



# SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

## IBM Corporation

SPECfp®2006 = **62.6**

### IBM System x3250 M4 (Intel Xeon E3-1240)

SPECfp\_base2006 = **60.7**

CPU2006 license: 11

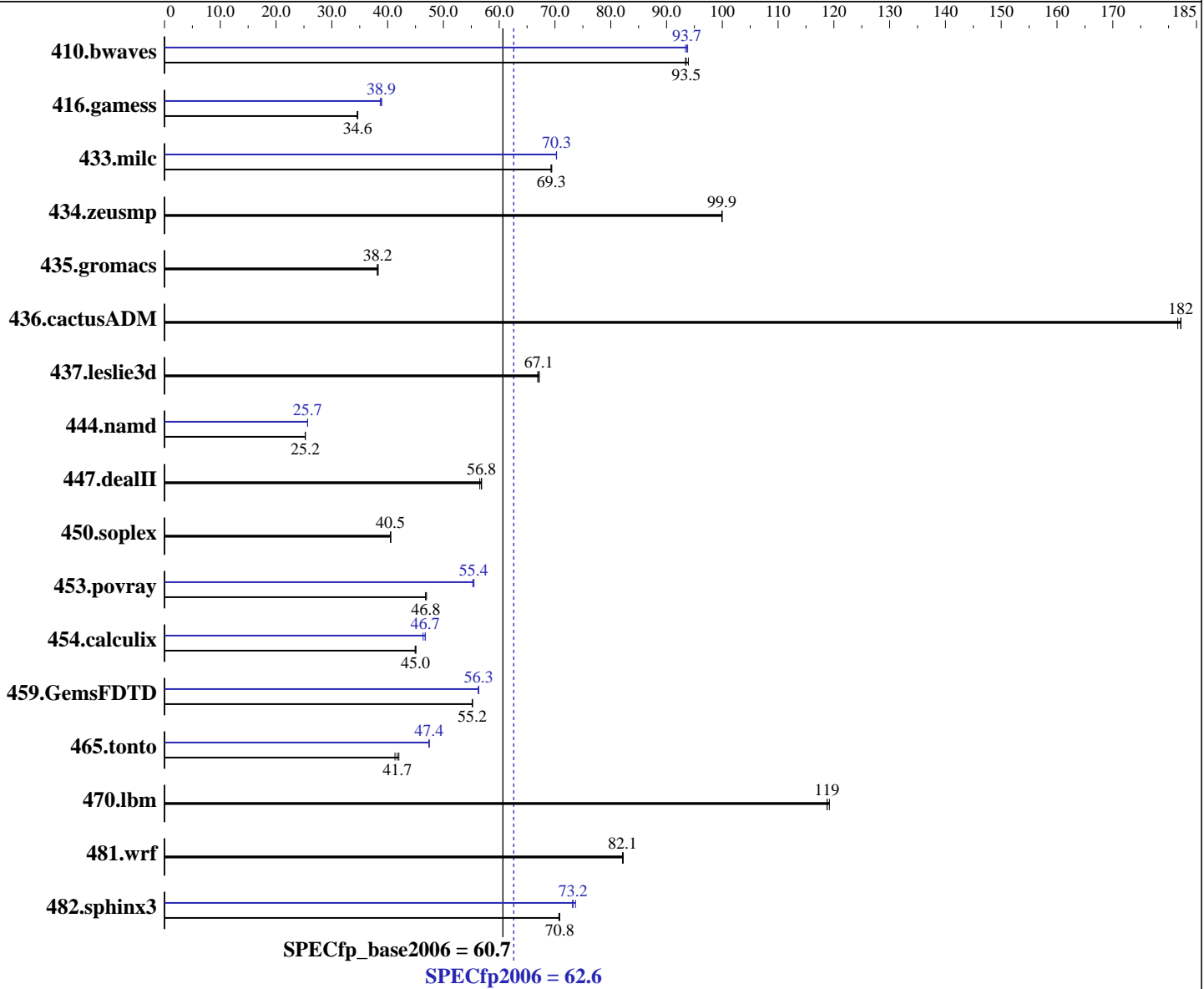
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Oct-2011

Hardware Availability: Oct-2011

Software Availability: Aug-2011



### Hardware

CPU Name: Intel Xeon E3-1240  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.70 GHz  
 CPU MHz: 3300  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip, 2 threads/core  
 CPU(s) orderable: 1 chip  
 Primary Cache: 32 KB I + 32 KB D on chip per core  
 Secondary Cache: 256 KB I+D on chip per core

Continued on next page

### Software

Operating System: Red Hat Enterprise Linux Server Release 6.1, Kernel 2.6.32-131.0.15.el6.x86\_64  
 Compiler: C/C++/Fortran: Version 12.1.0.225 of Intel Compiler XE Build 20110803  
 Auto Parallel: Yes  
 File System: ext4  
 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 = **62.6**

