SPEC® CFP2006 Result
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IBM Corporation

IBM BladeCenter HS22V (Intel Xeon X5570)

$SPECfp®\_rate2006 =$ 201

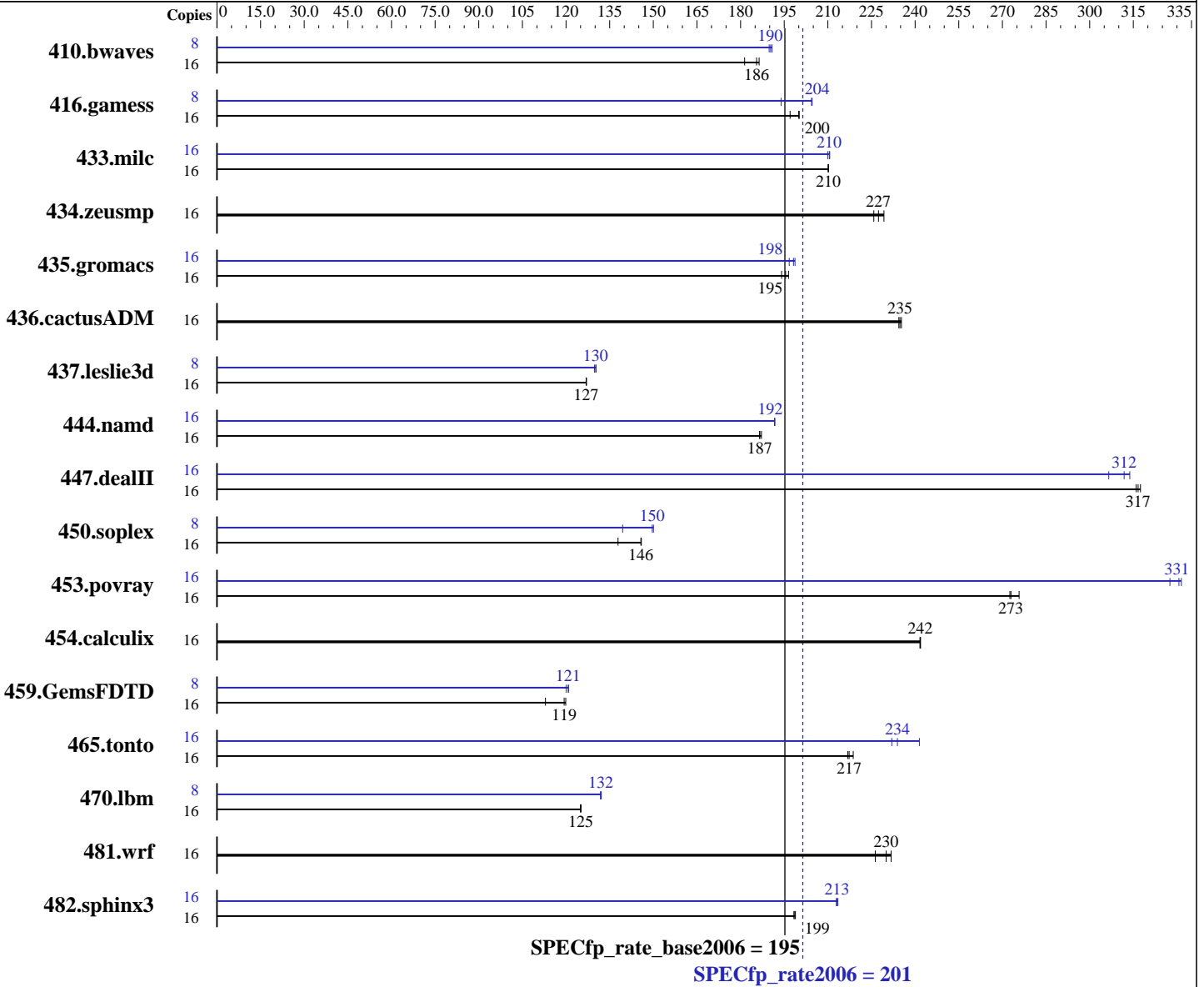$SPECfp\_rate\_base2006 =$ 195

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

Test date: Jan-2010
Hardware Availability: Mar-2010
Software Availability: Jan-2010

SPECfp_rate_base2006 = 195

SPECfp_rate2006 = 201

Hardware

CPU Name: Intel Xeon X5570
CPU Characteristics: Intel Turbo Boost Technology up to 3.33 GHz
CPU MHz: 2933
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 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)
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L3 Cache:	8 MB I+D on chip per chip
Other Cache:	None
Memory:	24 GB (6 x 4 GB PC3-10600R)
Disk Subsystem:	2 x 50 GB SATA, SSD
Other Hardware:	None

Base Pointers:	64-bit
Peak Pointers:	32/64-bit
Other Software:	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	1199	181	1167	186	**1172**	**186**	8	573	190	570	191	**571**	**190**
416.gamess	16	1590	197	**1566**	**200**	1565	200	8	**766**	**204**	766	205	808	194
433.milc	16	699	210	699	210	**699**	**210**	16	697	211	700	210	**698**	**210**
434.zeusmp	16	645	226	**640**	**227**	635	229	16	645	226	**640**	**227**	635	229
435.gromacs	16	589	194	581	196	**584**	**195**	16	575	199	**576**	**198**	581	197
436.cactusADM	16	816	234	**814**	**235**	813	235	16	816	234	**814**	**235**	813	235
437.leslie3d	16	**1185**	**127**	1185	127	1184	127	8	577	130	579	130	**578**	**130**
444.namd	16	686	187	**688**	**187**	688	187	16	669	192	**669**	**192**	669	192
447.dealII	16	577	317	**578**	**317**	579	316	16	583	314	597	307	**587**	**312**
450.soplex	16	968	138	**916**	**146**	915	146	8	478	139	**446**	**150**	445	150
453.povray	16	312	273	**312**	**273**	309	276	16	257	332	260	328	**257**	**331**
454.calculix	16	**546**	**242**	546	242	546	242	16	**546**	**242**	546	242	546	242
459.GemsFDTD	16	1503	113	**1422**	**119**	1416	120	8	**703**	**121**	702	121	707	120
465.tonto	16	726	217	720	219	**725**	**217**	16	**673**	**234**	652	241	679	232
470.lbm	16	**1758**	**125**	1757	125	1759	125	8	832	132	**833**	**132**	834	132
481.wrf	16	771	232	**777**	**230**	790	226	16	771	232	**777**	**230**	790	226
482.sphinx3	16	**1570**	**199**	1568	199	1572	198	16	1465	213	1461	213	**1463**	**213**

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

```
    Operating Modes: Performance Mode enabled in BIOS
```

General Notes

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

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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.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

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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.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: 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

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Peak Optimization Flags (Continued)

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-ic11.1-linux64-revE.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.xml

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

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