



SPEC[®] CFP2006 Result

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ACTION S.A.

SPECfp[®]_rate2006 = 189

ACTINA SOLAR 820 S4 (Intel Xeon X5560)

SPECfp_rate_base2006 = 184

CPU2006 license: 9008

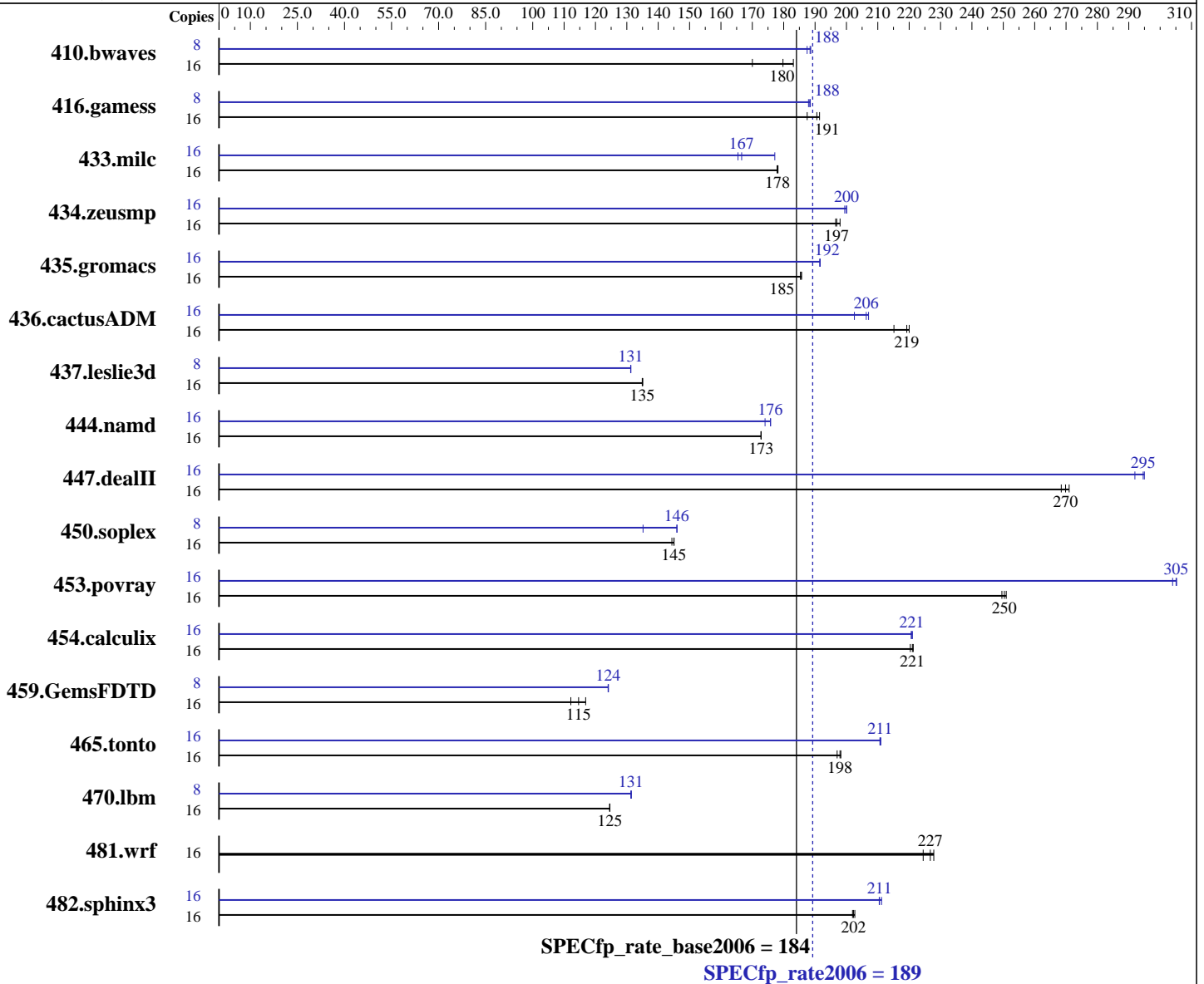
Test sponsor: ACTION S.A.

Tested by: ACTION S.A.

