



# SPEC® CFP2006 Result

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## IBM Corporation

**SPECfp®\_rate2006 = 26.5**

IBM System x3250 M2 (Intel Pentium E5300)

**SPECfp\_rate\_base2006 = 26.5**

CPU2006 license: 11

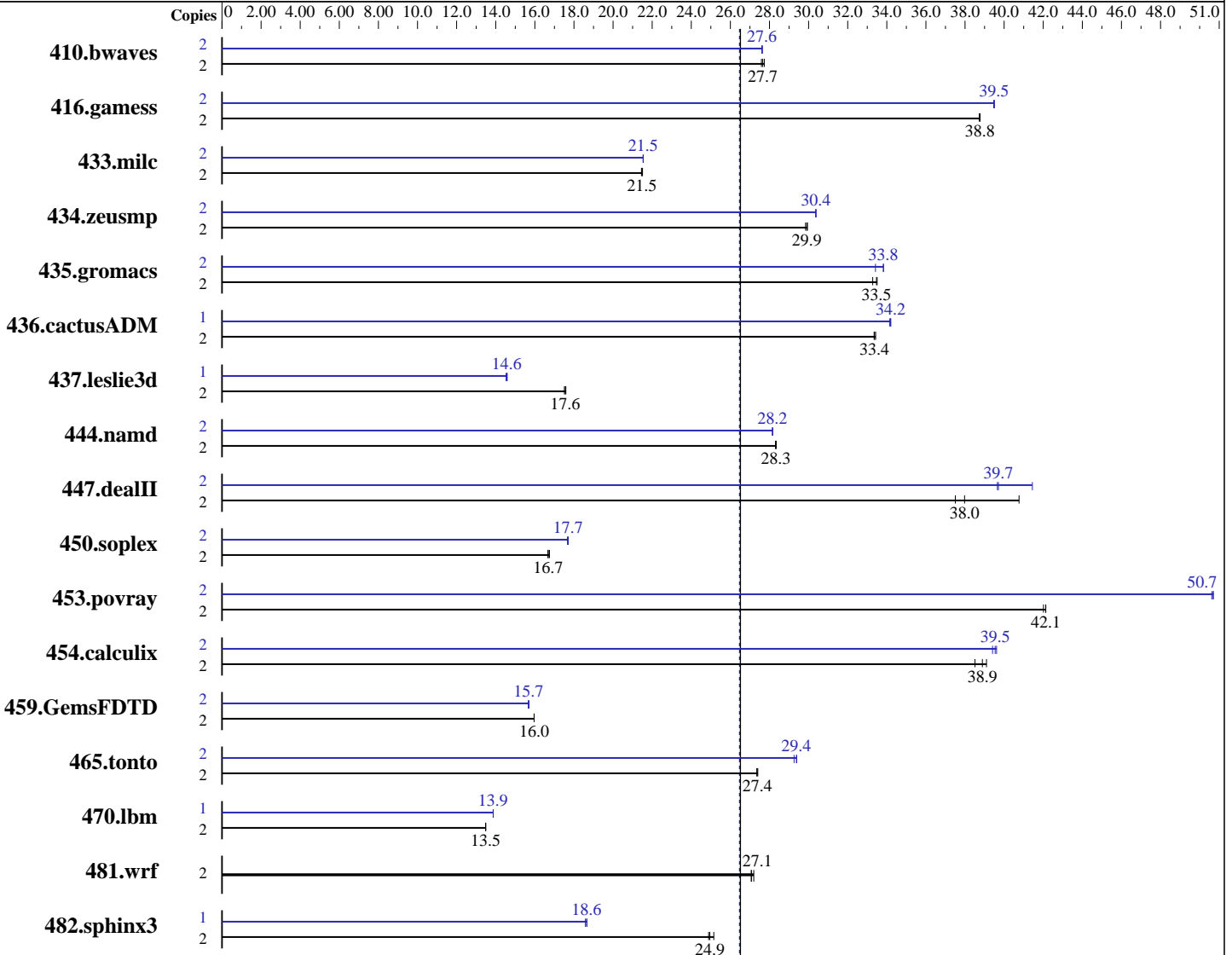
Test date: Jun-2009

Test sponsor: IBM Corporation

Hardware Availability: Apr-2009

Tested by: IBM Corporation

Software Availability: Nov-2008



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### Hardware

CPU Name: Intel Pentium E5300  
 CPU Characteristics: 800 MHz system bus  
 CPU MHz: 2600  
 FPU: Integrated  
 CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip  
 CPU(s) orderable: 1 chip  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 2 MB I+D on chip per chip

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### Software

Operating System: SuSE Linux Enterprise Server 10(x86\_64) SP1, Kernel 2.6.16.46-0.12-smp  
 Compiler: Intel C++ and Fortran Compiler 11.0 for Linux Build 20080930 Package ID: l\_cproc\_p\_11.0.066, l\_cprof\_p\_11.0.066  
 Auto Parallel: Yes  
 File System: ReiserFS  
 System State: Run level 3 (multi-user)  
 Base Pointers: 64-bit

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L3 Cache: None  
Other Cache: None  
Memory: 8 GB(4 x 2 GB DDR2-6400E ECC)  
Disk Subsystem: 1 x 250 GB SATA, 7200RPM  
Other Hardware: None

