SPEC® CFP2006 Result

Fujitsu Siemens Computers

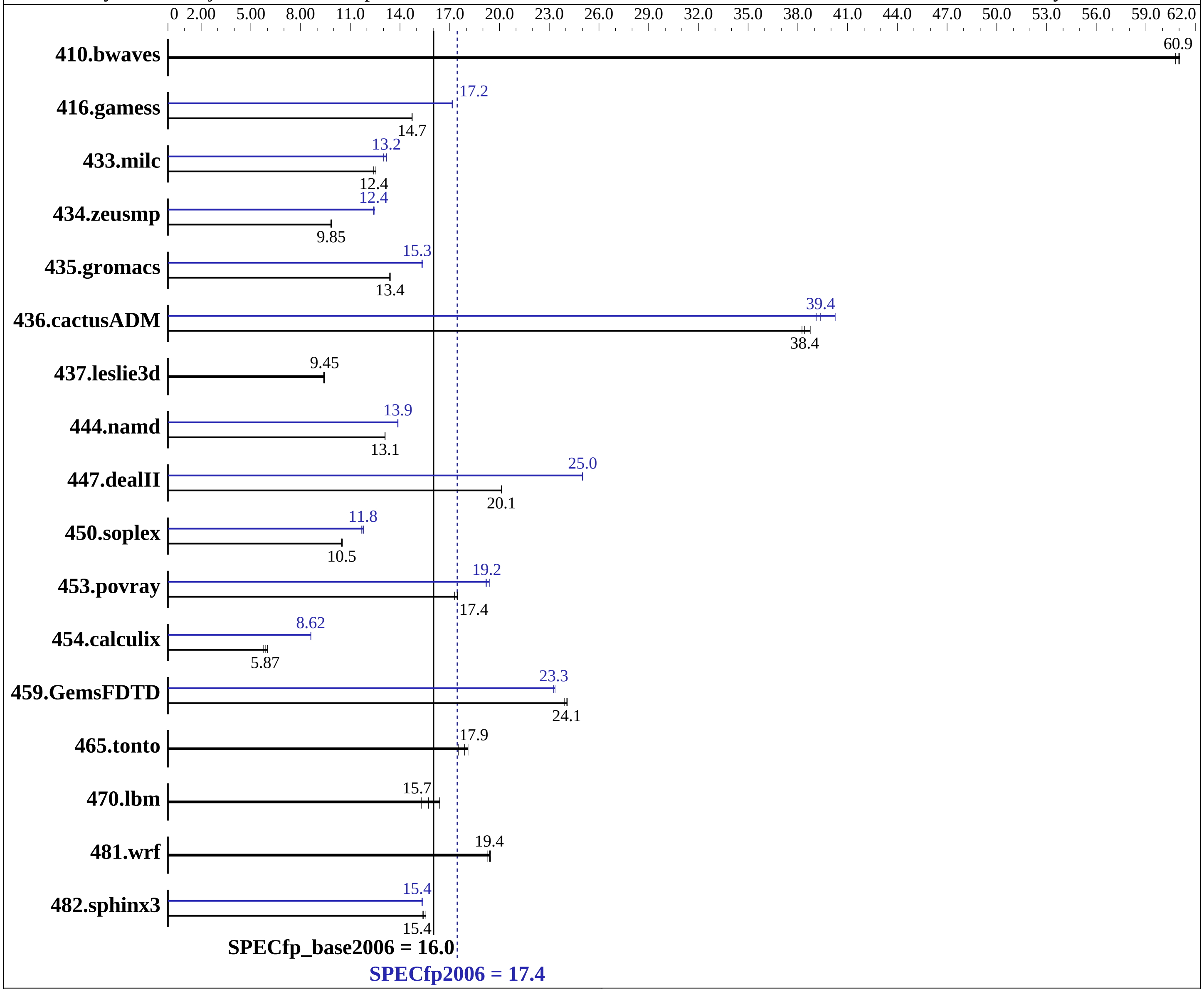
CELSIUS V840, Opteron 2222, 64-bit Linux

SPECfp®2006 = 17.4

SPECfp_base2006 = 16.0

CPU2006 license: 22
Test sponsor: Fujitsu Siemens Computers
Tested by: Fujitsu Siemens Computers

