



# SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## IBM Corporation

### SPECfp®\_rate2006 = 84.8

## IBM System x3450 (Intel Xeon E5472)

### SPECfp\_rate\_base2006 = 75.3

CPU2006 license: 11

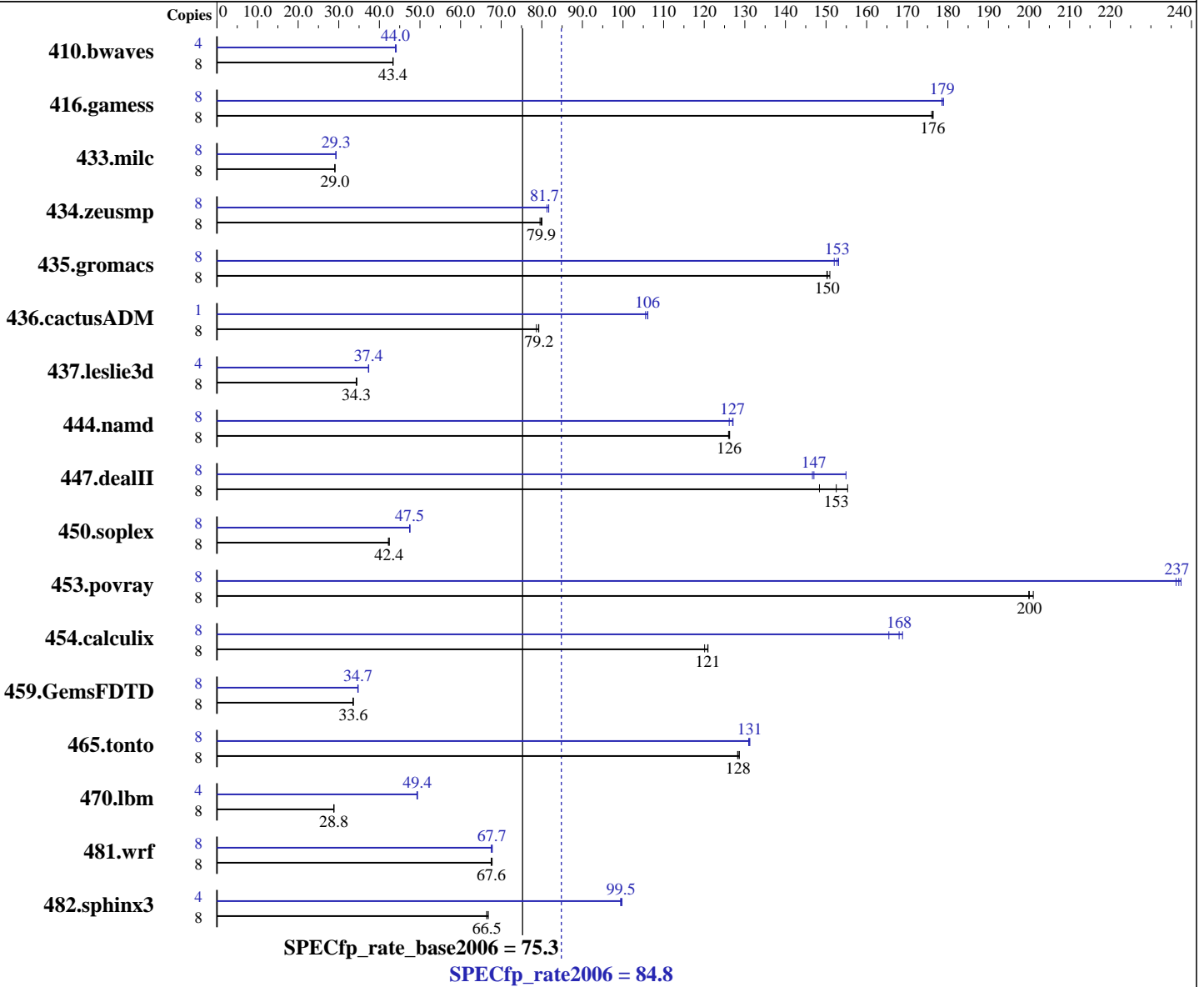
Test date: Feb-2008

Test sponsor: IBM Corporation

Hardware Availability: May-2008

Tested by: IBM Corporation

Software Availability: Nov-2007



### Hardware

CPU Name: Intel Xeon E5472  
 CPU Characteristics: 1600MHz 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) SP1, Kernel 2.6.16.46-0.12-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 = 84.8

IBM System x3450 (Intel Xeon E5472)

