SPEC® CFP2006 Result
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Fujitsu

PRIMERGY CX270 S1, Intel Xeon E5-2650, 2.0 GHz

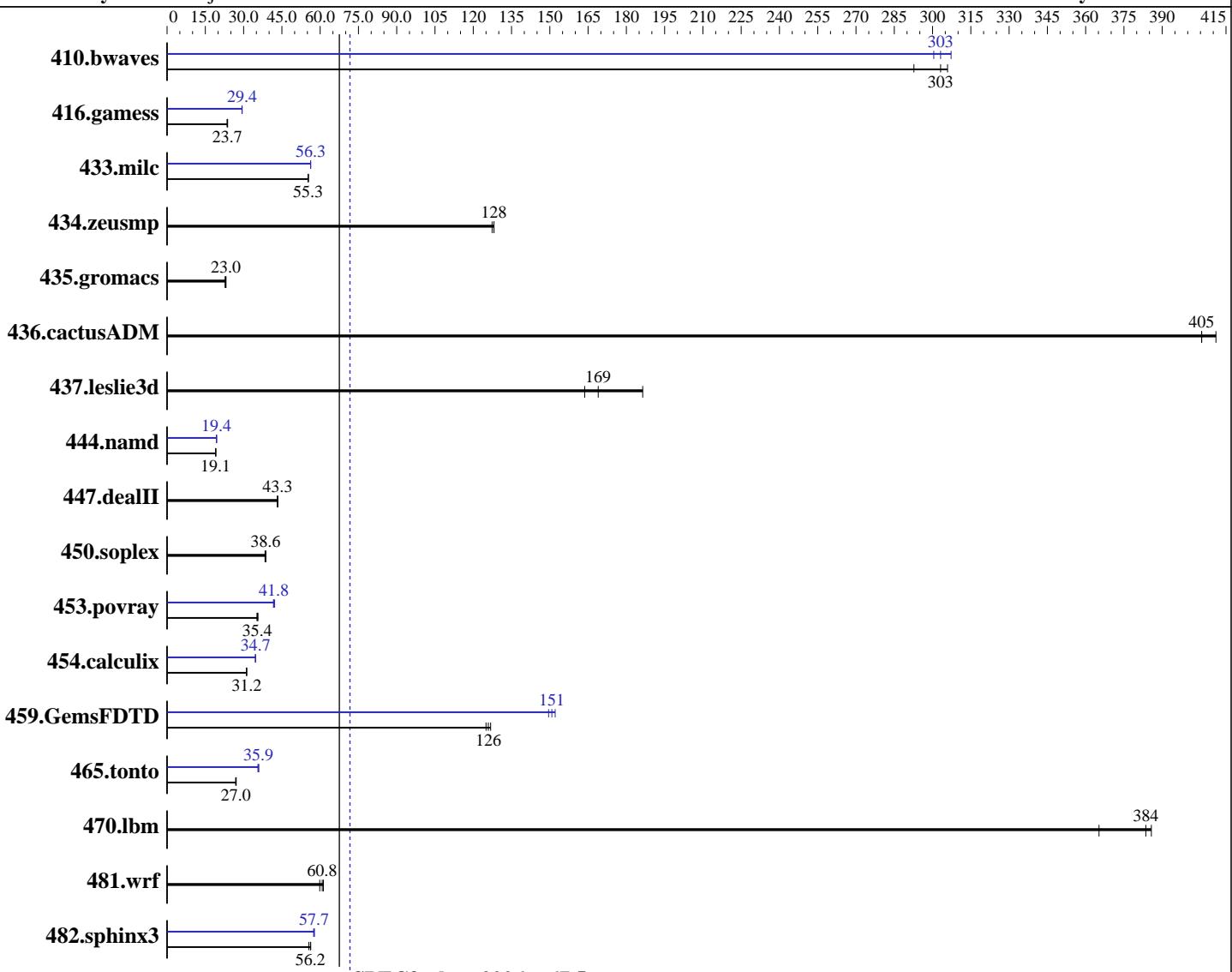$SPECfp^{®}2006 =$ 71.7

$SPECfp\_base2006 =$ 67.5

CPU2006 license: 19	**Test date:** Feb-2012
Test sponsor: Fujitsu	**Hardware Availability:** Jun-2012
Tested by: Fujitsu	**Software Availability:** Dec-2011

410.bwaves 303 / 303
416.gamess 29.4 / 23.7
433.milc 56.3 / 55.3
434.zeusmp 128
435.gromacs 23.0
436.cactusADM 405
437.leslie3d 169
444.namd 19.4 / 19.1
447.dealII 43.3
450.soplex 38.6
453.povray 41.8 / 35.4
454.calculix 34.7 / 31.2
459.GemsFDTD 151 / 126
465.tonto 35.9 / 27.0
470.lbm 384
481.wrf 60.8
482.sphinx3 57.7 / 56.2

