



# SPEC<sup>®</sup> CFP2006 Result

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## Fujitsu

SPECfp<sup>®</sup>2006 = **82.3**

PRIMERGY CX270 S1, Intel Xeon E5-2670, 2.60 GHz

SPECfp\_base2006 = **77.9**

CPU2006 license: 19

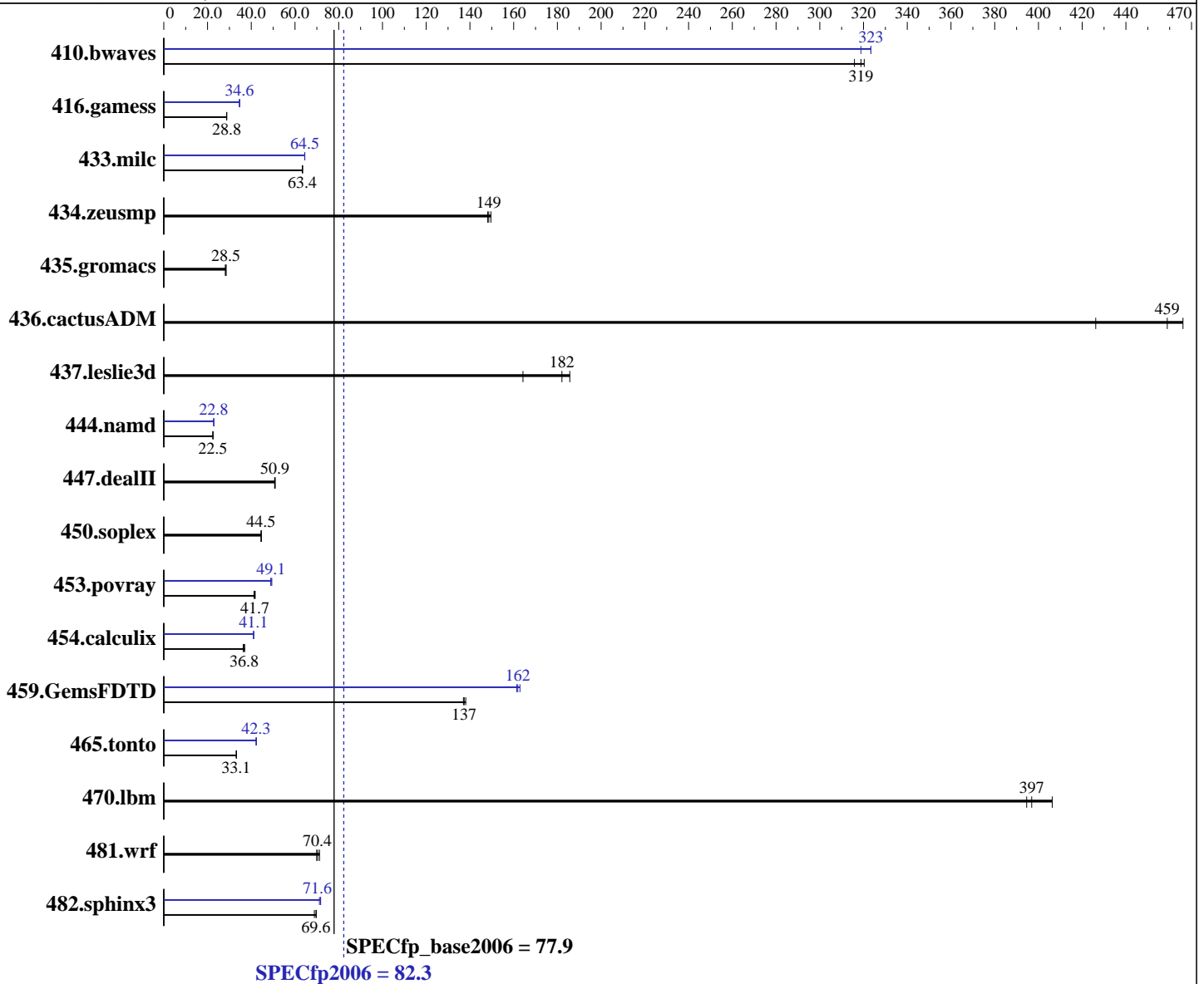
Test date: Mar-2012

Test sponsor: Fujitsu

Hardware Availability: Jun-2012

Tested by: Fujitsu

Software Availability: Dec-2011



**Hardware**

CPU Name: Intel Xeon E5-2670  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz  
 CPU MHz: 2600  
 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

