



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

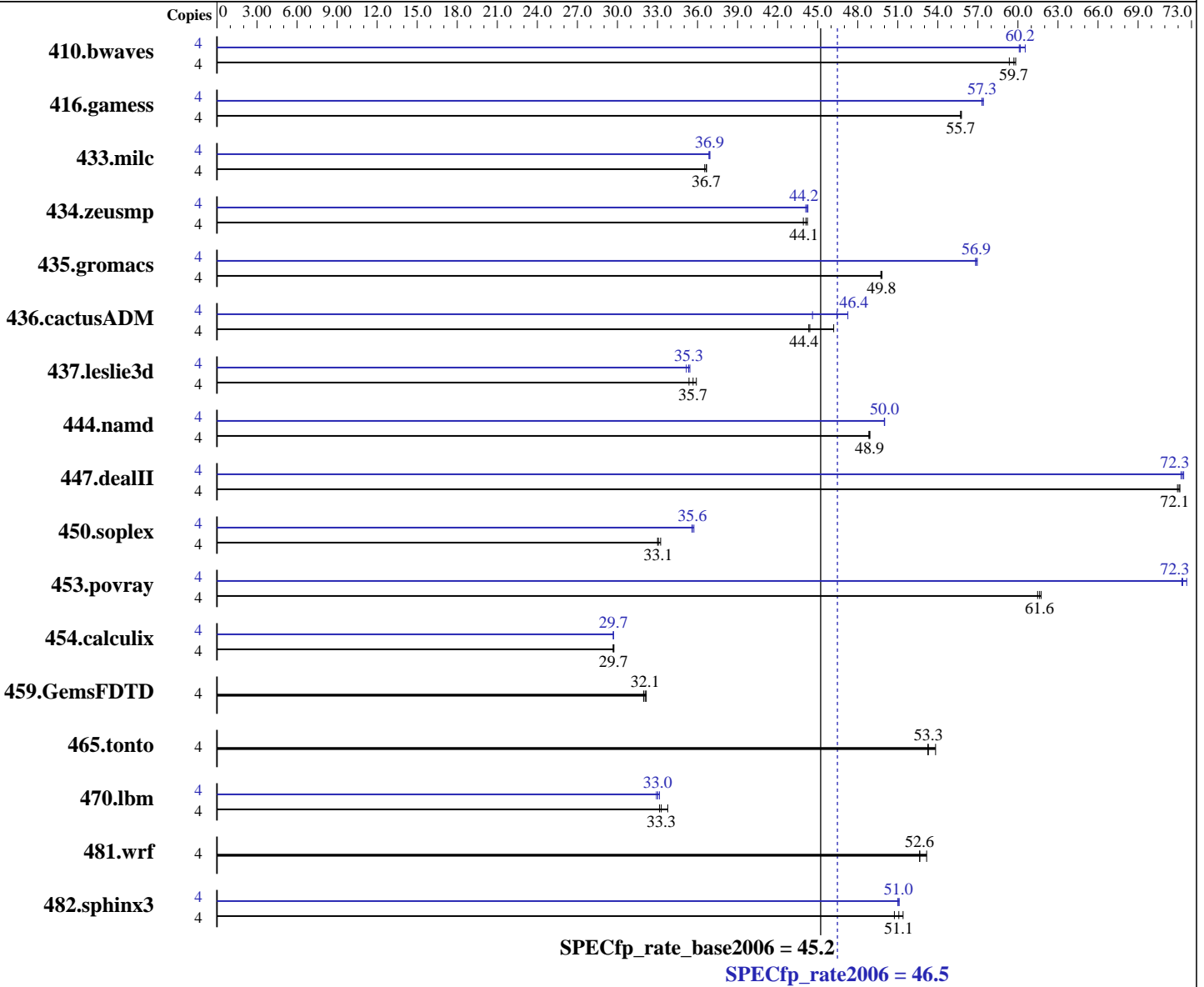
Test sponsor: Fujitsu Siemens Computers

Tested by: Fujitsu Siemens Computers

Test date: Feb-2007

Hardware Availability: Feb-2007

Software Availability: Aug-2006



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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Hardware (Continued)

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

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>

Compiler Invocation

C benchmarks:
pathcc

C++ benchmarks:
pathCC

Fortran benchmarks:
pathf95

Benchmarks using both Fortran and C:
pathcc pathf95

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 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.dealII: -Ofast -fno-exceptions

450.soplex: -O3 -OPT:IEEE_arith=3 -CG:load_exe=0 -CG:movnti=1
-LNO:minvariant=off -fno-exceptions

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:

Continued on next page



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Peak Optimization Flags (Continued)

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

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

http://www.spec.org/cpu2006/flags/CPU2006_flags.20090715.14.xml

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For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.0.
Report generated on Wed Jul 15 12:54:18 2009 by SPEC CPU2006 PS/PDF formatter v6323.