SPEC® CFP2006 Result

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Fujitsu Siemens Computers

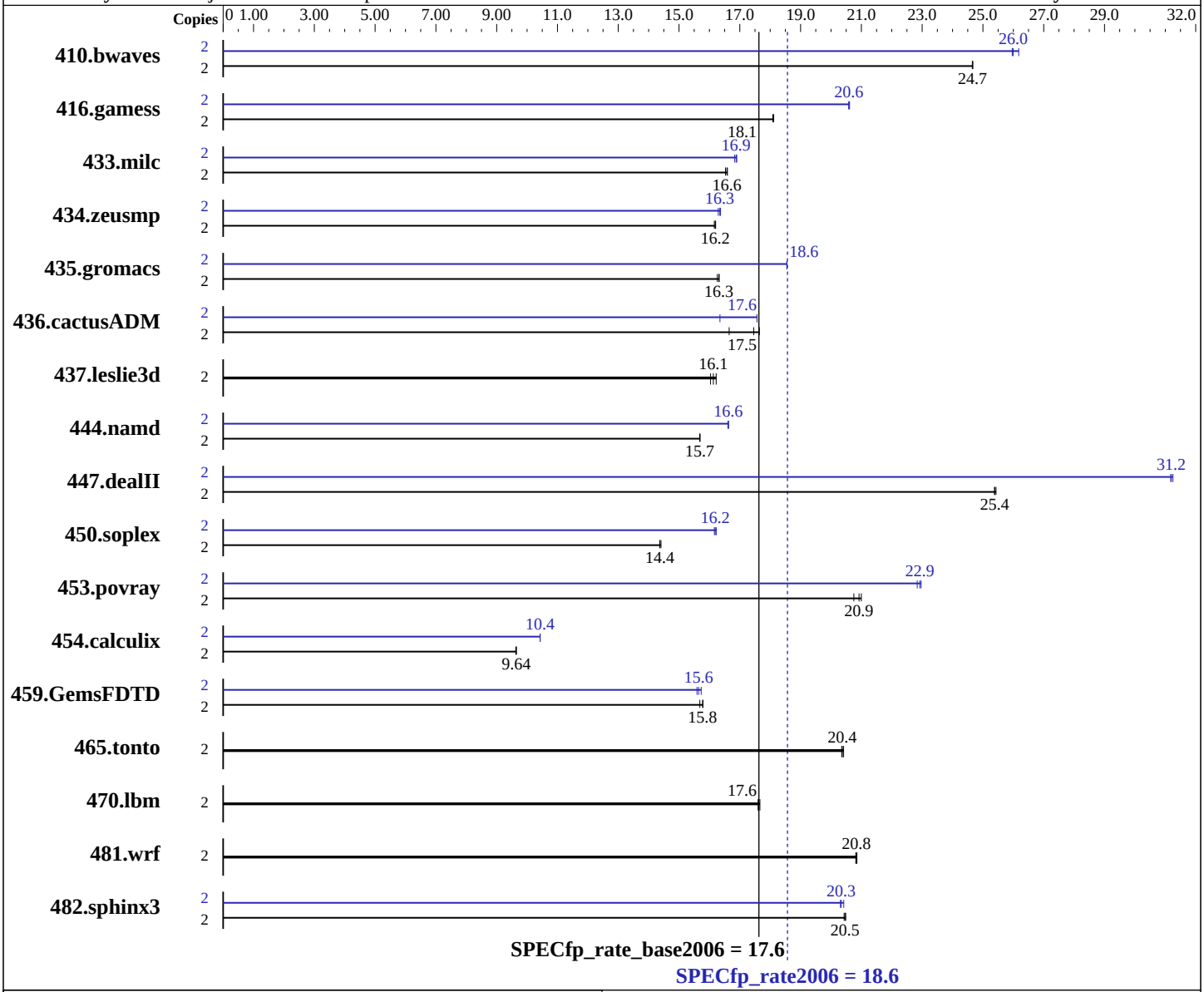
PRIMERGY RX330 S1, AMD Opteron 2210, 1.8 GHz

SPECfp®_rate2006 = 18.6

SPECfp_rate_base2006 = 17.6

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

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



Hardware

CPU Name:	AMD Opteron 2210
CPU Characteristics:	2210
CPU MHz:	1800
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:	SLES 10 for AMD64/EM64T
Compiler:	QLogic PathScale Compiler Suite, - Release 3.0
Auto Parallel:	No
File System:	ReiserFS
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: 32 GB (8x4 GB DDR2 PC2-5300P, 2 rank, CAS 5-5-5, with ECC)
Disk Subsystem: SAS (36GB 15.4 krpm)
Other Hardware: None

Other Software: None

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	2	**1102**	**24.7**	1102	24.7	1103	24.7	2	1038	26.2	1047	26.0	**1046**	**26.0**
416.gamess	2	**2164**	**18.1**	2165	18.1	2162	18.1	2	**1902**	**20.6**	1902	20.6	1900	20.6
433.milc	2	1111	16.5	**1108**	**16.6**	1107	16.6	2	1091	16.8	**1088**	**16.9**	1086	16.9
434.zeusmp	2	1123	16.2	1126	16.2	**1124**	**16.2**	2	1112	16.4	**1114**	**16.3**	1117	16.3
435.gromacs	2	878	16.3	875	16.3	**875**	**16.3**	2	770	18.5	770	18.6	**770**	**18.6**
436.cactusADM	2	1435	16.6	1355	17.6	**1369**	**17.5**	2	**1361**	**17.6**	1360	17.6	1462	16.3
437.leslie3d	2	**1166**	**16.1**	1172	16.0	1159	16.2	2	**1166**	**16.1**	1172	16.0	1159	16.2
444.namd	2	1023	15.7	1022	15.7	**1023**	**15.7**	2	966	16.6	**965**	**16.6**	965	16.6
447.dealII	2	900	25.4	**901**	**25.4**	901	25.4	2	734	31.2	**733**	**31.2**	732	31.3
450.soplex	2	1161	14.4	**1161**	**14.4**	1158	14.4	2	1028	16.2	1032	16.2	**1030**	**16.2**
453.povray	2	513	20.8	**509**	**20.9**	507	21.0	2	463	23.0	466	22.8	**464**	**22.9**
454.calculix	2	1710	9.65	1714	9.63	**1711**	**9.64**	2	**1582**	**10.4**	1582	10.4	1582	10.4
459.GemsFDTD	2	1353	15.7	1344	15.8	**1345**	**15.8**	2	1361	15.6	**1356**	**15.6**	1349	15.7
465.tonto	2	967	20.4	964	20.4	**966**	**20.4**	2	967	20.4	964	20.4	**966**	**20.4**
470.lbm	2	**1560**	**17.6**	1556	17.7	1561	17.6	2	**1560**	**17.6**	1556	17.7	1561	17.6
481.wrf	2	1071	20.9	**1072**	**20.8**	1073	20.8	2	1071	20.9	**1072**	**20.8**	1073	20.8
482.sphinx3	2	**1905**	**20.5**	1903	20.5	1908	20.4	2	1909	20.4	**1917**	**20.3**	1919	20.3

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

Operating System Notes

```
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
'/usr/bin/taskset' has been used to bind processes to CPUs
```

General Notes

```
BIOS settings:
Node Interleave = disabled

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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 -OPT:malloc_alg=1

Benchmarks using both Fortran and C:
-Ofast -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`

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`

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`

Continued on next page

Peak Optimization Flags (Continued)

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

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.20090714.10.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.10.xml`

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