SPEC® CFP2006 Result

ACTION S.A.

$SPECfp^{®}\_rate2006 = \quad 189$

ACTINA SOLAR 820 S4 (Intel Xeon X5560)

$SPECfp\_rate\_base2006 = \quad 184$
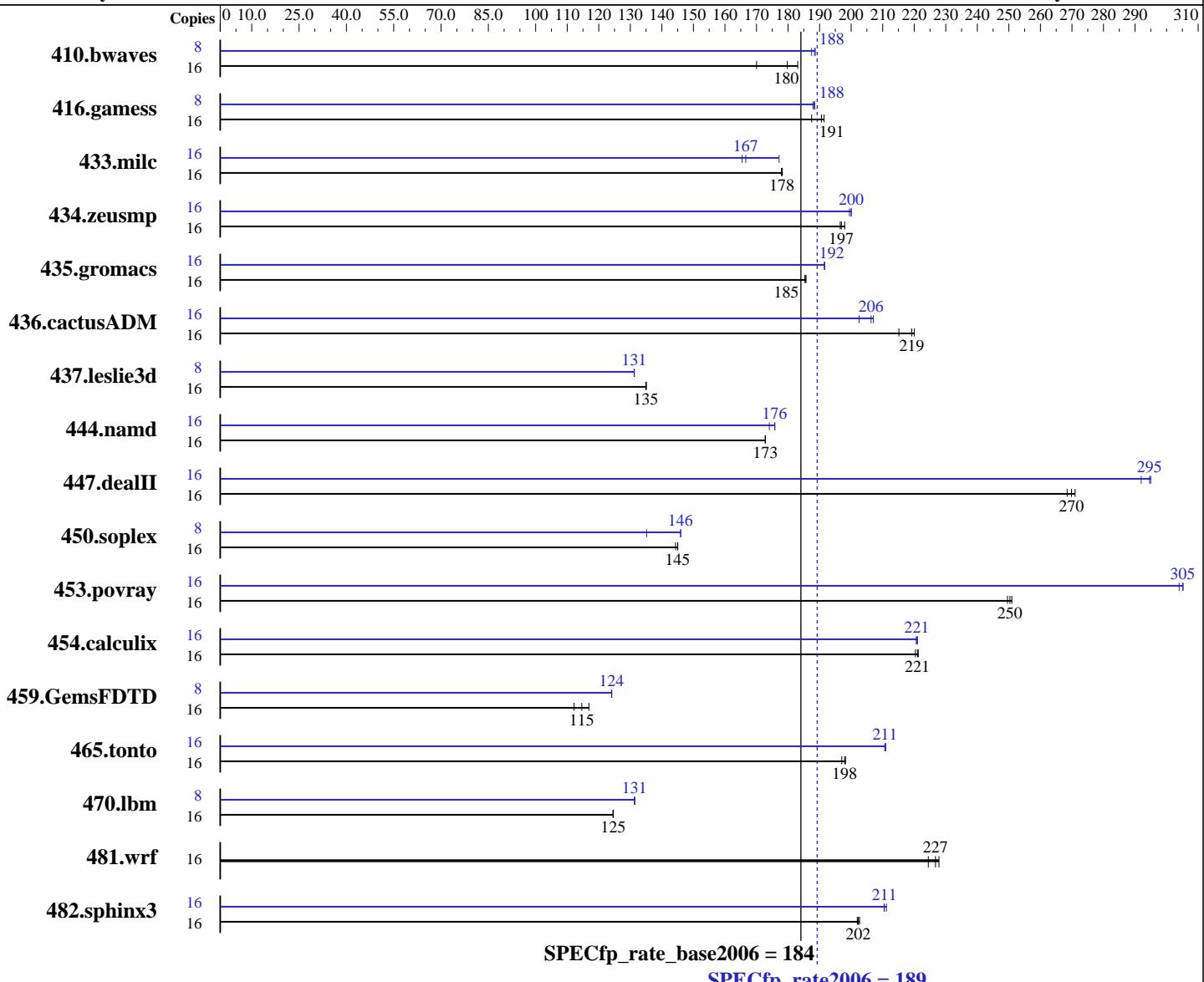
CPU2006 license: 9008
Test sponsor: ACTION S.A.
Tested by: ACTION S.A.

Test date: May-2009
Hardware Availability: Apr-2009
Software Availability: Feb-2009

Benchmark	Copies	Result
410.bwaves	8	188
	16	180
416.gamess	8	188
	16	191
433.milc	16	167
	16	178
434.zeusmp	16	200
	16	197
435.gromacs	16	192
	16	185
436.cactusADM	16	206
	16	219
437.leslie3d	8	131
	16	135
444.namd	16	176
	16	173
447.dealII	16	295
	16	270
450.soplex	8	146
	16	145
453.povray	16	305
	16	250
454.calculix	16	221
	16	221
459.GemsFDTD	8	124
	16	115
465.tonto	16	211
	16	198
470.lbm	8	131
	16	125
481.wrf	16	227
482.sphinx3	16	211
	16	202

SPECfp_rate_base2006 = 184

SPECfp_rate2006 = 189

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

Continued on next page

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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SPEC CFP2006 Result
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ACTION S.A.

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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

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

Results Table

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

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.

Base Compiler Invocation

C benchmarks:
    icc

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ACTION S.A.

ACTINA SOLAR 820 S4 (Intel Xeon X5560)

SPECfp_rate2006 = 189

SPECfp_rate_base2006 = 184

CPU2006 license: 9008
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Base Compiler Invocation (Continued)

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.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

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

ACTION S.A.

ACTINA SOLAR 820 S4 (Intel Xeon X5560)

SPECfp_rate2006 =   189

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

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.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: `-xSSE4.2 -ipo -O3 -no-prec-div -static -opt-prefetch`
        `-auto-ilp32`

ACTION S.A.

ACTINA SOLAR 820 S4 (Intel Xeon X5560)

$SPECfp_rate2006 = $ 189

$SPECfp_rate_base2006 = $ 184

CPU2006 license: 9008		**Test date:**	May-2009
Test sponsor: ACTION S.A.		**Hardware Availability:**	Apr-2009
Tested by: ACTION S.A.		**Software Availability:**	Feb-2009

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

ACTION S.A.

ACTINA SOLAR 820 S4 (Intel Xeon X5560)

$SPECfp\_rate2006 =$ 189

$SPECfp\_rate\_base2006 =$ 184

CPU2006 license: 9008
Test sponsor: ACTION S.A.
Tested by: ACTION S.A.

Test date: May-2009
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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

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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