



# SPEC® CFP2006 Result

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## Fujitsu

SPECfp®2006 = 35.5

PRIMERGY RX100 S6, Intel Xeon L3426, 1.86 GHz

SPECfp\_base2006 = 32.2

CPU2006 license: 19

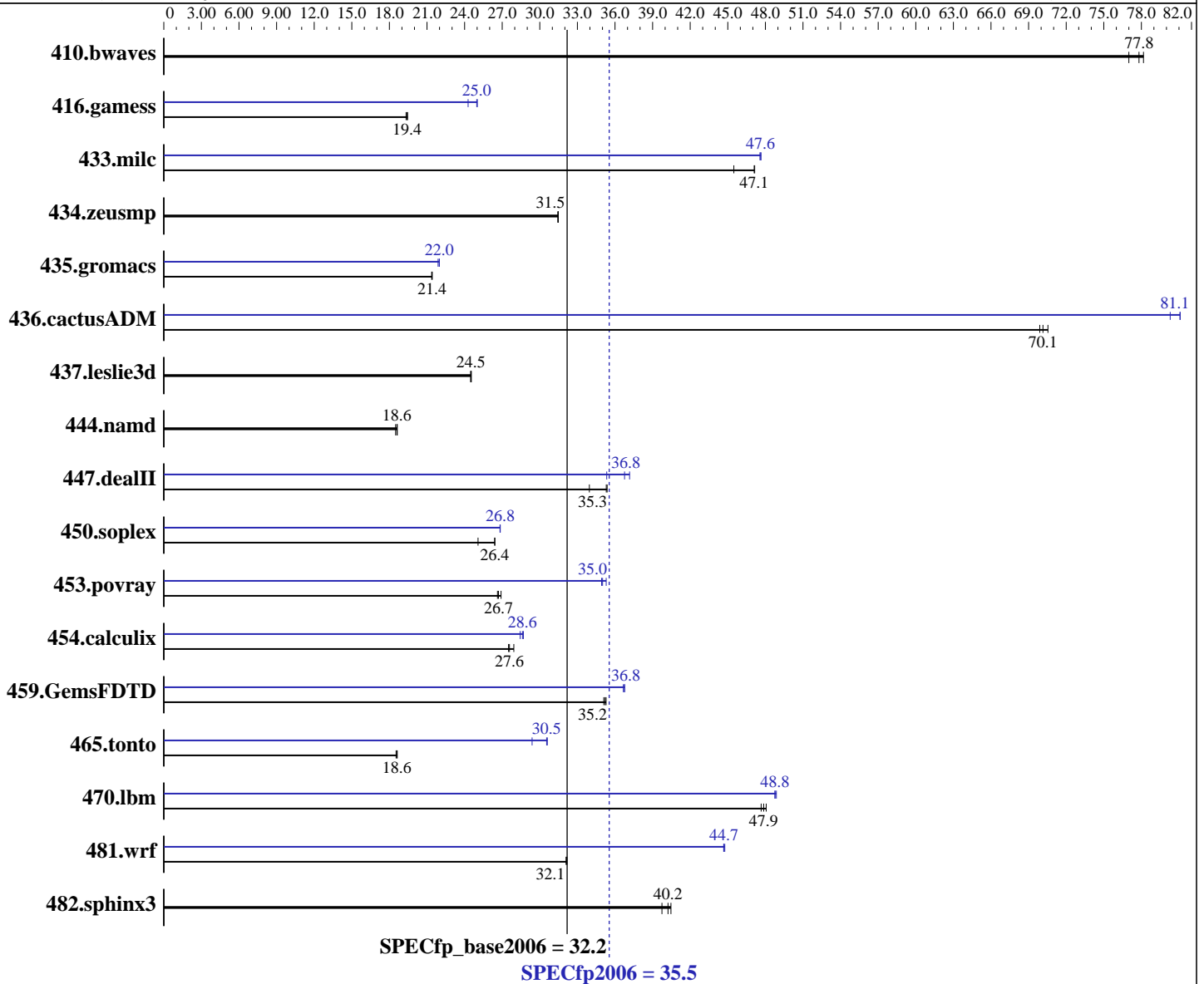
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Jan-2010

