



# SPEC<sup>®</sup> CFP2006 Result

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## Fujitsu Siemens Computers

## SPECfp<sup>®</sup>\_rate2006 = 45.3

## CELSIUS V840, AMD Opteron 2218

## SPECfp\_rate\_base2006 = 44.1

CPU2006 license: 22

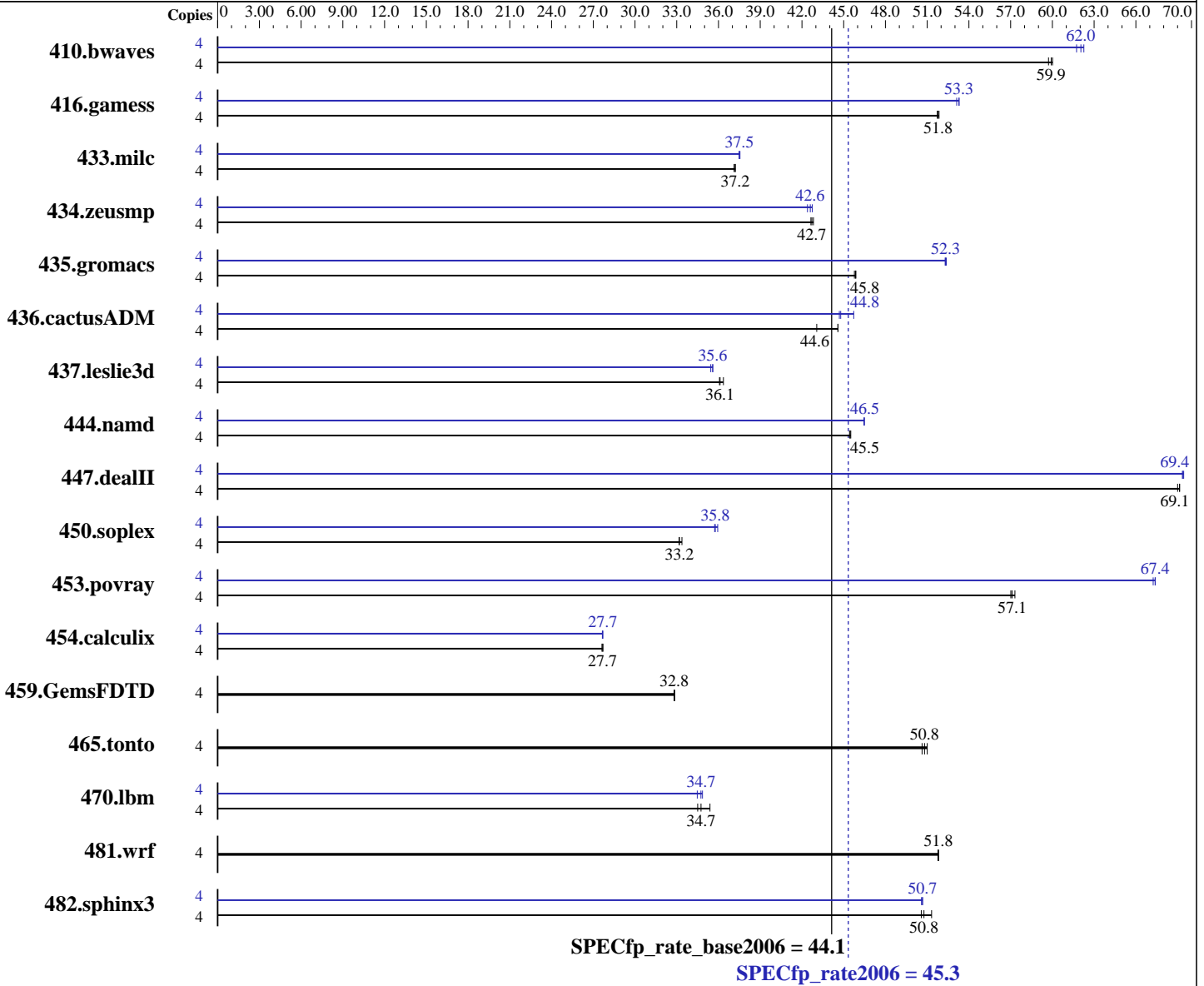
Test sponsor: Fujitsu Siemens Computers

Tested by: Fujitsu Siemens Computers

Test date: Jan-2007

Hardware Availability: Nov-2006

Software Availability: Aug-2006



### Hardware

CPU Name: AMD Opteron 2218  
 CPU Characteristics: Dual Core, 2.6 GHz, 2 MB L2-cache  
 CPU MHz: 2600  
 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

