

SPEC[®] CFP2006 Result

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Tyan

SPECfp[®]_rate2006 = 48.1

Thunder n4250 (S4985) Opteron 2220

SPECfp_rate_base2006 = 45.6

Test sponsor:

AMD

Tested by:

AMD

CPU2006 license #:

49

Test date:

Jul-2006

Hardware Availability: Feb-2007

Software Availability: Aug-2006



SPECfp_rate_base2006 = 45.6

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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: 1,2,4 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

Continued on next page

Software

Operating System: SuSE SLES9SP3 64-bit kernel
 Compiler: QLogic PathScale
 Compiler Suite, Release 2.5
 SmartHeap 8.0 32 bit Library for Linux
 Auto Parallel: No
 File System: Linux/ext3
 System State: Multi-user, run level 3
 Base Pointers: 64-bit
 Peak Pointers: 32/64-bit

Continued on next page

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Hardware (Continued)

Other Cache: None
 Memory: 8 GB (8x1GB, DDR2-667 CL4 ECC Reg Dual Rank)
 Disk Subsystem: SATA, 74 GB
 Other Hardware: None

Software (Continued)

Other Software: None

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	1124	48.4	918	59.2	962	56.5	4	947	57.4	1084	50.1	900	60.4
416.gamess	4	1401	55.9	1400	55.9	1399	56.0	4	1223	64.0	1223	64.1	1223	64.0
433.milc	4	1002	36.6	1006	36.5	1004	36.6	4	994	36.9	996	36.9	1001	36.7
434.zeusmp	4	823	44.2	823	44.2	822	44.3	4	818	44.5	818	44.5	815	44.7
435.gromacs	4	570	50.1	570	50.1	569	50.2	4	499	57.2	499	57.3	498	57.3
436.cactusADM	4	1015	47.1	1017	47.0	1021	46.8	4	1018	46.9	1007	47.5	1010	47.3
437.leslie3d	4	1038	36.2	1041	36.1	1039	36.2	4	1038	36.2	1041	36.1	1039	36.2
444.namd	4	654	49.0	654	49.0	654	49.0	4	641	50.1	641	50.0	641	50.1
447.dealII	4	632	72.4	631	72.5	630	72.7	4	524	87.3	525	87.2	525	87.2
450.soplex	4	1000	33.4	1000	33.4	999	33.4	4	877	38.0	891	37.4	876	38.1
453.povray	4	343	62.1	343	62.1	343	62.1	4	294	72.3	294	72.3	294	72.4
454.calculix	4	1108	29.8	1109	29.8	1109	29.8	4	1060	31.1	1059	31.2	1058	31.2
459.GemsFDTD	4	1278	33.2	1276	33.3	1293	32.8	4	1352	31.4	1241	34.2	1231	34.5
465.tonto	4	738	53.3	739	53.3	743	53.0	4	725	54.3	720	54.7	726	54.2
470.lbm	4	1592	34.5	1601	34.3	1607	34.2	4	1592	34.5	1601	34.3	1607	34.2
481.wrf	4	844	52.9	848	52.7	849	52.6	4	844	52.9	848	52.7	849	52.6
482.sphinx3	4	1495	52.2	1500	52.0	1502	51.9	4	1476	52.8	1480	52.7	1479	52.7

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

General Notes

taskset utility used to bind CPU(s) to processes

The tested system can be assembled using any SSI-MEB case and a Silverstone Zeus 650 watt ST65ZF ATX 12V Power Supply.

Submitted_by: "Paton, Michael" <michael.paton@amd.com>

Submitted: Mon Jan 22 23:18:03 2007

Submission: cpu2006-20070122-00302.sub

Compiler Invocation

C benchmarks:
 pathcc

Continued on next page

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Compiler Invocation (Continued)

C++ benchmarks:
pathCC

Fortran benchmarks:
pathf95

Benchmarks using both Fortran and C:
pathcc pathf95

Base Portability Flags

C benchmarks:
-DSPEC_CPU_LP64

C++ benchmarks (except as noted below):
-DSPEC_CPU_LP64

447.dealII: -DSPEC_CPU_TABLE_WORKAROUND -DSPEC_CPU_LP64

453.povray: -DSPEC_CPU_LP64

Fortran benchmarks:
-DSPEC_CPU_LP64

Benchmarks using both Fortran and C (except as noted below):
-DSPEC_CPU_LP64

436.cactusADM: -DSPEC_CPU_LP64 -fno-second-underscore

481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX -fno-second-underscore

Peak Portability Flags

C benchmarks (except as noted below):
-DSPEC_CPU_LP64

C++ benchmarks:

444.namd: -DSPEC_CPU_LP64

447.dealII: -DSPEC_CPU_TABLE_WORKAROUND

450.soplex: No flags used

453.povray: -DSPEC_CPU_LP64

Continued on next page

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Peak Portability Flags (Continued)

Fortran benchmarks (except as noted below):

-DSPEC_CPU_LP64

Benchmarks using both Fortran and C (except as noted below):

-DSPEC_CPU_LP64

436.cactusADM: -DSPEC_CPU_LP64 -fno-second-underscore

Base Optimization Flags

C benchmarks:

-Ofast

C++ benchmarks:

-Ofast

Fortran benchmarks:

-Ofast

Benchmarks using both Fortran and C:

-Ofast

Peak Optimization Flags

C benchmarks (except as noted below):

-Ofast -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2)

470.lbm: basepeak = yes

C++ benchmarks:

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

447.dealII: -Ofast -fno-exceptions -m32

450.soplex: -O3 -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2)
-fno-exceptions -CG:load_exe=0 -CG:movnti=1
-LNO:minvariant=off -m32 -OPT:IEEE_arith=3

453.povray: -Ofast -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2)
-fno-fast-math

Fortran benchmarks:

410.bwaves: -O3 -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2)
-LNO:blocking=off -LNO:ignore_feedback=off -OPT:IEEE_arith=3
-OPT:Ofast

Continued on next page

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Peak Optimization Flags (Continued)

416.gamess: -O2 -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2)
-OPT:Ofast -OPT:ro=3 -OPT:unroll_size=256

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

437.leslie3d: basepeak = yes

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

465.tonto: -Ofast -CG:local_fwd_sched=on -IPA:plimit=525

Benchmarks using both Fortran and C:

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

436.cactusADM: -O3 -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -ipa
-LNO:full_unroll=5 -LNO:ou_prod_max=10 -LNO:prefetch_ahead=5

454.calculix: -Ofast -CG:prefetch=off -LNO:simd=0 -OPT:unroll_times_max=8
-WOPT:mem_opnds=on

481.wrf: basepeak = yes

Other Flags

C benchmarks:

-IPA:max_jobs=2

C++ benchmarks:

-IPA:max_jobs=2

Fortran benchmarks:

-IPA:max_jobs=2

Benchmarks using both Fortran and C:

-IPA:max_jobs=2

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

http://pro.spec.org/private/osg/submit/cpu2006/flags/CPU2006_flags.20070110.00.html

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

http://pro.spec.org/private/osg/submit/cpu2006/flags/CPU2006_flags.20070110.00.xml

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