SPEC® CFP2006 Result

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Fujitsu Siemens Computers

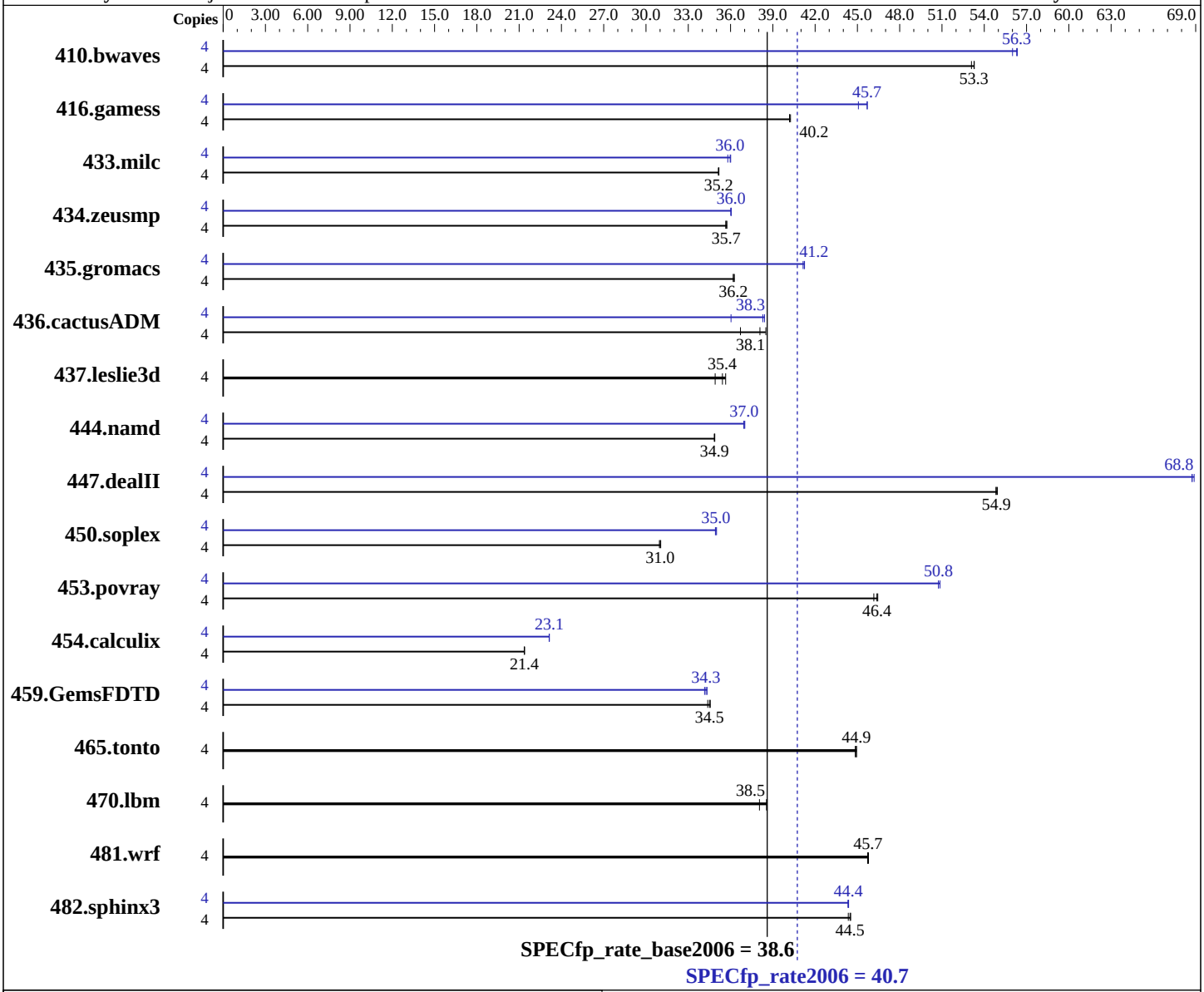
PRIMERGY RX330 S1, AMD Opteron 2212, 2.0 GHz

SPECfp®_rate2006 = 40.7

SPECfp_rate_base2006 = 38.6

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:	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:	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	4	**1020**	**53.3**	1024	53.1	1020	53.3	4	965	56.3	**966**	**56.3**	971	56.0
416.gamess	4	1949	40.2	**1949**	**40.2**	1946	40.3	4	1714	45.7	1738	45.1	**1714**	**45.7**
433.milc	4	**1044**	**35.2**	1045	35.1	1044	35.2	4	**1021**	**36.0**	1020	36.0	1026	35.8
434.zeusmp	4	**1020**	**35.7**	1018	35.7	1021	35.7	4	1011	36.0	**1010**	**36.0**	1010	36.0
435.gromacs	4	789	36.2	**789**	**36.2**	787	36.3	4	692	41.2	694	41.1	**693**	**41.2**
436.cactusADM	4	**1255**	**38.1**	1242	38.5	1302	36.7	4	**1248**	**38.3**	1327	36.0	1245	38.4
437.leslie3d	4	1055	35.7	**1061**	**35.4**	1077	34.9	4	1055	35.7	**1061**	**35.4**	1077	34.9
444.namd	4	920	34.9	920	34.9	**920**	**34.9**	4	868	36.9	**868**	**37.0**	867	37.0
447.dealII	4	833	54.9	**834**	**54.9**	835	54.8	4	**666**	**68.8**	666	68.7	664	68.9
450.soplex	4	1078	31.0	**1076**	**31.0**	1075	31.0	4	**954**	**35.0**	955	34.9	953	35.0
453.povray	4	458	46.4	461	46.2	**459**	**46.4**	4	419	50.7	**419**	**50.8**	418	50.9
454.calculix	4	1543	21.4	**1544**	**21.4**	1545	21.4	4	1427	23.1	1426	23.1	**1426**	**23.1**
459.GemsFDTD	4	**1230**	**34.5**	1234	34.4	1228	34.6	4	1236	34.3	**1239**	**34.3**	1243	34.2
465.tonto	4	878	44.8	876	44.9	**876**	**44.9**	4	878	44.8	876	44.9	**876**	**44.9**
470.lbm	4	1444	38.1	1424	38.6	**1426**	**38.5**	4	1444	38.1	1424	38.6	**1426**	**38.5**
481.wrf	4	976	45.8	**977**	**45.7**	977	45.7	4	976	45.8	**977**	**45.7**	977	45.7
482.sphinx3	4	1758	44.4	**1753**	**44.5**	1751	44.5	4	**1757**	**44.4**	1759	44.3	1757	44.4

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 11:21:26 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 12 June 2007.