SPEC® CFP2006 Result
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Fujitsu

PRIMERGY BX920 S2, Intel Xeon X5675, 3.07 GHz

$SPECfp^{®}\_rate2006 =$ 262

$SPECfp\_rate\_base2006 =$ 254

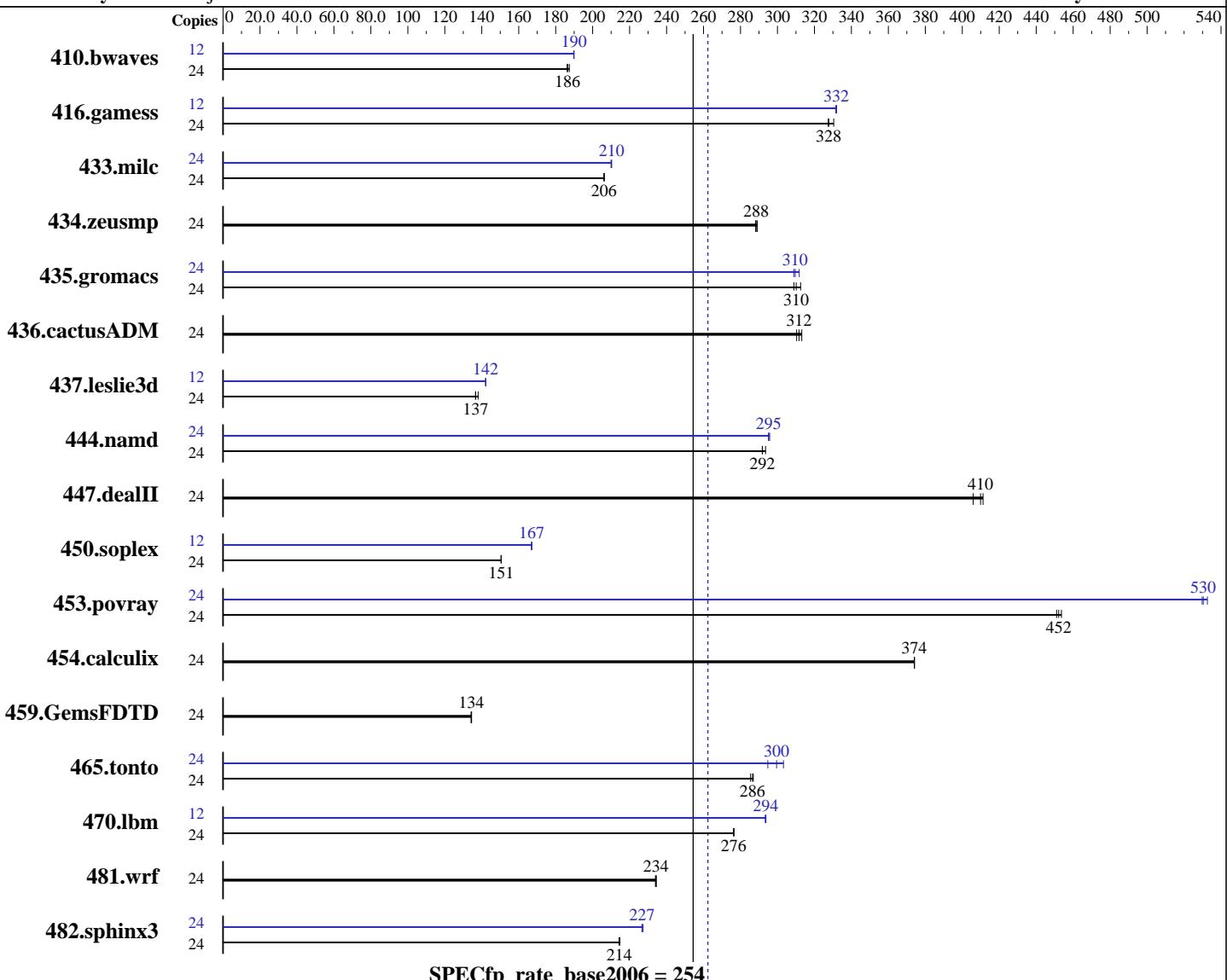| **CPU2006 license:** 19 | **Test date:** Jan-2011 |
| **Test sponsor:** Fujitsu | **Hardware Availability:** Feb-2011 |
| **Tested by:** Fujitsu | **Software Availability:** Jan-2011 |

