 33.9        | <u>1423</u> | <u>34.0</u> | 1422        | 34.0        | 4      | <u>1318</u> | <u>36.7</u> | 1315        | 36.8        | 1319        | 36.7        |
| 462.libquantum | 4      | 2035        | 40.7        | 2020        | 41.0        | <u>2020</u> | <u>41.0</u> | 4      | 2023        | 41.0        | 2021        | 41.0        | <u>2022</u> | <u>41.0</u> |
| 464.h264ref    | 4      | <u>1609</u> | <u>55.0</u> | 1599        | 55.4        | 1618        | 54.7        | 4      | 1562        | 56.7        | <u>1565</u> | <u>56.6</u> | 1569        | 56.4        |
| 471.omnetpp    | 4      | 867         | 28.8        | 868         | 28.8        | <u>867</u>  | <u>28.8</u> | 4      | <u>865</u>  | <u>28.9</u> | 863         | 29.0        | 865         | 28.9        |
| 473.astar      | 4      | 1048        | 26.8        | 1051        | 26.7        | <u>1049</u> | <u>26.8</u> | 4      | 1048        | 26.8        | 1051        | 26.7        | <u>1049</u> | <u>26.8</u> |
| 483.xalancbmk  | 4      | <u>671</u>  | <u>41.1</u> | 672         | 41.1        | 671         | 41.1        | 4      | <u>664</u>  | <u>41.6</u> | 663         | 41.6        | 664         | 41.6        |

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  
'/usr/bin/taskset' has been used to bind processes to CPUs

## General Notes

BIOS settings:  
Node Interleave = disabled

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## Base Compiler Invocation

C benchmarks:  
pathcc

C++ benchmarks:  
pathCC



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## Base Portability Flags

400.perlbench: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64  
401.bzip2: -DSPEC\_CPU\_LP64  
403.gcc: -DSPEC\_CPU\_LP64  
429.mcf: -DSPEC\_CPU\_LP64  
445.gobmk: -DSPEC\_CPU\_LP64  
456.hmmer: -DSPEC\_CPU\_LP64  
458.sjeng: -DSPEC\_CPU\_LP64  
462.libquantum: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX  
464.h264ref: -DSPEC\_CPU\_LP64  
483.xalancbmk: -DSPEC\_CPU\_LINUX

## Base Optimization Flags

C benchmarks:

-Ofast -OPT:malloc\_alg=1

C++ benchmarks:

-Ofast -m32 -L/opt/SmartHeap\_8.1/lib -lsmartheap

## Base Other Flags

C benchmarks:

-IPA:max\_jobs=4

C++ benchmarks:

-IPA:max\_jobs=4

## Peak Compiler Invocation

C benchmarks:

pathcc

C++ benchmarks:

pathCC

## Peak Portability Flags

400.perlbench: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX\_X64  
401.bzip2: -DSPEC\_CPU\_LP64  
445.gobmk: -DSPEC\_CPU\_LP64  
456.hmmer: -DSPEC\_CPU\_LP64

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## Peak Portability Flags (Continued)

458.sjeng: -DSPEC\_CPU\_LP64  
 462.libquantum: -DSPEC\_CPU\_LP64 -DSPEC\_CPU\_LINUX  
 464.h264ref: -DSPEC\_CPU\_LP64  
 483.xalancbmk: -DSPEC\_CPU\_LINUX

## Peak Optimization Flags

C benchmarks:

400.perlbench: -fb\_create fbdata(pass 1) -fb\_opt fbdata(pass 2) -Ofast  
 -LNO:opt=0

401.bzip2: -O3 -LNO:ou\_prod\_max=10 -OPT:Ofast -OPT:alias=disjoint

403.gcc: -fb\_create fbdata(pass 1) -fb\_opt fbdata(pass 2) -m32 -O3  
 -OPT:Ofast

429.mcf: -m32 -O3 -ipa -L/opt/SmartHeap\_8.1/lib -lsmartheap

445.gobmk: -fb\_create fbdata(pass 1) -fb\_opt fbdata(pass 2) -O3  
 -OPT:alias=disjoint -LNO:simd=0 -LNO:minvariant=off  
 -WOPT:retype\_expr=on

456.hmmer: -O2 -OPT:alias=disjoint -OPT:malloc\_alg=1 -CG:cflow=0

458.sjeng: -fb\_create fbdata(pass 1) -fb\_opt fbdata(pass 2) -O3  
 -IPA:plimit=50000 -IPA:pu\_reorder=2

462.libquantum: -O3 -ipa -CG:local\_fwd\_sched=on -IPA:space=1000

464.h264ref: -fb\_create fbdata(pass 1) -fb\_opt fbdata(pass 2) -O3  
 -IPA:plimit=20000 -OPT:alias=disjoint -LNO:prefetch=0

C++ benchmarks:

471.omnetpp: -Ofast -CG:gcm=off -m32  
 -L/opt/SmartHeap\_8.1/lib -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: -Ofast -m32 -OPT:unroll\_times\_max=8  
 -L/opt/SmartHeap\_8.1/lib -lsmartheap



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## Peak Other Flags

C benchmarks:

-IPA:max\_jobs=4

C++ benchmarks:

-IPA:max\_jobs=4

The flags file that was used to format this result can be browsed at

[http://www.spec.org/cpu2006/flags/CPU2006\\_flags.20090714.31.html](http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.31.html)

You can also download the XML flags source by saving the following link:

[http://www.spec.org/cpu2006/flags/CPU2006\\_flags.20090714.31.xml](http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.31.xml)

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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