



# SPEC<sup>®</sup> CFP2006 Result

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## Fujitsu

SPECfp<sup>®</sup>2006 = 37.1

## CELSIUS W280, Intel Core i5-750

SPECfp\_base2006 = 34.8

CPU2006 license: 19

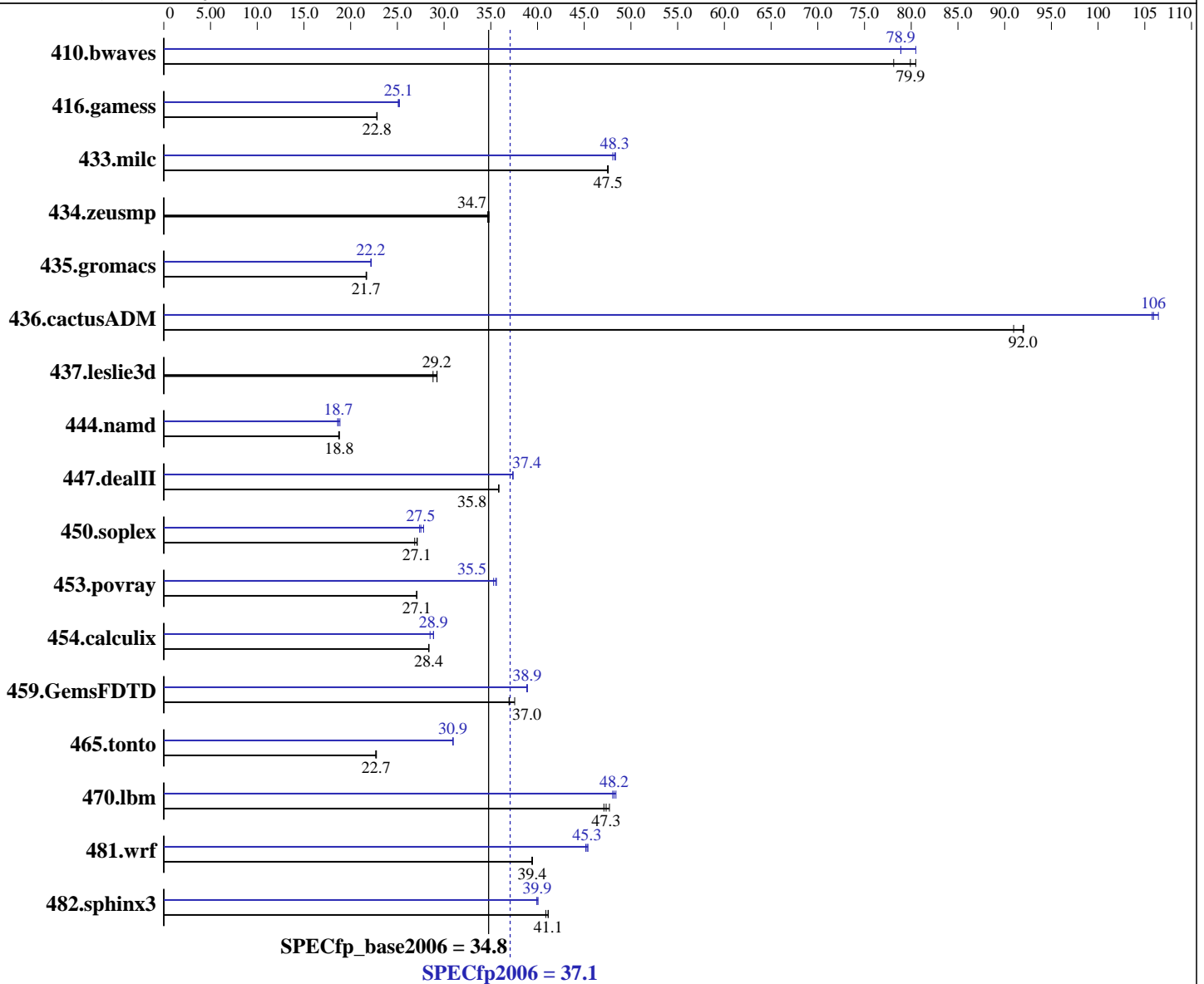
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Jan-2010

Hardware Availability: Jan-2010

Software Availability: Oct-2009



### Hardware

CPU Name: Intel Core i5-750  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.2 GHz  
 CPU MHz: 2667  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip  
 CPU(s) orderable: 1 chip  
 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: SUSE Linux Enterprise Server 11 (x86\_64), kernel 2.6.27.19-5-default  
 Compiler: Intel C++ and Fortran Compiler for IA32 and Intel 64, Version 11.1  
 Build 20091012 Package ID: l\_cproc\_p\_11.1.059, l\_cprof\_p\_11.1.059  
 Auto Parallel: Yes  
 File System: ext3  
 System State: Multi-User Run Level 3

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L3 Cache: 8 MB I+D on chip per chip  
Other Cache: None  
Memory: 8 GB (2x4 GB PC3-10600U, 2 rank, CL9)  
Disk Subsystem: 1 x SATA II, 400 GB, 7200 rpm  
Other Hardware: None

