SPEC® CFP2006 Result

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Fujitsu Siemens Computers

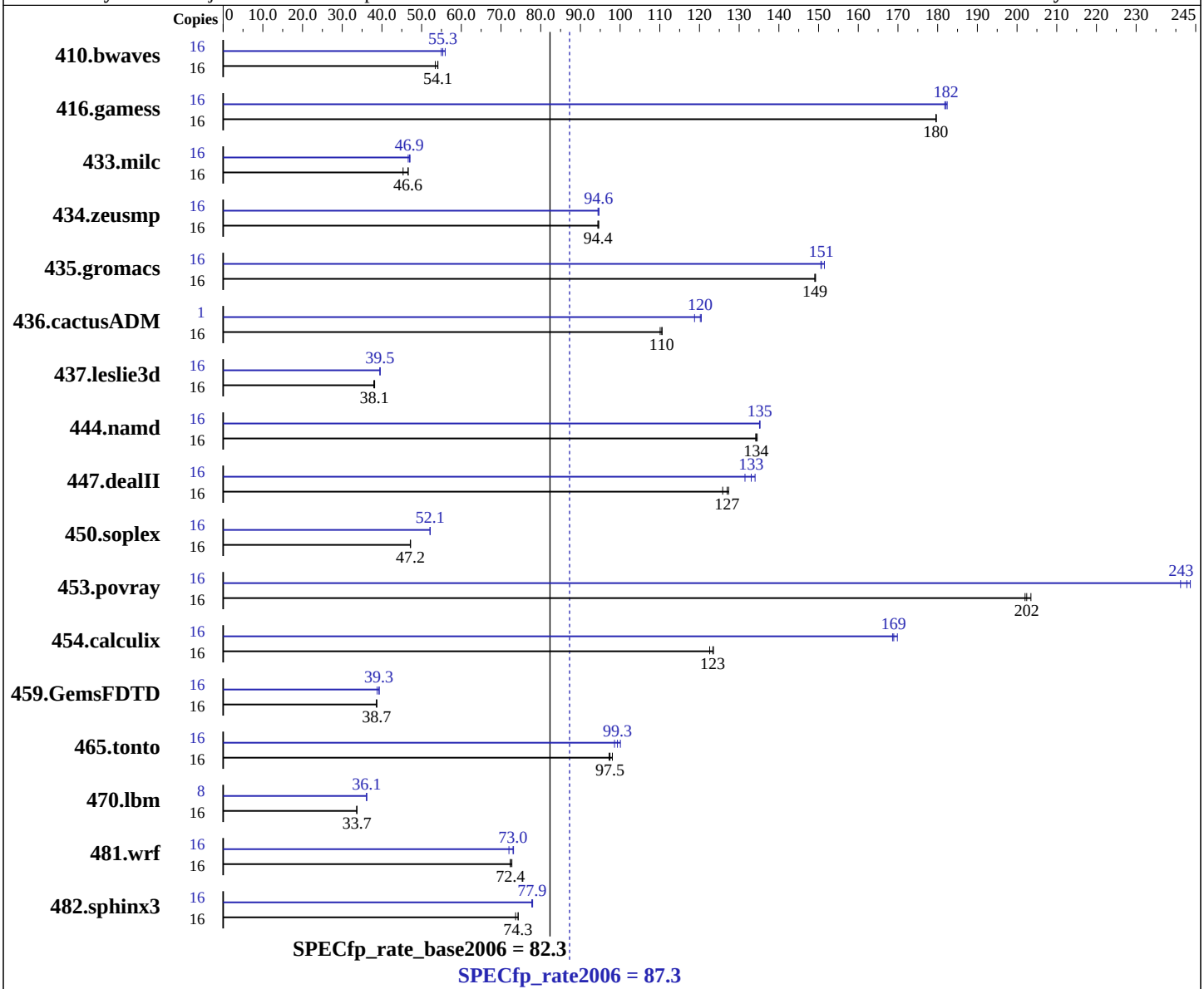
PRIMERGY RX600 S4, Intel Xeon E7310, 1.60 GHz

SPECfp®_rate2006 = 87.3

SPECfp_rate_base2006 = 82.3

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

Test date: Jan-2008
Hardware Availability: Dec-2007
Software Availability: Nov-2007



Hardware

CPU Name:	Intel Xeon E7310
CPU Characteristics:	1067 MHz system bus
CPU MHz:	1600
FPU:	Integrated
CPU(s) enabled:	16 cores, 4 chips, 4 cores/chip
CPU(s) orderable:	1,2,4 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	4 MB I+D on chip per chip, 2 MB shared / 2 cores

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Software

Operating System:	SUSE Linux Enterprise Server 10 (x86_64) SP1, Kernel 2.6.16.46-0.12-smp
Compiler:	Intel C++ and Fortran Compiler for Linux32 and Linux64 Version 10.1 - Build 20070725
Auto Parallel:	Yes
File System:	ext2
System State:	Multiuser, Runlevel 3
Base Pointers:	64-bit

