



# SPEC® CFP2006 Result

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## Fujitsu

SPECfp®2006 = 34.9

PRIMERGY TX150 S7, Intel Xeon X3440, 2.53 GHz

SPECfp\_base2006 = 32.9

CPU2006 license: 19

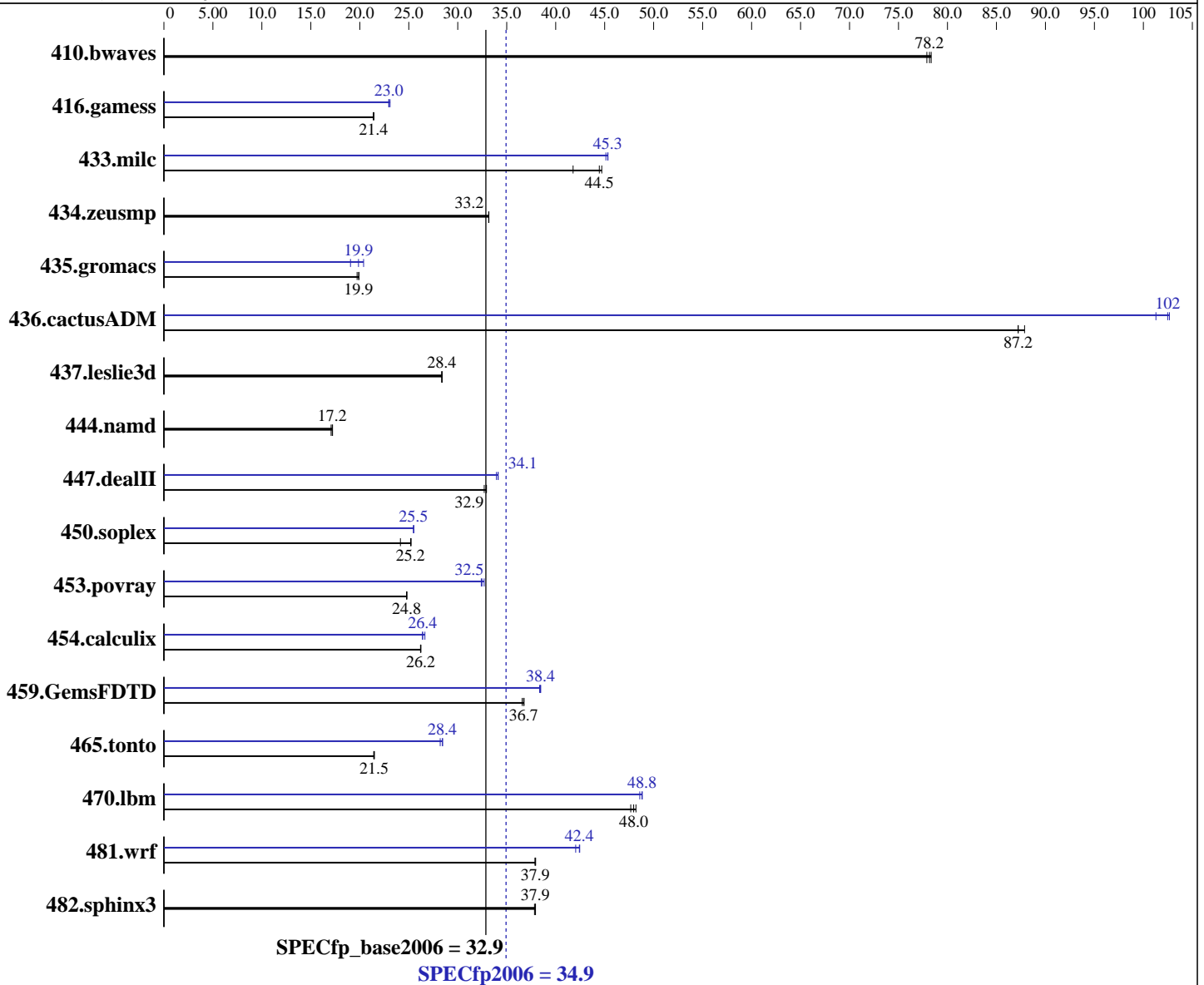
Test sponsor: Fujitsu

Tested by: Fujitsu

Test date: Dec-2009

Hardware Availability: Jan-2010

Software Availability: Nov-2009



### Hardware

CPU Name: Intel Xeon X3440  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.93 GHz  
 CPU MHz: 2533  
 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	173	78.3	174	77.9	<b><u>174</u></b>	<b><u>78.2</u></b>	173	78.3	174	77.9	<b><u>174</u></b>	<b><u>78.2</u></b>
416.gamess	913	21.4	916	21.4	<b><u>915</u></b>	<b><u>21.4</u></b>	<b><u>852</u></b>	<b><u>23.0</u></b>	853	23.0	848	23.1
433.milc	220	41.8	<b><u>207</u></b>	<b><u>44.5</u></b>	205	44.7	203	45.1	<b><u>203</u></b>	<b><u>45.3</u></b>	202	45.3
434.zeusmp	274	33.2	<b><u>274</u></b>	<b><u>33.2</u></b>	274	33.2	274	33.2	<b><u>274</u></b>	<b><u>33.2</u></b>	274	33.2
435.gromacs	359	19.9	<b><u>359</u></b>	<b><u>19.9</u></b>	362	19.7	<b><u>359</u></b>	<b><u>19.9</u></b>	350	20.4	375	19.0
436.cactusADM	136	87.9	137	87.2	<b><u>137</u></b>	<b><u>87.2</u></b>	116	103	<b><u>117</u></b>	<b><u>102</u></b>	118	101
437.leslie3d	331	28.4	<b><u>331</u></b>	<b><u>28.4</u></b>	331	28.4	331	28.4	<b><u>331</u></b>	<b><u>28.4</u></b>	331	28.4
444.namd	<b><u>467</u></b>	<b><u>17.2</u></b>	466	17.2	470	17.1	<b><u>467</u></b>	<b><u>17.2</u></b>	466	17.2	470	17.1
