



# SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## IBM Corporation

### SPECfp®\_rate2006 = 73.5

## IBM System x3550 (Intel Xeon E5440)

### SPECfp\_rate\_base2006 = 64.9

CPU2006 license: 11

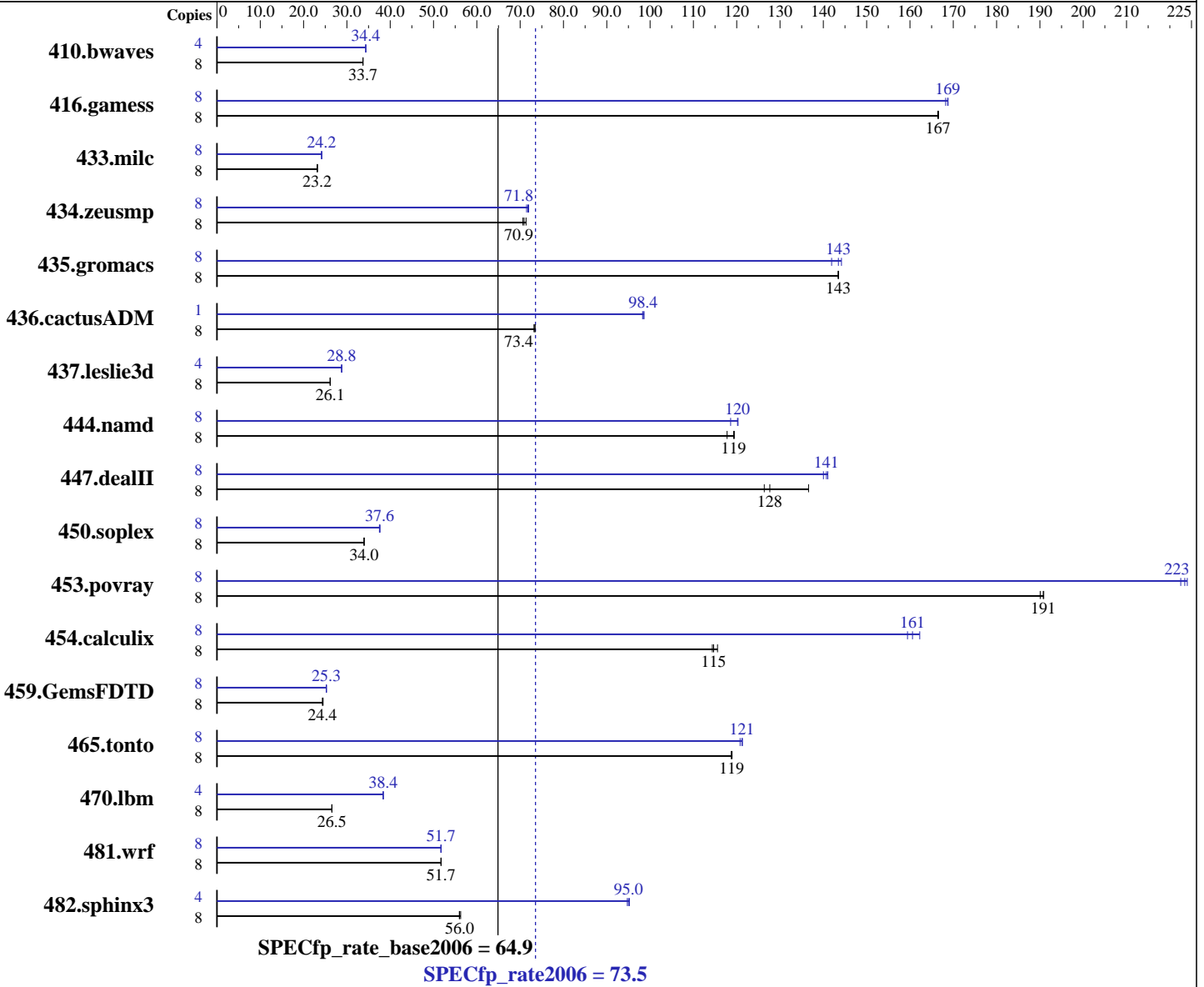
Test date: Dec-2007

Test sponsor: IBM Corporation

Hardware Availability: Jan-2008

Tested by: IBM Corporation

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon E5440  
 CPU Characteristics: 1333MHz system bus  
 CPU MHz: 2833  
 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), Kernel 2.6.16.21-0.8-smp  
 Compiler: Intel C++ and Fortran Compiler 10.1 for Linux Build 20070913 Package ID: l\_cc\_p\_10.1.008, l\_fc\_p\_10.1.008  
 Auto Parallel: Yes  
 File System: ReiserFS  
 System State: Multi-user, run level 3  
 Base Pointers: 64-bit

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp\_rate2006 = 73.5

IBM System x3550 (Intel Xeon E5440)

SPECfp\_rate\_base2006 = 64.9

CPU2006 license: 11

Test date: Dec-2007

Test sponsor: IBM Corporation

Hardware Availability: Jan-2008

Tested by: IBM Corporation

Software Availability: Nov-2007

L3 Cache: None  
Other Cache: None  
Memory: 16 GB (8 x 2 GB DDR2-5300F ECC)  
Disk Subsystem: 1 x 36 GB SAS, 15000 RPM  
Other Hardware: None

Peak Pointers: 32/64-bit  
Other Software: Binutils 2.17.50.0.15

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	3225	33.7	<u>3225</u>	<u>33.7</u>	3225	33.7	4	<u>1582</u>	<u>34.4</u>	1582	34.4	1582	34.4
416.gamess	8	941	166	940	167	<u>941</u>	<u>167</u>	8	928	169	931	168	<u>928</u>	<u>169</u>
