SPEC® CFP2006 Result

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Fujitsu Siemens Computers

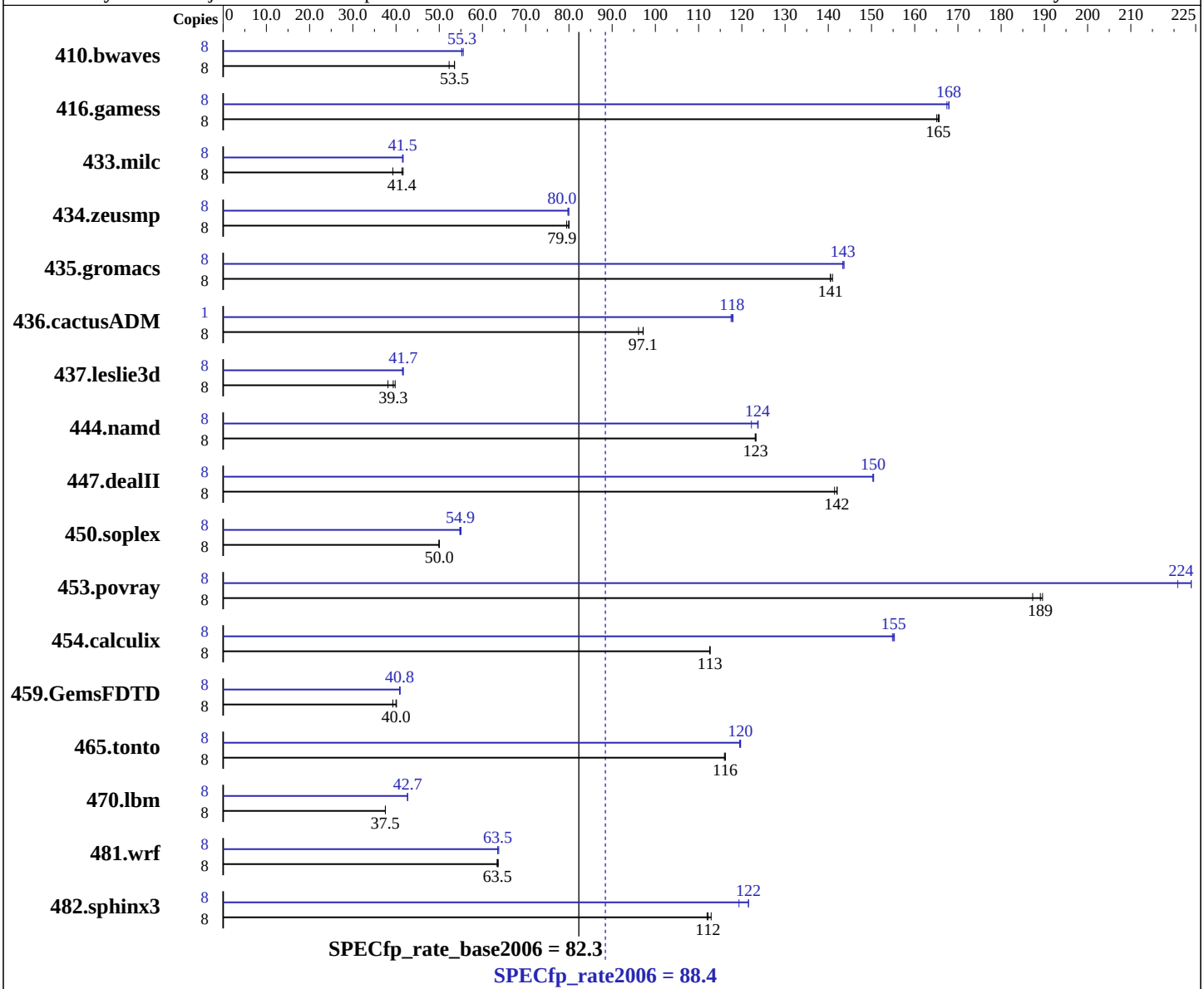
PRIMERGY RX600 S4, Intel Xeon E7220, 2.93 GHz

SPECfp®_rate2006 = 88.4

SPECfp_rate_base2006 = 82.3

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

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



Hardware

CPU Name:	Intel Xeon E7220
CPU Characteristics:	1067 MHz system bus
CPU MHz:	2933
FPU:	Integrated
CPU(s) enabled:	8 cores, 4 chips, 2 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 core

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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	8	2080	52.3	2031	53.5	**2032**	**53.5**	8	1957	55.6	1970	55.2	**1968**	**55.3**
416.gamess	8	946	166	949	165	**947**	**165**	8	933	168	**933**	**168**	935	167
433.milc	8	1871	39.3	**1775**	**41.4**	1763	41.6	8	1769	41.5	1763	41.7	**1769**	**41.5**
434.zeusmp	8	916	79.5	910	80.0	**911**	**79.9**	8	**911**	**80.0**	913	79.8	911	80.0
435.gromacs	8	405	141	**406**	**141**	407	140	8	398	144	**398**	**143**	398	143
436.cactusADM	8	995	96.1	984	97.2	**984**	**97.1**	1	**101**	**118**	102	118	101	118
437.leslie3d	8	1972	38.1	**1911**	**39.3**	1889	39.8	8	**1805**	**41.7**	1805	41.7	1813	41.5
444.namd	8	521	123	**521**	**123**	521	123	8	525	122	518	124	**519**	**124**
447.dealII	8	647	141	644	142	**644**	**142**	8	**609**	**150**	609	150	608	151
450.soplex	8	1334	50.0	**1334**	**50.0**	1337	49.9	8	1218	54.8	1212	55.0	**1216**	**54.9**
453.povray	8	227	187	**225**	**189**	224	190	8	**190**	**224**	190	224	193	221
454.calculix	8	586	113	586	113	**586**	**113**	8	426	155	425	155	**425**	**155**
459.GemsFDTD	8	2162	39.3	**2123**	**40.0**	2116	40.1	8	2072	41.0	**2078**	**40.8**	2079	40.8
465.tonto	8	677	116	**678**	**116**	679	116	8	659	119	**658**	**120**	658	120
470.lbm	8	2929	37.5	**2929**	**37.5**	2928	37.5	8	2576	42.7	**2576**	**42.7**	2576	42.7
481.wrf	8	1410	63.4	1404	63.7	**1407**	**63.5**	8	1401	63.8	1407	63.5	**1406**	**63.5**
482.sphinx3	8	1393	112	**1390**	**112**	1381	113	8	1283	122	1307	119	**1283**	**122**

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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