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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: 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						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	43.0	316	42.4	320	<b><u>42.6</u></b>	<b><u>319</u></b>	42.0	323	42.6	319	<b><u>42.0</u></b>	<b><u>323</u></b>
416.gamess	<b><u>681</u></b>	<b><u>28.8</u></b>	680	28.8	682	28.7	<b><u>566</u></b>	<b><u>34.6</u></b>	564	34.7	566	34.6
433.milc	145	63.4	<b><u>145</u></b>	<b><u>63.4</u></b>	145	63.5	142	64.5	<b><u>142</u></b>	<b><u>64.5</u></b>	142	64.4
434.zeusmp	61.4	148	<b><u>61.2</u></b>	<b><u>149</u></b>	60.8	150	61.4	148	<b><u>61.2</u></b>	<b><u>149</u></b>	60.8	150
435.gromacs	254	28.1	251	28.5	<b><u>251</u></b>	<b><u>28.5</u></b>	254	28.1	251	28.5	<b><u>251</u></b>	<b><u>28.5</u></b>
436.cactusADM	28.0	426	25.6	466	<b><u>26.0</u></b>	<b><u>459</u></b>	28.0	426	25.6	466	<b><u>26.0</u></b>	<b><u>459</u></b>
437.leslie3d	57.2	164	50.6	186	<b><u>51.6</u></b>	<b><u>182</u></b>	57.2	164	50.6	186	<b><u>51.6</u></b>	<b><u>182</u></b>
444.namd	<b><u>357</u></b>	<b><u>22.5</u></b>	357	22.5	357	22.5	351	22.8	351	22.9	<b><u>351</u></b>	<b><u>22.8</u></b>
447.dealII	225	50.9	<b><u>225</u></b>	<b><u>50.9</u></b>	226	50.7	225	50.9	<b><u>225</u></b>	<b><u>50.9</u></b>	226	50.7
450.soplex	187	44.5	<b><u>187</u></b>	<b><u>44.5</u></b>	187	44.6	187	44.5	<b><u>187</u></b>	<b><u>44.5</u></b>	187	44.6
453.povray	127	41.8	129	41.3	<b><u>128</u></b>	<b><u>41.7</u></b>	<b><u>108</u></b>	<b><u>49.1</u></b>	109	48.9	108	49.4
454.calculix	223	37.0	<b><u>224</u></b>	<b><u>36.8</u></b>	227	36.3	<b><u>201</u></b>	<b><u>41.1</u></b>	201	41.1	201	41.1
459.GemsFDTD	76.8	138	<b><u>77.2</u></b>	<b><u>137</u></b>	77.4	137	65.1	163	<b><u>65.5</u></b>	<b><u>162</u></b>	65.7	161
465.tonto	<b><u>297</u></b>	<b><u>33.1</u></b>	296	33.3	297	33.1	<b><u>233</u></b>	<b><u>42.3</u></b>	232	42.4	233	42.2
470.lbm	<b><u>34.6</u></b>	<b><u>397</u></b>	34.8	395	33.8	406	<b><u>34.6</u></b>	<b><u>397</u></b>	34.8	395	33.8	406
481.wrf	157	71.2	160	69.9	<b><u>159</u></b>	<b><u>70.4</u></b>	157	71.2	160	69.9	<b><u>159</u></b>	<b><u>70.4</u></b>
482.sphinx3	<b><u>280</u></b>	<b><u>69.6</u></b>	279	69.7	283	68.9	274	71.2	272	71.7	<b><u>272</u></b>	<b><u>71.6</u></b>

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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<http://www.spec.org/cpu2006/flags/Fujitsu-Platform.20120313.01.xml>

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