433.milc	8	<u>3172</u>	<u>23.2</u>	3174	23.1	3164	23.2	8	<u>3040</u>	<u>24.2</u>	3036	24.2	3041	24.1
434.zeusmp	8	<u>1027</u>	<u>70.9</u>	1020	71.4	1031	70.6	8	1012	72.0	<u>1014</u>	<u>71.8</u>	1018	71.5
435.gromacs	8	398	144	398	143	<u>398</u>	<u>143</u>	8	402	142	396	144	<u>398</u>	<u>143</u>
436.cactusADM	8	1302	73.5	<u>1303</u>	<u>73.4</u>	1306	73.2	1	122	98.3	<u>121</u>	<u>98.4</u>	121	98.6
437.leslie3d	8	<u>2876</u>	<u>26.1</u>	2878	26.1	2873	26.2	4	<u>1306</u>	<u>28.8</u>	1306	28.8	1305	28.8
444.namd	8	545	118	<u>538</u>	<u>119</u>	537	119	8	541	119	533	120	<u>534</u>	<u>120</u>
447.dealII	8	670	137	724	126	<u>717</u>	<u>128</u>	8	654	140	<u>650</u>	<u>141</u>	649	141
450.soplex	8	1963	34.0	1964	34.0	<u>1964</u>	<u>34.0</u>	8	1772	37.6	1779	37.5	<u>1776</u>	<u>37.6</u>
453.povray	8	223	191	<u>223</u>	<u>191</u>	224	190	8	191	223	190	224	<u>190</u>	<u>223</u>
454.calculix	8	571	116	<u>576</u>	<u>115</u>	577	114	8	407	162	<u>411</u>	<u>161</u>	414	159
459.GemsFDTD	8	3464	24.5	3482	24.4	<u>3480</u>	<u>24.4</u>	8	<u>3361</u>	<u>25.3</u>	3357	25.3	3362	25.2
465.tonto	8	663	119	662	119	<u>663</u>	<u>119</u>	8	<u>650</u>	<u>121</u>	649	121	652	121
470.lbm	8	4142	26.5	<u>4142</u>	<u>26.5</u>	4140	26.5	4	1432	38.4	<u>1432</u>	<u>38.4</u>	1431	38.4
481.wrf	8	1728	51.7	1726	51.8	<u>1727</u>	<u>51.7</u>	8	<u>1727</u>	<u>51.7</u>	1729	51.7	1726	51.8
482.sphinx3	8	2786	56.0	<u>2783</u>	<u>56.0</u>	2771	56.3	4	823	94.7	819	95.2	<u>821</u>	<u>95.0</u>

