



SPEC[®] CFP2006 Result

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IBM Corporation

SPECfp[®]_rate2006 = 284

IBM System x3690 X5 (Intel Xeon X7560)

SPECfp_rate_base2006 = 275

CPU2006 license: 11

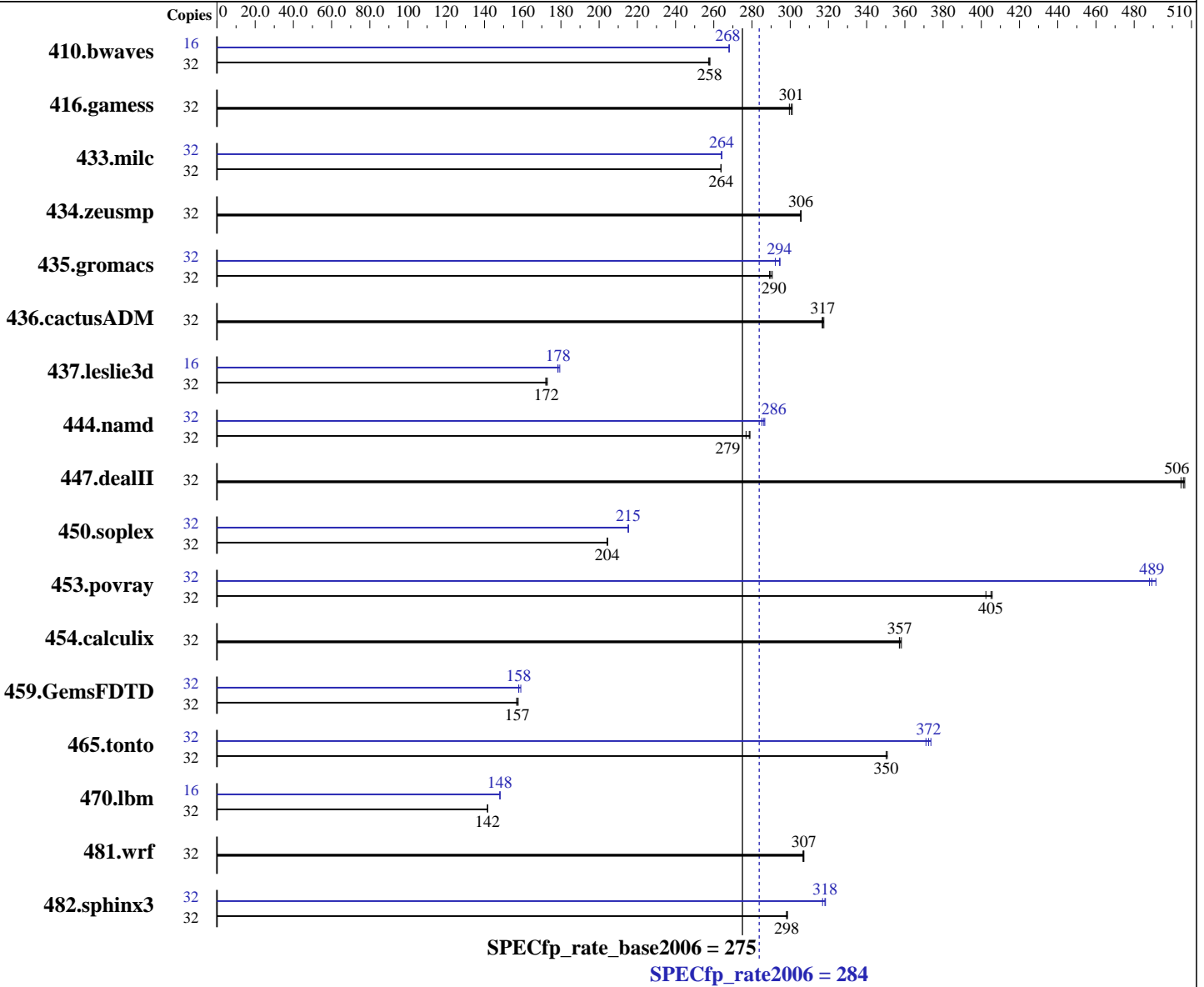
Test date: Jun-2010

Test sponsor: IBM Corporation

Hardware Availability: Aug-2010

Tested by: IBM Corporation

Software Availability: Jan-2010



Hardware

CPU Name: Intel Xeon X7560
 CPU Characteristics: Intel Turbo Boost Technology up to 2.67 GHz
 CPU MHz: 2267
 FPU: Integrated
 CPU(s) enabled: 16 cores, 2 chips, 8 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 11 (x86_64), Kernel 2.6.27.19-5-default
 Compiler: Intel C++ and Fortran Professional Compiler for IA32 and Intel 64, Version 11.1 Build 20091130 Package ID: l_cproc_p_11.1.064, l_cprof_p_11.1.064
 Auto Parallel: No
 File System: ext3
 System State: Run level 3 (multi-user)

