



SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp®2006 = 39.0

IBM System x3650 M2 (Intel Xeon X5560)

SPECfp_base2006 = 36.8

CPU2006 license: 11

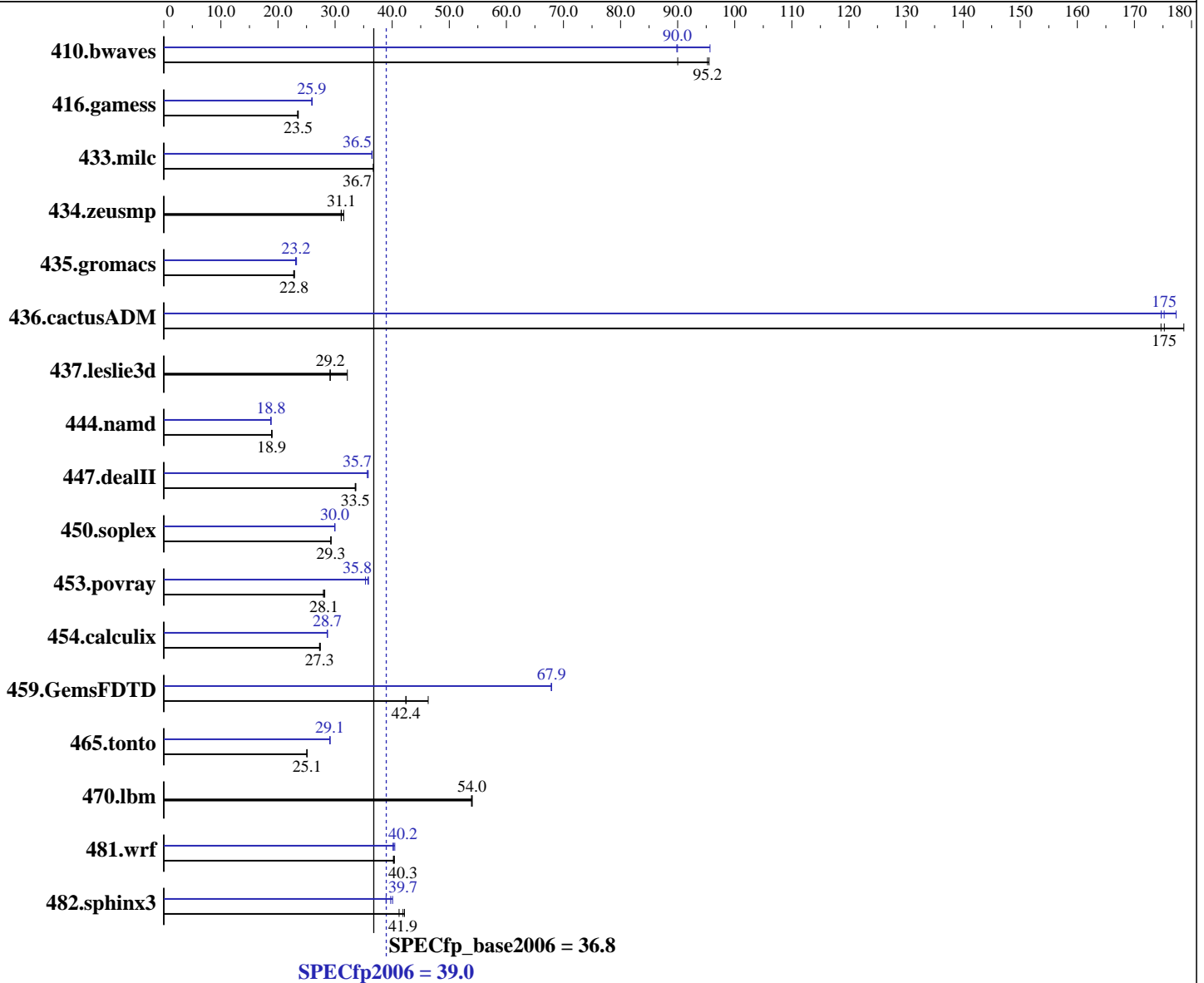
Test date: May-2009

Test sponsor: IBM Corporation

Hardware Availability: Apr-2009

Tested by: IBM Corporation

Software Availability: Feb-2009



Hardware

CPU Name: Intel Xeon X5560
 CPU Characteristics: Intel Turbo Boost Technology up to 3.20 GHz
 CPU MHz: 2800
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip, 2 threads/core
 CPU(s) orderable: 1,2 chips
 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: SuSE Linux Enterprise Server 10 (x86_64) SP2 with patch Linux kernel 20090119, Kernel 2.6.16.60-0.34-smp
 Compiler: Intel C++ and Fortran Compiler 11.0 for Linux Build 20090131 Package ID: l_cproc_p_11.0.080, l_cprof_p_11.0.080
 Auto Parallel: Yes
 File System: ReiserFS
 System State: Run level 3 (multi-user)

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp2006 = 39.0

IBM System x3650 M2 (Intel Xeon X5560)

SPECfp_base2006 = 36.8

CPU2006 license: 11

Test date: May-2009

Test sponsor: IBM Corporation

Hardware Availability: Apr-2009

Tested by: IBM Corporation

Software Availability: Feb-2009

L3 Cache: 8 MB I+D on chip per chip
Other Cache: None
Memory: 24 GB (6 x 4 GB PC3-10600R)
Disk Subsystem: 1 x 73 GB SAS, 15000 RPM
Other Hardware: None

