SPEC® CFP2006 Result

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Fujitsu Siemens Computers

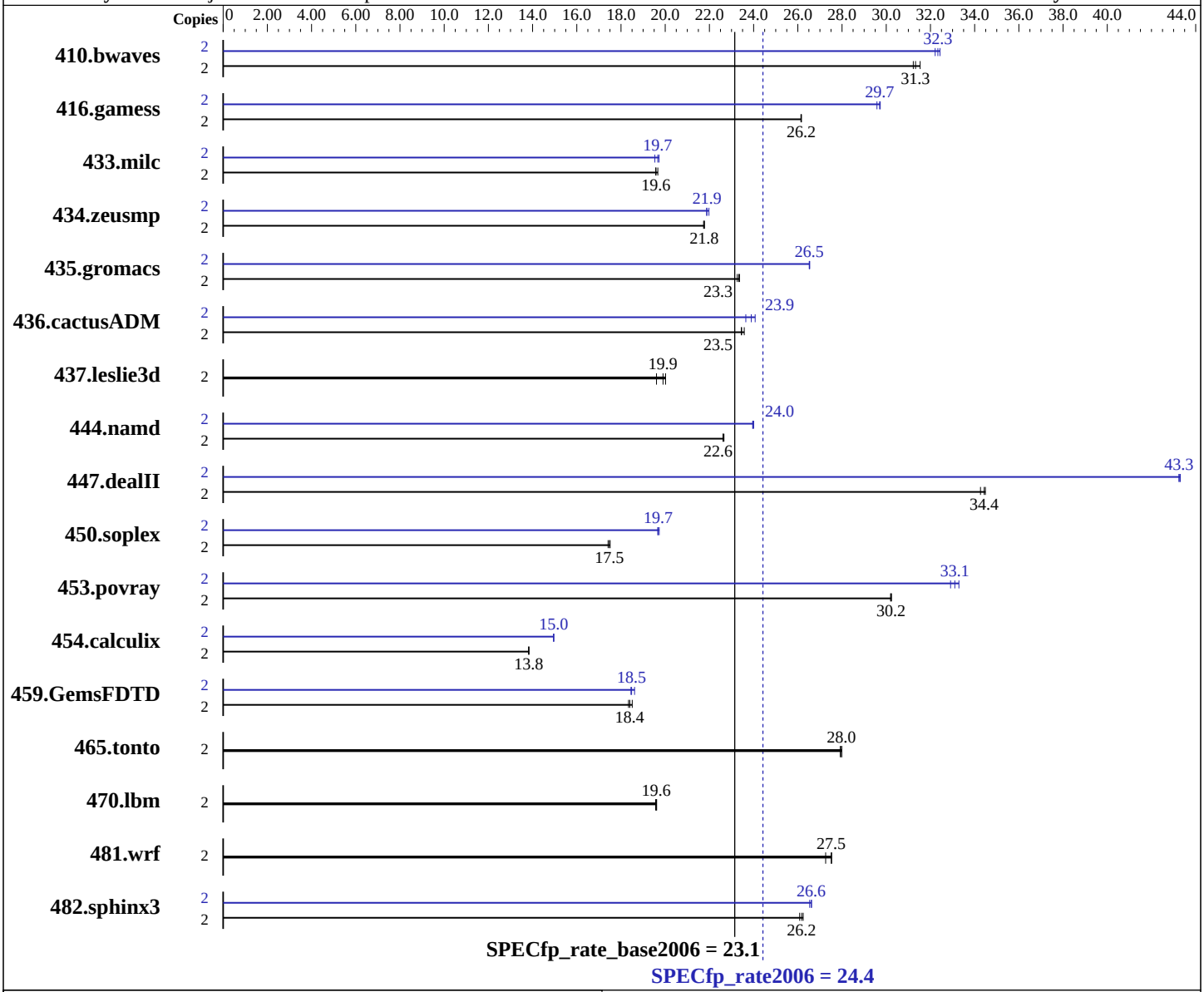
PRIMERGY RX330 S1, AMD Opteron 2218, 2.60 GHz

SPECfp®_rate2006 = 24.4

SPECfp_rate_base2006 = 23.1

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 2218
CPU Characteristics:	2218
CPU MHz:	2600
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	862	31.5	**868**	**31.3**	871	31.2	2	838	32.4	**841**	**32.3**	844	32.2
416.gamess	2	**1497**	**26.2**	1498	26.1	1497	26.2	2	**1319**	**29.7**	1317	29.7	1324	29.6
433.milc	2	938	19.6	934	19.7	**938**	**19.6**	2	931	19.7	**934**	**19.7**	940	19.5
434.zeusmp	2	836	21.8	**836**	**21.8**	837	21.7	2	828	22.0	832	21.9	**831**	**21.9**
435.gromacs	2	614	23.3	**612**	**23.3**	611	23.4	2	**538**	**26.5**	538	26.5	538	26.5
436.cactusADM	2	1014	23.6	1020	23.4	**1019**	**23.5**	2	1011	23.6	**1000**	**23.9**	993	24.1
437.leslie3d	2	939	20.0	959	19.6	**945**	**19.9**	2	939	20.0	959	19.6	**945**	**19.9**
444.namd	2	**709**	**22.6**	708	22.7	709	22.6	2	669	24.0	**669**	**24.0**	668	24.0
447.dealII	2	**664**	**34.4**	663	34.5	668	34.3	2	529	43.2	528	43.3	**529**	**43.3**
450.soplex	2	953	17.5	**955**	**17.5**	958	17.4	2	845	19.7	**848**	**19.7**	848	19.7
453.povray	2	**352**	**30.2**	352	30.2	352	30.2	2	323	32.9	**321**	**33.1**	320	33.3
454.calculix	2	1193	13.8	**1193**	**13.8**	1194	13.8	2	**1103**	**15.0**	1103	15.0	1104	14.9
459.GemsFDTD	2	**1153**	**18.4**	1147	18.5	1157	18.3	2	**1148**	**18.5**	1150	18.5	1140	18.6
465.tonto	2	703	28.0	**703**	**28.0**	705	27.9	2	703	28.0	**703**	**28.0**	705	27.9
470.lbm	2	**1402**	**19.6**	1401	19.6	1405	19.6	2	**1402**	**19.6**	1401	19.6	1405	19.6
481.wrf	2	**812**	**27.5**	820	27.3	811	27.5	2	**812**	**27.5**	820	27.3	811	27.5
482.sphinx3	2	1485	26.2	**1489**	**26.2**	1494	26.1	2	**1465**	**26.6**	1469	26.5	1464	26.6

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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