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L3 Cache: None
Other Cache: None
Memory: 64 GB (16x4 GB PC2-5300F, 2 rank, CAS 5-5-5, with ECC)
Disk Subsystem: Seagate ST973451SS (SAS, 73GB, 15000rpm)
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: None

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	16	4068	53.5	**4021**	**54.1**	4019	54.1	16	3957	55.0	3887	55.9	**3930**	**55.3**
416.gamess	16	**1745**	**180**	1743	180	1745	180	16	1718	182	1723	182	**1720**	**182**
433.milc	16	3240	45.3	3150	46.6	**3153**	**46.6**	16	3150	46.6	**3129**	**46.9**	3120	47.1
434.zeusmp	16	1542	94.4	**1542**	**94.4**	1539	94.6	16	1538	94.7	1542	94.4	**1539**	**94.6**
435.gromacs	16	**766**	**149**	766	149	765	149	16	754	151	**758**	**151**	759	151
436.cactusADM	16	1737	110	1729	111	**1731**	**110**	1	99.2	120	**99.4**	**120**	101	119
437.leslie3d	16	3962	38.0	**3947**	**38.1**	3941	38.2	16	3808	39.5	3804	39.5	**3805**	**39.5**
444.namd	16	**956**	**134**	956	134	954	135	16	**949**	**135**	949	135	950	135
447.dealII	16	**1442**	**127**	1455	126	1437	127	16	**1376**	**133**	1366	134	1392	131
450.soplex	16	**2828**	**47.2**	2831	47.1	2827	47.2	16	**2559**	**52.1**	2560	52.1	2559	52.1
453.povray	16	**420**	**202**	421	202	418	203	16	349	244	**351**	**243**	353	241
454.calculix	16	1069	124	1077	123	**1070**	**123**	16	**781**	**169**	783	169	777	170
459.GemsFDTD	16	4385	38.7	**4390**	**38.7**	4397	38.6	16	4375	38.8	**4325**	**39.3**	4317	39.3
465.tonto	16	1606	98.1	1619	97.2	**1615**	**97.5**	16	1597	98.6	**1585**	**99.3**	1573	100
470.lbm	16	6527	33.7	6530	33.7	**6527**	**33.7**	8	3044	36.1	**3042**	**36.1**	3040	36.2
481.wrf	16	**2470**	**72.4**	2470	72.4	2457	72.7	16	2482	72.0	**2447**	**73.0**	2443	73.2
482.sphinx3	16	4233	73.7	4196	74.3	**4196**	**74.3**	16	**4005**	**77.9**	4010	77.8	3999	78.0

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
'OMP_NUM_THREADS' set to number of cores (default)

General Notes

This result has been produced with binaries provided and compiled by Intel.

All binaries were built with 64-bit Intel compiler except:
437.leslie3d, 450.soplex, 470.lbm and 482.sphinx3 in peak were built with
32-bit Intel compiler by changing the path for include and library files.

For information about Fujitsu Siemens Computers please see:

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General Notes (Continued)

http://www.fujitsu-siemens.com

Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
icc ifort

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 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
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 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:
-fast

C++ benchmarks:
-fast

Fortran benchmarks:
-fast

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Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:
`-fast`

Peak Compiler Invocation

C benchmarks (except as noted below):
`/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/icc`
`-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib`
`-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include`

433.milc: `icc`

C++ benchmarks (except as noted below):
`icpc`

450.soplex: `/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/icpc`
`-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib`
`-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include`

Fortran benchmarks (except as noted below):
`ifort`

437.leslie3d: `/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/ifort`
`-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib`
`-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include`

Benchmarks using both Fortran and C:
`icc ifort`

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 -nofor_main`
436.cactusADM: `-DSPEC_CPU_LP64 -nofor_main`
444.namd: `-DSPEC_CPU_LP64`
447.dealII: `-DSPEC_CPU_LP64`
453.povray: `-DSPEC_CPU_LP64`
454.calculix: `-DSPEC_CPU_LP64 -nofor_main`
459.GemsFDTD: `-DSPEC_CPU_LP64`
465.tonto: `-DSPEC_CPU_LP64`
481.wrf: `-DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX`

Peak Optimization Flags

C benchmarks:

433.milc: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias -auto-ilp32

470.lbm: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -scalar-rep- -prefetch -opt-malloc-options=3

482.sphinx3: -fast -unroll2

C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias -auto-ilp32

447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -ansi-alias -scalar-rep-

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -fast -opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -fast -prefetch

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0 -ansi-alias -scalar-rep-

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -fast

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch -opt-malloc-options=3

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0 -prefetch

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -auto

Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch -auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -prefetch -parallel -auto-ilp32

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Peak Optimization Flags (Continued)

454.calculix: `-fast -unroll-aggressive -auto-ilp32`

481.wrf: `-fast -auto-ilp32`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090714.01.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090714.01.xml`

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For other inquiries, please contact webmaster@spec.org.

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