SPEC® CFP2006 Result
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Fujitsu

PRIMERGY BX920 S3, Intel Xeon E5-2440, 2.40 GHz

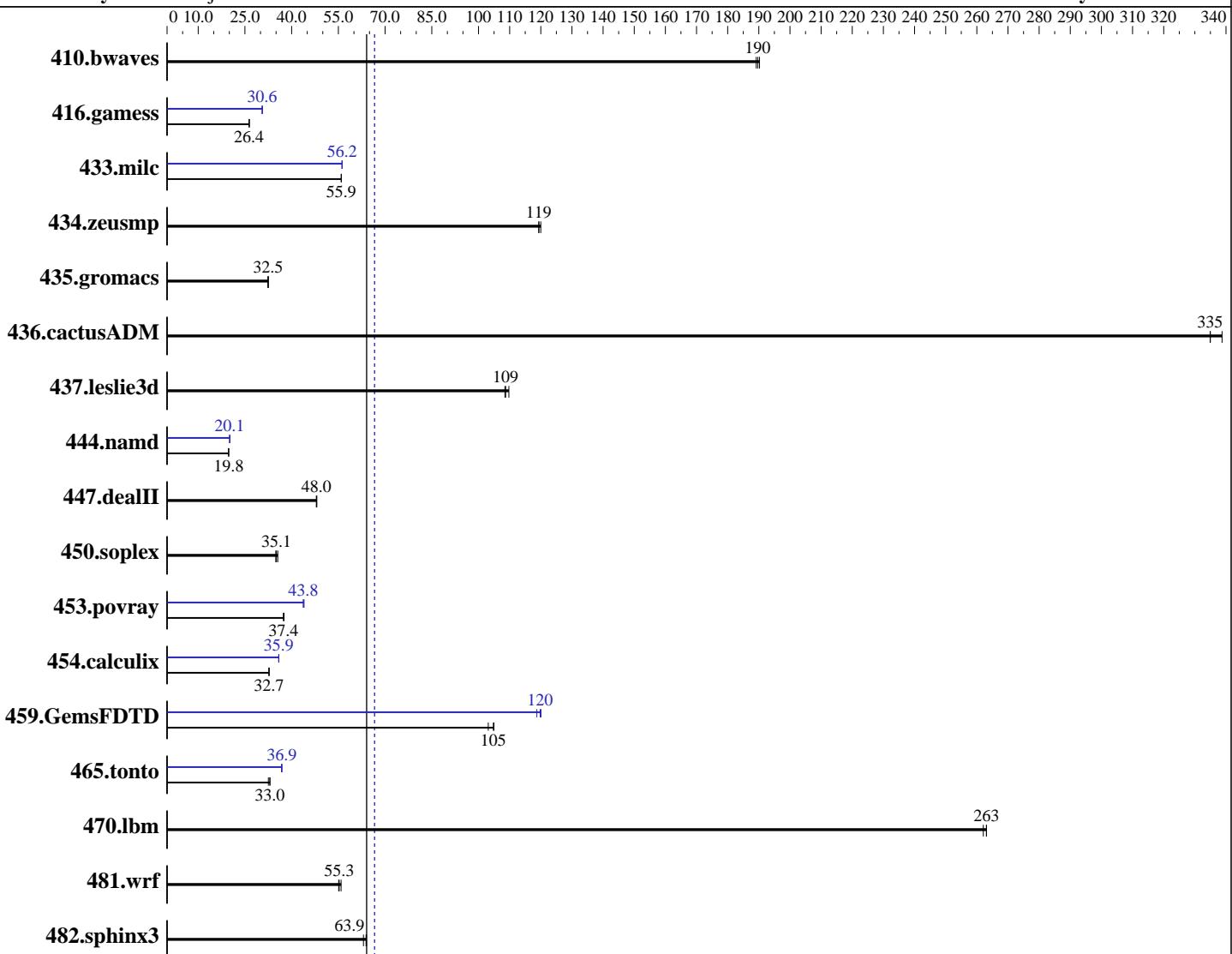$SPECfp®2006 =$ 66.6

$SPECfp\_base2006 =$ 64.1

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

Chart scale: 0 10.0 25.0 40.0 55.0 70.0 85.0 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 340

