SPEC® CFP2006 Result

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Tyan
(Test Sponsor: Advanced Micro Devices)

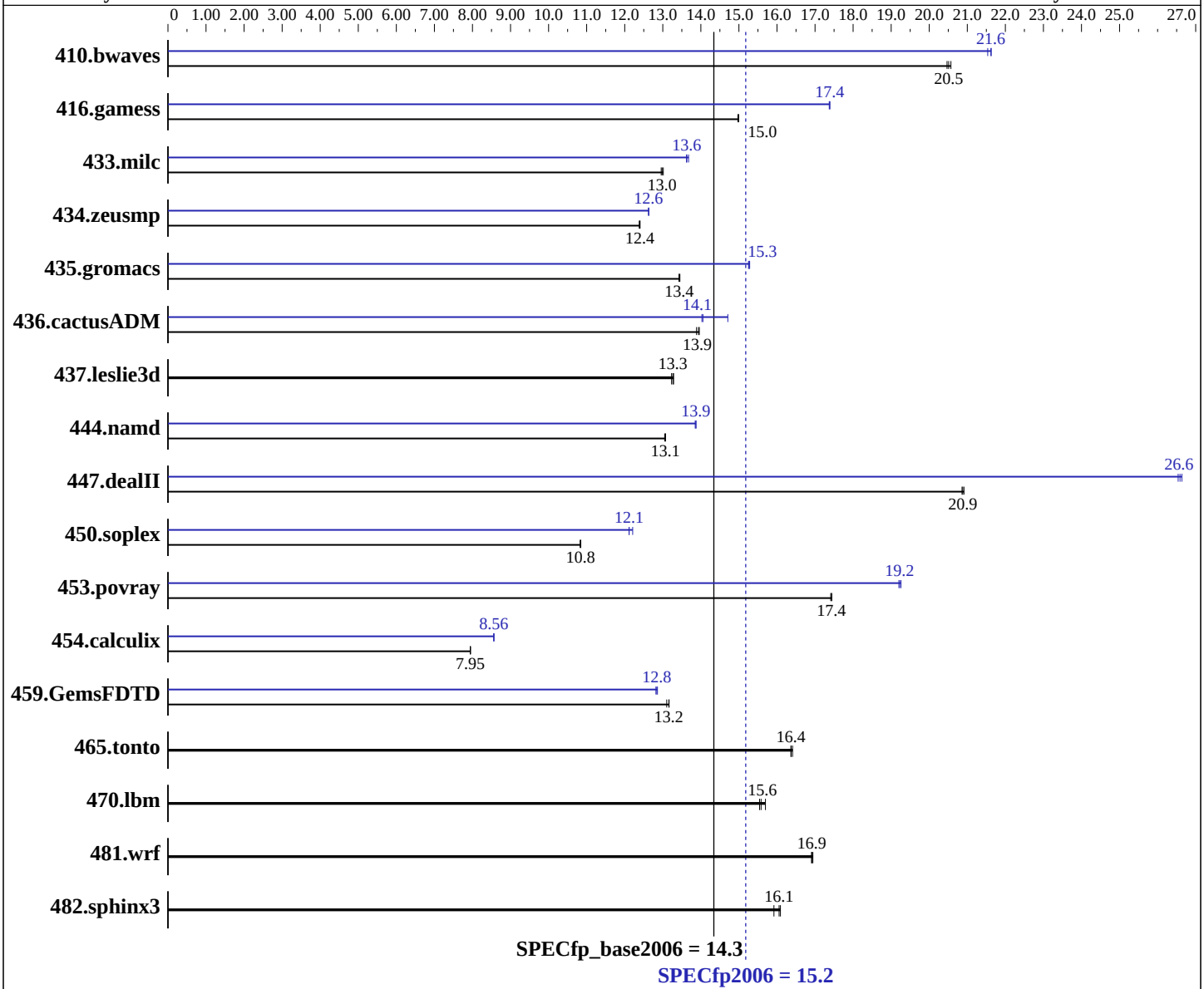
n4250QE (S4985) AMD Opteron 2222 SE

SPECfp®2006 = 15.2

SPECfp_base2006 = 14.3

CPU2006 license: 49
Test sponsor: Advanced Micro Devices
Tested by: Advanced Micro Devices

