SPEC® CFP2006 Result

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Bull SAS

BL265
(Intel Xeon E5520, 2.27 GHz)

$SPECfp®\_rate2006 =$ 159

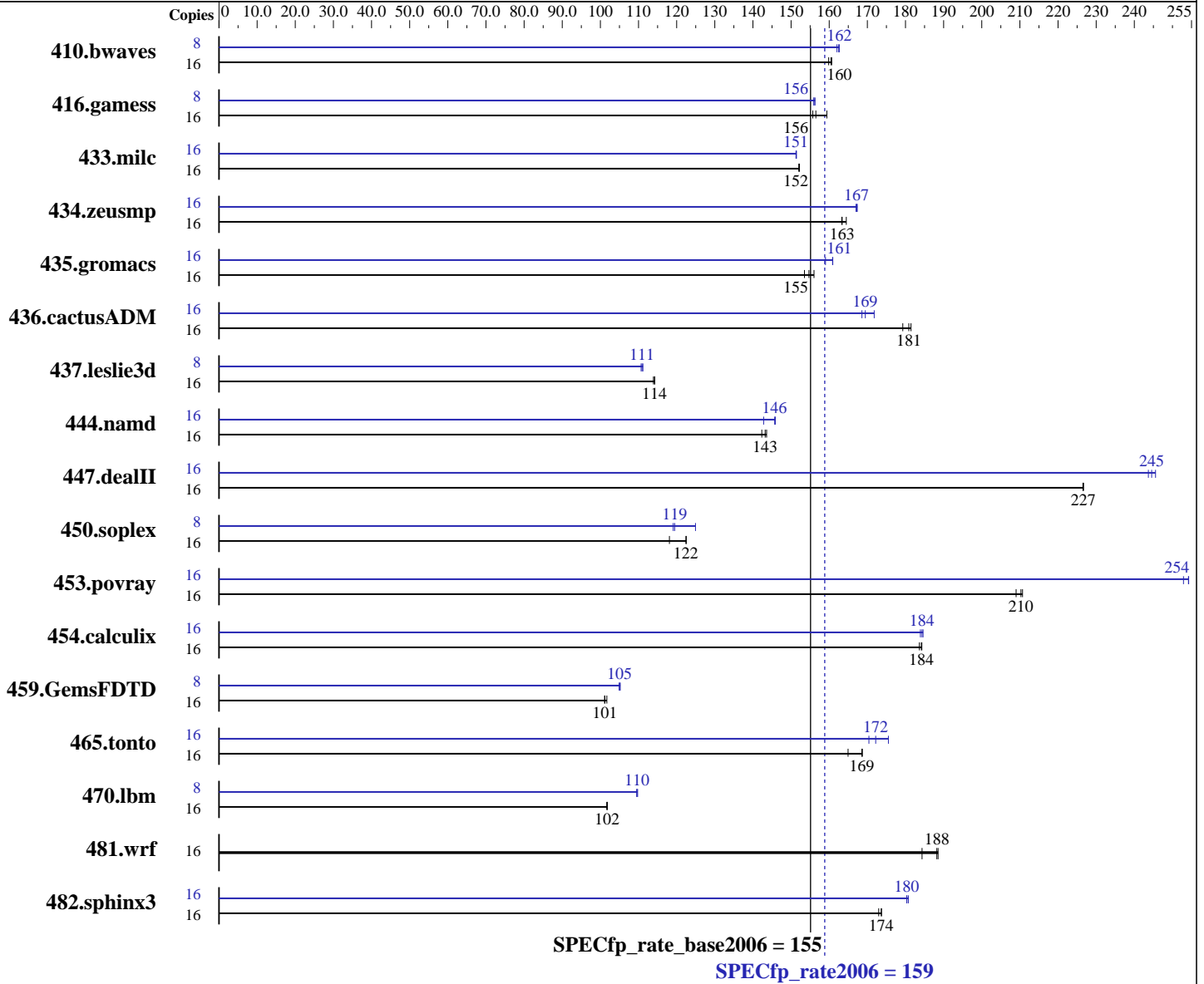$SPECfp\_rate\_base2006 =$ 155

CPU2006 license: 20
Test sponsor: Bull SAS
Tested by: Bull SAS

Test date: Jan-2010
Hardware Availability: May-2009
Software Availability: Feb-2009