## IBM System x3250 M4 (Intel Xeon E3-1240)

SPECfp\_base2006 = **60.7**

CPU2006 license: 11  
Test sponsor: IBM Corporation  
Tested by: IBM Corporation

Test date: Oct-2011  
Hardware Availability: Oct-2011  
Software Availability: Aug-2011

L3 Cache: 8 MB I+D on chip per chip  
Other Cache: None  
Memory: 8 GB (2 x 4 GB 2Rx8 PC3-10600E-9, ECC)  
Disk Subsystem: 1 x 146 GB SAS, 15000 RPM  
Other Hardware: None

Peak Pointers: 32/64-bit  
Other Software: None

### Results Table

| Benchmark     | Base               |                    |                   |                    |                    |                    | Peak               |                    |                   |                    |                    |                    |
|---------------|--------------------|--------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|--------------------|
|               | Seconds            | Ratio              | Seconds           | Ratio              | Seconds            | Ratio              | Seconds            | Ratio              | Seconds           | Ratio              | Seconds            | Ratio              |
| 410.bwaves    | 146                | 93.4               | <b><u>145</u></b> | <b><u>93.5</u></b> | 145                | 93.9               | 146                | 93.4               | 145               | 93.8               | <b><u>145</u></b>  | <b><u>93.7</u></b> |
| 416.gamess    | 567                | 34.5               | <b><u>565</u></b> | <b><u>34.6</u></b> | 565                | 34.7               | <b><u>504</u></b>  | <b><u>38.9</u></b> | 506               | 38.7               | 503                | 38.9               |
| 433.milc      | 132                | 69.3               | <b><u>132</u></b> | <b><u>69.3</u></b> | 132                | 69.4               | <b><u>131</u></b>  | <b><u>70.3</u></b> | 131               | 70.2               | 131                | 70.3               |
| 434.zeusmp    | <b><u>91.0</u></b> | <b><u>99.9</u></b> | 91.0              | 99.9               | 91.0               | 99.9               | <b><u>91.0</u></b> | <b><u>99.9</u></b> | 91.0              | 99.9               | 91.0               | 99.9               |
| 435.gromacs   | 187                | 38.2               | 186               | 38.3               | <b><u>187</u></b>  | <b><u>38.2</u></b> | 187                | 38.2               | 186               | 38.3               | <b><u>187</u></b>  | <b><u>38.2</u></b> |
| 436.cactusADM | 65.8               | 182                | 65.6              | 182                | <b><u>65.6</u></b> | <b><u>182</u></b>  | 65.8               | 182                | 65.6              | 182                | <b><u>65.6</u></b> | <b><u>182</u></b>  |
| 437.leslie3d  | <b><u>140</u></b>  | <b><u>67.1</u></b> | 140               | 67.2               | 141                | 66.9               | <b><u>140</u></b>  | <b><u>67.1</u></b> | 140               | 67.2               | 141                | 66.9               |
| 444.namd      | 318                | 25.3               | <b><u>318</u></b> | <b><u>25.2</u></b> | 318                | 25.2               | <b><u>313</u></b>  | <b><u>25.7</u></b> | 312               | 25.7               | 313                | 25.7               |
| 447.dealII    | <b><u>201</u></b>  | <b><u>56.8</u></b> | 201               | 56.8               | 202                | 56.5               | <b><u>201</u></b>  | <b><u>56.8</u></b> | 201               | 56.8               | 202                | 56.5               |
| 450.soplex    | 206                | 40.6               | 206               | 40.5               | <b><u>206</u></b>  | <b><u>40.5</u></b> | 206                | 40.6               | 206               | 40.5               | <b><u>206</u></b>  | <b><u>40.5</u></b> |
| 453.povray    | 113                | 47.0               | <b><u>114</u></b> | <b><u>46.8</u></b> | 114                | 46.8               | 96.2               | 55.3               | 95.9              | 55.5               | <b><u>96.0</u></b> | <b><u>55.4</u></b> |
| 454.calculix  | 184                | 44.9               | <b><u>183</u></b> | <b><u>45.0</u></b> | 183                | 45.1               | 178                | 46.4               | 176               | 46.8               | <b><u>177</u></b>  | <b><u>46.7</u></b> |
| 459.GemsFDTD  | 192                | 55.2               | 192               | 55.2               | <b><u>192</u></b>  | <b><u>55.2</u></b> | 189                | 56.3               | <b><u>188</u></b> | <b><u>56.3</u></b> | 188                | 56.3               |
| 465.tonto     | 234                | 42.0               | <b><u>236</u></b> | <b><u>41.7</u></b> | 238                | 41.3               | 207                | 47.4               | <b><u>207</u></b> | <b><u>47.4</u></b> | 207                | 47.4               |
| 470.lbm       | <b><u>116</u></b>  | <b><u>119</u></b>  | 116               | 119                | 115                | 119                | <b><u>116</u></b>  | <b><u>119</u></b>  | 116               | 119                | 115                | 119                |
| 481.wrf       | 136                | 82.2               | <b><u>136</u></b> | <b><u>82.1</u></b> | 136                | 82.1               | 136                | 82.2               | <b><u>136</u></b> | <b><u>82.1</u></b> | 136                | 82.1               |
| 482.sphinx3   | 275                | 70.9               | <b><u>275</u></b> | <b><u>70.8</u></b> | 276                | 70.7               | <b><u>266</u></b>  | <b><u>73.2</u></b> | 264               | 73.7               | 266                | 73.1               |

