SPEC® CFP2006 Result

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Fujitsu

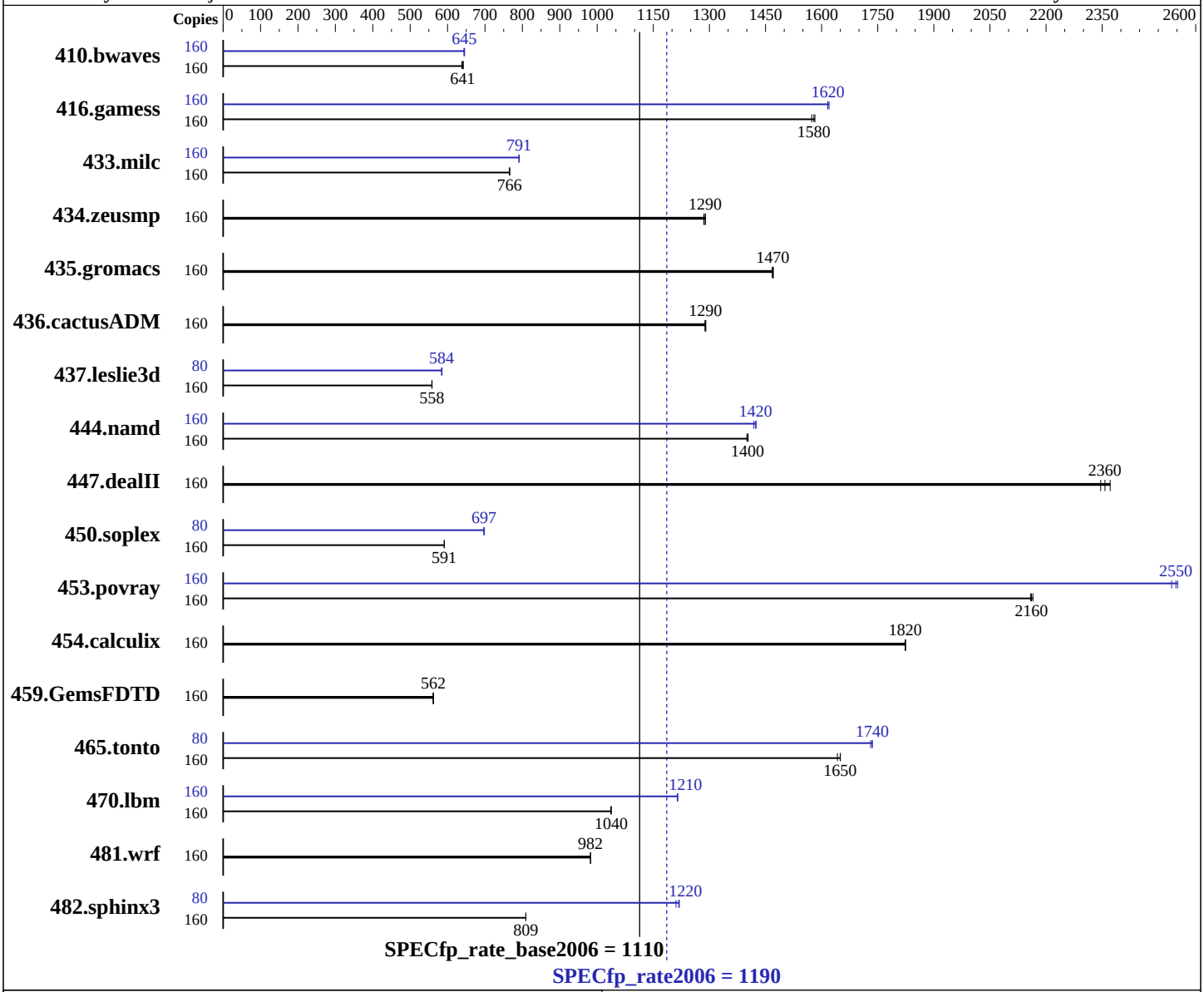
PRIMERGY RX900 S2, Intel Xeon E7-8870, 2.40 GHz

SPECfp®_rate2006 = 1190

SPECfp_rate_base2006 = 1110

CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Fujitsu

Test date: Apr-2011
Hardware Availability: Jun-2011
Software Availability: Nov-2010



Hardware

CPU Name:	Intel Xeon E7-8870
CPU Characteristics:	Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz:	2400
FPU:	Integrated
CPU(s) enabled:	80 cores, 8 chips, 10 cores/chip, 2 threads/core
CPU(s) orderable:	4,6,8 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core

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Software

Operating System:	SUSE Linux Enterprise Server 11 SP1(x86_64), Kernel 2.6.32.12-0.7-default
Compiler:	Intel C++ and Fortran Intel 64 Compiler XE for applications running on Intel 64 Version 12.0.1.116 Build 20101116
Auto Parallel:	No
File System:	ext2
System State:	Run level 3 (multi-user)
Base Pointers:	64-bit