Benchmark	Copies	Result
410.bwaves	8	162
	16	160
416.gamess	8	156
	16	156
433.milc	16	151
	16	152
434.zeusmp	16	167
	16	163
435.gromacs	16	161
	16	155
436.cactusADM	16	169
	16	181
437.leslie3d	8	111
	16	114
444.namd	16	146
	16	143
447.dealII	16	245
	16	227
450.soplex	8	119
	16	122
453.povray	16	254
	16	210
454.calculix	16	184
	16	184
459.GemsFDTD	8	105
	16	101
465.tonto	16	172
	16	169
470.lbm	8	110
	16	102
481.wrf	16	188
482.sphinx3	16	180
	16	174

SPECfp_rate_base2006 = 155

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Hardware

CPU Name: Intel Xeon E5520
CPU Characteristics: Intel Turbo Boost Technology up to 2.53 GHz
CPU MHz: 2267
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: SUSE Linux Enterprise Server 10 (x86_64) SP2, SP2 with patch Linux kernel 20090119, Kernel 2.6.16.60-0.34-smp
Compiler: Intel C++ and Fortran Compiler 11.0 for Linux Build 20090131 Package ID: l_cproc_p_11.0.080, l_cprof_p_11.0.080
Auto Parallel: No
File System: ReiserFS
System State: Run level 3 (multi-user)

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L3 Cache:	8 MB I+D on chip per chip	Base Pointers:	64-bit
Other Cache:	None	Peak Pointers:	32/64-bit
Memory:	24 GB (6 x 4 GB PC3-10600R, 2 Rank, CL9-9-9, ECC, running at 1066 MHz)	Other Software:	Binutils 2.18.50.0.7.20080502
Disk Subsystem:	1 x 73 GB SAS, 10000 RPM		
Other Hardware:	None		

Results Table

Benchmark	Base						Peak					
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	16	1353	161	1360	160	**1355**	**160**	8	671	162	**669**	**162**	668	163
416.gamess	16	1966	159	**2002**	**156**	2012	156	8	**1004**	**156**	1002	156	1004	156
433.milc	16	**965**	**152**	965	152	966	152	16	970	151	971	151	**970**	**151**
434.zeusmp	16	885	164	892	163	**891**	**163**	16	**871**	**167**	872	167	870	167
435.gromacs	16	732	156	744	154	**739**	**155**	16	710	161	718	159	**710**	**161**
436.cactusADM	16	**1057**	**181**	1054	181	1066	179	16	**1128**	**169**	1134	169	1113	172
437.leslie3d	16	1316	114	1320	114	**1317**	**114**	8	**678**	**111**	677	111	679	111
444.namd	16	894	144	902	142	**896**	**143**	16	**881**	**146**	899	143	880	146
447.dealII	16	808	227	807	227	**808**	**227**	16	751	244	**748**	**245**	745	246
450.soplex	16	**1090**	**122**	1089	123	1130	118	8	560	119	**558**	**119**	534	125
453.povray	16	404	211	407	209	**405**	**210**	16	337	253	335	254	**335**	**254**
454.calculix	16	716	184	719	184	**717**	**184**	16	715	185	718	184	**716**	**184**
459.GemsFDTD	16	1669	102	1679	101	**1678**	**101**	8	**808**	**105**	807	105	809	105
465.tonto	16	**934**	**169**	954	165	933	169	16	**914**	**172**	897	176	924	170
470.lbm	16	2159	102	**2160**	**102**	2162	102	8	**1003**	**110**	1001	110	1004	110
481.wrf	16	**950**	**188**	948	189	970	184	16	**950**	**188**	948	189	970	184
482.sphinx3	16	**1796**	**174**	1795	174	1803	173	16	**1729**	**180**	1729	180	1725	181

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
```

Operating System Notes

```
'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
```

Base Compiler Invocation

C benchmarks:
```
icc
```

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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`

Bull SAS

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(Intel Xeon E5520, 2.27 GHz)

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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.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`

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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.20100202.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.20100202.xml

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

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