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

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	2	980	27.7	<b>983</b>	<b>27.7</b>	985	27.6	2	<b>984</b>	<b>27.6</b>	983	27.6	985	27.6
416.gamess	2	1010	38.8	<b>1010</b>	<b>38.8</b>	1011	38.7	2	992	39.5	991	39.5	<b>992</b>	<b>39.5</b>
433.milc	2	<b>855</b>	<b>21.5</b>	854	21.5	856	21.5	2	852	21.5	853	21.5	<b>852</b>	<b>21.5</b>
434.zeusmp	2	610	29.8	<b>609</b>	<b>29.9</b>	608	29.9	2	599	30.4	<b>599</b>	<b>30.4</b>	599	30.4
435.gromacs	2	429	33.3	<b>427</b>	<b>33.5</b>	426	33.5	2	427	33.4	<b>422</b>	<b>33.8</b>	422	33.8
436.cactusADM	2	<b>716</b>	<b>33.4</b>	715	33.4	717	33.4	1	350	34.1	<b>349</b>	<b>34.2</b>	349	34.2
437.leslie3d	2	1069	17.6	<b>1071</b>	<b>17.6</b>	1074	17.5	1	<b>645</b>	<b>14.6</b>	644	14.6	647	14.5
444.namd	2	567	28.3	<b>566</b>	<b>28.3</b>	566	28.3	2	570	28.2	<b>570</b>	<b>28.2</b>	569	28.2
447.dealII	2	<b>602</b>	<b>38.0</b>	610	37.5	561	40.8	2	577	39.7	<b>576</b>	<b>39.7</b>	552	41.4
450.soplex	2	996	16.7	<b>999</b>	<b>16.7</b>	1001	16.7	2	942	17.7	<b>942</b>	<b>17.7</b>	944	17.7
453.povray	2	253	42.1	253	42.0	<b>253</b>	<b>42.1</b>	2	210	50.6	210	50.7	<b>210</b>	<b>50.7</b>
454.calculix	2	422	39.1	428	38.5	<b>424</b>	<b>38.9</b>	2	417	39.6	<b>417</b>	<b>39.5</b>	419	39.4
459.GemsFDTD	2	<b>1329</b>	<b>16.0</b>	1329	16.0	1330	16.0	2	<b>1353</b>	<b>15.7</b>	1351	15.7	1355	15.7
465.tonto	2	718	27.4	720	27.4	<b>719</b>	<b>27.4</b>	2	<b>670</b>	<b>29.4</b>	670	29.4	673	29.3
470.lbm	2	2038	13.5	<b>2038</b>	<b>13.5</b>	2038	13.5	1	990	13.9	<b>991</b>	<b>13.9</b>	991	13.9
481.wrf	2	825	27.1	821	27.2	<b>825</b>	<b>27.1</b>	2	825	27.1	821	27.2	<b>825</b>	<b>27.1</b>
482.sphinx3	2	<b>1562</b>	<b>24.9</b>	1550	25.2	1566	24.9	1	<b>1045</b>	<b>18.6</b>	1044	18.7	1049	18.6

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

## Submit Notes

The config file option 'submit' was used.

## General Notes

taskset was used to bind processes to cores except for 436.cactusADM peak  
Hardware Sector Prefetch Enable and Adjacent Sector Prefetch Enable  
OMP\_NUM\_THREADS set to number of cores  
KMP\_AFFINITY set to "physical,0"  
KMP\_STACKSIZE set to 64M



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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:

-xSSSE3 -ipo -O3 -no-prec-div -static -opt-prefetch

C++ benchmarks:

-xSSSE3 -ipo -O3 -no-prec-div -static -opt-prefetch

Fortran benchmarks:

-xSSSE3 -ipo -O3 -no-prec-div -static -opt-prefetch

Benchmarks using both Fortran and C:

-xSSSE3 -ipo -O3 -no-prec-div -static -opt-prefetch



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## Peak Compiler Invocation

C benchmarks (except as noted below):

icc

482.sphinx3: icc -m32

C++ benchmarks (except as noted below):

icpc

450.soplex: icpc -m32

Fortran benchmarks (except as noted below):

ifort

437.leslie3d: ifort -m32

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  
 444.namd: -DSPEC\_CPU\_LP64  
 447.deallI: -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: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3  
-no-prec-div -static -fno-alias

470.lbm: -xSSSE3 -ipo -O3 -no-prec-div -static -opt-prefetch  
-auto-ilp32

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## Peak Optimization Flags (Continued)

482.sphinx3: -xSSSE3 -ipo -O3 -no-prec-div -static -unroll2

### C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3  
-no-prec-div -static -fno-alias -auto-ilp32

447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3  
-no-prec-div -static -unroll2 -ansi-alias -scalar-rep-

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3  
-no-prec-div -static -opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3  
-no-prec-div -static -unroll4 -ansi-alias

### Fortran benchmarks:

410.bwaves: -xSSSE3 -ipo -O3 -no-prec-div -static -opt-prefetch

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3  
-no-prec-div -static -unroll2 -Ob0 -ansi-alias  
-scalar-rep-

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3  
-no-prec-div -static

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3  
-no-prec-div -static -opt-malloc-options=3 -opt-prefetch

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3  
-no-prec-div -static -unroll2 -Ob0 -opt-prefetch

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3  
-no-prec-div -static -unroll4 -auto

### Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3  
-no-prec-div -static -opt-prefetch -auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -xSSSE3 -ipo -O3  
-no-prec-div -static -unroll2 -opt-prefetch -parallel  
-auto-ilp32

454.calculix: -xSSSE3 -ipo -O3 -no-prec-div -static -auto-ilp32

481.wrf: basepeak = yes



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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.20090827.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.20090827.xml>

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