



SPEC® CFP2006 Result

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IBM Corporation

SPECfp®_rate2006 = 75.0

IBM System x3100 M4 (Intel Core i3-2100)

SPECfp_rate_base2006 = 73.6

CPU2006 license: 11

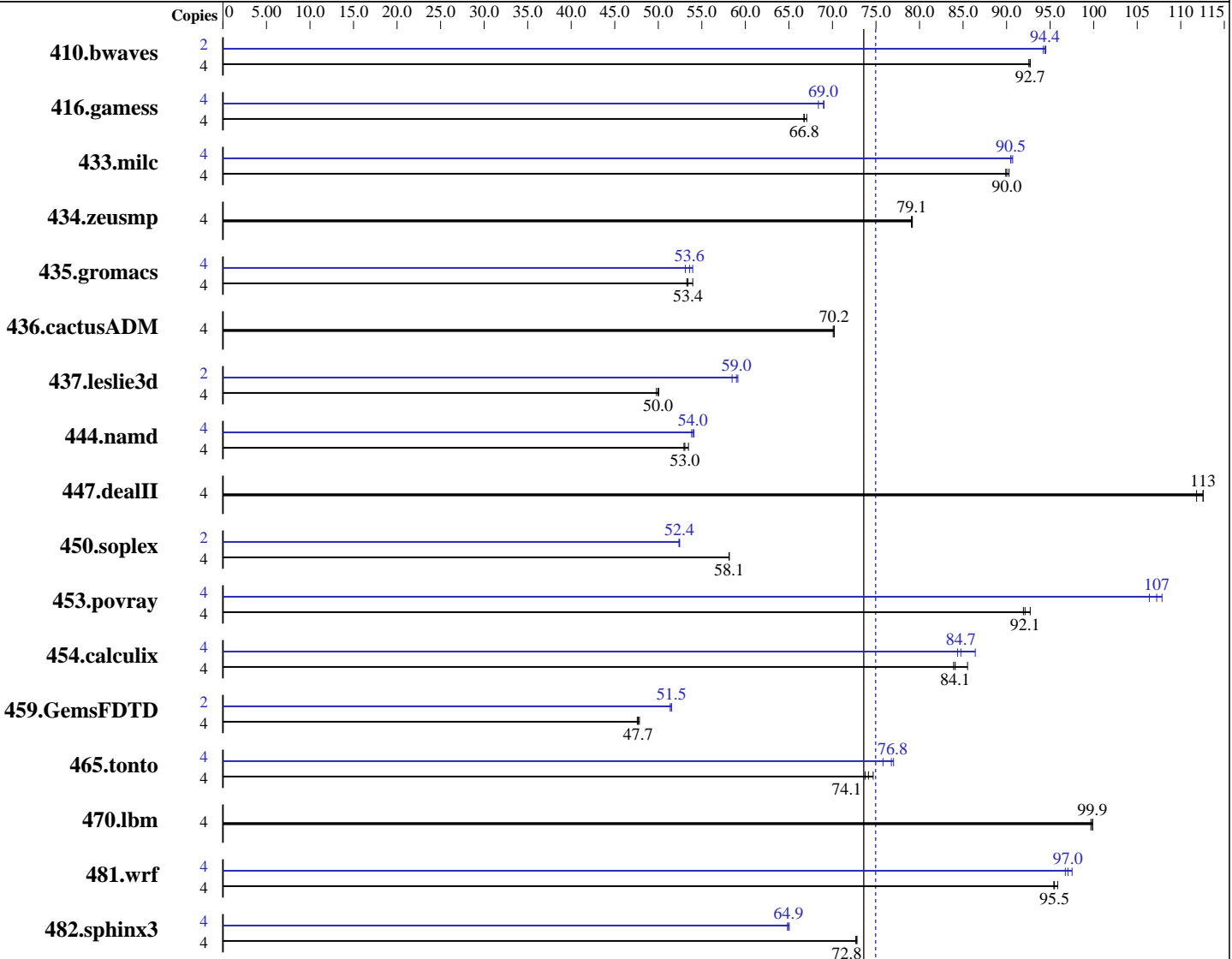
Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Nov-2011

Hardware Availability: Oct-2011

Software Availability: Aug-2011



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Hardware

CPU Name: Intel Core i3-2100
 CPU Characteristics:
 CPU MHz: 3100
 FPU: Integrated
 CPU(s) enabled: 2 cores, 1 chip, 2 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

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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: No
 File System: ext4
 System State: Run level 3 (multi-user)
 Base Pointers: 32/64-bit

