SPEC® CFP2006 Result
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Fujitsu

PRIMERGY BX920 S3, Intel Xeon E5-2407, 2.20 GHz

$SPECfp®2006 =$ 51.6

$SPECfp\_base2006 =$ 49.4

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

Results by benchmark:

- 410.bwaves: 169 / 168
- 416.gamess: 23.2 / 20.5
- 433.milc: 44.7 / 43.8
- 434.zeusmp: 85.2
- 435.gromacs: 23.8
- 436.cactusADM: 240
- 437.leslie3d: 94.7
- 444.namd: 15.3 / 15.0
- 447.dealII: 34.2
- 450.soplex: 27.0
- 453.povray: 32.9 / 27.7
- 454.calculix: 27.3 / 25.3
- 459.GemsFDTD: 93.6 / 84.1
- 465.tonto: 28.2 / 23.6
- 470.lbm: 204
- 481.wrf: 46.9
- 482.sphinx3: 51.0 / 49.0

SPECfp_base2006 = 49.4
SPECfp2006 = 51.6

Hardware

CPU Name:	Intel Xeon E5-2407
CPU Characteristics:	
CPU MHz:	2200
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 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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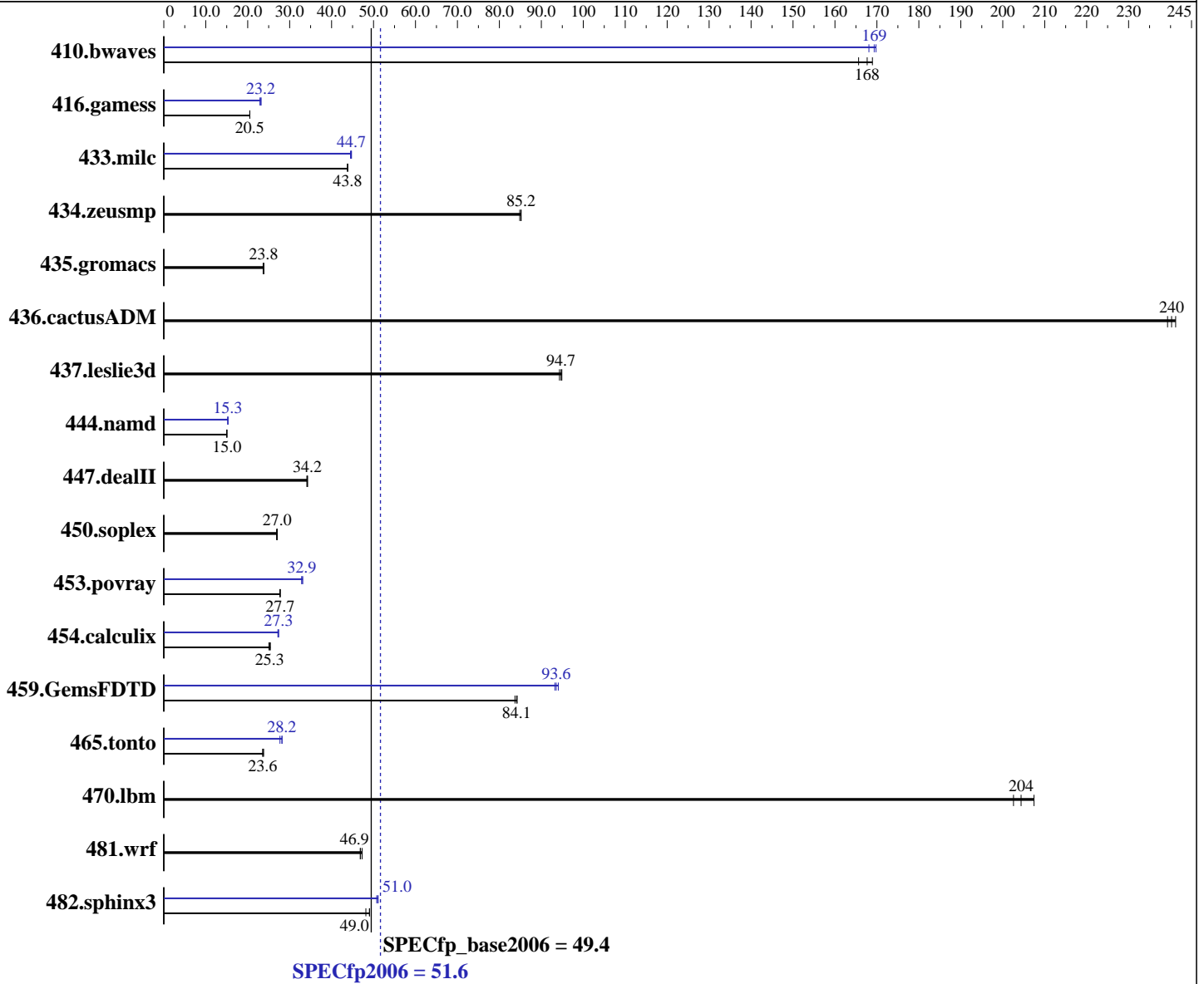|	
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L3 Cache:	10 MB I+D on chip per chip	System State:	Run level 3 (multi-user)
Other Cache:	None	Base Pointers:	64-bit
Memory:	96 GB (12 x 8 GB 2Rx4 PC3L-12800R-11, ECC, running at 1067 MHz and CL7)	Peak Pointers:	32/64-bit
		Other Software:	None
Disk Subsystem:	1 x SATA, 500 GB, 7200 RPM		
Other Hardware:	None		