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### Software

Operating System: SLES 10 for AMD64/EM64T  
 Compiler: QLogic Pathscale Compiler Suite 2.5  
 Auto Parallel: No  
 File System: ext3  
 System State: Multi-User SuSE Run Level 3  
 Base Pointers: 64-bit  
 Peak Pointers: 64-bit  
 Other Software: --



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L3 Cache: None  
 Other Cache: None  
 Memory: 16 GB (8x2GB DDR2-667 CL5 dual rank ECC DIMMs registered)  
 Disk Subsystem: SATA II, 80 GB  
 Other Hardware: None

### Results Table

Benchmark	Base								Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
410.bwaves	4	<b>907</b>	<b>59.9</b>	906	60.0	910	59.7	4	<b>876</b>	<b>62.0</b>	873	62.3	880	61.7		
416.gamess	4	1514	51.7	<b>1512</b>	<b>51.8</b>	1510	51.9	4	1474	53.1	1470	53.3	<b>1470</b>	<b>53.3</b>		
433.milc	4	989	37.1	987	37.2	<b>987</b>	<b>37.2</b>	4	978	37.5	980	37.5	<b>979</b>	<b>37.5</b>		
434.zeusmp	4	850	42.8	<b>852</b>	<b>42.7</b>	854	42.6	4	<b>855</b>	<b>42.6</b>	859	42.4	852	42.7		
435.gromacs	4	<b>623</b>	<b>45.8</b>	623	45.9	624	45.8	4	<b>546</b>	<b>52.3</b>	546	52.3	545	52.4		
436.cactusADM	4	<b>1072</b>	<b>44.6</b>	1110	43.1	1072	44.6	4	1070	44.7	<b>1067</b>	<b>44.8</b>	1045	45.7		
437.leslie3d	4	<b>1041</b>	<b>36.1</b>	1034	36.4	1042	36.1	4	<b>1057</b>	<b>35.6</b>	1056	35.6	1061	35.4		
444.namd	4	<b>706</b>	<b>45.5</b>	705	45.5	706	45.4	4	690	46.5	<b>690</b>	<b>46.5</b>	690	46.5		
447.dealII	4	663	69.0	662	69.1	<b>662</b>	<b>69.1</b>	4	660	69.3	<b>660</b>	<b>69.4</b>	659	69.4		
450.soplex	4	1000	33.4	<b>1005</b>	<b>33.2</b>	1006	33.2	4	928	35.9	934	35.7	<b>933</b>	<b>35.8</b>		
453.povray	4	<b>373</b>	<b>57.1</b>	371	57.3	373	57.0	4	<b>316</b>	<b>67.4</b>	316	67.4	316	67.2		
454.calculix	4	1192	27.7	1195	27.6	<b>1192</b>	<b>27.7</b>	4	1192	27.7	<b>1192</b>	<b>27.7</b>	1193	27.7		
459.GemsFDTD	4	1292	32.8	1293	32.8	<b>1293</b>	<b>32.8</b>	4	1292	32.8	1293	32.8	<b>1293</b>	<b>32.8</b>		
465.tonto	4	772	51.0	<b>775</b>	<b>50.8</b>	777	50.6	4	772	51.0	<b>775</b>	<b>50.8</b>	777	50.6		
470.lbm	4	1553	35.4	<b>1582</b>	<b>34.7</b>	1593	34.5	4	1577	34.8	<b>1582</b>	<b>34.7</b>	1594	34.5		
481.wrf	4	862	51.8	863	51.8	<b>863</b>	<b>51.8</b>	4	862	51.8	863	51.8	<b>863</b>	<b>51.8</b>		
482.sphinx3	4	1519	51.3	1541	50.6	<b>1536</b>	<b>50.8</b>	4	1539	50.7	<b>1539</b>	<b>50.7</b>	1541	50.6		

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

### Operating System Notes

powersave -f is applied to set CPU to maximum frequency prior to run  
 stacksize is set to unlimited prior to run  
 taskset utility used to bind CPU(s) to processes  
 numactl utility used to assign to each chip its local memory

### General Notes

Binaries are generated on an Opteron-based system running Suse 9.3.

