



# SPEC® CFP2006 Result

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## Fujitsu

**SPECfp®2006 = 33.0**

PRIMERGY TX200 S5, Intel Xeon E5530, 2.40 GHz

**SPECfp\_base2006 = 31.1**

CPU2006 license: 19

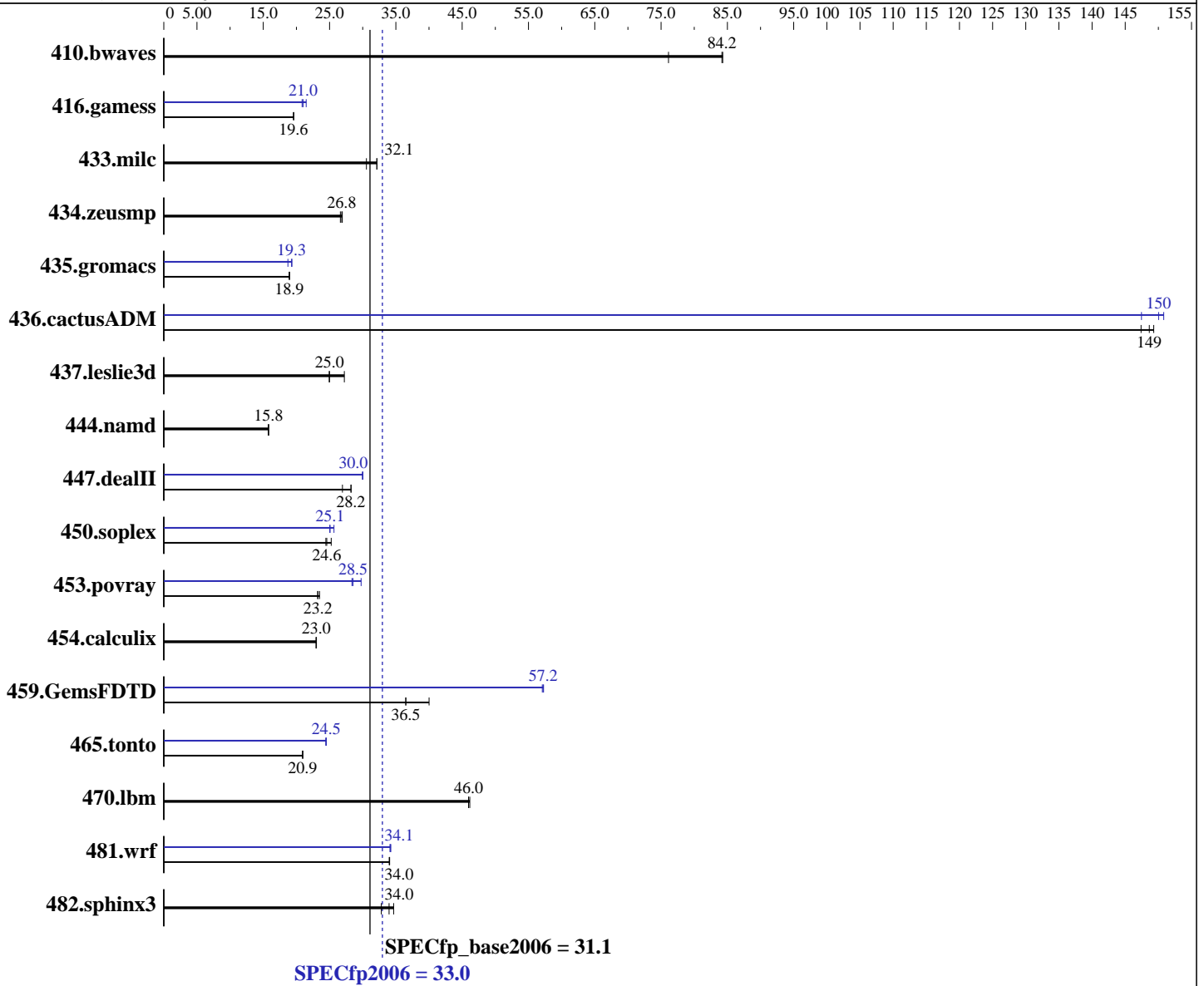
Test date: Aug-2009

Test sponsor: Fujitsu

Hardware Availability: Jun-2009

Tested by: Fujitsu

Software Availability: Feb-2009



### Hardware

CPU Name: Intel Xeon E5530  
 CPU Characteristics: Intel Turbo Boost Technology up to 2.67 GHz  
 CPU MHz: 2400  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip, 2 threads/core  
 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: SUSE Linux Enterprise Server 10 (x86\_64) SP2, Kernel 2.6.16.60-0.21-smpp  
 Compiler: Intel C++ and Fortran Compiler 11.0 for Linux Build 20090131 Package ID: l\_cproc\_p\_11.0.080, l\_cprof\_p\_11.0.080  
 Auto Parallel: Yes  
 File System: ext3  
 System State: Multi-User Run Level 3  
 Base Pointers: 64-bit