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

## General Notes

All benchmarks compiled in 64-bit mode except 437.leslie3d, 450.soplex 470.lbm and 482.sphinx3, at peak, are compiled in 32-bit mode  
Hardware Sector Prefetch Enabled and Adjacent Sector Prefetch Disabled  
OMP\_NUM\_THREADS set to number of cores  
KMP\_AFFINITY set to physical,0  
KMP\_STACKSIZE set to 64M  
Powersaved dameon was disabled in OS  
taskset utility used to bind CPU(s) to processes



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp\_rate2006 = 73.5

IBM System x3550 (Intel Xeon E5440)

SPECfp\_rate\_base2006 = 64.9

CPU2006 license: 11

Test date: Dec-2007

Test sponsor: IBM Corporation

Hardware Availability: Jan-2008

Tested by: IBM Corporation

Software Availability: Nov-2007

## 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:

-fast

C++ benchmarks:

-fast

Fortran benchmarks:

-fast

Benchmarks using both Fortran and C:

-fast



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp\_rate2006 = 73.5

IBM System x3550 (Intel Xeon E5440)

SPECfp\_rate\_base2006 = 64.9

CPU2006 license: 11

Test date: Dec-2007

Test sponsor: IBM Corporation

Hardware Availability: Jan-2008

Tested by: IBM Corporation

Software Availability: Nov-2007

## Peak Compiler Invocation

C benchmarks (except as noted below):

```
/opt/intel/cc/10.1.008/bin/icc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include
```

433.milc: icc

C++ benchmarks (except as noted below):

icpc

```
450.soplex: /opt/intel/cc/10.1.008/bin/icpc -L/opt/intel/cc/10.1.008/lib
-I/opt/intel/cc/10.1.008/include
```

Fortran benchmarks (except as noted below):

ifort

```
437.leslie3d: /opt/intel/fc/10.1.008/bin/ifort -L/opt/intel/fc/10.1.008/lib
-I/opt/intel/fc/10.1.008/include
```

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
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) -fast -fno-alias
-auto-ilp32
```

```
470.lbm: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2
-scalar-rep- -prefetch -opt-malloc-options=3
```

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp\_rate2006 = 73.5

IBM System x3550 (Intel Xeon E5440)

SPECfp\_rate\_base2006 = 64.9

CPU2006 license: 11

Test date: Dec-2007

Test sponsor: IBM Corporation

Hardware Availability: Jan-2008

Tested by: IBM Corporation

Software Availability: Nov-2007

## Peak Optimization Flags (Continued)

482.sphinx3: -fast -unroll2

### C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias  
-auto-ilp32

447.dealIII: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2  
-ansi-alias -scalar-rep-

450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -fast  
-opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4  
-ansi-alias

### Fortran benchmarks:

410.bwaves: -fast -prefetch

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0  
-ansi-alias -scalar-rep-

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -fast

437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch  
-opt-malloc-options=3

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0  
-prefetch

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -auto

### Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch  
-auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2  
-prefetch -parallel -auto-ilp32

454.calculix: -fast -unroll-aggressive -auto-ilp32

481.wrf: -fast -auto-ilp32

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

<http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090714.11.html>



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp\_rate2006 = 73.5

IBM System x3550 (Intel Xeon E5440)

SPECfp\_rate\_base2006 = 64.9

CPU2006 license: 11

Test date: Dec-2007

Test sponsor: IBM Corporation

Hardware Availability: Jan-2008

Tested by: IBM Corporation

Software Availability: Nov-2007

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

<http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090714.11.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 v1.0.  
Report generated on Tue Jul 22 16:27:53 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 6 February 2008.