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

### Platform Notes

BIOS Settings:  
Turbo Mode enabled in BIOS  
C-State enabled in BIOS

### General Notes

Environment variables set by runspec before the start of the run:  
KMP\_AFFINITY = "granularity=fine,scatter"  
LD\_LIBRARY\_PATH = "/root/SPECcpu12.1/smartheap:/root/SPECcpu12.1/ic12.1-libs/ia32:/root/SPECcpu12.1/ic12.1-libs/intel64"  
OMP\_NUM\_THREADS = "4"

Binaries compiled on a system with 1x Core i7-860 CPU + 8GB memory  
using RHEL5.5 with binutils-2.17.50.0.6-14.el5  
Stack size set to unlimited using "ulimit -s unlimited"

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp2006 = 62.6

IBM System x3250 M4 (Intel Xeon E3-1240)

SPECfp\_base2006 = 60.7

CPU2006 license: 11

Test date: Oct-2011

Test sponsor: IBM Corporation

Hardware Availability: Oct-2011

Tested by: IBM Corporation

Software Availability: Aug-2011

## General Notes (Continued)

Transparent Huge Pages enabled with:  
echo always > /sys/kernel/mm/redhat\_transparent\_hugepage/enabled  
Filesystem page cache cleared with:  
echo 1> /proc/sys/vm/drop\_caches

## Base Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks:

icpc -m64

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

## 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:

-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch  
-ansi-alias

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp2006 = 62.6

IBM System x3250 M4 (Intel Xeon E3-1240)

SPECfp\_base2006 = 60.7

CPU2006 license: 11

Test date: Oct-2011

Test sponsor: IBM Corporation

Hardware Availability: Oct-2011

Tested by: IBM Corporation

Software Availability: Aug-2011

## Base Optimization Flags (Continued)

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -ansi-alias

Fortran benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:

-xAVX -ipo -O3 -no-prec-div -static -parallel -opt-prefetch  
-ansi-alias

## Peak Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks:

icpc -m64

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

## Peak Portability Flags

Same as Base Portability Flags

## Peak Optimization Flags

C benchmarks:

433.milc: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32  
-ansi-alias

470.lbm: basepeak = yes

482.sphinx3: -xAVX -ipo -O3 -no-prec-div -unroll2 -ansi-alias  
-parallel

C++ benchmarks:

Continued on next page



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp2006 = 62.6

IBM System x3250 M4 (Intel Xeon E3-1240)

SPECfp\_base2006 = 60.7

CPU2006 license: 11

Test date: Oct-2011

Test sponsor: IBM Corporation

Hardware Availability: Oct-2011

Tested by: IBM Corporation

Software Availability: Aug-2011

## Peak Optimization Flags (Continued)

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

447.dealII: basepeak = yes

450.soplex: basepeak = yes

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

### Fortran benchmarks:

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

416.gamess: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -unroll2  
-inline-level=0 -scalar-rep- -static

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -unroll2  
-inline-level=0 -opt-prefetch -parallel

465.tonto: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)  
-no-prec-div(pass 2) -prof-use(pass 2) -inline-calloc  
-opt-malloc-options=3 -auto -unroll4

### Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xAVX -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-linux64.html>

<http://www.spec.org/cpu2006/flags/IBM-platform-linux64-revB.20111206.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic12.1-linux64.xml>

<http://www.spec.org/cpu2006/flags/IBM-platform-linux64-revB.20111206.xml>



# SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp2006 = 62.6

IBM System x3250 M4 (Intel Xeon E3-1240)

SPECfp\_base2006 = 60.7

CPU2006 license: 11

Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Oct-2011

Hardware Availability: Oct-2011

Software Availability: Aug-2011

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 Thu Jul 24 01:11:32 2014 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 6 December 2011.