



# SPEC<sup>®</sup> CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## IBM Corporation

**SPECfp<sup>®</sup>2006 = 24.6**

IBM System x iDataPlex dx340 (Intel Xeon E5450)

**SPECfp\_base2006 = 23.4**

CPU2006 license: 11

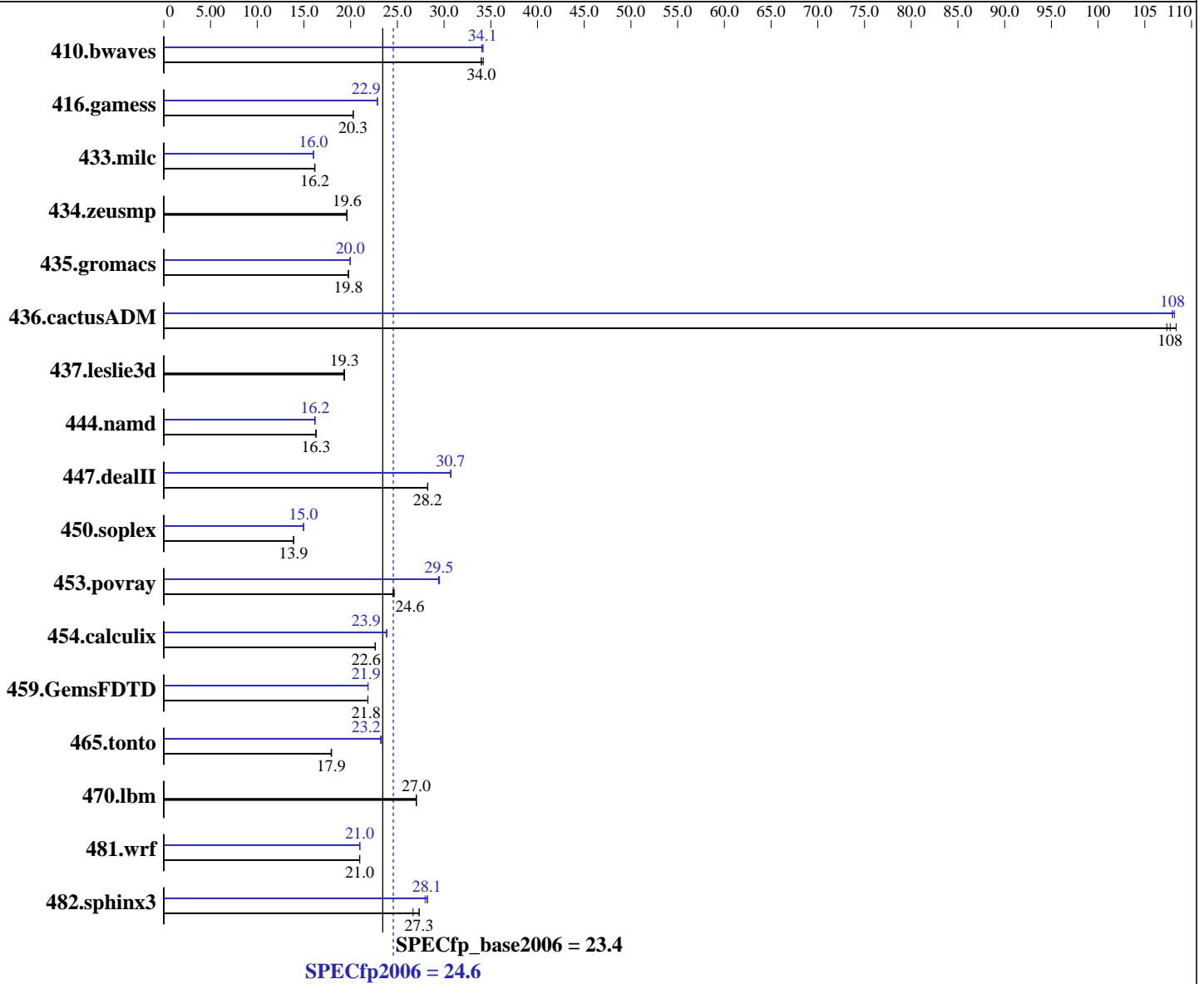
Test date: Oct-2008

Test sponsor: IBM Corporation

Hardware Availability: Oct-2008

Tested by: IBM Corporation

Software Availability: Nov-2008



### Hardware

CPU Name: Intel Xeon E5450  
 CPU Characteristics: 1333MHz system bus  
 CPU MHz: 3000  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip  
 CPU(s) orderable: 1,2 chips  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 12 MB I+D on chip per chip, 6 MB shared / 2 cores

Continued on next page

### Software

Operating System: SuSE Linux Enterprise Server 10 (x86\_64) SP2, Kernel 2.6.16.60-0.21-smp  
 Compiler: Intel C++ and Fortran Compiler 11.0 for Linux Build 20080730 Package ID: l\_cproc\_b\_11.0.042, l\_fproc\_b\_11.0.042  
 Auto Parallel: Yes  
 File System: ReiserFS  
 System State: Run level 3 (multi-user)  
 Base Pointers: 64-bit

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## IBM Corporation

SPECfp2006 = 24.6

IBM System x iDataPlex dx340 (Intel Xeon E5450)

SPECfp\_base2006 = 23.4

CPU2006 license: 11

Test date: Oct-2008

Test sponsor: IBM Corporation

Hardware Availability: Oct-2008

Tested by: IBM Corporation

Software Availability: Nov-2008

L3 Cache: None  
Other Cache: None  
Memory: 16 GB (4 x 4 GB DDR2-5300F ECC)  
