



# SPEC® CFP2006 Result

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## Fujitsu Siemens Computers

## SPECfp®\_rate2006 = 46.5

## CELSIUS V840, AMD Opteron 2220

## SPECfp\_rate\_base2006 = 45.2

CPU2006 license: 22

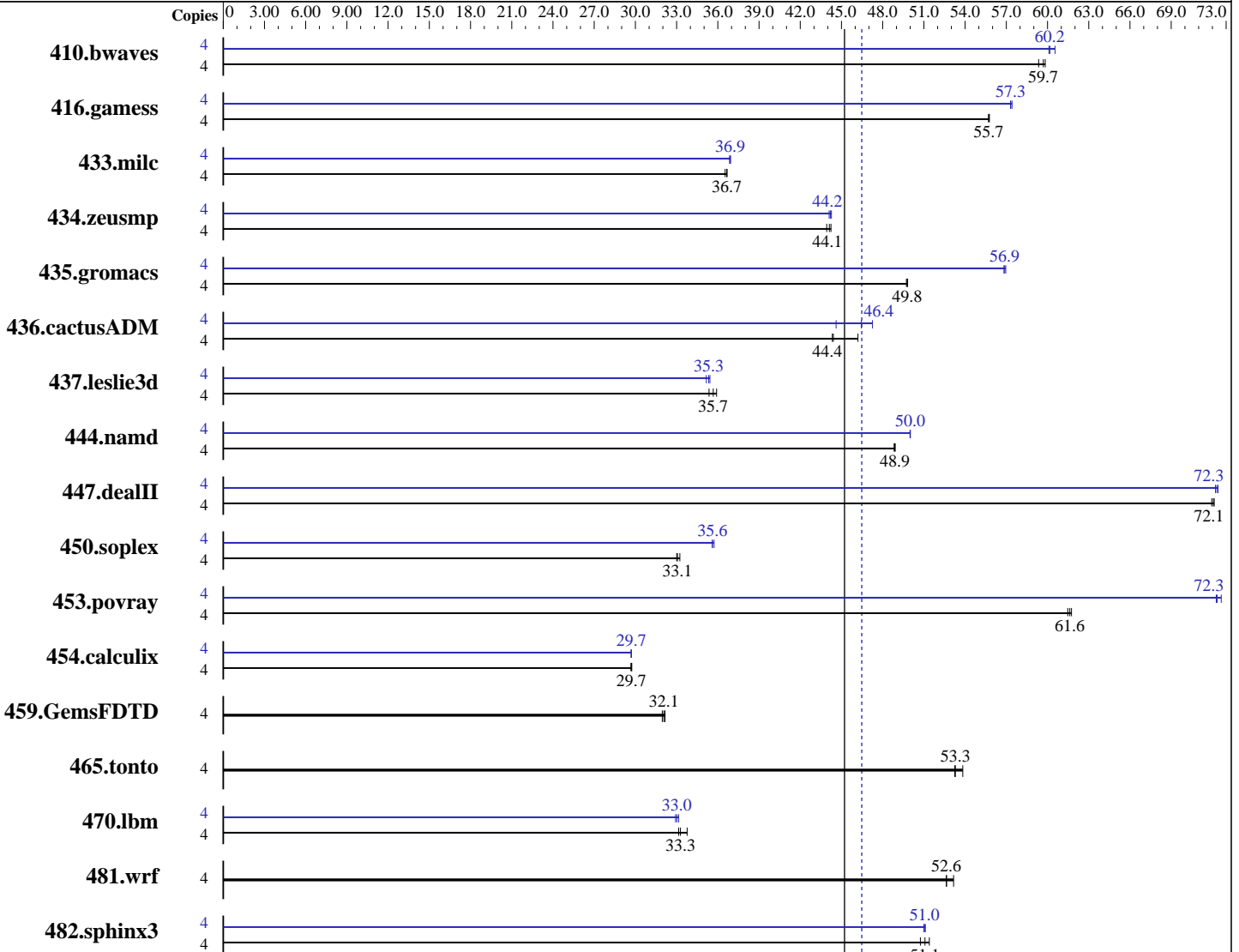
Test sponsor: Fujitsu Siemens Computers

Tested by: Fujitsu Siemens Computers

Test date: Feb-2007

Hardware Availability: Feb-2007

Software Availability: Aug-2006



SPECfp\_rate\_base2006 = 45.2

SPECfp\_rate2006 = 46.5

### Hardware

CPU Name: AMD Opteron 2220  
 CPU Characteristics: Dual Core, 2.8 GHz, 2 MB L2-cache  
 CPU MHz: 2800  
 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: None