Test date: Feb-2007
Hardware Availability: May-2007
Software Availability: Mar-2007



Hardware

CPU Name:	AMD Opteron 2222 SE
CPU Characteristics:	
CPU MHz:	3000
FPU:	Integrated
CPU(s) enabled:	2 cores, 1 chip, 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 9 SP3 64-bit kernel
Compiler:	QLogic PathScale Compiler Suite, Release 3.0
Auto Parallel:	No
File System:	ext3
System State:	Multi-user, run level 3
Base Pointers:	64-bit
Peak Pointers:	32/64-bit

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L3 Cache: None
Other Cache: None
Memory: 4 GB (4x1GB, DDR2-667 CL4 ECC Reg Dual Rank)
Disk Subsystem: SATA, 80 GB
Other Hardware: None

Other Software: None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	**663**	**20.5**	661	20.6	664	20.5	631	21.5	628	21.6	**629**	**21.6**
416.gamess	1308	15.0	**1306**	**15.0**	1306	15.0	1127	17.4	**1126**	**17.4**	1126	17.4
433.milc	705	13.0	708	13.0	**707**	**13.0**	671	13.7	**673**	**13.6**	674	13.6
434.zeusmp	735	12.4	734	12.4	**734**	**12.4**	**721**	**12.6**	721	12.6	720	12.6
435.gromacs	**532**	**13.4**	532	13.4	531	13.4	468	15.3	467	15.3	**468**	**15.3**
436.cactusADM	**857**	**13.9**	856	14.0	861	13.9	**850**	**14.1**	812	14.7	852	14.0
437.leslie3d	710	13.2	708	13.3	**709**	**13.3**	710	13.2	708	13.3	**709**	**13.3**
444.namd	615	13.0	613	13.1	**614**	**13.1**	579	13.9	**578**	**13.9**	578	13.9
447.dealII	548	20.9	**548**	**20.9**	547	20.9	**430**	**26.6**	431	26.5	429	26.6
450.soplex	**769**	**10.8**	770	10.8	769	10.8	683	12.2	689	12.1	**688**	**12.1**
453.povray	**305**	**17.4**	306	17.4	305	17.4	276	19.3	277	19.2	**277**	**19.2**
454.calculix	**1038**	**7.95**	1039	7.94	1038	7.95	**964**	**8.56**	964	8.56	964	8.56
459.GemsFDTD	810	13.1	806	13.2	**806**	**13.2**	828	12.8	825	12.9	**826**	**12.8**
465.tonto	600	16.4	**601**	**16.4**	601	16.4	600	16.4	**601**	**16.4**	601	16.4
470.lbm	875	15.7	**882**	**15.6**	884	15.5	875	15.7	**882**	**15.6**	884	15.5
481.wrf	659	16.9	661	16.9	**660**	**16.9**	659	16.9	661	16.9	**660**	**16.9**
482.sphinx3	1224	15.9	**1214**	**16.1**	1211	16.1	1224	15.9	**1214**	**16.1**	1211	16.1

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

General Notes

```
All memory slots filled on all used CPU sockets

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

Base Compiler Invocation

C benchmarks:
`pathcc`

C++ benchmarks:
`pathCC`

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Base Compiler Invocation (Continued)

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

Fortran benchmarks:
-Ofast -OPT:malloc_alg=1

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

Peak Compiler Invocation

C benchmarks:
pathcc

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Peak Compiler Invocation (Continued)

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
447.dealII: -DSPEC_CPU_TABLE_WORKAROUND
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: basepeak = yes

C++ benchmarks:

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

447.dealII: -Ofast -INLINE:aggressive=on -LNO:opt=0 -OPT:alias=disjoint
-m32 -fno-exceptions

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Peak Optimization Flags (Continued)

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.20090714.26.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.26.xml`

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