



SPEC[®] CFP2006 Result

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Supermicro

SPECfp[®]_rate2006 = 49.1

Motherboard H8DMR-82 AMD Opteron 2220

SPECfp_rate_base2006 = 46.3

CPU2006 license: 001176

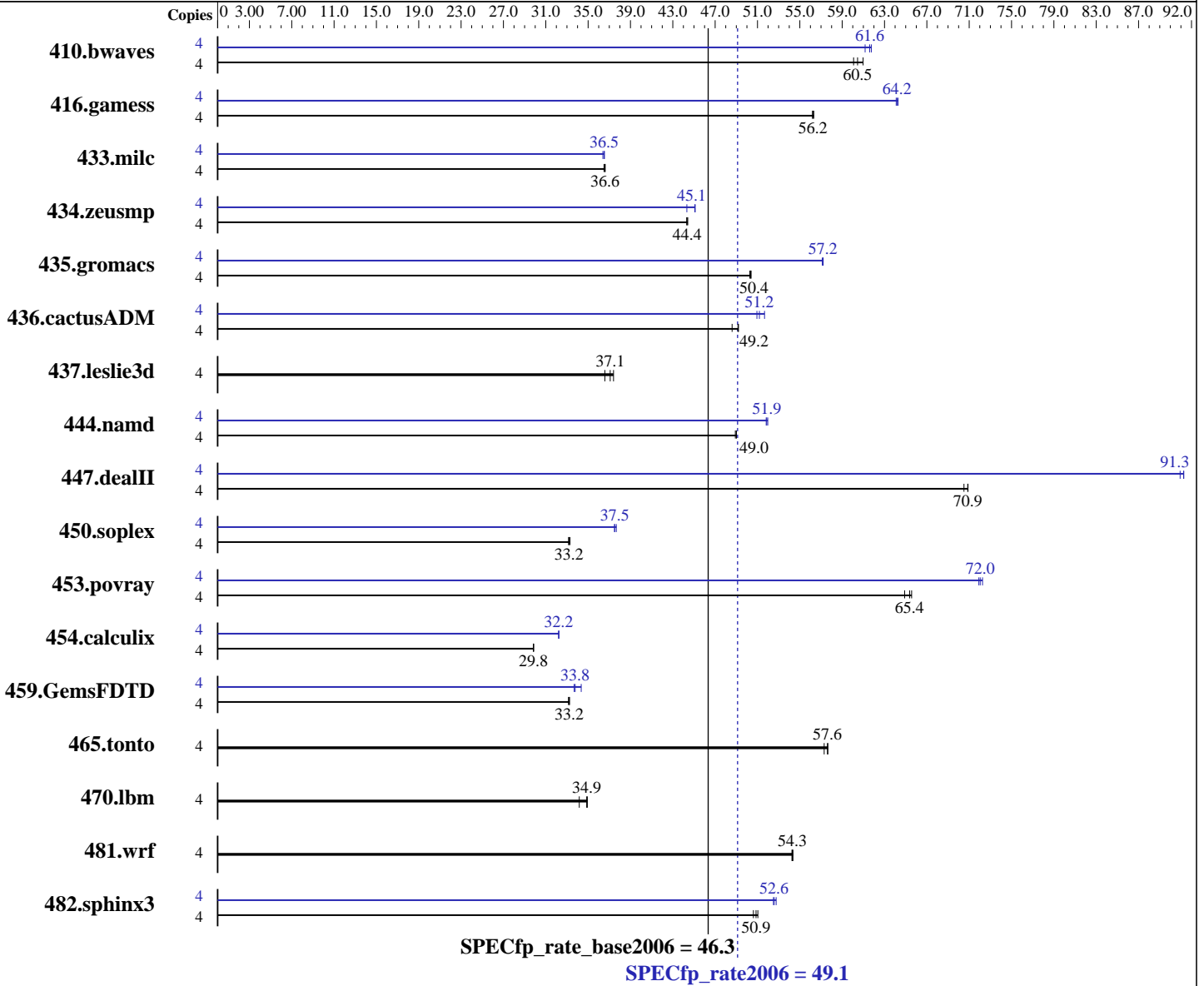
Test date: Sep-2007

Test sponsor: Supermicro

Hardware Availability: Oct-2006

Tested by: Supermicro

Software Availability: Apr-2007



Hardware

CPU Name: AMD Opteron 2220
 CPU Characteristics:
 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: SuSE Linux Enterprise Server 10 SP1 64-bit kernel
 Compiler: The Portland Group (PGI)
 PGI pgcc 7.1-0 C Compiler
 PGI pgCC 7.1-0 C++ Compiler
 PathScale Compiler Suite, Release 3.0
 Auto Parallel: No
 File System: ReiserFS
 System State: Multi-user, run level 2

