



# SPEC® CFP2006 Result

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## Fujitsu

SPECfp®2006 = **71.0**

PRIMERGY RX300 S7, Intel Xeon E5-2630, 2.30 GHz

SPECfp\_base2006 = **67.8**

CPU2006 license: 19

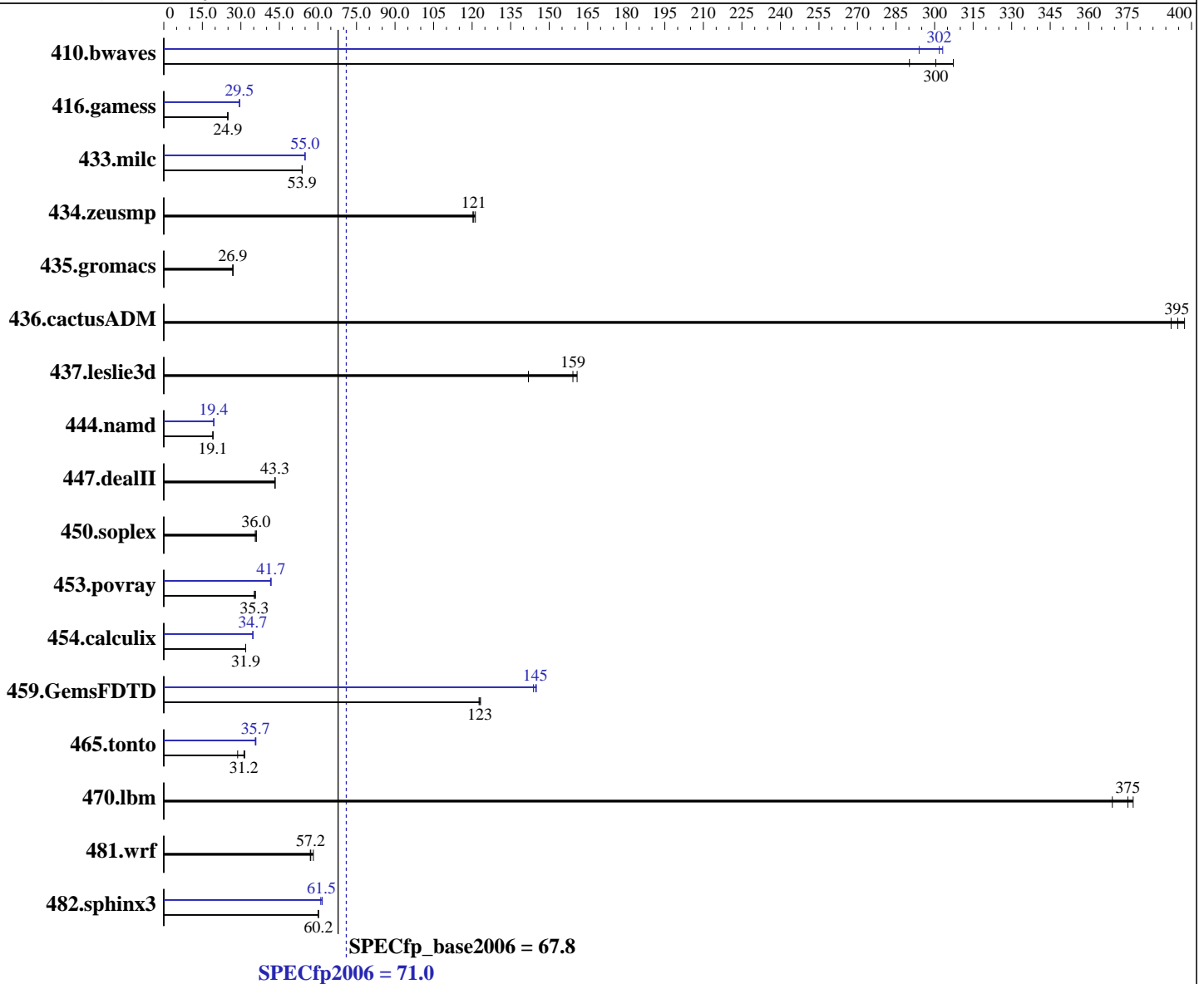
Test date: Mar-2012

Test sponsor: Fujitsu

Hardware Availability: Mar-2012

Tested by: Fujitsu

Software Availability: Dec-2011



### Hardware

CPU Name: Intel Xeon E5-2630  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz  
 CPU MHz: 2300  
 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