Hardware Availability: Jan-2010

Software Availability: Nov-2009



**Hardware**

CPU Name: Intel Xeon L3426  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.20 GHz  
 CPU MHz: 1867  
 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-smp  
 Compiler: Intel C++ and Fortran Professional 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: 16 GB (4x4 GB PC3-10600R, 2 rank, CL9-9-9, ECC)  
Disk Subsystem: 1 x SATA, 250 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	78.2	<b>175</b>	<b>77.8</b>	176	77.0	174	78.2	<b>175</b>	<b>77.8</b>	176	77.0
416.gamess	<b>1009</b>	<b>19.4</b>	1013	19.3	1007	19.4	<b>784</b>	<b>25.0</b>	783	25.0	806	24.3
433.milc	202	45.5	<b>195</b>	<b>47.1</b>	195	47.1	193	47.6	<b>193</b>	<b>47.6</b>	193	47.6
434.zeusmp	289	31.5	<b>289</b>	<b>31.5</b>	289	31.4	289	31.5	<b>289</b>	<b>31.5</b>	289	31.4
435.gromacs	333	21.4	334	21.4	<b>334</b>	<b>21.4</b>	325	22.0	<b>325</b>	<b>22.0</b>	326	21.9
436.cactusADM	<b>170</b>	<b>70.1</b>	171	69.9	169	70.5	149	80.3	147	81.1	<b>147</b>	<b>81.1</b>
437.leslie3d	<b>384</b>	<b>24.5</b>	384	24.5	383	24.5	<b>384</b>	<b>24.5</b>	384	24.5	383	24.5
444.namd	431	18.6	434	18.5	<b>431</b>	<b>18.6</b>	431	18.6	434	18.5	<b>431</b>	<b>18.6</b>
447.dealII	337	34.0	<b>324</b>	<b>35.3</b>	323	35.4	<b>311</b>	<b>36.8</b>	324	35.3	308	37.2
450.soplex	333	25.1	316	26.4	<b>316</b>	<b>26.4</b>	<b>311</b>	<b>26.8</b>	311	26.8	311	26.8
453.povray	<b>199</b>	<b>26.7</b>	198	26.9	200	26.6	<b>152</b>	<b>35.0</b>	151	35.3	152	34.9
454.calculix	295	27.9	<b>299</b>	<b>27.6</b>	300	27.5	290	28.4	<b>288</b>	<b>28.6</b>	288	28.7
459.GemsFDTD	301	35.3	302	35.1	<b>301</b>	<b>35.2</b>	<b>289</b>	<b>36.8</b>	289	36.7	289	36.8
465.tonto	531	18.5	528	18.6	<b>529</b>	<b>18.6</b>	<b>322</b>	<b>30.5</b>	335	29.4	322	30.6
470.lbm	286	48.1	<b>287</b>	<b>47.9</b>	288	47.7	281	48.9	282	48.8	<b>282</b>	<b>48.8</b>
481.wrf	347	32.2	348	32.1	<b>348</b>	<b>32.1</b>	250	44.7	<b>250</b>	<b>44.7</b>	250	44.8
482.sphinx3	<b>484</b>	<b>40.2</b>	482	40.5	490	39.7	<b>484</b>	<b>40.2</b>	482	40.5	490	39.7

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  
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## 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

## 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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## Peak Compiler Invocation

C benchmarks:

icc -m64

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  
 482.sphinx3: -DSPEC\_CPU\_LP64

## 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: basepeak = yes

### C++ benchmarks:

444.namd: basepeak = yes

447.dealIII: -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: basepeak = yes

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

454.calculix: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32

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## Peak Optimization Flags (Continued)

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-fp-linux64-revF.20100202.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-fp-linux64-revF.20100202.xml>

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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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