SPECfp\_rate\_base2006 = 75.3

CPU2006 license: 11

Test date: Feb-2008

Test sponsor: IBM Corporation

Hardware Availability: May-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 80 GB SATA, 7200 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	2507	43.4	<u>2507</u>	<u>43.4</u>	2509	43.3	4	<u>1236</u>	<u>44.0</u>	1236	44.0	1231	44.2
416.gamess	8	<u>889</u>	<u>176</u>	890	176	888	176	8	875	179	877	179	<u>877</u>	<u>179</u>
433.milc	8	<u>2528</u>	<u>29.0</u>	2530	29.0	2528	29.1	8	2509	29.3	<u>2504</u>	<u>29.3</u>	2502	29.4
434.zeusmp	8	915	79.6	910	80.0	<u>912</u>	<u>79.9</u>	8	<u>891</u>	<u>81.7</u>	891	81.7	896	81.3
435.gromacs	8	378	151	<u>380</u>	<u>150</u>	380	150	8	<u>374</u>	<u>153</u>	376	152	373	153
436.cactusADM	8	1206	79.3	1215	78.7	<u>1207</u>	<u>79.2</u>	1	113	106	113	106	<u>113</u>	<u>106</u>
437.leslie3d	8	2183	34.4	2190	34.3	<u>2190</u>	<u>34.3</u>	4	<u>1006</u>	<u>37.4</u>	1006	37.4	1008	37.3
444.namd	8	508	126	<u>508</u>	<u>126</u>	509	126	8	<u>505</u>	<u>127</u>	505	127	509	126
447.dealII	8	589	155	617	148	<u>600</u>	<u>153</u>	8	624	147	<u>622</u>	<u>147</u>	591	155
450.soplex	8	1572	42.4	1580	42.2	<u>1574</u>	<u>42.4</u>	8	1407	47.4	1404	47.5	<u>1405</u>	<u>47.5</u>
453.povray	8	<u>213</u>	<u>200</u>	212	201	213	200	8	<u>180</u>	<u>237</u>	179	237	180	236
454.calculix	8	550	120	<u>546</u>	<u>121</u>	546	121	8	391	169	<u>393</u>	<u>168</u>	399	165
459.GemsFDTD	8	2528	33.6	<u>2528</u>	<u>33.6</u>	2534	33.5	8	2440	34.8	2447	34.7	<u>2446</u>	<u>34.7</u>
465.tonto	8	<u>613</u>	<u>128</u>	612	129	614	128	8	600	131	601	131	<u>600</u>	<u>131</u>
470.lbm	8	3819	28.8	<u>3818</u>	<u>28.8</u>	3816	28.8	4	1116	49.3	<u>1114</u>	<u>49.4</u>	1113	49.4
481.wrf	8	<u>1322</u>	<u>67.6</u>	1323	67.5	1318	67.8	8	1318	67.8	<u>1320</u>	<u>67.7</u>	1323	67.6
482.sphinx3	8	<u>2345</u>	<u>66.5</u>	2346	66.5	2333	66.8	4	782	99.8	<u>783</u>	<u>99.5</u>	784	99.4

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  
OMP\_NUM\_THREADS set to number of cores  
KMP\_AFFINITY set to physical,0  
KMP\_STACKSIZE set to 64M  
taskset utility used to bind CPU(s) to processes

## Base Compiler Invocation

C benchmarks:  
icc

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp\_rate2006 = 84.8

IBM System x3450 (Intel Xeon E5472)

SPECfp\_rate\_base2006 = 75.3

CPU2006 license: 11

Test date: Feb-2008

Test sponsor: IBM Corporation

Hardware Availability: May-2008

Tested by: IBM Corporation

Software Availability: Nov-2007

## 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:  
-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 = 84.8

IBM System x3450 (Intel Xeon E5472)

SPECfp\_rate\_base2006 = 75.3

CPU2006 license: 11

Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Feb-2008

Hardware Availability: May-2008

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 = 84.8

IBM System x3450 (Intel Xeon E5472)

SPECfp\_rate\_base2006 = 75.3

CPU2006 license: 11

Test date: Feb-2008

Test sponsor: IBM Corporation

Hardware Availability: May-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.20090713.html>



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp\_rate2006 = 84.8

IBM System x3450 (Intel Xeon E5472)

SPECfp\_rate\_base2006 = 75.3

CPU2006 license: 11

Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Feb-2008

Hardware Availability: May-2008

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.20090713.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 16:42:51 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 2 April 2008.