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### 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: None

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

## Results Table

| Benchmark     | Base        |             |             |             |             |             | Peak        |             |             |             |             |             |
|---------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|               | Seconds     | Ratio       | Seconds     | Ratio       | Seconds     | Ratio       | Seconds     | Ratio       | Seconds     | Ratio       | Seconds     | Ratio       |
| 410.bwaves    | 46.8        | 290         | <b>45.2</b> | <b>300</b>  | 44.2        | 307         | <b>45.0</b> | <b>302</b>  | 46.2        | 294         | 44.8        | 303         |
| 416.gamess    | 788         | 24.8        | 784         | 25.0        | <b>786</b>  | <b>24.9</b> | 665         | 29.4        | <b>664</b>  | <b>29.5</b> | 664         | 29.5        |
| 433.milc      | <b>170</b>  | <b>53.9</b> | 170         | 53.9        | 171         | 53.8        | <b>167</b>  | <b>55.0</b> | 167         | 54.9        | 167         | 55.0        |
| 434.zeusmp    | <b>75.4</b> | <b>121</b>  | 75.0        | 121         | 75.6        | 120         | <b>75.4</b> | <b>121</b>  | 75.0        | 121         | 75.6        | 120         |
| 435.gromacs   | 266         | 26.8        | <b>265</b>  | <b>26.9</b> | 265         | 26.9        | 266         | 26.8        | <b>265</b>  | <b>26.9</b> | 265         | 26.9        |
| 436.cactusADM | 30.1        | 397         | <b>30.3</b> | <b>395</b>  | 30.5        | 392         | 30.1        | 397         | <b>30.3</b> | <b>395</b>  | 30.5        | 392         |
| 437.leslie3d  | <b>59.0</b> | <b>159</b>  | 66.2        | 142         | 58.4        | 161         | <b>59.0</b> | <b>159</b>  | 66.2        | 142         | 58.4        | 161         |
| 444.namd      | <b>420</b>  | <b>19.1</b> | 420         | 19.1        | 419         | 19.1        | <b>412</b>  | <b>19.4</b> | 412         | 19.4        | 412         | 19.4        |
| 447.dealII    | <b>264</b>  | <b>43.3</b> | 264         | 43.3        | 264         | 43.3        | <b>264</b>  | <b>43.3</b> | 264         | 43.3        | 264         | 43.3        |
| 450.soplex    | 232         | 36.0        | <b>232</b>  | <b>36.0</b> | 234         | 35.6        | 232         | 36.0        | <b>232</b>  | <b>36.0</b> | 234         | 35.6        |
| 453.povray    | 151         | 35.3        | <b>151</b>  | <b>35.3</b> | 149         | 35.7        | 127         | 41.7        | <b>127</b>  | <b>41.7</b> | 128         | 41.5        |
| 454.calculix  | 259         | 31.9        | 259         | 31.9        | <b>259</b>  | <b>31.9</b> | 238         | 34.7        | 238         | 34.7        | <b>238</b>  | <b>34.7</b> |
| 459.GemsFDTD  | 86.5        | 123         | <b>86.3</b> | <b>123</b>  | 86.1        | 123         | 73.8        | 144         | <b>73.4</b> | <b>145</b>  | 73.2        | 145         |
| 465.tonto     | <b>315</b>  | <b>31.2</b> | 342         | 28.7        | 312         | 31.5        | <b>275</b>  | <b>35.7</b> | 274         | 35.9        | 276         | 35.6        |
| 470.lbm       | 36.4        | 377         | 37.2        | 369         | <b>36.6</b> | <b>375</b>  | 36.4        | 377         | 37.2        | 369         | <b>36.6</b> | <b>375</b>  |
| 481.wrf       | <b>195</b>  | <b>57.2</b> | 196         | 57.0        | 192         | 58.2        | <b>195</b>  | <b>57.2</b> | 196         | 57.0        | 192         | 58.2        |
| 482.sphinx3   | 325         | 60.1        | 324         | 60.2        | <b>324</b>  | <b>60.2</b> | 319         | 61.1        | <b>317</b>  | <b>61.5</b> | 316         | 61.7        |

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"

## 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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## 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.dealIII: 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/Fujitsu-Platform.20120320.html>

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.html>



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You can also download the XML flags sources by saving the following links:

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<http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml>

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Tested with SPEC CPU2006 v1.2.  
Report generated on Thu Jul 24 07:21:40 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 10 April 2012.