



SPEC[®] CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp[®]_rate2006 = 48.1

IBM System x3655 (AMD Opteron 2220)

SPECfp_rate_base2006 = 45.7

CPU2006 license: 11

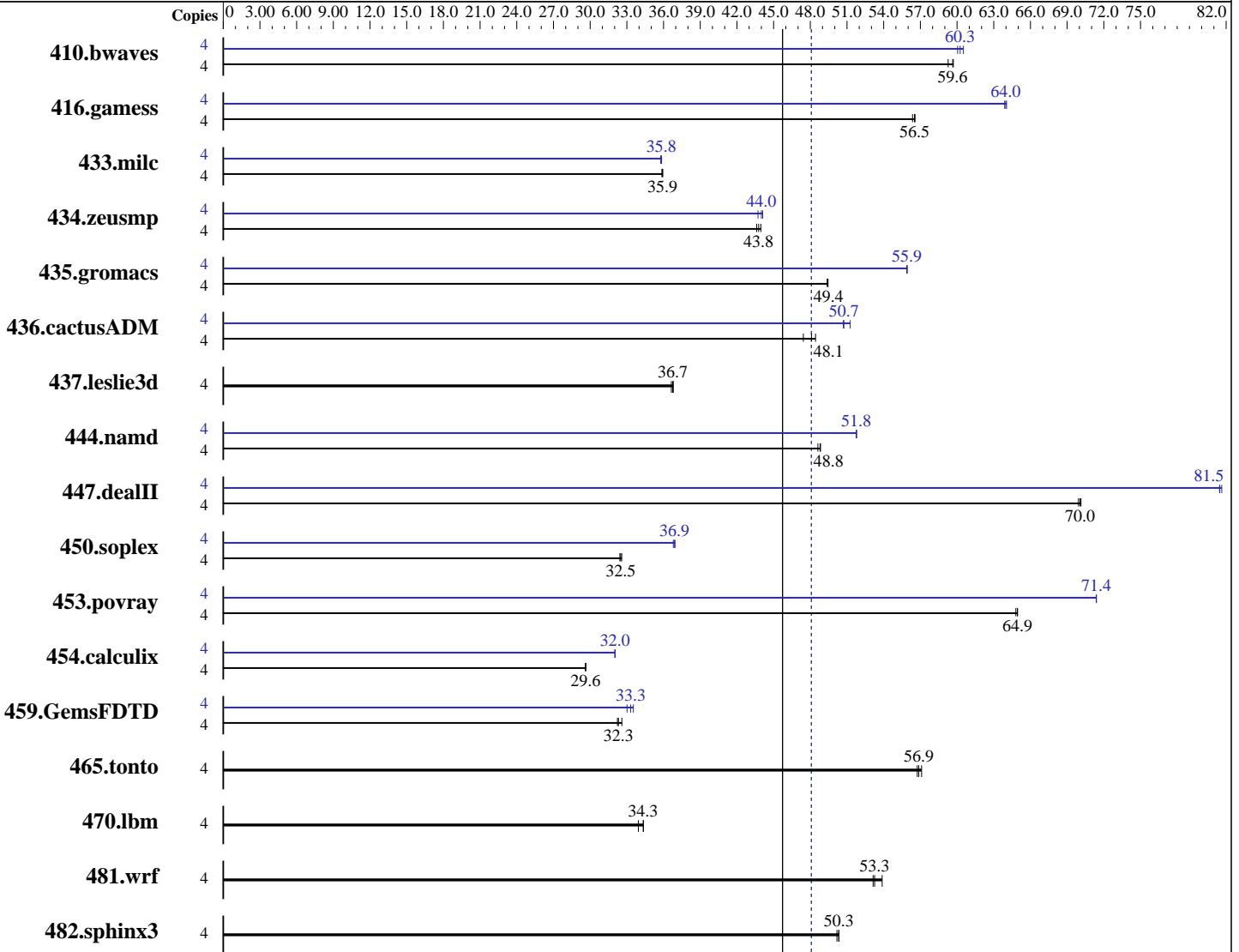
Test date: Jul-2007

Test sponsor: IBM Corporation

Hardware Availability: Jan-2007

Tested by: IBM Corporation

Software Availability: Mar-2007



SPECfp_rate_base2006 = 45.7

SPECfp_rate2006 = 48.1

Hardware

CPU Name: AMD Opteron 2220
 CPU Characteristics:
 CPU MHz: 2800
 FPU: Integrated
 CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip
 CPU(s) orderable: 1, 2 chips
 Primary Cache: 64 KB I + 64 KB D on chip per core
 Secondary Cache: 1 MB I+D on chip per core

Continued on next page

Software

Operating System: SLES 10 (x86_64), 2.6.16.21-0.8-smp
 Compiler: QLogic PathScale Compiler Suite, Release 3.0
 Auto Parallel: No
 File System: ext3
 System State: Multi-user, run level 3
 Base Pointers: 64-bit
 Peak Pointers: 32/64-bit