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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>911</b>	<b>59.7</b>	909	59.8	916	59.4	4	905	60.1	898	60.5	<b>903</b>	<b>60.2</b>		
416.gamess	4	1404	55.8	<b>1406</b>	<b>55.7</b>	1406	55.7	4	1364	57.4	<b>1366</b>	<b>57.3</b>	1367	57.3		
433.milc	4	1005	36.5	1001	36.7	<b>1002</b>	<b>36.7</b>	4	994	36.9	<b>995</b>	<b>36.9</b>	996	36.9		
434.zeusmp	4	823	44.2	<b>825</b>	<b>44.1</b>	829	43.9	4	<b>824</b>	<b>44.2</b>	822	44.3	825	44.1		
435.gromacs	4	573	49.8	<b>574</b>	<b>49.8</b>	574	49.7	4	501	57.0	<b>502</b>	<b>56.9</b>	503	56.8		
436.cactusADM	4	<b>1076</b>	<b>44.4</b>	1078	44.3	1035	46.2	4	1011	47.3	<b>1029</b>	<b>46.4</b>	1071	44.6		
437.leslie3d	4	1047	35.9	1063	35.4	<b>1054</b>	<b>35.7</b>	4	1061	35.4	1069	35.2	<b>1064</b>	<b>35.3</b>		
444.namd	4	657	48.8	656	48.9	<b>656</b>	<b>48.9</b>	4	<b>641</b>	<b>50.0</b>	642	50.0	641	50.0		
447.dealII	4	634	72.1	636	71.9	<b>635</b>	<b>72.1</b>	4	634	72.2	<b>633</b>	<b>72.3</b>	632	72.4		
450.soplex	4	1011	33.0	1004	33.2	<b>1009</b>	<b>33.1</b>	4	934	35.7	<b>937</b>	<b>35.6</b>	937	35.6		
453.povray	4	346	61.5	345	61.7	<b>345</b>	<b>61.6</b>	4	293	72.6	294	72.3	<b>294</b>	<b>72.3</b>		
454.calculix	4	1110	29.7	<b>1111</b>	<b>29.7</b>	1112	29.7	4	1111	29.7	<b>1111</b>	<b>29.7</b>	1112	29.7		
459.GemsFDTD	4	1320	32.2	<b>1323</b>	<b>32.1</b>	1328	32.0	4	1320	32.2	<b>1323</b>	<b>32.1</b>	1328	32.0		
465.tonto	4	731	53.8	<b>739</b>	<b>53.3</b>	739	53.3	4	731	53.8	<b>739</b>	<b>53.3</b>	739	53.3		
470.lbm	4	1628	33.8	<b>1652</b>	<b>33.3</b>	1658	33.1	4	1658	33.2	<b>1664</b>	<b>33.0</b>	1669	32.9		
481.wrf	4	849	52.6	840	53.2	<b>849</b>	<b>52.6</b>	4	849	52.6	840	53.2	<b>849</b>	<b>52.6</b>		
482.sphinx3	4	1517	51.4	<b>1526</b>	<b>51.1</b>	1536	50.7	4	1525	51.1	1529	51.0	<b>1527</b>	<b>51.0</b>		

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.20090715.14.html](http://www.spec.org/cpu2006/flags/CPU2006_flags.20090715.14.html)

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

[http://www.spec.org/cpu2006/flags/CPU2006\\_flags.20090715.14.xml](http://www.spec.org/cpu2006/flags/CPU2006_flags.20090715.14.xml)

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Tested with SPEC CPU2006 v1.0.

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