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	**81.0**	**168**	80.4	169	82.0	166	80.0	170	**80.2**	**169**	80.8	168
416.gamess	955	20.5	**955**	**20.5**	955	20.5	**846**	**23.2**	854	22.9	845	23.2
433.milc	**209**	**43.8**	210	43.8	209	43.8	205	44.7	206	44.5	**205**	**44.7**
434.zeusmp	**107**	**85.2**	107	85.2	107	84.8	**107**	**85.2**	107	85.2	107	84.8
435.gromacs	302	23.7	299	23.9	**300**	**23.8**	302	23.7	299	23.9	**300**	**23.8**
436.cactusADM	49.9	239	**49.7**	**240**	49.5	241	49.9	239	**49.7**	**240**	49.5	241
437.leslie3d	**99.3**	**94.7**	99.7	94.3	99.1	94.9	**99.3**	**94.7**	99.7	94.3	99.1	94.9
444.namd	**534**	**15.0**	534	15.0	533	15.0	525	15.3	525	15.3	**525**	**15.3**
447.dealII	334	34.3	335	34.1	**334**	**34.2**	334	34.3	335	34.1	**334**	**34.2**
450.soplex	308	27.1	310	26.9	**308**	**27.0**	308	27.1	310	26.9	**308**	**27.0**
453.povray	**192**	**27.7**	192	27.8	192	27.7	162	32.9	**162**	**32.9**	161	33.1
454.calculix	329	25.1	**327**	**25.3**	325	25.4	303	27.2	**302**	**27.3**	301	27.4
459.GemsFDTD	126	84.2	**126**	**84.1**	127	83.7	114	93.2	**113**	**93.6**	113	94.1
465.tonto	**417**	**23.6**	413	23.8	417	23.6	**350**	**28.2**	355	27.7	349	28.2
470.lbm	**67.2**	**204**	66.2	207	67.8	203	**67.2**	**204**	66.2	207	67.8	203
481.wrf	236	47.3	239	46.8	**238**	**46.9**	236	47.3	239	46.8	**238**	**46.9**
482.sphinx3	397	49.0	**398**	**49.0**	405	48.2	**382**	**51.0**	384	50.8	381	51.1

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:

    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 = "8"

 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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Test date: Apr-2012
Hardware Availability: May-2012
Software Availability: Dec-2011

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.20120320.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.20120320.xml

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

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