SPEC® CFP2006 Result
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IBM Corporation

IBM System x iDataPlex dx340 (Intel Xeon E5430)

$SPECfp®\_rate2006 = \quad 74.2$

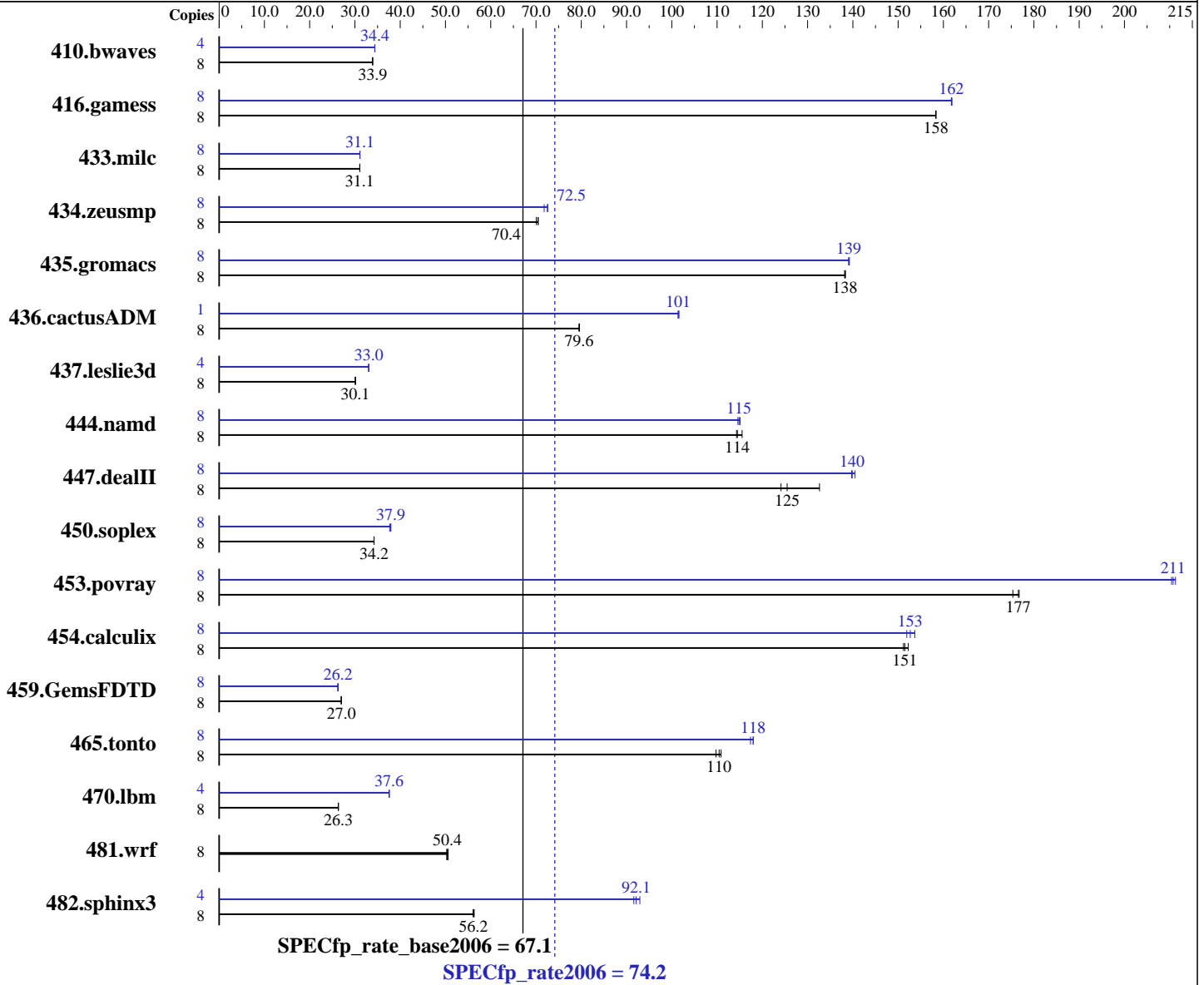$SPECfp\_rate\_base2006 = \quad 67.1$

CPU2006 license: 11

Test sponsor: IBM Corporation

Tested by: IBM Corporation

Test date: Apr-2009

Hardware Availability: Oct-2008

Software Availability: Nov-2008

SPECfp_rate_base2006 = 67.1

SPECfp_rate2006 = 74.2

	Hardware	
CPU Name:	Intel Xeon E5430	
CPU Characteristics:	1333MHz system bus	
CPU MHz:	2666	
FPU:	Integrated	
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip	
CPU(s) orderable:	1,2 chips	
Primary Cache:	32 KB I + 32 KB D on chip per core	
Secondary Cache:	12 MB I+D on chip per chip, 6 MB shared / 2 cores	