Base Pointers: 64-bit  
Peak Pointers: 32/64-bit  
Other Software: Binutils 2.18.50.0.7.20080502

## Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	174	78.1	169	80.5	<b>170</b>	<b>79.9</b>	172	78.9	169	80.5	<b>172</b>	<b>78.9</b>
416.gamess	859	22.8	<b>858</b>	<b>22.8</b>	857	22.8	776	25.2	<b>779</b>	<b>25.1</b>	780	25.1
433.milc	193	47.5	<b>193</b>	<b>47.5</b>	193	47.6	191	48.1	190	48.3	<b>190</b>	<b>48.3</b>
434.zeusmp	<b>262</b>	<b>34.7</b>	262	34.7	261	34.8	<b>262</b>	<b>34.7</b>	262	34.7	261	34.8
435.gromacs	329	21.7	330	21.7	<b>330</b>	<b>21.7</b>	322	22.2	<b>322</b>	<b>22.2</b>	322	22.2
436.cactusADM	<b>130</b>	<b>92.0</b>	131	91.0	130	92.0	<b>113</b>	<b>106</b>	113	106	112	106
437.leslie3d	321	29.2	<b>322</b>	<b>29.2</b>	326	28.8	321	29.2	<b>322</b>	<b>29.2</b>	326	28.8
444.namd	428	18.7	427	18.8	<b>427</b>	<b>18.8</b>	<b>429</b>	<b>18.7</b>	431	18.6	425	18.9
447.dealII	319	35.8	<b>319</b>	<b>35.8</b>	319	35.9	306	37.4	306	37.4	<b>306</b>	<b>37.4</b>
450.soplex	307	27.1	<b>308</b>	<b>27.1</b>	311	26.9	300	27.8	<b>303</b>	<b>27.5</b>	305	27.4
453.povray	196	27.1	197	27.1	<b>197</b>	<b>27.1</b>	149	35.6	151	35.3	<b>150</b>	<b>35.5</b>
454.calculix	<b>291</b>	<b>28.4</b>	291	28.3	291	28.4	<b>286</b>	<b>28.9</b>	286	28.9	289	28.5
459.GemsFDTD	283	37.6	287	36.9	<b>287</b>	<b>37.0</b>	273	38.9	273	38.9	<b>273</b>	<b>38.9</b>
465.tonto	432	22.8	<b>433</b>	<b>22.7</b>	434	22.7	318	31.0	318	30.9	<b>318</b>	<b>30.9</b>
470.lbm	288	47.7	<b>290</b>	<b>47.3</b>	292	47.1	284	48.4	<b>285</b>	<b>48.2</b>	286	48.0
481.wrf	283	39.5	284	39.4	<b>283</b>	<b>39.4</b>	247	45.2	<b>247</b>	<b>45.3</b>	246	45.4
482.sphinx3	<b>474</b>	<b>41.1</b>	477	40.9	474	41.1	487	40.1	488	39.9	<b>488</b>	<b>39.9</b>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Operating System Notes

'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run

## General Notes

OMP\_NUM\_THREADS set to number of cores  
KMP\_AFFINITY set to granularity=fine,scatter  
KMP\_STACKSIZE set to 200M

## Base Compiler Invocation

C benchmarks:  
icc -m64

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## Base Compiler Invocation (Continued)

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

## Base Optimization Flags

C benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

C++ benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Fortran benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:

-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch



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**Tested by:** Fujitsu

**Test date:** Jan-2010

**Hardware Availability:** Jan-2010

**Software Availability:** Oct-2009

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

482.sphinx3:icc -m32

C++ benchmarks (except as noted below):

icpc -m64

450.soplex:icpc -m32

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

## Peak 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  
 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

## Peak Optimization Flags

C benchmarks:

433.milc: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
 -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
 -ansi-alias

470.lbm: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
 -no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
 -parallel -ansi-alias -auto-ilp32

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## Peak Optimization Flags (Continued)

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2

### C++ benchmarks:

444.namd: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-fno-alias -auto-ilp32

447.dealII: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-unroll2 -ansi-alias -scalar-rep- -auto-ilp32

450.soplex: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-opt-malloc-options=3

453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-unroll4 -ansi-alias

### Fortran benchmarks:

410.bwaves: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch  
-parallel

416.gamess: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-unroll2 -Ob0 -ansi-alias -scalar-rep-

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) -static(pass 2) -prof-use(pass 2)  
-unroll2 -Ob0 -opt-prefetch -parallel

465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-inline-calloc -opt-malloc-options=3 -auto -unroll4

### Benchmarks using both Fortran and C:

435.gromacs: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-opt-prefetch -auto-ilp32

436.cactusADM: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -static(pass 2) -prof-use(pass 2)  
-unroll2 -opt-prefetch -parallel -auto-ilp32

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## Peak Optimization Flags (Continued)

454.calculix: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32  
 481.wrf: Same as 454.calculix

The flags file that was used to format this result can be browsed at  
<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revD.20100119.html>

You can also download the XML flags source by saving the following link:  
<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revD.20100119.xml>

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 For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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