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L3 Cache: 8 MB I+D on chip per chip  
Other Cache: None  
Memory: 48 GB (12x4 GB PC3-10600R, 2 rank, CL9-9-9, ECC, see add'l detail in notes)  
Disk Subsystem: 1 x SATA, 250 GB, 7200 RPM  
Other Hardware: None

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	179	76.1	161	84.3	<b>161</b>	<b>84.2</b>	179	76.1	161	84.3	<b>161</b>	<b>84.2</b>
416.gamess	<b>1000</b>	<b>19.6</b>	1001	19.6	999	19.6	<b>931</b>	<b>21.0</b>	939	20.9	912	21.5
433.milc	300	30.6	<b>286</b>	<b>32.1</b>	286	32.1	300	30.6	<b>286</b>	<b>32.1</b>	286	32.1
434.zeusmp	342	26.6	338	26.9	<b>339</b>	<b>26.8</b>	342	26.6	338	26.9	<b>339</b>	<b>26.8</b>
435.gromacs	<b>377</b>	<b>18.9</b>	376	19.0	377	18.9	381	18.7	<b>370</b>	<b>19.3</b>	370	19.3
436.cactusADM	80.0	149	<b>80.4</b>	<b>149</b>	81.1	147	81.0	147	<b>79.6</b>	<b>150</b>	79.2	151
437.leslie3d	<b>376</b>	<b>25.0</b>	345	27.2	377	24.9	<b>376</b>	<b>25.0</b>	345	27.2	377	24.9
444.namd	508	15.8	508	15.8	<b>508</b>	<b>15.8</b>	508	15.8	508	15.8	<b>508</b>	<b>15.8</b>
447.dealII	405	28.3	425	26.9	<b>405</b>	<b>28.2</b>	382	30.0	381	30.0	<b>381</b>	<b>30.0</b>
450.soplex	<b>339</b>	<b>24.6</b>	330	25.2	341	24.4	325	25.7	<b>333</b>	<b>25.1</b>	333	25.0
453.povray	229	23.2	<b>229</b>	<b>23.2</b>	226	23.5	179	29.8	188	28.4	<b>186</b>	<b>28.5</b>
454.calculix	358	23.0	359	23.0	<b>359</b>	<b>23.0</b>	358	23.0	359	23.0	<b>359</b>	<b>23.0</b>
459.GemsFDTD	291	36.5	<b>291</b>	<b>36.5</b>	265	40.0	<b>185</b>	<b>57.2</b>	185	57.3	186	57.1
465.tonto	470	20.9	<b>470</b>	<b>20.9</b>	470	20.9	402	24.5	<b>402</b>	<b>24.5</b>	403	24.4
470.lbm	299	46.0	<b>299</b>	<b>46.0</b>	298	46.1	299	46.0	<b>299</b>	<b>46.0</b>	298	46.1
481.wrf	<b>328</b>	<b>34.0</b>	328	34.1	328	34.0	326	34.2	<b>327</b>	<b>34.1</b>	327	34.1
482.sphinx3	<b>574</b>	<b>34.0</b>	562	34.7	594	32.8	<b>574</b>	<b>34.0</b>	562	34.7	594	32.8

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

## Platform Notes

The system automatically configures the memory to run at 1066 MHz.

## 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  
  
C++ benchmarks:  
icpc  
  
Fortran benchmarks:  
ifort  
  
Benchmarks using both Fortran and C:  
icc ifort

## 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

C++ benchmarks (except as noted below):

icpc

450.soplex: icpc -m32

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

icc ifort

## 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: basepeak = yes

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

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## Peak Optimization Flags (Continued)

444.namd: basepeak = yes

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- -opt-prefetch

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)  
-unroll4 -auto

### 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: basepeak = yes

481.wrf: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch  
-parallel -auto-ilp32



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The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20091013.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20091013.xml>

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