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L3 Cache: 30 MB I+D on chip per chip
Other Cache: None
Memory: 1 TB (128 x 8 GB 4Rx8 PC3-10600R-9, ECC, running at 1066 MHz)
Disk Subsystem: 2 x 147 GB (SAS, 15000RPM, RAID0)
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: Binaries compiled on RHEL5.5 with binutils-2.17.50.0.6-14.el5

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	160	**3394**	**641**	3408	638	3387	642	160	3370	645	3379	644	**3371**	**645**
416.gamess	160	1991	1570	**1984**	**1580**	1980	1580	160	**1938**	**1620**	1934	1620	1938	1620
433.milc	160	1917	766	**1918**	**766**	1919	765	160	**1857**	**791**	1856	791	1857	791
434.zeusmp	160	1129	1290	1133	1290	**1130**	**1290**	160	1129	1290	1133	1290	**1130**	**1290**
435.gromacs	160	778	1470	**777**	**1470**	777	1470	160	778	1470	**777**	**1470**	777	1470
436.cactusADM	160	1482	1290	**1483**	**1290**	1484	1290	160	1482	1290	**1483**	**1290**	1484	1290
437.leslie3d	160	**2694**	**558**	2692	559	2696	558	80	**1287**	**584**	1285	585	1288	584
444.namd	160	**915**	**1400**	914	1400	916	1400	160	904	1420	901	1420	**901**	**1420**
447.dealII	160	**776**	**2360**	772	2370	780	2350	160	**776**	**2360**	772	2370	780	2350
450.soplex	160	2257	591	2257	591	**2257**	**591**	80	957	697	**957**	**697**	956	698
453.povray	160	**394**	**2160**	393	2160	394	2160	160	334	2550	336	2540	**334**	**2550**
454.calculix	160	**724**	**1820**	724	1820	724	1820	160	**724**	**1820**	724	1820	724	1820
459.GemsFDTD	160	**3021**	**562**	3025	561	3018	563	160	**3021**	**562**	3025	561	3018	563
465.tonto	160	**954**	**1650**	959	1640	954	1650	80	**454**	**1740**	454	1740	455	1730
470.lbm	160	2119	1040	2121	1040	**2119**	**1040**	160	1809	1210	**1810**	**1210**	1810	1210
481.wrf	160	1820	982	1819	982	**1820**	**982**	160	1820	982	1819	982	**1820**	**982**
482.sphinx3	160	**3853**	**809**	3854	809	3853	809	80	**1280**	**1220**	1288	1210	1278	1220

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

```
The config file option 'submit' was used.
 numactl was used to bind copies to the cores
```

Operating System Notes

```
Large pages were not enabled for this run

The following command was used prior to run
   ulimit -s unlimited
   echo 1 > /proc/sys/vm/zone_reclaim_mode
```

Base Compiler Invocation

C benchmarks:
icc -m64

C++ benchmarks:
icpc -m64

Fortran benchmarks:
ifort -m64

Benchmarks using both Fortran and C:
icc -m64 ifort -m64

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:
-xSSE4.2 -ipo -O3 -no-prec-div -static -ansi-alias

C++ benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -static -ansi-alias

Fortran benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -static

Benchmarks using both Fortran and C:
-xSSE4.2 -ipo -O3 -no-prec-div -static -ansi-alias

Peak Compiler Invocation

C benchmarks (except as noted below):
`icc -m64`

482.sphinx3: `icc -m32`

C++ benchmarks (except as noted below):
`icpc -m64`

450.soplex: `icpc -m32`

Fortran benchmarks:
`ifort -m64`

Benchmarks using both Fortran and C:
`icc -m64 ifort -m64`

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`
437.leslie3d: `-DSPEC_CPU_LP64`
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`
470.lbm: `-DSPEC_CPU_LP64`
481.wrf: `-DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX`

Peak Optimization Flags

C benchmarks:

433.milc: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2)
`-no-prec-div`(pass 2) `-prof-use`(pass 2) `-static -auto-ilp32`

470.lbm: `-xSSE4.2`(pass 2) `-prof-gen`(pass 1) `-ipo`(pass 2) `-O3`(pass 2)
`-no-prec-div`(pass 2) `-prof-use`(pass 2) `-opt-malloc-options=3`
`-ansi-alias -opt-prefetch -static -auto-ilp32`

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Peak Optimization Flags (Continued)

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2

C++ benchmarks:

444.namd: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -fno-alias -auto-ilp32

447.dealII: basepeak = yes

450.soplex: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3 -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

Fortran benchmarks:

410.bwaves: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -static

416.gamess: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll2 -inline-level=0 -scalar-rep- -static

434.zeusmp: basepeak = yes

437.leslie3d: -xSSE4.2 -ipo -O3 -no-prec-div -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

459.GemsFDTD: basepeak = yes

465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -auto -inline-calloc -opt-malloc-options=3 -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.html
http://www.spec.org/cpu2006/flags/RX900S2_Platform.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.xml
http://www.spec.org/cpu2006/flags/RX900S2_Platform.xml

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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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