SPEC® CFP2006 Result
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Fujitsu

PRIMERGY BX922 S2, Intel Xeon X5670, 2.93 GHz

$SPECfp®\_rate2006 = 249$

$SPECfp\_rate\_base2006 = 241$

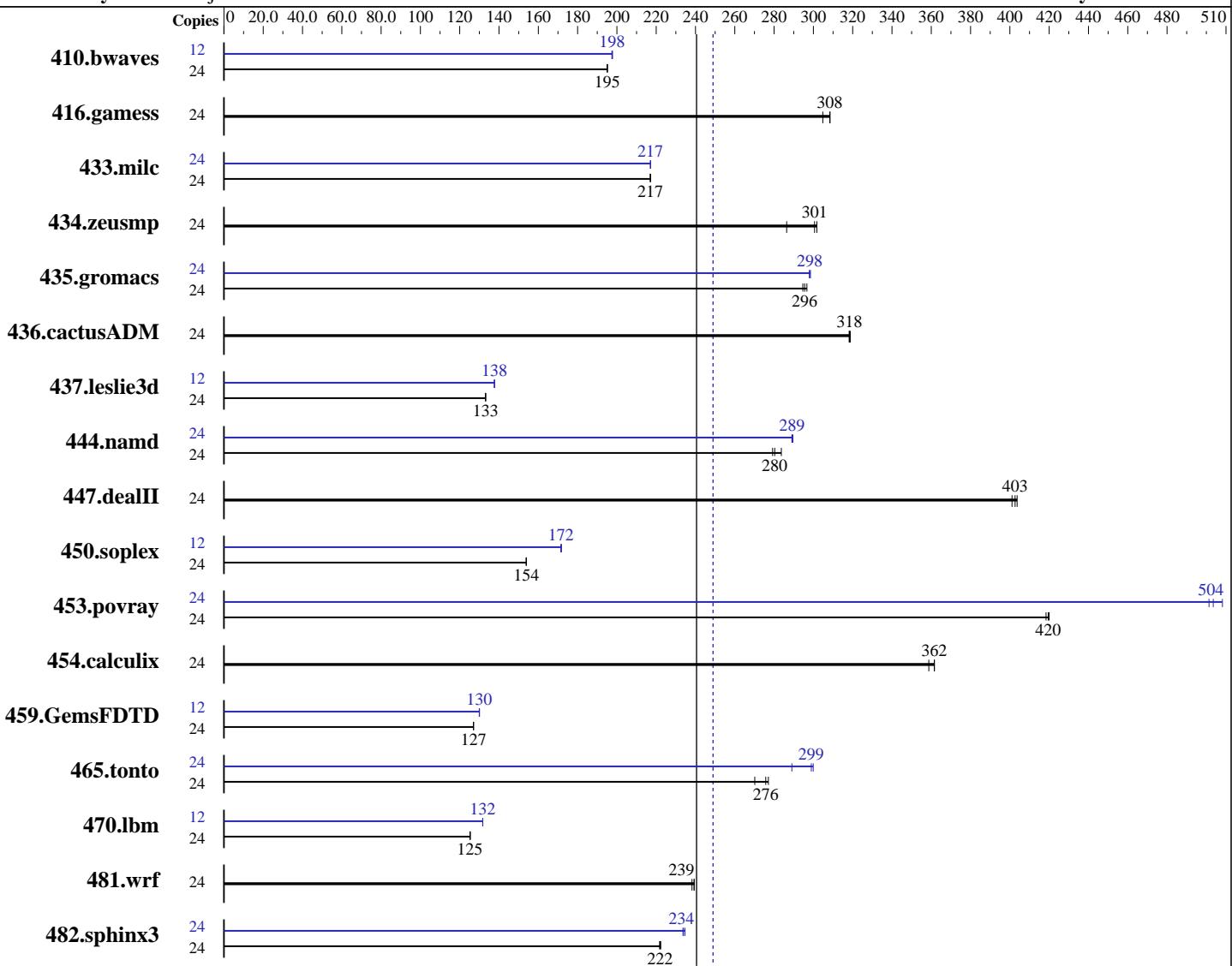|	
CPU2006 license: 19	**Test date:** Jun-2010
Test sponsor: Fujitsu	**Hardware Availability:** Oct-2010
Tested by: Fujitsu	**Software Availability:** Jan-2010

Results chart (Copies):

- 410.bwaves: 12 copies = 198; 24 copies = 195
- 416.gamess: 24 copies = 308
- 433.milc: 24 copies = 217; 24 copies = 217
- 434.zeusmp: 24 copies = 301
- 435.gromacs: 24 copies = 298; 24 copies = 296
- 436.cactusADM: 24 copies = 318
- 437.leslie3d: 12 copies = 138; 24 copies = 133
- 444.namd: 24 copies = 289; 24 copies = 280
- 447.dealII: 24 copies = 403
- 450.soplex: 12 copies = 172; 24 copies = 154
- 453.povray: 24 copies = 504; 24 copies = 420
- 454.calculix: 24 copies = 362
- 459.GemsFDTD: 12 copies = 130; 24 copies = 127
- 465.tonto: 24 copies = 299; 24 copies = 276
- 470.lbm: 12 copies = 132; 24 copies = 125
- 481.wrf: 24 copies = 239
- 482.sphinx3: 24 copies = 234; 24 copies = 222