Copies		
410.bwaves	12	190
	24	186
416.gamess	12	332
	24	328
433.milc	24	210
	24	206
434.zeusmp	24	288
435.gromacs	24	310
	24	310
436.cactusADM	24	312
437.leslie3d	12	142
	24	137
444.namd	24	295
	24	292
447.dealII	24	410
450.soplex	12	167
	24	151
453.povray	24	530
	24	452
454.calculix	24	374
459.GemsFDTD	24	134
465.tonto	24	300
	24	286
470.lbm	12	294
	24	276
481.wrf	24	234
482.sphinx3	24	227
	24	214

SPECfp_rate_base2006 = 254

SPECfp_rate2006 = 262

Hardware

CPU Name:	Intel Xeon X5675
CPU Characteristics:	Intel Turbo Boost Technology up to 3.47 GHz
CPU MHz:	3067
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) with SP1, 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:	ext3
System State:	Run level 3 (multi-user)
Base Pointers:	64-bit

Continued on next page

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L3 Cache:	12 MB I+D on chip per chip
Other Cache:	None
Memory:	48 GB (6 x 8 GB 2Rx4 PC3-10600R-9, ECC)
Disk Subsystem:	1 x SAS, 300 GB, 10000 RPM
Other Hardware:	--

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	24	1741	187	**1749**	**186**	1751	186	12	**859**	**190**	859	190	859	190
416.gamess	24	1422	330	**1434**	**328**	1435	327	12	**708**	**332**	709	332	708	332
433.milc	24	1068	206	1069	206	**1069**	**206**	24	1048	210	**1048**	**210**	1049	210
434.zeusmp	24	**757**	**288**	758	288	756	289	24	**757**	**288**	758	288	756	289
435.gromacs	24	**553**	**310**	548	313	555	309	24	**553**	**310**	555	309	550	312
436.cactusADM	24	924	310	**920**	**312**	916	313	24	924	310	**920**	**312**	916	313
437.leslie3d	24	1652	137	1634	138	**1650**	**137**	12	**794**	**142**	794	142	794	142
444.namd	24	656	294	**659**	**292**	660	292	24	651	296	652	295	**652**	**295**
447.dealII	24	**670**	**410**	668	411	676	406	24	**670**	**410**	668	411	676	406
450.soplex	24	**1330**	**151**	1329	151	1331	150	12	599	167	600	167	**599**	**167**
453.povray	24	281	454	283	451	**282**	**452**	24	240	533	**241**	**530**	241	530
454.calculix	24	529	374	529	374	**529**	**374**	24	529	374	529	374	**529**	**374**
459.GemsFDTD	24	1898	134	1894	134	**1894**	**134**	24	1898	134	1894	134	**1894**	**134**
465.tonto	24	827	285	**824**	**286**	823	287	24	**788**	**300**	779	303	801	295
470.lbm	24	1193	276	1193	276	**1193**	**276**	12	561	294	**561**	**294**	562	293
481.wrf	24	1144	234	**1144**	**234**	1146	234	24	1144	234	**1144**	**234**	1146	234
482.sphinx3	24	2178	215	2183	214	**2182**	**214**	24	2058	227	**2062**	**227**	2064	227

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
     Large pages were not enabled for this 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

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

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Tested by:　　　Fujitsu　　　　　　　　　　　　　　　**Software Availability:**　Jan-2011

Base Optimization Flags (Continued)

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:

Fujitsu

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CPU2006 license: 19

Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Jan-2011

Hardware Availability: Feb-2011

Software Availability: Jan-2011

Peak Optimization Flags (Continued)

```
  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

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: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
             -no-prec-div(pass 2) -prof-use(pass 2) -opt-prefetch
             -static -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-ic12.0-linux64-revA.20110222.00.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revA.20110222.00.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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