447.dealII	347	32.9	350	32.7	<b><u>347</u></b>	<b><u>32.9</u></b>	337	33.9	<b><u>335</u></b>	<b><u>34.1</u></b>	335	34.1
450.soplex	345	24.1	330	25.2	<b><u>331</u></b>	<b><u>25.2</u></b>	327	25.5	<b><u>327</u></b>	<b><u>25.5</u></b>	327	25.5
453.povray	215	24.8	214	24.8	<b><u>215</u></b>	<b><u>24.8</u></b>	164	32.4	<b><u>164</u></b>	<b><u>32.5</u></b>	163	32.7
454.calculix	314	26.2	315	26.2	<b><u>315</u></b>	<b><u>26.2</u></b>	310	26.6	<b><u>312</u></b>	<b><u>26.4</u></b>	312	26.4
459.GemsFDTD	<b><u>289</u></b>	<b><u>36.7</u></b>	290	36.6	289	36.8	277	38.4	<b><u>276</u></b>	<b><u>38.4</u></b>	276	38.5
465.tonto	458	21.5	<b><u>459</u></b>	<b><u>21.5</u></b>	459	21.4	346	28.4	349	28.2	<b><u>346</u></b>	<b><u>28.4</u></b>
470.lbm	285	48.2	<b><u>286</u></b>	<b><u>48.0</u></b>	288	47.7	<b><u>281</u></b>	<b><u>48.8</u></b>	281	48.8	283	48.6
481.wrf	295	37.9	<b><u>295</u></b>	<b><u>37.9</u></b>	294	38.0	263	42.5	<b><u>263</u></b>	<b><u>42.4</u></b>	266	42.0
482.sphinx3	<b><u>514</u></b>	<b><u>37.9</u></b>	514	37.9	515	37.8	<b><u>514</u></b>	<b><u>37.9</u></b>	514	37.9	515	37.8

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  
For information about Fujitsu please visit: <http://www.fujitsu.com>



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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-revE.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-revE.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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