SPECfp_rate_base2006 = 241

SPECfp_rate2006 = 249

Hardware

CPU Name:	Intel Xeon X5670
CPU Characteristics:	Intel Turbo Boost Technology up to 3.33 GHz
CPU MHz:	2933
FPU:	Integrated
CPU(s) enabled:	12 cores, 2 chips, 6 cores/chip, 2 threads/core
CPU(s) orderable:	1,2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core

Continued on next page

Software

Operating System:	SUSE Linux Enterprise Server 11 (x86_64), Kernel 2.6.27.19-5-default
Compiler:	Intel C++ and Fortran Professional Compiler for IA32 and Intel 64, Version 11.1 Build 20091130 Package ID: l_cproc_p_11.1.064, l_cprof_p_11.1.064
Auto Parallel:	No
File System:	ext3
System State:	Multi-User Run Level 3

Continued on next page

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L3 Cache:	12 MB I+D on chip per chip	Base Pointers:	64-bit
Other Cache:	None	Peak Pointers:	32/64-bit
Memory:	48 GB (12x4 GB PC3-10600R, 2 rank, CL9-9-9, ECC)	Other Software:	None
Disk Subsystem:	1 x SSD SATA, 64 GB		
Other Hardware:	None		

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	24	1671	195	**1672**	**195**	1672	195	12	**826**	**198**	825	198	826	197
416.gamess	24	1523	308	1542	305	**1524**	**308**	24	1523	308	1542	305	**1524**	**308**
433.milc	24	**1015**	**217**	1015	217	1016	217	24	1015	217	1015	217	**1015**	**217**
434.zeusmp	24	724	302	763	286	**727**	**301**	24	724	302	763	286	**727**	**301**
435.gromacs	24	582	295	578	297	**580**	**296**	24	575	298	574	299	**575**	**298**
436.cactusADM	24	**901**	**318**	900	319	901	318	24	**901**	**318**	900	319	901	318
437.leslie3d	24	1694	133	1695	133	**1694**	**133**	12	819	138	820	138	**819**	**138**
444.namd	24	689	279	**687**	**280**	678	284	24	**666**	**289**	665	290	666	289
447.dealII	24	**682**	**403**	680	404	685	401	24	**682**	**403**	680	404	685	401
450.soplex	24	1300	154	**1300**	**154**	1301	154	12	583	172	**583**	**172**	583	172
453.povray	24	305	418	304	420	**304**	**420**	24	255	501	**254**	**504**	251	508
454.calculix	24	548	362	552	359	**548**	**362**	24	548	362	552	359	**548**	**362**
459.GemsFDTD	24	**2005**	**127**	2005	127	2005	127	12	980	130	**979**	**130**	979	130
465.tonto	24	852	277	**856**	**276**	874	270	24	817	289	787	300	**790**	**299**
470.lbm	24	2629	125	**2633**	**125**	2634	125	12	1252	132	**1252**	**132**	1251	132
481.wrf	24	1125	238	1120	239	**1120**	**239**	24	1125	238	1120	239	**1120**	**239**
482.sphinx3	24	2104	222	2110	222	**2107**	**222**	24	1993	235	2002	234	**2000**	**234**

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

    'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run

Platform Notes

    BIOS configuration:
    Data Reuse Optimization = Disable
    Performance/Power Setting = Traditional

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General Notes

```
For information about Fujitsu please visit: http://www.fujitsu.com
Binaries were compiled on SLES 10 with Binutils 2.18.50.0.7.20080502
```

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
```

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

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Base Optimization Flags (Continued)

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

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

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`

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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) -static(pass 2) -prof-use(pass 2)
-fno-alias -opt-prefetch

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

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

C++ benchmarks:

444.namd: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(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) -static(pass 2) -prof-use(pass 2)
-opt-malloc-options=3

453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch

416.gamess: basepeak = yes

434.zeusmp: basepeak = yes

437.leslie3d: -xSSE4.2 -ipo -O3 -no-prec-div -static

459.GemsFDTD: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-unroll2 -Ob0

465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-unroll4 -auto -inline-calloc -opt-malloc-options=3

Benchmarks using both Fortran and C:

435.gromacs: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)
-opt-prefetch -auto-ilp32

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Peak Optimization Flags (Continued)

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: basepeak = yes

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100708.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100708.xml

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

Tested with SPEC CPU2006 v1.1.
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