BIOS default settings with Node memory interleave disabled, SRAT enabled

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## General Notes (Continued)

For information about Fujitsu Siemens Computers in your country please see:  
<http://www.fujitsu-siemens.com/countries>

## Base Compiler Invocation

C benchmarks:  
pathcc

C++ benchmarks:  
pathCC

Fortran benchmarks:  
pathf95

Benchmarks using both Fortran and C:  
pathcc pathf95

## Base Portability Flags

```

410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64
436.cactusADM: -DSPEC_CPU_LP64 -fno-second-underscore
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64 -DSPEC_CPU_TABLE_WORKAROUND
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX -fno-second-underscore
482.sphinx3: -DSPEC_CPU_LP64

```

## Base Optimization Flags

C benchmarks:  
-Ofast

C++ benchmarks:  
-Ofast

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## Base Optimization Flags (Continued)

Fortran benchmarks:

-Ofast

Benchmarks using both Fortran and C:

-Ofast

## Peak Compiler Invocation

C benchmarks:

pathcc

C++ benchmarks:

pathCC

Fortran benchmarks:

pathf95

Benchmarks using both Fortran and C:

pathcc pathf95

## Peak Portability Flags

Same as Base Portability Flags

## Peak Optimization Flags

C benchmarks:

433.milc: -fb\_create fbdata(pass 1) -fb\_opt fbdata(pass 2) -Ofast

470.lbm: Same as 433.milc

482.sphinx3: -fb\_create fbdata(pass 1) -fb\_opt fbdata(pass 2) -O3

-LNO:sclrze=off -LNO:prefetch=1

C++ benchmarks:

444.namd: -fb\_create fbdata(pass 1) -fb\_opt fbdata(pass 2) -Ofast

447.dealIII: -Ofast -fno-exceptions

450.soplex: -O3 -OPT:IEEE\_arith=3 -CG:load\_exe=0 -CG:movnti=1

-LNO:minvariant=off -fno-exceptions

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## Peak Optimization Flags (Continued)

453.povray: -fb\_create fbdata(pass 1) -fb\_opt fbdata(pass 2) -Ofast  
-fno-fast-math

Fortran benchmarks:

410.bwaves: -fb\_create fbdata(pass 1) -fb\_opt fbdata(pass 2) -O3  
-OPT:Ofast -OPT:IEEE\_arith=3 -LNO:blocking=off  
-LNO:ignore\_feedback=off

416.gamess: -fb\_create fbdata(pass 1) -fb\_opt fbdata(pass 2) -Ofast

434.zeusmp: -O3 -CG:load\_exe=0

437.leslie3d: -O3 -OPT:Ofast

459.GemsFDTD: basepeak = yes

465.tonto: basepeak = yes

Benchmarks using both Fortran and C:

435.gromacs: -O3 -OPT:rsqrt=2 -OPT:ro=3

436.cactusADM: -fb\_create fbdata(pass 1) -fb\_opt fbdata(pass 2) -O3  
-LNO:prefetch\_ahead=5 -LNO:ou\_prod\_max=10 -LNO:full\_unroll=5  
-ipa

454.calculix: -Ofast

481.wrf: basepeak = yes

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

[http://www.spec.org/cpu2006/flags/CPU2006\\_flags.20090715.13.html](http://www.spec.org/cpu2006/flags/CPU2006_flags.20090715.13.html)

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

[http://www.spec.org/cpu2006/flags/CPU2006\\_flags.20090715.13.xml](http://www.spec.org/cpu2006/flags/CPU2006_flags.20090715.13.xml)

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

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