Base Pointers: 64-bit
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	151	90.0	<u>143</u>	<u>95.2</u>	142	95.5	142	95.7	151	89.9	<u>151</u>	<u>90.0</u>
416.gamess	836	23.4	<u>832</u>	<u>23.5</u>	831	23.6	<u>755</u>	<u>25.9</u>	753	26.0	755	25.9
433.milc	250	36.8	250	36.7	<u>250</u>	<u>36.7</u>	252	36.5	<u>252</u>	<u>36.5</u>	252	36.5
434.zeusmp	289	31.5	293	31.1	<u>293</u>	<u>31.1</u>	289	31.5	293	31.1	<u>293</u>	<u>31.1</u>
435.gromacs	312	22.9	314	22.7	<u>313</u>	<u>22.8</u>	309	23.1	<u>308</u>	<u>23.2</u>	307	23.2
436.cactusADM	<u>68.2</u>	<u>175</u>	66.9	179	68.4	175	<u>68.2</u>	<u>175</u>	67.4	177	68.4	175
437.leslie3d	292	32.1	323	29.1	<u>322</u>	<u>29.2</u>	292	32.1	323	29.1	<u>322</u>	<u>29.2</u>
444.namd	423	19.0	<u>425</u>	<u>18.9</u>	425	18.9	429	18.7	427	18.8	<u>427</u>	<u>18.8</u>
447.dealII	<u>341</u>	<u>33.5</u>	341	33.5	340	33.6	319	35.8	321	35.7	<u>321</u>	<u>35.7</u>
450.soplex	285	29.3	<u>285</u>	<u>29.3</u>	285	29.3	279	29.9	<u>278</u>	<u>30.0</u>	278	30.0
453.povray	<u>190</u>	<u>28.1</u>	189	28.2	190	28.0	<u>149</u>	<u>35.8</u>	148	35.8	151	35.3
454.calculix	301	27.4	302	27.3	<u>302</u>	<u>27.3</u>	288	28.6	288	28.7	<u>288</u>	<u>28.7</u>
459.GemsFDTD	229	46.3	<u>250</u>	<u>42.4</u>	250	42.4	156	67.9	<u>156</u>	<u>67.9</u>	156	67.9
465.tonto	392	25.1	393	25.1	<u>392</u>	<u>25.1</u>	<u>338</u>	<u>29.1</u>	338	29.1	338	29.1
470.lbm	255	53.9	254	54.0	<u>254</u>	<u>54.0</u>	255	53.9	254	54.0	<u>254</u>	<u>54.0</u>
481.wrf	277	40.4	<u>277</u>	<u>40.3</u>	278	40.2	276	40.5	278	40.1	<u>278</u>	<u>40.2</u>
482.sphinx3	<u>465</u>	<u>41.9</u>	462	42.2	473	41.2	<u>490</u>	<u>39.7</u>	501	38.9	486	40.1

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

General Notes

'ulimit -s unlimited' was used to set the stack size to unlimited prior to run
OMP_NUM_THREADS set to number of cores
KMP_AFFINITY set to granularity=fine,scatter
KMP_STACKSIZE set to 200M
Processor CPU C-States Enabled

Base Compiler Invocation

C benchmarks:
icc

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp2006 = 39.0

IBM System x3650 M2 (Intel Xeon X5560)

SPECfp_base2006 = 36.8

CPU2006 license: 11

Test date: May-2009

Test sponsor: IBM Corporation

Hardware Availability: Apr-2009

Tested by: IBM Corporation

Software Availability: Feb-2009

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:
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

C++ benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Fortran benchmarks:
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch

Benchmarks using both Fortran and C:
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp2006 = 39.0

IBM System x3650 M2 (Intel Xeon X5560)

SPECfp_base2006 = 36.8

CPU2006 license: 11

Test date: May-2009

Test sponsor: IBM Corporation

Hardware Availability: Apr-2009

Tested by: IBM Corporation

Software Availability: Feb-2009

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:

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

470.lbm: basepeak = yes

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -static -unroll2

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp2006 = 39.0

IBM System x3650 M2 (Intel Xeon X5560)

SPECfp_base2006 = 36.8

CPU2006 license: 11

Test date: May-2009

Test sponsor: IBM Corporation

Hardware Availability: Apr-2009

Tested by: IBM Corporation

Software Availability: Feb-2009

Peak Optimization Flags (Continued)

C++ benchmarks:

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

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

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

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

Fortran benchmarks:

410.bwaves: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch
-parallel

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

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

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

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

Benchmarks using both Fortran and C:

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

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

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation SPECfp2006 = 39.0

IBM System x3650 M2 (Intel Xeon X5560) SPECfp_base2006 = 36.8

CPU2006 license: 11	Test date:	May-2009
Test sponsor: IBM Corporation	Hardware Availability:	Apr-2009
Tested by: IBM Corporation	Software Availability:	Feb-2009

Peak Optimization Flags (Continued)

454.calculix: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32

481.wrf: -xSSE4.2 -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.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.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.

Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 01:50:57 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 25 June 2009.