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L3 Cache: 3 MB I+D on chip per chip
Other Cache: None
Memory: 16 GB (2 x 8 GB 2Rx8 PC3-10600E-9, ECC)
Disk Subsystem: 1 x 250 GB SATA, 7200 RPM
Other Hardware: None

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

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	586	92.7	586	92.7	587	92.6	2	289	94.2	288	94.5	288	94.4
416.gamess	4	1174	66.7	1168	67.0	1173	66.8	4	1134	69.0	1145	68.4	1136	69.0
433.milc	4	407	90.3	408	90.0	408	89.9	4	406	90.5	405	90.7	406	90.5
434.zeusmp	4	460	79.1	460	79.1	460	79.2	4	460	79.1	460	79.1	460	79.2
435.gromacs	4	529	54.0	535	53.4	536	53.3	4	538	53.1	529	54.0	533	53.6
436.cactusADM	4	682	70.1	681	70.2	681	70.2	4	682	70.1	681	70.2	681	70.2
437.leslie3d	4	751	50.1	755	49.8	752	50.0	2	319	59.0	318	59.1	321	58.5
444.namd	4	600	53.5	605	53.0	606	52.9	4	593	54.1	594	54.0	596	53.8
447.dealII	4	407	113	409	112	406	113	4	407	113	409	112	406	113
450.soplex	4	574	58.1	574	58.1	574	58.1	2	319	52.4	318	52.4	318	52.5
453.povray	4	231	92.1	230	92.7	231	91.9	4	198	107	200	106	197	108
454.calculix	4	386	85.5	392	84.1	393	83.9	4	389	84.7	382	86.4	391	84.4
459.GemsFDTD	4	887	47.8	892	47.6	890	47.7	2	413	51.4	412	51.5	412	51.5
465.tonto	4	527	74.7	531	74.1	534	73.8	4	513	76.8	511	77.0	519	75.8
470.lbm	4	551	99.7	550	99.9	550	99.9	4	551	99.7	550	99.9	550	99.9
481.wrf	4	468	95.4	466	95.9	468	95.5	4	460	97.0	462	96.7	458	97.5
482.sphinx3	4	1073	72.7	1072	72.8	1071	72.8	4	1199	65.0	1202	64.8	1200	64.9

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

Submit Notes

The config file option 'submit' was used.
taskset was used to bind copies to the cores

Platform Notes

BIOS Settings:
C-State enabled in BIOS

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/root/SPECcpu12.1/smartheap:/root/SPECcpu12.1/ic12.1-libs/ia32:/root/SPECcpu12.1/ic12.1-libs/intel64"

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General Notes (Continued)

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"
 Transparent Huge Pages disabled with:
 echo never > /sys/kernel/mm/redhat_transparent_hugepage/enabled
 Filesystem page cache cleared with:
 echo 1> /proc/sys/vm/drop_caches
 runspec command invoked through numactl i.e.:
 numactl --interleave=all runspec <etc>

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



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Base Optimization Flags

C benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

C++ benchmarks:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

Fortran benchmarks:

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

Benchmarks using both Fortran and C:

-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

482.sphinx3: icc -m32

C++ benchmarks (except as noted below):

icpc -m64

450.soplex: icpc -m32

Fortran benchmarks:

ifort -m64

Benchmarks using both Fortran and C:

icc -m64 ifort -m64

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.deallI: -DSPEC_CPU_LP64

453.povray: -DSPEC_CPU_LP64

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Peak Portability Flags (Continued)

454.calculix: -DSPEC_CPU_LP64 -nofor_main
 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: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
 -no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
 -prof-use(pass 2) -static -auto-ilp32

470.lbm: basepeak = yes

482.sphinx3: -xAVX -ipo -O3 -no-prec-div -opt-mem-layout-trans=3
 -unroll2

C++ benchmarks:

444.namd: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
 -no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
 -prof-use(pass 2) -fno-alias -auto-ilp32

447.dealII: basepeak = yes

450.soplex: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
 -no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
 -prof-use(pass 2) -opt-malloc-options=3

453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
 -no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
 -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
 -no-prec-div(pass 2) -prof-use(pass 2) -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: -xAVX -ipo -O3 -no-prec-div -static -opt-prefetch

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Peak Optimization Flags (Continued)

459.GemsFDTD: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3

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

Benchmarks using both Fortran and C:

435.gromacs: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
-no-prec-div(pass 2) -opt-mem-layout-trans=3(pass 2)
-prof-use(pass 2) -opt-prefetch -static -auto-ilp32

436.cactusADM: basepeak = yes

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

481.wrf: Same as 454.calculix

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>

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Tested with SPEC CPU2006 v1.1.

Report generated on Thu Jul 24 01:10:20 2014 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 6 December 2011.