Disk Subsystem: 1 x 250 GB SATA, 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	400	34.0	397	34.2	<b>400</b>	<b>34.0</b>	399	34.0	<b>398</b>	<b>34.1</b>	398	34.2
416.gamess	<b>966</b>	<b>20.3</b>	965	20.3	967	20.2	<b>856</b>	<b>22.9</b>	856	22.9	857	22.9
433.milc	569	16.1	567	16.2	<b>568</b>	<b>16.2</b>	<b>573</b>	<b>16.0</b>	573	16.0	573	16.0
434.zeusmp	464	19.6	464	19.6	<b>464</b>	<b>19.6</b>	464	19.6	464	19.6	<b>464</b>	<b>19.6</b>
435.gromacs	<b>361</b>	<b>19.8</b>	362	19.7	361	19.8	358	19.9	<b>358</b>	<b>20.0</b>	358	20.0
436.cactusADM	110	108	<b>111</b>	<b>108</b>	111	107	<b>111</b>	<b>108</b>	110	108	111	108
437.leslie3d	486	19.3	<b>486</b>	<b>19.3</b>	488	19.3	486	19.3	<b>486</b>	<b>19.3</b>	488	19.3
444.namd	492	16.3	493	16.3	<b>492</b>	<b>16.3</b>	496	16.2	495	16.2	<b>496</b>	<b>16.2</b>
447.dealII	<b>405</b>	<b>28.2</b>	405	28.3	405	28.2	<b>373</b>	<b>30.7</b>	372	30.7	373	30.7
450.soplex	<b>600</b>	<b>13.9</b>	601	13.9	600	13.9	<b>557</b>	<b>15.0</b>	558	14.9	557	15.0
453.povray	217	24.5	216	24.7	<b>216</b>	<b>24.6</b>	181	29.4	<b>181</b>	<b>29.5</b>	180	29.5
454.calculix	365	22.6	365	22.6	<b>365</b>	<b>22.6</b>	346	23.9	<b>346</b>	<b>23.9</b>	346	23.8
459.GemsFDTD	<b>486</b>	<b>21.8</b>	486	21.8	486	21.9	<b>485</b>	<b>21.9</b>	485	21.9	486	21.8
465.tonto	548	18.0	<b>549</b>	<b>17.9</b>	549	17.9	422	23.3	<b>424</b>	<b>23.2</b>	424	23.2
470.lbm	<b>509</b>	<b>27.0</b>	509	27.0	508	27.1	<b>509</b>	<b>27.0</b>	509	27.0	508	27.1
481.wrf	532	21.0	<b>533</b>	<b>21.0</b>	533	21.0	532	21.0	<b>532</b>	<b>21.0</b>	532	21.0
482.sphinx3	731	26.7	713	27.3	<b>713</b>	<b>27.3</b>	697	28.0	690	28.2	<b>692</b>	<b>28.1</b>

