SPEC® CFP2006 Result

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Fujitsu Siemens Computers

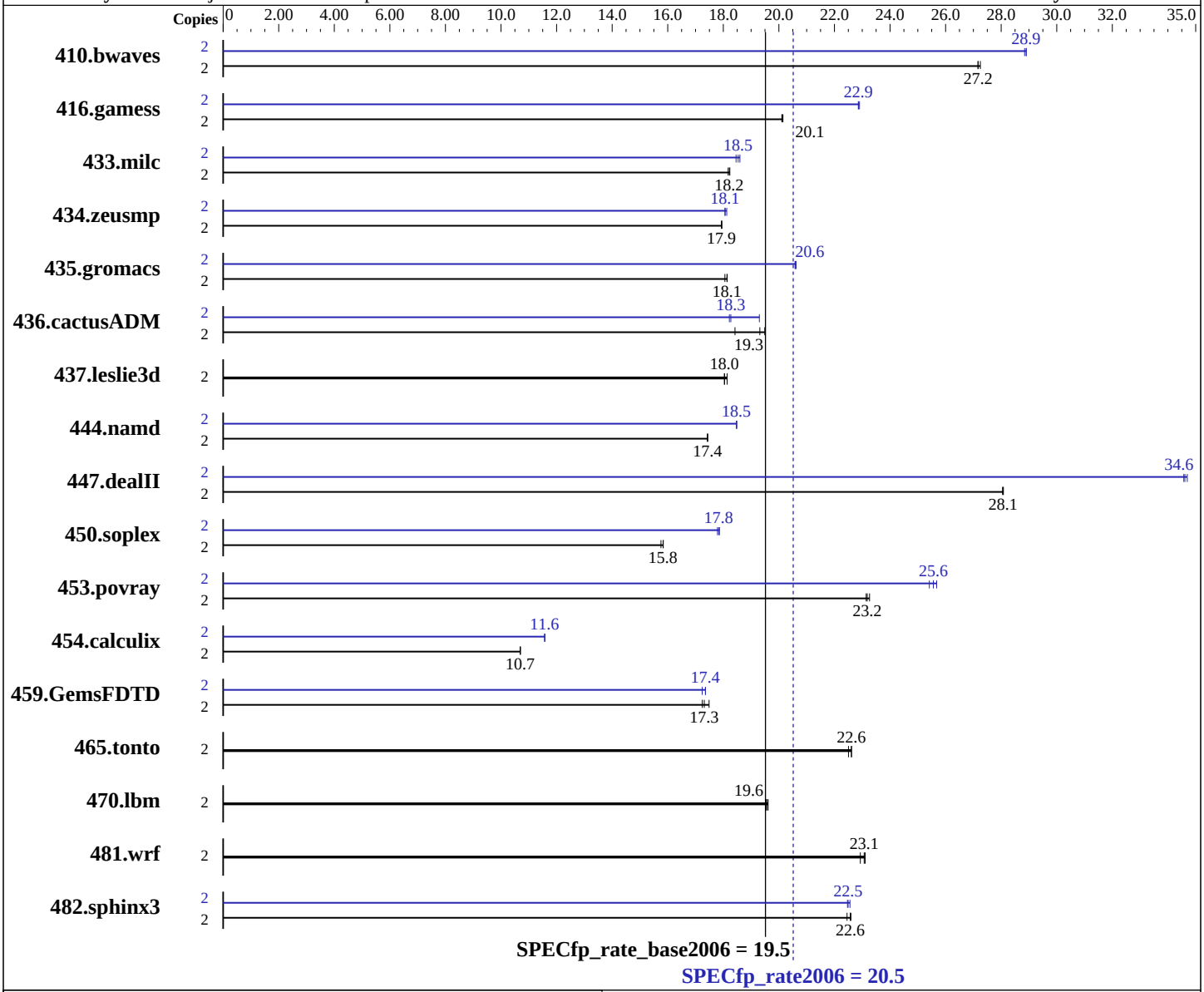
PRIMERGY RX330 S1, AMD Opteron 2212, 2.0 GHz

SPECfp®_rate2006 = 20.5

SPECfp_rate_base2006 = 19.5

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

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



Hardware

CPU Name:	AMD Opteron 2212
CPU Characteristics:	2212
CPU MHz:	2000
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	997	27.3	1001	27.2	**1000**	**27.2**	2	942	28.8	940	28.9	**941**	**28.9**
416.gamess	2	1948	20.1	**1946**	**20.1**	1944	20.1	2	**1713**	**22.9**	1710	22.9	1713	22.9
433.milc	2	**1008**	**18.2**	1010	18.2	1007	18.2	2	987	18.6	995	18.5	**991**	**18.5**
434.zeusmp	2	1015	17.9	1014	17.9	**1015**	**17.9**	2	1004	18.1	1008	18.1	**1007**	**18.1**
435.gromacs	2	791	18.1	787	18.1	**788**	**18.1**	2	694	20.6	**693**	**20.6**	693	20.6
436.cactusADM	2	1226	19.5	1297	18.4	**1237**	**19.3**	2	**1308**	**18.3**	1238	19.3	1312	18.2
437.leslie3d	2	1037	18.1	**1042**	**18.0**	1042	18.0	2	1037	18.1	**1042**	**18.0**	1042	18.0
444.namd	2	**920**	**17.4**	920	17.4	920	17.4	2	869	18.5	868	18.5	**868**	**18.5**
447.dealII	2	815	28.1	**815**	**28.1**	816	28.1	2	**661**	**34.6**	662	34.6	659	34.7
450.soplex	2	**1054**	**15.8**	1053	15.8	1059	15.8	2	934	17.9	**935**	**17.8**	938	17.8
453.povray	2	457	23.3	460	23.1	**459**	**23.2**	2	419	25.4	414	25.7	**416**	**25.6**
454.calculix	2	1543	10.7	1543	10.7	**1543**	**10.7**	2	1426	11.6	**1426**	**11.6**	1425	11.6
459.GemsFDTD	2	**1226**	**17.3**	1231	17.2	1213	17.5	2	1222	17.4	1231	17.2	**1223**	**17.4**
465.tonto	2	870	22.6	**870**	**22.6**	874	22.5	2	870	22.6	**870**	**22.6**	874	22.5
470.lbm	2	**1403**	**19.6**	1401	19.6	1406	19.5	2	**1403**	**19.6**	1401	19.6	1406	19.5
481.wrf	2	974	22.9	967	23.1	**968**	**23.1**	2	974	22.9	967	23.1	**968**	**23.1**
482.sphinx3	2	1736	22.5	1725	22.6	**1727**	**22.6**	2	1728	22.6	**1733**	**22.5**	1735	22.5

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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Tested with SPEC CPU2006 v1.0.
Report generated on Tue Sep 13 11:21:33 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 12 June 2007.