Continued on next page

	Software	
Operating System:	SuSE Linux Enterprise Server 10(x86_64) SP2, Kernel 2.6.16.60-0.21-smp	
Compiler:	Intel C++ and Fortran Compiler 11.0 for Linux Build 20080930 Package ID: l_cproc_p_11.0.066, l_cprof_p_11.0.066	
Auto Parallel:	Yes	
File System:	ReiserFS	
System State:	Run level 3 (multi-user)	
Base Pointers:	64-bit	

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L3 Cache:	None
Other Cache:	None
Memory:	16 GB (4 x 4 GB PC2-5300F ECC)
Disk Subsystem:	1 x 250 GB SATA, 7200 RPM
Other Hardware:	None

Peak Pointers:	32/64-bit
Other Software:	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	8	3208	33.9	**3206**	**33.9**	3206	33.9	4	1581	34.4	**1580**	**34.4**	1580	34.4
416.gamess	8	989	158	**989**	**158**	989	158	8	**968**	**162**	968	162	968	162
433.milc	8	2364	31.1	2363	31.1	**2363**	**31.1**	8	2362	31.1	2361	31.1	**2361**	**31.1**
434.zeusmp	8	**1034**	**70.4**	1033	70.5	1039	70.1	8	**1004**	**72.5**	1014	71.8	1003	72.6
435.gromacs	8	413	138	413	138	**413**	**138**	8	410	139	411	139	**411**	**139**
436.cactusADM	8	1202	79.5	1201	79.6	**1202**	**79.6**	1	118	101	**118**	**101**	118	102
437.leslie3d	8	**2499**	**30.1**	2498	30.1	2500	30.1	4	1138	33.0	1138	33.1	**1138**	**33.0**
444.namd	8	**560**	**114**	561	114	555	116	8	560	115	558	115	**559**	**115**
447.dealII	8	**729**	**125**	690	133	737	124	8	655	140	651	140	**654**	**140**
450.soplex	8	1949	34.2	**1950**	**34.2**	1950	34.2	8	1771	37.7	**1760**	**37.9**	1759	37.9
453.povray	8	**241**	**177**	243	175	241	177	8	202	210	**202**	**211**	201	211
454.calculix	8	437	151	**436**	**151**	433	152	8	**432**	**153**	429	154	434	152
459.GemsFDTD	8	3144	27.0	**3145**	**27.0**	3147	27.0	8	3235	26.2	**3234**	**26.2**	3233	26.3
465.tonto	8	710	111	717	110	**713**	**110**	8	671	117	**667**	**118**	667	118
470.lbm	8	4176	26.3	**4174**	**26.3**	4171	26.4	4	1463	37.6	**1463**	**37.6**	1464	37.5
481.wrf	8	**1772**	**50.4**	1766	50.6	1778	50.3	8	**1772**	**50.4**	1766	50.6	1778	50.3
482.sphinx3	8	2767	56.3	2779	56.1	**2774**	**56.2**	4	839	92.9	851	91.6	**846**	**92.1**

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

'ulimit -s unlimited' was used to set the stack size to unlimited prior to run
taskset was used to bind processes to cores except
for 436.cactusADM peak
OMP_NUM_THREADS set to number of processors
KMP_AFFINITY set to "physical,0"
KMP_STACKSIZE set to 64M
Hardware Prefetcher Enable and Adjacent Cache Line Prefetch Disable

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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.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:
```
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch
```

C++ benchmarks:
```
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch
```

Fortran benchmarks:
```
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch
```

Benchmarks using both Fortran and C:
```
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch
```

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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: `-prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3`
                `-no-prec-div -static -fno-alias`

        470.lbm: `-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch`
               `-auto-ilp32`

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Peak Optimization Flags (Continued)

```
       482.sphinx3: -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2
```

C++ benchmarks:

```
         444.namd: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
                   -no-prec-div -static -fno-alias -auto-ilp32

         447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
                   -no-prec-div -static -unroll2 -ansi-alias -scalar-rep-

         450.soplex: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
                   -no-prec-div -static -opt-malloc-options=3

         453.povray: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
                   -no-prec-div -static -unroll4 -ansi-alias
```

Fortran benchmarks:

```
         410.bwaves: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

         416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
                   -no-prec-div -static -unroll2 -Ob0 -ansi-alias
                   -scalar-rep-

         434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
                   -no-prec-div -static

         437.leslie3d: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
                   -no-prec-div -static -opt-malloc-options=3 -opt-prefetch

         459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
                   -no-prec-div -static -unroll2 -Ob0 -opt-prefetch

         465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
                   -no-prec-div -static -unroll4 -auto
```

Benchmarks using both Fortran and C:

```
         435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
                   -no-prec-div -static -opt-prefetch -auto-ilp32

         436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
                   -no-prec-div -static -unroll2 -opt-prefetch -parallel
                   -auto-ilp32

         454.calculix: -xSSE4.1 -ipo -O3 -no-prec-div -static -auto-ilp32

         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-ic11.0-fp-linux64-revA.20090805.00.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.20090805.00.xml

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

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