



# SPEC<sup>®</sup> CINT2006 Result

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## Fujitsu Siemens Computers

### SPECint<sup>®</sup>\_rate2006 = 24.0

PRIMERGY RX330 S1, AMD Opteron 2216, 2.4 GHz

### SPECint\_rate\_base2006 = 21.6

CPU2006 license: 22

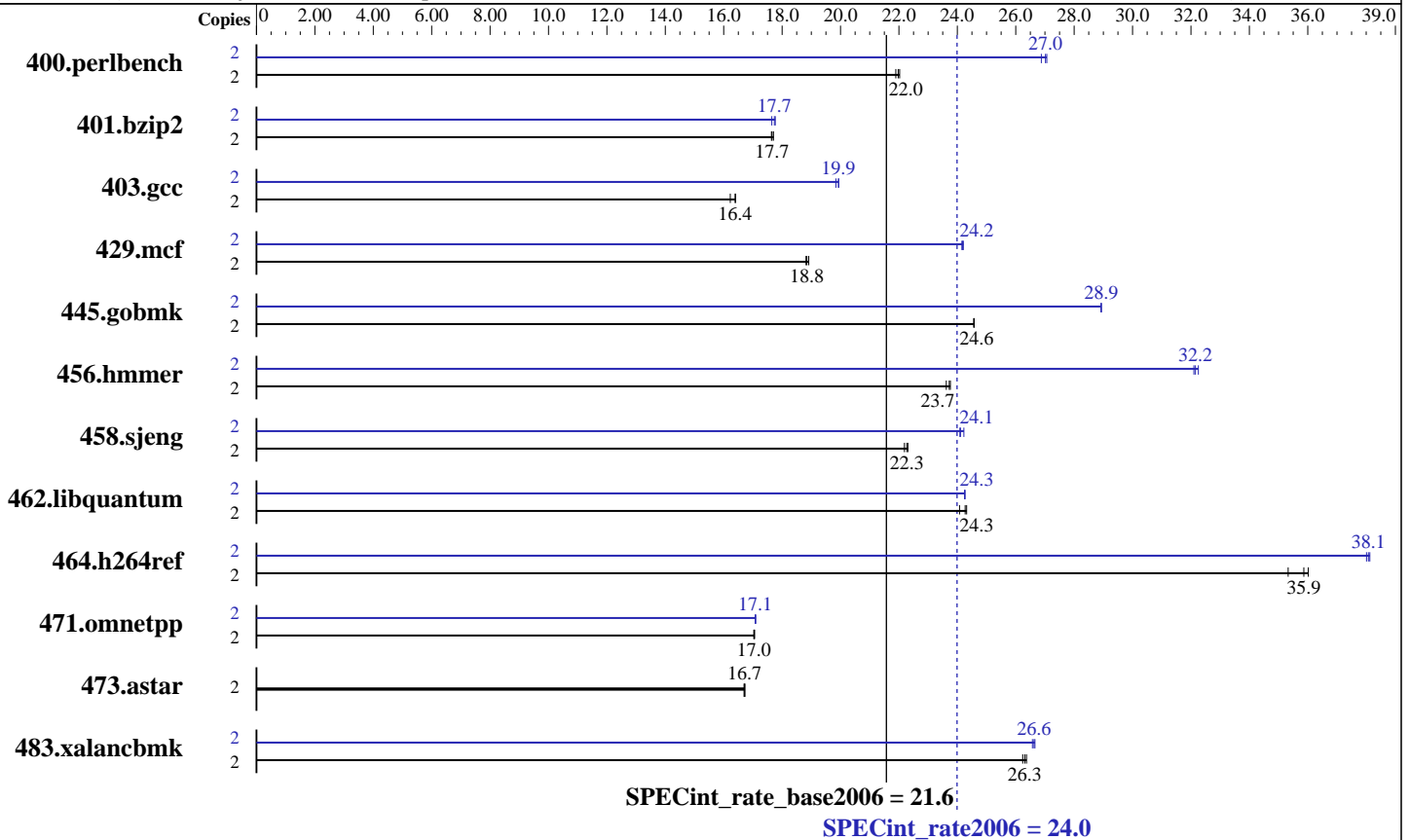
Test sponsor: Fujitsu Siemens Computers

Tested by: Fujitsu Siemens Computers

Test date: Apr-2007

Hardware Availability: May-2007

Software Availability: Mar-2007



### Hardware

CPU Name: AMD Opteron 2216  
 CPU Characteristics: 2216  
 CPU MHz: 2400  
 FPU: Integrated  
 CPU(s) enabled: 2 cores, 1 chip, 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	2	893	21.9	887	22.0	<b>889</b>	<b>22.0</b>	2	722	27.1	<b>723</b>	<b>27.0</b>	727	26.9
401.bzip2	2	1090	17.7	<b>1093</b>	<b>17.7</b>	1094	17.6	2	1094	17.6	1086	17.8	<b>1088</b>	<b>17.7</b>
403.gcc	2	981	16.4	<b>982</b>	<b>16.4</b>	992	16.2	2	<b>808</b>	<b>19.9</b>	811	19.8	808	19.9
429.mcf	2	964	18.9	<b>968</b>	<b>18.8</b>	969	18.8	2	<b>754</b>	<b>24.2</b>	754	24.2	755	24.2
445.gobmk	2	854	24.6	<b>854</b>	<b>24.6</b>	854	24.6	2	<b>725</b>	<b>28.9</b>	725	28.9	725	28.9
456.hammer	2	785	23.8	790	23.6	<b>787</b>	<b>23.7</b>	2	579	32.3	<b>580</b>	<b>32.2</b>	581	32.1
458.sjeng	2	1091	22.2	1085	22.3	<b>1087</b>	<b>22.3</b>	2	999	24.2	<b>1004</b>	<b>24.1</b>	1005	24.1
462.libquantum	2	1721	24.1	<b>1708</b>	<b>24.3</b>	1704	24.3	2	<b>1709</b>	<b>24.3</b>	1708	24.3	1709	24.3
464.h264ref	2	1229	36.0	<b>1234</b>	<b>35.9</b>	1253	35.3	2	<b>1162</b>	<b>38.1</b>	1161	38.1	1164	38.0
471.omnetpp	2	733	17.1	<b>734</b>	<b>17.0</b>	734	17.0	2	731	17.1	<b>732</b>	<b>17.1</b>	732	17.1
473.astar	2	839	16.7	<b>840</b>	<b>16.7</b>	841	16.7	2	839	16.7	<b>840</b>	<b>16.7</b>	841	16.7
483.xalancbmk	2	523	26.4	<b>524</b>	<b>26.3</b>	526	26.2	2	518	26.7	519	26.6	<b>518</b>	<b>26.6</b>

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 -lsmarheap  
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.hmmr: -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 -lsmarheap  
473.astar: basepeak = yes  
483.xalancbmk: -Ofast -m32 -OPT:unroll\_times\_max=8  
-L/opt/SmartHeap\_8.1/lib -lsmarheap



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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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