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp_rate2006 = 48.1

IBM System x3655 (AMD Opteron 2220)

SPECfp_rate_base2006 = 45.7

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

Test date: Jul-2007
Hardware Availability: Jan-2007
Software Availability: Mar-2007

L3 Cache: None
Other Cache: None
Memory: 16 GB (8 x 2GB DDR2-5300 ECC)
Disk Subsystem: 1 x 36 GB SAS, 10000 RPM
Other Hardware: None

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	911	59.7	<u>911</u>	<u>59.6</u>	917	59.3	4	905	60.0	898	60.5	<u>902</u>	<u>60.3</u>
416.gamess	4	1385	56.6	1390	56.4	<u>1386</u>	<u>56.5</u>	4	<u>1224</u>	<u>64.0</u>	1223	64.0	1226	63.9
433.milc	4	1024	35.9	1022	35.9	<u>1022</u>	<u>35.9</u>	4	1025	35.8	<u>1025</u>	<u>35.8</u>	1027	35.8
434.zeusmp	4	828	44.0	<u>831</u>	<u>43.8</u>	835	43.6	4	832	43.7	825	44.1	<u>827</u>	<u>44.0</u>
435.gromacs	4	<u>578</u>	<u>49.4</u>	578	49.4	578	49.4	4	511	55.9	<u>511</u>	<u>55.9</u>	511	55.9
436.cactusADM	4	987	48.4	1008	47.4	<u>994</u>	<u>48.1</u>	4	<u>942</u>	<u>50.7</u>	932	51.3	943	50.7
437.leslie3d	4	<u>1023</u>	<u>36.7</u>	1022	36.8	1026	36.6	4	<u>1023</u>	<u>36.7</u>	1022	36.8	1026	36.6
444.namd	4	657	48.8	<u>657</u>	<u>48.8</u>	660	48.6	4	619	51.8	620	51.8	<u>620</u>	<u>51.8</u>
447.dealII	4	652	70.1	654	69.9	<u>653</u>	<u>70.0</u>	4	562	81.5	560	81.6	<u>562</u>	<u>81.5</u>
450.soplex	4	<u>1027</u>	<u>32.5</u>	1029	32.4	1024	32.6	4	907	36.8	<u>904</u>	<u>36.9</u>	903	36.9
453.povray	4	328	64.8	328	64.9	<u>328</u>	<u>64.9</u>	4	<u>298</u>	<u>71.4</u>	298	71.4	298	71.4
454.calculix	4	1113	29.6	1114	29.6	<u>1114</u>	<u>29.6</u>	4	<u>1030</u>	<u>32.0</u>	1030	32.0	1030	32.0
459.GemsFDTD	4	1302	32.6	1317	32.2	<u>1313</u>	<u>32.3</u>	4	1286	33.0	<u>1274</u>	<u>33.3</u>	1266	33.5
465.tonto	4	689	57.1	<u>692</u>	<u>56.9</u>	694	56.7	4	689	57.1	<u>692</u>	<u>56.9</u>	694	56.7
470.lbm	4	1619	33.9	<u>1601</u>	<u>34.3</u>	1600	34.4	4	1619	33.9	<u>1601</u>	<u>34.3</u>	1600	34.4
481.wrf	4	829	53.9	<u>839</u>	<u>53.3</u>	841	53.1	4	829	53.9	<u>839</u>	<u>53.3</u>	841	53.1
482.sphinx3	4	1549	50.3	<u>1549</u>	<u>50.3</u>	1554	50.2	4	1549	50.3	<u>1549</u>	<u>50.3</u>	1554	50.2

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

General Notes

taskset utility used to bind CPU(s) to processes
DSPEC_CPU_TABLE_WORKAROUND was used for portability when compiling 447.dealII
due to compilation being performed on SLES 9 SP3

Base Compiler Invocation

C benchmarks:
pathcc

C++ benchmarks:
pathCC

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp_rate2006 = 48.1

IBM System x3655 (AMD Opteron 2220)

SPECfp_rate_base2006 = 45.7

CPU2006 license: 11

Test date: Jul-2007

Test sponsor: IBM Corporation

Hardware Availability: Jan-2007

Tested by: IBM Corporation

Software Availability: Mar-2007

Base Compiler Invocation (Continued)

Fortran benchmarks:
pathf95

Benchmarks using both Fortran and C:
pathcc pathf95

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
 436.cactusADM: -DSPEC_CPU_LP64 -fno-second-underscore
 437.leslie3d: -DSPEC_CPU_LP64
 444.namd: -DSPEC_CPU_LP64
 447.dealII: -DSPEC_CPU_LP64 -DSPEC_CPU_TABLE_WORKAROUND
 450.soplex: -DSPEC_CPU_LP64
 453.povray: -DSPEC_CPU_LP64
 454.calculix: -DSPEC_CPU_LP64
 459.GemsFDTD: -DSPEC_CPU_LP64
 465.tonto: -DSPEC_CPU_LP64
 470.lbm: -DSPEC_CPU_LP64
 481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX -fno-second-underscore
 482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:
-Ofast