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

## General Notes

OMP\_NUM\_THREADS set to number of processors  
KMP\_AFFINITY set to "physical,0"  
KMP\_STACKSIZE set to 200M  
Hardware Prefetch Enabled and Adjacent Sector Prefetch Enabled  
Memory configuration set to "Performance Optimized"  
'ulimit -s unlimited' was used to set the stack size to unlimited prior to run

## Base Compiler Invocation

C benchmarks:  
icc

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp2006 = 24.6

IBM System x iDataPlex dx340 (Intel Xeon E5450)

SPECfp\_base2006 = 23.4

CPU2006 license: 11

Test date: Oct-2008

Test sponsor: IBM Corporation

Hardware Availability: Oct-2008

Tested by: IBM Corporation

Software Availability: Nov-2008

## Base Compiler Invocation (Continued)

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:  
-xSSE4.1 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

C++ benchmarks:  
-xSSE4.1 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Fortran benchmarks:  
-xSSE4.1 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:  
-xSSE4.1 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp2006 = 24.6

IBM System x iDataPlex dx340 (Intel Xeon E5450)

SPECfp\_base2006 = 23.4

CPU2006 license: 11

Test date: Oct-2008

Test sponsor: IBM Corporation

Hardware Availability: Oct-2008

Tested by: IBM Corporation

Software Availability: Nov-2008

## Peak Compiler Invocation

C benchmarks (except as noted below):

icc

```
482.sphinx3: /opt/intel/Compiler/11.0/042/bin/ia32/icc
             -L/opt/intel/Compiler/11.0/042/ipp/ia32/lib
             -I/opt/intel/Compiler/11.0/042/ipp/ia32/include
```

C++ benchmarks (except as noted below):

icpc

```
450.soplex: /opt/intel/Compiler/11.0/042/bin/ia32/icpc
            -L/opt/intel/Compiler/11.0/042/ipp/ia32/lib
            -I/opt/intel/Compiler/11.0/042/ipp/ia32/include
```

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
```

## Peak Optimization Flags

C benchmarks:

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

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp2006 = 24.6

IBM System x iDataPlex dx340 (Intel Xeon E5450)

SPECfp\_base2006 = 23.4

CPU2006 license: 11

Test date: Oct-2008

Test sponsor: IBM Corporation

Hardware Availability: Oct-2008

Tested by: IBM Corporation

Software Availability: Nov-2008

## Peak Optimization Flags (Continued)

470.ibm: basepeak = yes

482.sphinx3: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2

### C++ benchmarks:

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

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

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

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

### Fortran benchmarks:

410.bwaves: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch  
-parallel

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

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -unroll2 -Ob0 -opt-prefetch  
-parallel

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3  
-no-prec-div -static -unroll4 -auto

### Benchmarks using both Fortran and C:

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

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

454.calculix: -xSSE4.1 -ipo -O3 -no-prec-div -static -auto-ilp32

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp2006 = 24.6

IBM System x iDataPlex dx340 (Intel Xeon E5450)

SPECfp\_base2006 = 23.4

CPU2006 license: 11

Test date: Oct-2008

Test sponsor: IBM Corporation

Hardware Availability: Oct-2008

Tested by: IBM Corporation

Software Availability: Nov-2008

## Peak Optimization Flags (Continued)

481.wrf: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch  
-parallel -auto-ilp32

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.20090713.17.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.20090713.17.xml>

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC CPU2006 v1.1.  
Report generated on Tue Jul 22 21:48:01 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 26 November 2008.