- 410.bwaves: 190
- 416.gamess: 30.6 / 26.4
- 433.milc: 56.2 / 55.9
- 434.zeusmp: 119
- 435.gromacs: 32.5
- 436.cactusADM: 335
- 437.leslie3d: 109
- 444.namd: 20.1 / 19.8
- 447.dealII: 48.0
- 450.soplex: 35.1
- 453.povray: 43.8 / 37.4
- 454.calculix: 35.9 / 32.7
- 459.GemsFDTD: 120 / 105
- 465.tonto: 36.9 / 33.0
- 470.lbm: 263
- 481.wrf: 55.3
- 482.sphinx3: 63.9

SPECfp_base2006 = 64.1
SPECfp2006 = 66.6

Hardware

CPU Name:	Intel Xeon E5-2440
CPU Characteristics:	Intel Turbo Boost Technology up to 2.90 GHz
CPU MHz:	2400
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 12.1.0.293 of Intel C++ Studio XE for Linux; Fortran: Version 12.1.0.293 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	System State:	Run level 3 (multi-user)
Other Cache:	None	Base Pointers:	64-bit
Memory:	96 GB (12 x 8 GB 2Rx4 PC3L-12800R-11, ECC, running at 1333 MHz and CL9)	Peak Pointers:	32/64-bit
		Other Software:	None
Disk Subsystem:	1 x SATA, 500 GB, 7200 RPM		
Other Hardware:	None		

Results Table

	Base						Peak					
Benchmark	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**
410.bwaves	71.8	189	**71.6**	**190**	71.4	190	71.8	189	**71.6**	**190**	71.4	190
416.gamess	743	26.4	742	26.4	**743**	**26.4**	640	30.6	641	30.5	**640**	**30.6**
433.milc	164	55.9	164	55.9	**164**	**55.9**	163	56.2	**163**	**56.2**	163	56.2
434.zeusmp	75.8	120	76.2	119	**76.2**	**119**	75.8	120	76.2	119	**76.2**	**119**
435.gromacs	**220**	**32.5**	221	32.4	220	32.5	**220**	**32.5**	221	32.4	220	32.5
436.cactusADM	**35.7**	**335**	35.3	339	35.7	335	**35.7**	**335**	35.3	339	35.7	335
437.leslie3d	86.7	108	**86.5**	**109**	85.7	110	86.7	108	**86.5**	**109**	85.7	110
444.namd	**406**	**19.8**	406	19.8	406	19.8	399	20.1	399	20.1	**399**	**20.1**
447.dealII	238	48.1	**239**	**48.0**	239	48.0	238	48.1	**239**	**48.0**	239	48.0
450.soplex	239	34.9	235	35.5	**237**	**35.1**	239	34.9	235	35.5	**237**	**35.1**
453.povray	142	37.4	**142**	**37.4**	142	37.6	122	43.8	**122**	**43.8**	121	44.0
454.calculix	252	32.7	252	32.7	**252**	**32.7**	230	35.9	**230**	**35.9**	230	35.9
459.GemsFDTD	**101**	**105**	103	103	101	105	**88.6**	**120**	89.4	119	88.4	120
465.tonto	**298**	**33.0**	298	33.0	303	32.5	267	36.9	268	36.7	**267**	**36.9**
470.lbm	52.4	262	52.2	263	**52.2**	**263**	52.4	262	52.2	263	**52.2**	**263**
481.wrf	200	55.9	**202**	**55.3**	203	55.1	200	55.9	**202**	**55.3**	203	55.1
482.sphinx3	**305**	**63.9**	305	64.0	309	63.1	**305**	**63.9**	305	64.0	309	63.1

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 E3-1270v2 CPU + 32 GB
 memory using RHEL6.2
 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: basepeak = yes
```

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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: basepeak = yes

    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: `-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 -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.20120320.html

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.20120320.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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