SPEC® CFP2006 Result
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Fujitsu

$SPECfp^{®}2006 =$ 63.8

PRIMERGY BX924 S3, Intel Xeon E5-2620, 2.0 GHz

$SPECfp\_base2006 =$ 60.6

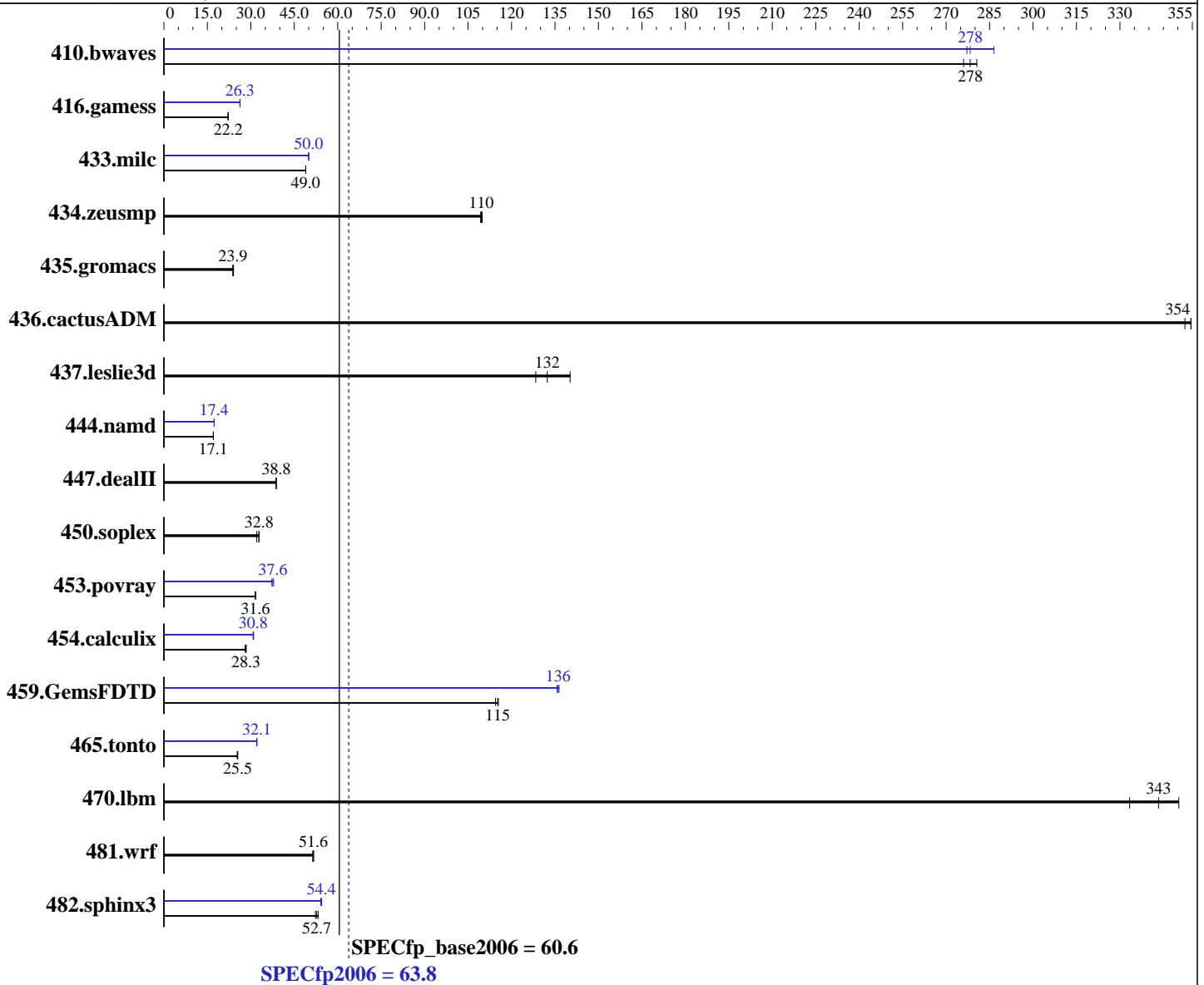|			
CPU2006 license: 19		**Test date:**	Feb-2012
Test sponsor: Fujitsu		**Hardware Availability:**	Mar-2012
Tested by: Fujitsu		**Software Availability:**	Dec-2011

