



SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp®2006 = 21.9

IBM System x3400 M2 (Intel Xeon E5502)

SPECfp_base2006 = 20.7

CPU2006 license: 11

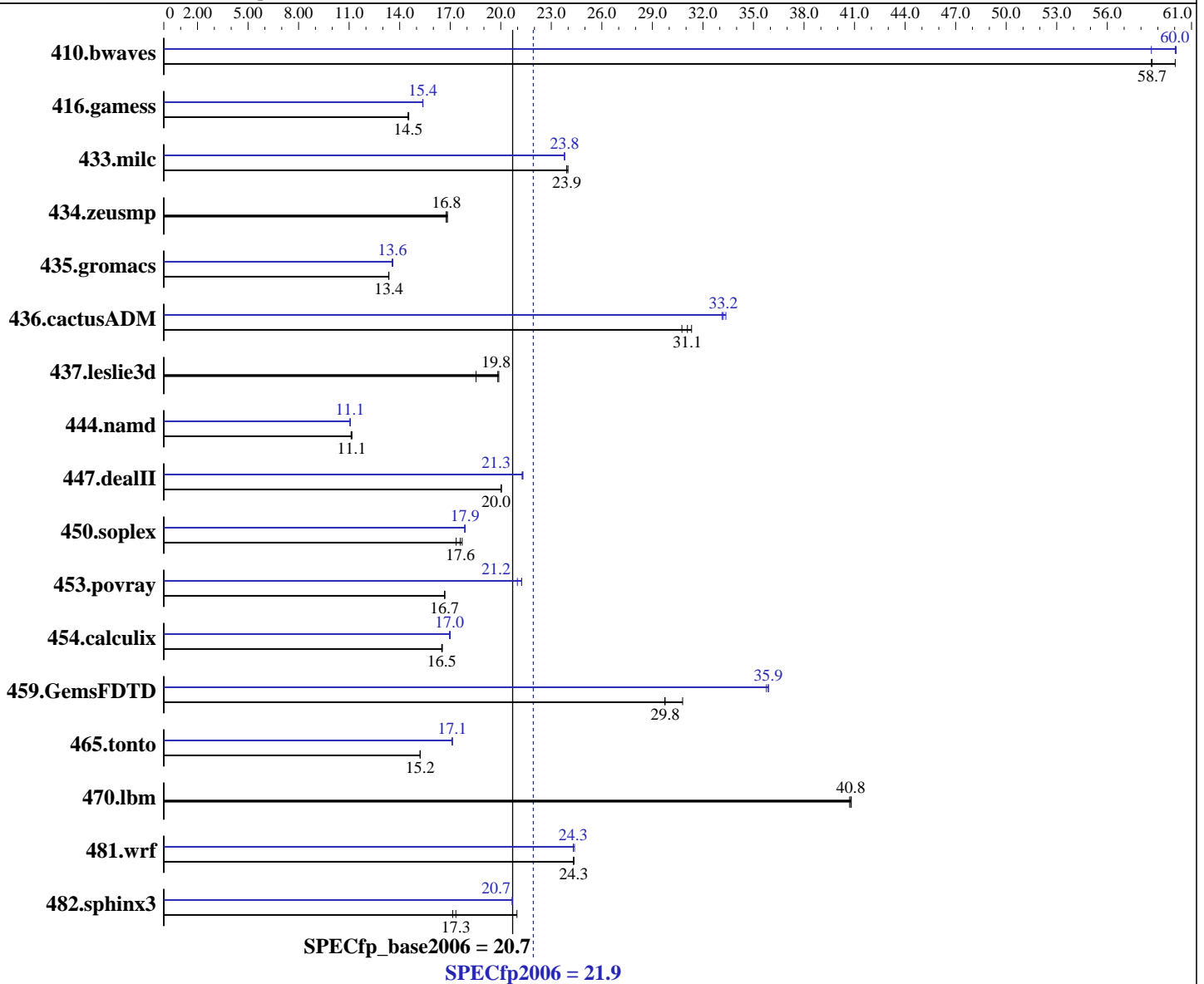
Test date: May-2009

Test sponsor: IBM Corporation

Hardware Availability: Apr-2009

Tested by: IBM Corporation

Software Availability: Feb-2009



Hardware

CPU Name: Intel Xeon E5502
 CPU Characteristics:
 CPU MHz: 1867
 FPU: Integrated
 CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip
 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 Linux patch 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 = **21.9**

IBM System x3400 M2 (Intel Xeon E5502)

SPECfp_base2006 = **20.7**

CPU2006 license: 11

Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: May-2009

Hardware Availability: Apr-2009

Software Availability: Feb-2009

L3 Cache: 4 MB I+D on chip per chip
Other Cache: None
Memory: 24 GB (12 x 2 GB PC3-10600R, 2 Rank, running at 800 MHz)
Disk Subsystem: 1 x 146 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	232	58.6	226	60.0	232	58.7	232	58.6	226	60.0	226	60.1
416.gamess	1350	14.5	1349	14.5	1346	14.5	1273	15.4	1274	15.4	1273	15.4
433.milc	383	24.0	384	23.9	384	23.9	386	23.8	386	23.8	386	23.8
434.zeusmp	540	16.8	542	16.8	543	16.8	540	16.8	542	16.8	543	16.8
435.gromacs	534	13.4	535	13.4	535	13.3	526	13.6	525	13.6	527	13.6
436.cactusADM	389	30.8	384	31.1	381	31.3	360	33.2	358	33.4	361	33.1
437.leslie3d	507	18.5	473	19.9	474	19.8	507	18.5	473	19.9	474	19.8
444.namd	718	11.2	720	11.1	721	11.1	725	11.1	725	11.1	725	11.1
447.dealII	571	20.0	571	20.0	571	20.0	538	21.3	537	21.3	537	21.3
450.soplex	471	17.7	481	17.4	474	17.6	467	17.9	467	17.9	466	17.9
453.povray	319	16.7	319	16.7	319	16.7	253	21.0	250	21.2	250	21.2
454.calculix	500	16.5	499	16.5	500	16.5	486	17.0	486	17.0	485	17.0
459.GemsFDTD	345	30.8	357	29.7	357	29.8	297	35.8	296	35.9	296	35.9
465.tonto	647	15.2	647	15.2	647	15.2	574	17.1	575	17.1	575	17.1
470.lbm	338	40.7	337	40.8	337	40.8	338	40.7	337	40.8	337	40.8
481.wrf	459	24.3	459	24.3	459	24.3	460	24.3	460	24.3	458	24.4
482.sphinx3	930	21.0	1136	17.2	1124	17.3	942	20.7	941	20.7	942	20.7

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
```

Base Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp2006 = 21.9

IBM System x3400 M2 (Intel Xeon E5502)

SPECfp_base2006 = 20.7

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)

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

Peak Compiler Invocation

C benchmarks (except as noted below):

icc

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp2006 = 21.9

IBM System x3400 M2 (Intel Xeon E5502)

SPECfp_base2006 = 20.7

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 (Continued)

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.lelie3d: `-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`

C++ benchmarks:

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp2006 = 21.9

IBM System x3400 M2 (Intel Xeon E5502)

SPECfp_base2006 = 20.7

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)

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.dealII: -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

454.calculix: -xSSE4.2 -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 = 21.9

IBM System x3400 M2 (Intel Xeon E5502) SPECfp_base2006 = 20.7

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)

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 02:16:07 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 7 July 2009.