Test date: Jul-2007
Hardware Availability: Jul-2007
Software Availability: Mar-2007



Hardware

CPU Name:	AMD Opteron 2222
CPU Characteristics:	Dual Core, 3.0 GHz, 2 MB L2-cache
CPU MHz:	3000
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, - Release 3.0
Auto Parallel:	Yes
File System:	ext3
System State:	Multi-User SuSE Run Level 3
Base Pointers:	64-bit
Peak Pointers:	32/64-bit

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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

Other Software: None

Results Table

Benchmark	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
410.bwaves	223	61.0	**223**	**60.9**	224	60.8	223	61.0	**223**	**60.9**	224	60.8
416.gamess	1330	14.7	**1330**	**14.7**	1328	14.7	**1142**	**17.2**	1140	17.2	1143	17.1
433.milc	**739**	**12.4**	739	12.4	732	12.5	706	13.0	**697**	**13.2**	696	13.2
434.zeusmp	922	9.87	**924**	**9.85**	930	9.79	730	12.5	**733**	**12.4**	734	12.4
435.gromacs	535	13.3	532	13.4	**533**	**13.4**	466	15.3	**465**	**15.3**	464	15.4
436.cactusADM	312	38.2	308	38.7	**311**	**38.4**	297	40.3	**304**	**39.4**	306	39.1
437.leslie3d	1001	9.39	995	9.45	**995**	**9.45**	1001	9.39	995	9.45	**995**	**9.45**
444.namd	612	13.1	613	13.1	**612**	**13.1**	**578**	**13.9**	579	13.9	578	13.9
447.dealII	**569**	**20.1**	568	20.1	569	20.1	457	25.0	**457**	**25.0**	458	25.0
450.soplex	**795**	**10.5**	792	10.5	796	10.5	**709**	**11.8**	714	11.7	707	11.8
453.povray	304	17.5	308	17.3	**305**	**17.4**	**277**	**19.2**	277	19.2	274	19.4
454.calculix	1428	5.78	1372	6.01	**1406**	**5.87**	957	8.62	**957**	**8.62**	957	8.62
459.GemsFDTD	440	24.1	**441**	**24.1**	443	23.9	454	23.4	456	23.3	**456**	**23.3**
465.tonto	544	18.1	**550**	**17.9**	561	17.5	544	18.1	**550**	**17.9**	561	17.5
470.lbm	838	16.4	**874**	**15.7**	898	15.3	838	16.4	**874**	**15.7**	898	15.3
481.wrf	**576**	**19.4**	579	19.3	574	19.5	**576**	**19.4**	579	19.3	574	19.5
482.sphinx3	**1265**	**15.4**	1253	15.6	1268	15.4	1267	15.4	**1268**	**15.4**	1272	15.3

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
```

General Notes

```
BIOS default settings with
Node memory interleave disabled, SRAT enabled

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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
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 -apo -OPT:malloc_alg=1`

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

Base Other Flags

C benchmarks:
```
-IPA:max_jobs=4
```

C++ benchmarks:
```
-IPA:max_jobs=4
```

Fortran benchmarks:
```
-IPA:max_jobs=4
```

Benchmarks using both Fortran and C:
```
-IPA:max_jobs=4
```

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

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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 -apo -OPT:Ofast -WOPT:aggstr=0 -m32`

C++ benchmarks:

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

447.dealII: `-Ofast -apo -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 -apo -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 -apo -fno-fast-math`

Fortran benchmarks:

410.bwaves: `basepeak = yes`

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 -apo -LNO:fission=2 -LNO:prefetch=0`

465.tonto: `basepeak = yes`

Benchmarks using both Fortran and C:

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

436.cactusADM: `-fb_create fbdata`(pass 1) `-fb_opt fbdata`(pass 2) `-O3 -apo -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`

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Peak Optimization Flags (Continued)

481.wrf: `basepeak = yes`

Peak Other Flags

C benchmarks:
`-IPA:max_jobs=4`

C++ benchmarks:
`-IPA:max_jobs=4`

Fortran benchmarks:
`-IPA:max_jobs=4`

Benchmarks using both Fortran and C:
`-IPA:max_jobs=4`

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.28.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.28.xml

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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