SPEC® CFP2006 Result

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Fujitsu Siemens Computers

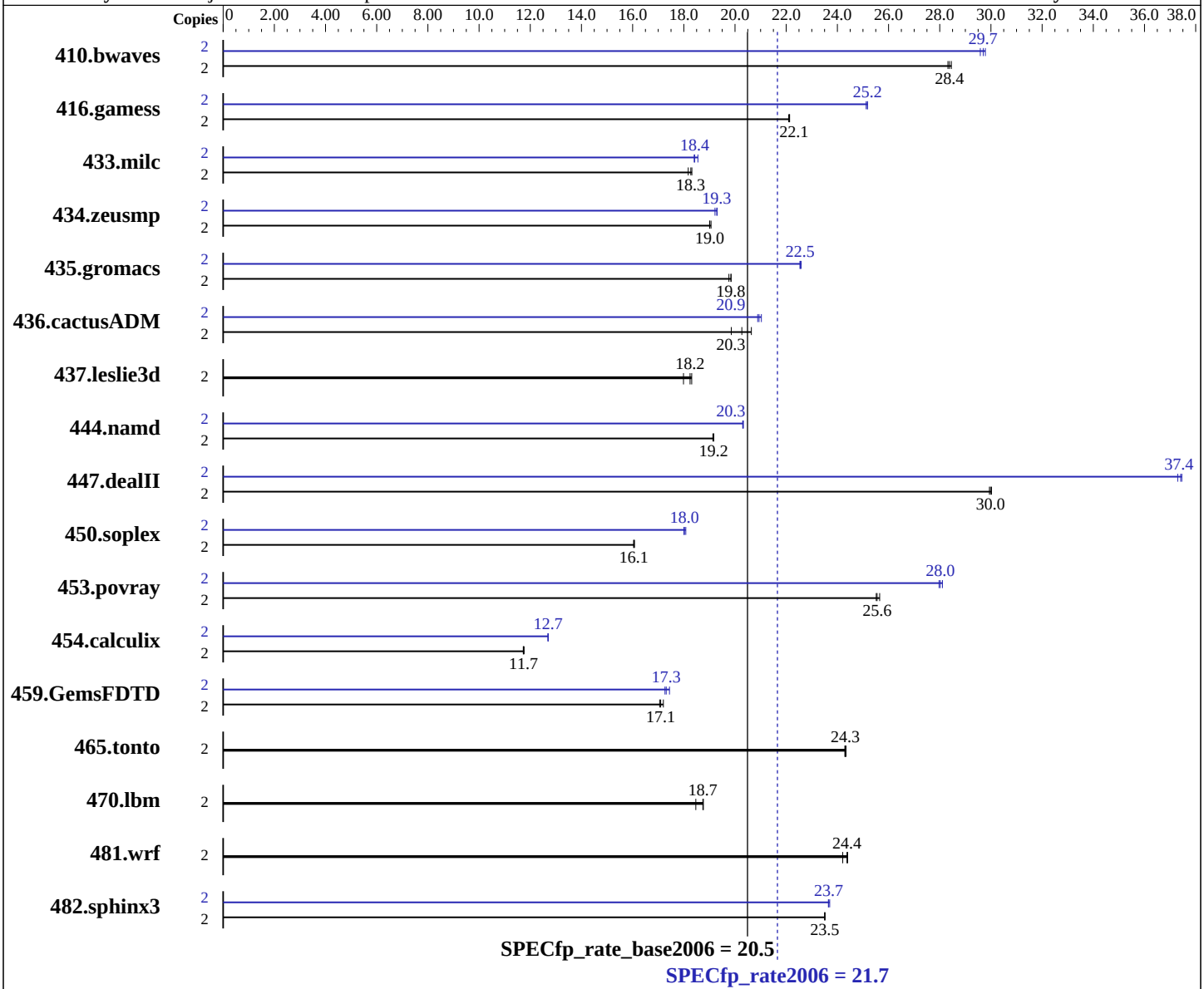
PRIMERGY RX330 S1, AMD Opteron 2214, 2.20 GHz

SPECfp®_rate2006 = 21.7

SPECfp_rate_base2006 = 20.5

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

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



Hardware

CPU Name:	AMD Opteron 2214
CPU Characteristics:	2214
CPU MHz:	2200
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	955	28.5	**958**	**28.4**	960	28.3	2	913	29.8	**915**	**29.7**	919	29.6
416.gamess	2	**1770**	**22.1**	1769	22.1	1772	22.1	2	1556	25.2	**1556**	**25.2**	1559	25.1
433.milc	2	1010	18.2	**1005**	**18.3**	1002	18.3	2	990	18.6	**996**	**18.4**	998	18.4
434.zeusmp	2	958	19.0	**957**	**19.0**	955	19.1	2	947	19.2	943	19.3	**944**	**19.3**
435.gromacs	2	723	19.8	**720**	**19.8**	720	19.8	2	634	22.5	**633**	**22.5**	632	22.6
436.cactusADM	2	1204	19.9	1158	20.6	**1179**	**20.3**	2	1136	21.0	1144	20.9	**1141**	**20.9**
437.leslie3d	2	**1030**	**18.2**	1027	18.3	1045	18.0	2	**1030**	**18.2**	1027	18.3	1045	18.0
444.namd	2	**837**	**19.2**	838	19.1	837	19.2	2	**790**	**20.3**	789	20.3	790	20.3
447.dealII	2	764	29.9	**763**	**30.0**	762	30.0	2	613	37.3	611	37.5	**612**	**37.4**
450.soplex	2	1040	16.0	1038	16.1	**1039**	**16.1**	2	923	18.1	**925**	**18.0**	927	18.0
453.povray	2	417	25.5	415	25.7	**416**	**25.6**	2	379	28.1	**380**	**28.0**	380	28.0
454.calculix	2	1403	11.8	**1406**	**11.7**	1407	11.7	2	1299	12.7	**1299**	**12.7**	1300	12.7
459.GemsFDTD	2	**1241**	**17.1**	1244	17.1	1234	17.2	2	1229	17.3	**1226**	**17.3**	1217	17.4
465.tonto	2	809	24.3	810	24.3	**810**	**24.3**	2	809	24.3	810	24.3	**810**	**24.3**
470.lbm	2	1488	18.5	1465	18.8	**1466**	**18.7**	2	1488	18.5	1465	18.8	**1466**	**18.7**
481.wrf	2	923	24.2	916	24.4	**917**	**24.4**	2	923	24.2	916	24.4	**917**	**24.4**
482.sphinx3	2	1659	23.5	1658	23.5	**1658**	**23.5**	2	1648	23.6	**1647**	**23.7**	1645	23.7

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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