SPECfp_base2006 = 67.5

SPECfp2006 = 71.7

Hardware

CPU Name:	Intel Xeon E5-2650
CPU Characteristics:	Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz:	2000
FPU:	Integrated
CPU(s) enabled:	16 cores, 2 chips, 8 cores/chip
CPU(s) orderable:	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:	Red Hat Enterprise Linux Server release 6.2 (Santiago) 2.6.32-220.el6.x86_64
Compiler:	C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux; Fortran: Version 12.1.0.225 of Intel Fortran Studio XE for Linux
Auto Parallel:	Yes
File System:	ext4

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L3 Cache:	20 MB I+D on chip per chip
Other Cache:	None
Memory:	128 GB (16 x 8 GB 2Rx4 PC3L-12800R-11, ECC)
Disk Subsystem:	1 x SATA, 500 GB, 7200 RPM
Other Hardware:	None

System State:	Run level 3 (multi-user)
Base Pointers:	64-bit
Peak Pointers:	32/64-bit
Other Software:	None

Results Table

Benchmark	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
410.bwaves	46.4	293	**44.8**	**303**	44.4	306	44.2	307	45.2	300	**44.8**	**303**
416.gamess	833	23.5	825	23.7	**828**	**23.7**	**666**	**29.4**	667	29.4	665	29.4
433.milc	166	55.3	**166**	**55.3**	166	55.4	163	56.3	163	56.2	**163**	**56.3**
434.zeusmp	**71.0**	**128**	71.0	128	71.4	127	**71.0**	**128**	71.0	128	71.4	127
435.gromacs	314	22.7	**310**	**23.0**	309	23.1	314	22.7	**310**	**23.0**	309	23.1
436.cactusADM	29.5	405	**29.5**	**405**	29.1	411	29.5	405	**29.5**	**405**	29.1	411
437.leslie3d	**55.6**	**169**	50.4	186	57.4	164	**55.6**	**169**	50.4	186	57.4	164
444.namd	420	19.1	421	19.1	**420**	**19.1**	414	19.4	**414**	**19.4**	413	19.4
447.dealII	265	43.2	264	43.4	**264**	**43.3**	265	43.2	264	43.4	**264**	**43.3**
450.soplex	216	38.7	**216**	**38.6**	217	38.4	216	38.7	**216**	**38.6**	217	38.4
453.povray	149	35.6	**150**	**35.4**	151	35.2	126	42.2	**127**	**41.8**	128	41.7
454.calculix	265	31.1	264	31.2	**265**	**31.2**	**238**	**34.7**	238	34.7	238	34.6
459.GemsFDTD	83.7	127	84.9	125	**84.3**	**126**	71.0	150	**70.4**	**151**	69.8	152
465.tonto	363	27.1	**364**	**27.0**	366	26.9	274	35.9	276	35.6	**274**	**35.9**
470.lbm	**35.8**	**384**	37.6	365	35.6	386	**35.8**	**384**	37.6	365	35.6	386
481.wrf	187	59.8	**184**	**60.8**	182	61.3	187	59.8	**184**	**60.8**	182	61.3
482.sphinx3	**347**	**56.2**	351	55.6	346	56.3	**338**	**57.7**	339	57.4	338	57.7

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

Operating System Notes

```
Stack size set to unlimited using "ulimit -s unlimited"
Transparent Huge Pages enabled with:
echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
```

Platform Notes

```
BIOS configuration:
Intel HT Technology = Disable
```

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General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/SPECcpu2006/libs/32:/SPECcpu2006/libs/64"
OMP_NUM_THREADS = "16"

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RHEL5.5
 This result was measured on the PRIMERGY CX250 S1. The PRIMERGY CX250 S1
 and the PRIMERGY CX270 S1 are electronically equivalent.
 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
```

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Base Optimization Flags

C benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias
```

C++ benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias
```

Fortran benchmarks:
```
-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
```

Benchmarks using both Fortran and C:
```
-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
-ansi-alias
```

Peak Compiler Invocation

C benchmarks:
```
icc    -m64
```

C++ benchmarks:
```
icpc   -m64
```

Fortran benchmarks:
```
ifort -m64
```

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

Peak Portability Flags

```
Same as Base Portability Flags
```

Peak Optimization Flags

C benchmarks:

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

    470.lbm: basepeak = yes

    482.sphinx3: -xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias
              -parallel
```

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Peak Optimization Flags (Continued)

C++ benchmarks:

    444.namd: `-xAVX(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: `basepeak = yes`

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

Fortran benchmarks:

    410.bwaves: `-xAVX -ipo -O3 -no-prec-div -opt-prefetch -parallel`
             `-static`

    416.gamess: `-xAVX(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: `basepeak = yes`

    459.GemsFDTD: `-xAVX(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 -opt-prefetch -parallel`

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

Benchmarks using both Fortran and C:

    435.gromacs: `basepeak = yes`

    436.cactusADM: `basepeak = yes`

    454.calculix: `-xAVX -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias`

    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-ic12.1-official-linux64.20111122.html
http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20120313.01.html

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You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml
http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20120313.01.xml

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