SPECfp_base2006 = 60.6

SPECfp2006 = 63.8

410.bwaves	278 / 278
416.gamess	26.3 / 22.2
433.milc	50.0 / 49.0
434.zeusmp	110
435.gromacs	23.9
436.cactusADM	354
437.leslie3d	132
444.namd	17.4 / 17.1
447.dealII	38.8
450.soplex	32.8
453.povray	37.6 / 31.6
454.calculix	30.8 / 28.3
459.GemsFDTD	136 / 115
465.tonto	32.1 / 25.5
470.lbm	343
481.wrf	51.6
482.sphinx3	54.4 / 52.7

Hardware

CPU Name:	Intel Xeon E5-2620
CPU Characteristics:	Intel Turbo Boost Technology up to 2.50 GHz
CPU MHz:	2000
FPU:	Integrated
CPU(s) enabled:	12 cores, 2 chips, 6 cores/chip
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:	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:	15 MB I+D on chip per chip
Other Cache:	None
Memory:	128 GB (16 x 8 GB 2Rx4 PC3L-12800R-11, ECC, running at 1333 MHz and CL9)
Disk Subsystem:	1 x SATA, 500 GB, 7200 RPM
Other Hardware:	PRIMERGY SX940 S1 for hw_disk
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	49.2	276	48.4	281	**48.8**	**278**	**48.8**	**278**	47.4	287	49.0	277
416.gamess	**882**	**22.2**	881	22.2	885	22.1	746	26.2	**746**	**26.3**	744	26.3
433.milc	187	49.0	188	48.9	**187**	**49.0**	184	50.0	**184**	**50.0**	184	50.0
434.zeusmp	**83.0**	**110**	83.2	109	82.8	110	**83.0**	**110**	83.2	109	82.8	110
435.gromacs	**299**	**23.9**	300	23.8	297	24.0	**299**	**23.9**	300	23.8	297	24.0
436.cactusADM	33.7	355	**33.7**	**354**	33.9	352	33.7	355	**33.7**	**354**	33.9	352
437.leslie3d	73.2	128	**71.0**	**132**	67.0	140	73.2	128	**71.0**	**132**	67.0	140
444.namd	**470**	**17.1**	470	17.1	470	17.1	462	17.3	462	17.4	**462**	**17.4**
447.dealII	295	38.8	295	38.8	**295**	**38.8**	295	38.8	295	38.8	**295**	**38.8**
450.soplex	254	32.8	**254**	**32.8**	260	32.0	254	32.8	**254**	**32.8**	260	32.0
453.povray	**168**	**31.6**	169	31.6	168	31.7	143	37.2	**142**	**37.6**	140	37.9
454.calculix	**291**	**28.3**	291	28.4	294	28.0	268	30.8	**268**	**30.8**	266	31.0
459.GemsFDTD	91.9	115	92.7	114	**92.1**	**115**	**78.0**	**136**	78.2	136	77.8	136
465.tonto	386	25.5	389	25.3	**387**	**25.5**	306	32.1	**307**	**32.1**	307	32.0
470.lbm	41.2	333	39.2	350	**40.0**	**343**	41.2	333	39.2	350	**40.0**	**343**
481.wrf	216	51.6	**216**	**51.6**	218	51.4	216	51.6	**216**	**51.6**	218	51.4
482.sphinx3	366	53.3	**370**	**52.7**	373	52.3	**359**	**54.4**	360	54.1	358	54.5

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"
```

Platform Notes

```
BIOS configuration:
Intel HT Technology = Disable
Frequency Floor Override = Enable
```

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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 = "12"

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RHEL5.5
 Transparent Huge Pages enabled with:
 echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled
 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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Software Availability: Dec-2011

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.20120313.00.html

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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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