C++ benchmarks:
-Ofast

Fortran benchmarks:
-Ofast -OPT:malloc_alg=1

Benchmarks using both Fortran and C:
-Ofast -OPT:malloc_alg=1

Base Other Flags

C benchmarks:
-IPA:max_jobs=2

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp_rate2006 = 48.1

IBM System x3655 (AMD Opteron 2220)

SPECfp_rate_base2006 = 45.7

CPU2006 license: 11

Test date: Jul-2007

Test sponsor: IBM Corporation

Hardware Availability: Jan-2007

Tested by: IBM Corporation

Software Availability: Mar-2007

Base Other Flags (Continued)

C++ benchmarks:

-IPA:max_jobs=2

Fortran benchmarks:

-IPA:max_jobs=2

Benchmarks using both Fortran and C:

-IPA:max_jobs=2

Peak Compiler Invocation

C benchmarks:

pathcc

C++ benchmarks:

pathCC

Fortran benchmarks:

pathf95

Benchmarks using both Fortran and C:

pathcc pathf95

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
 436.cactusADM: -DSPEC_CPU_LP64 -fno-second-underscore
 437.leslie3d: -DSPEC_CPU_LP64
 444.namd: -DSPEC_CPU_LP64
 447.dealII: -DSPEC_CPU_TABLE_WORKAROUND
 453.povray: -DSPEC_CPU_LP64
 454.calculix: -DSPEC_CPU_LP64
 459.GemsFDTD: -DSPEC_CPU_LP64
 465.tonto: -DSPEC_CPU_LP64
 470.lbm: -DSPEC_CPU_LP64
 481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX -fno-second-underscore
 482.sphinx3: -DSPEC_CPU_LP64



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp_rate2006 = 48.1

IBM System x3655 (AMD Opteron 2220)

SPECfp_rate_base2006 = 45.7

CPU2006 license: 11

Test date: Jul-2007

Test sponsor: IBM Corporation

Hardware Availability: Jan-2007

Tested by: IBM Corporation

Software Availability: Mar-2007

Peak Optimization Flags

C benchmarks:

433.milc: -Ofast -CG:cflow=off -LNO:prefetch=1 -OPT:malloc_alg=1

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -Ofast
-fno-exceptions

447.dealIII: -Ofast -INLINE:aggressive=on -LNO:opt=0 -OPT:alias=disjoint
-m32 -fno-exceptions

450.soplex: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -m32 -O3
-OPT:IEEE_arith=3 -CG:load_exe=0 -CG:movnti=1
-LNO:minvariant=off -LNO:prefetch=1 -fno-exceptions

453.povray: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -Ofast
-fno-fast-math

Fortran benchmarks:

410.bwaves: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -O3
-OPT:Ofast -OPT:IEEE_arith=3 -LNO:blocking=off
-LNO:ignore_feedback=off

416.gamess: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -O2
-OPT:Ofast -OPT:ro=3 -OPT:unroll_size=256

434.zeusmp: -Ofast -CG:local_fwd_sched=on -LNO:blocking=off
-LNO:interchange=off -LNO:fu=10 -LNO:full_unroll_outer=on

437.leslie3d: basepeak = yes

459.GemsFDTD: -Ofast -LNO:fission=2 -LNO:prefetch=0

465.tonto: basepeak = yes

Benchmarks using both Fortran and C:

435.gromacs: -O3 -OPT:rsqrt=2 -OPT:ro=3

436.cactusADM: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -O3
-LNO:prefetch=3 -LNO:prefetch_ahead=5 -LNO:ou_prod_max=10
-LNO:full_unroll=5 -ipa

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

IBM Corporation

SPECfp_rate2006 = 48.1

IBM System x3655 (AMD Opteron 2220)

SPECfp_rate_base2006 = 45.7

CPU2006 license: 11

Test date: Jul-2007

Test sponsor: IBM Corporation

Hardware Availability: Jan-2007

Tested by: IBM Corporation

Software Availability: Mar-2007

Peak Optimization Flags (Continued)

454.calculix: -Ofast -LNO:simd=0 -WOPT:mem_opnds=on

481.wrf: basepeak = yes

Peak Other Flags

C benchmarks:

-IPA:max_jobs=2

C++ benchmarks:

-IPA:max_jobs=2

Fortran benchmarks:

-IPA:max_jobs=2

Benchmarks using both Fortran and C:

-IPA:max_jobs=2

The flags file that was used to format this result can be browsed at

http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.13.html

You can also download the XML flags source by saving the following link:

http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.13.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 v1.0.

Report generated on Tue Sep 13 11:25:16 2016 by SPEC CPU2006 PS/PDF formatter v6932.

Originally published on 21 August 2007.