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L3 Cache: None
Other Cache: None
Memory: 16 GB (8x2GB, PC2-5300 CL5 ECC Reg Dual Rank)
Disk Subsystem: SATA, 250 GB
Other Hardware: None

Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: SmartHeap 8.0 32-bit Library for Linux

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	892	61.0	899	60.5	905	60.1	4	889	61.2	880	61.8	882	61.6
416.gamess	4	1393	56.2	1391	56.3	1394	56.2	4	1220	64.2	1218	64.3	1222	64.1
433.milc	4	1006	36.5	1003	36.6	1004	36.6	4	1009	36.4	1006	36.5	1005	36.5
434.zeusmp	4	821	44.4	820	44.4	821	44.3	4	807	45.1	808	45.1	821	44.3
435.gromacs	4	568	50.3	567	50.4	567	50.4	4	499	57.2	500	57.1	499	57.2
436.cactusADM	4	984	48.6	972	49.2	971	49.2	4	925	51.7	938	50.9	934	51.2
437.leslie3d	4	1005	37.4	1014	37.1	1028	36.6	4	1005	37.4	1014	37.1	1028	36.6
444.namd	4	655	49.0	656	48.9	655	49.0	4	618	51.9	617	52.0	619	51.8
447.dealII	4	646	70.9	646	70.9	649	70.5	4	501	91.3	503	90.9	501	91.3
450.soplex	4	1006	33.2	1002	33.3	1005	33.2	4	886	37.7	890	37.5	889	37.5
453.povray	4	328	64.9	326	65.4	325	65.6	4	296	71.9	294	72.3	295	72.0
454.calculix	4	1106	29.8	1106	29.8	1105	29.9	4	1024	32.2	1024	32.2	1024	32.2
459.GemsFDTD	4	1277	33.2	1277	33.2	1281	33.1	4	1236	34.3	1260	33.7	1257	33.8
465.tonto	4	683	57.7	687	57.3	683	57.6	4	683	57.7	687	57.3	683	57.6
470.lbm	4	1609	34.2	1576	34.9	1574	34.9	4	1609	34.2	1576	34.9	1574	34.9
481.wrf	4	822	54.4	823	54.3	824	54.3	4	822	54.4	823	54.3	824	54.3
482.sphinx3	4	1540	50.6	1533	50.9	1528	51.0	4	1478	52.8	1485	52.5	1483	52.6

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

Operating System Notes

Environment stack size set to 'unlimited'
PGI_HUGE_PAGES set to 896.
Total number of huge pages available is 7168.

General Notes

Product description located as of
<http://www.supermicro.com/Aplus/motherboard/Opteron2000/MCP55/H8DMR-82.cfm>
taskset was used to bind processes to cores



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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
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

Fortran benchmarks:
-Ofast -OPT:malloc_alg=1

Benchmarks using both Fortran and C:
-Ofast -OPT:malloc_alg=1



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Peak Compiler Invocation

C benchmarks:
pathcc

C++ benchmarks:
pathCC

Fortran benchmarks:
pathf95

Benchmarks using both Fortran and C:
pathcc pathf95

Peak 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
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

Peak Optimization Flags

C benchmarks:

433.milc: -Ofast -CG:cflow=off -LNO:prefetch=1 -OPT:malloc_alg=1

470.lbm: basepeak = yes

482.sphinx3: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -O3
-OPT:Ofast -WOPT:aggstr=0 -m32

C++ benchmarks:

444.namd: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -Ofast
-fno-exceptions

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Peak Optimization Flags (Continued)

447.dealII: -Ofast -static -INLINE:aggressive=on -OPT:malloc_alg=1
-m32 -fno-exceptions

450.soplex: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -m32 -O3
-OPT:IEEE_arith=3 -CG:load_exe=0 -CG:movnti=1
-LNO:minvariant=off -LNO:prefetch=1 -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) -O2
-OPT:Ofast -OPT:ro=3 -OPT:unroll_size=256

434.zeusmp: -Ofast -CG:local_fwd_sched=on -LNO:blocking=off
-LNO:interchange=off -LNO:fu=10 -LNO:full_unroll_outer=on

437.leslie3d: basepeak = yes

459.GemsFDTD: -Ofast -LNO:fission=2 -LNO:prefetch=0

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=3 -LNO:prefetch_ahead=5 -LNO:ou_prod_max=10
-LNO:full_unroll=5 -ipa

454.calculix: -Ofast -LNO:simd=0 -WOPT:mem_opnds=on

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.20090714.06.html

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

http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.06.xml



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