Continued on next page



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L3 Cache: 24 MB I+D on chip per chip
Other Cache: None
Memory: 128 GB (32 x 4 GB PC3-8500R CL7, Quad Rank)
Disk Subsystem: 1 x 146 GB SAS, 15000 RPM
Other Hardware: None

Base Pointers: 64-bit
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	32	1690	257	1686	258	<u>1686</u>	<u>258</u>	16	<u>811</u>	<u>268</u>	811	268	811	268
416.gamess	32	2081	301	<u>2085</u>	<u>301</u>	2092	300	32	2081	301	<u>2085</u>	<u>301</u>	2092	300
433.milc	32	1114	264	1113	264	<u>1114</u>	<u>264</u>	32	<u>1112</u>	<u>264</u>	1112	264	1113	264
434.zeusmp	32	<u>953</u>	<u>306</u>	953	305	952	306	32	<u>953</u>	<u>306</u>	953	305	952	306
435.gromacs	32	786	291	790	289	<u>789</u>	<u>290</u>	32	782	292	<u>776</u>	<u>294</u>	775	295
436.cactusADM	32	<u>1206</u>	<u>317</u>	1204	318	1207	317	32	<u>1206</u>	<u>317</u>	1204	318	1207	317
437.leslie3d	32	1748	172	<u>1745</u>	<u>172</u>	1740	173	16	838	179	<u>843</u>	<u>178</u>	843	178
444.namd	32	920	279	927	277	<u>921</u>	<u>279</u>	32	900	285	895	287	<u>897</u>	<u>286</u>
447.dealII	32	723	506	726	505	<u>724</u>	<u>506</u>	32	723	506	726	505	<u>724</u>	<u>506</u>
450.soplex	32	<u>1306</u>	<u>204</u>	1305	204	1307	204	32	1239	215	1240	215	<u>1240</u>	<u>215</u>
453.povray	32	<u>420</u>	<u>405</u>	420	406	423	402	32	349	488	<u>348</u>	<u>489</u>	346	491
454.calculix	32	<u>739</u>	<u>357</u>	739	357	737	358	32	<u>739</u>	<u>357</u>	739	357	737	358
459.GemsFDTD	32	2154	158	<u>2160</u>	<u>157</u>	2165	157	32	<u>2150</u>	<u>158</u>	2135	159	2150	158
465.tonto	32	899	350	897	351	<u>899</u>	<u>350</u>	32	849	371	<u>846</u>	<u>372</u>	843	374
470.lbm	32	3105	142	<u>3104</u>	<u>142</u>	3104	142	16	1484	148	1485	148	<u>1485</u>	<u>148</u>
481.wrf	32	1166	307	1164	307	<u>1164</u>	<u>307</u>	32	1166	307	1164	307	<u>1164</u>	<u>307</u>
482.sphinx3	32	2092	298	2089	299	<u>2091</u>	<u>298</u>	32	<u>1960</u>	<u>318</u>	1958	318	1968	317

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.
numactl was used to bind copies to the cores

Platform Notes

Turbo Boost set to Traditional

General Notes

'ulimit -s unlimited' was used to set the stack size to unlimited prior to run
Binaries were compiled on SLES 10 with Binutils 2.18.50.0.7.20080502



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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.lelie3d: -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

C++ benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static

Fortran benchmarks:

-xSSE4.2 -ipo -O3 -no-prec-div -static

Benchmarks using both Fortran and C:

-xSSE4.2 -ipo -O3 -no-prec-div -static



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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.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 -opt-prefetch

470.lbm: -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 -ansi-alias -auto-ilp32

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Peak Optimization Flags (Continued)

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

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.deallI: basepeak = yes

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

416.gamess: basepeak = yes

434.zeusmp: basepeak = yes

437.leslie3d: -xSSE4.2 -ipo -O3 -no-prec-div -static

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

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 -inline-calloc -opt-malloc-options=3

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: basepeak = yes

454.calculix: basepeak = yes

481.wrf: basepeak = yes



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

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100603.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic11.1-linux64-revE.20100603.xml>

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