Test date: May-2009

Hardware Availability: Apr-2009

Software Availability: Feb-2009



Hardware

CPU Name: Intel Xeon X5560
 CPU Characteristics: Intel Turbo Boost Technology up to 3.2 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

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Software

Operating System: Scientific Linux 5.3 (x86_64)
 kernel 2.6.18-128.1.1.el5
 Compiler: Intel C++ and Fortran Compiler 11.0 for Linux
 Build 20080930 Package ID: L_cproc_p_11.0.066,
 L_fproc_p_11.0.066
 Auto Parallel: No
 File System: ext3
 System State: Run level 3 (multi-user)
 Base Pointers: 64-bit

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Hardware (Continued)

L3 Cache: 8 MB I+D on chip per chip
 Other Cache: None
 Memory: 24 GB (6x 4 GB DDR3-133 DR RDIMM)
 Disk Subsystem: 147 GB SAS, 15000 RPM
 Other Hardware: None

Software (Continued)

Peak Pointers: 32/64-bit
 Other Software: Microquill SmartHeap V8.1
 Binutils 2.18.50.0.7.20080502

Results Table

Benchmark	Base								Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
410.bwaves	16	1279	170	1188	183	<u>1210</u>	<u>180</u>	8	580	187	<u>577</u>	<u>188</u>	576	189		
416.gamess	16	1637	191	<u>1644</u>	<u>191</u>	1671	187	8	831	188	<u>832</u>	<u>188</u>	834	188		
433.milc	16	824	178	<u>825</u>	<u>178</u>	826	178	16	829	177	<u>882</u>	<u>167</u>	888	165		
434.zeusmp	16	<u>739</u>	<u>197</u>	735	198	741	197	16	730	199	<u>728</u>	<u>200</u>	728	200		
435.gromacs	16	616	185	615	186	<u>616</u>	<u>185</u>	16	596	192	597	192	<u>596</u>	<u>192</u>		
436.cactusADM	16	869	220	<u>872</u>	<u>219</u>	889	215	16	944	203	923	207	<u>927</u>	<u>206</u>		
437.leslie3d	16	<u>1114</u>	<u>135</u>	1113	135	1115	135	8	<u>573</u>	<u>131</u>	573	131	573	131		
444.namd	16	<u>742</u>	<u>173</u>	742	173	743	173	16	730	176	737	174	<u>730</u>	<u>176</u>		
447.dealII	16	682	268	675	271	<u>678</u>	<u>270</u>	16	621	295	627	292	<u>621</u>	<u>295</u>		
450.soplex	16	924	144	<u>920</u>	<u>145</u>	920	145	8	494	135	457	146	<u>457</u>	<u>146</u>		
453.povray	16	339	251	<u>340</u>	<u>250</u>	341	250	16	279	305	<u>279</u>	<u>305</u>	280	304		
454.calculix	16	596	221	<u>597</u>	<u>221</u>	599	220	16	597	221	598	221	<u>598</u>	<u>221</u>		
459.GemsFDTD	16	1514	112	<u>1481</u>	<u>115</u>	1452	117	8	684	124	<u>684</u>	<u>124</u>	684	124		
465.tonto	16	799	197	<u>795</u>	<u>198</u>	794	198	16	<u>747</u>	<u>211</u>	747	211	746	211		
470.lbm	16	1764	125	<u>1765</u>	<u>125</u>	1766	124	8	<u>837</u>	<u>131</u>	837	131	836	131		
481.wrf	16	784	228	796	224	<u>788</u>	<u>227</u>	16	784	228	796	224	<u>788</u>	<u>227</u>		
482.sphinx3	16	1544	202	1539	203	<u>1542</u>	<u>202</u>	16	1476	211	1482	210	<u>1481</u>	<u>211</u>		

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.

General Notes

'numactl' was used to bind copies to the cores.
 'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run.



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Base Compiler Invocation

C benchmarks:

icc

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.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

482.sphinx3: icc -m32

C++ benchmarks (except as noted below):

icpc

450.soplex: icpc -m32

Fortran benchmarks (except as noted below):

ifort

437.leslie3d: ifort -m32

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
 444.namd: -DSPEC_CPU_LP64
 447.deallI: -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: -xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch
 -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.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-

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: -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: -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)

437.leslie3d: -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 -opt-prefetch

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

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

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Peak Optimization Flags (Continued)

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 -auto-ilp32

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

481.wrf: basepeak = yes

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>

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For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.1.

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