SPEC® CFP2006 Result
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IBM Corporation

IBM System x iDataPlex dx360 (Intel Xeon L5410)

$SPECfp®\_rate2006 =$ 74.2
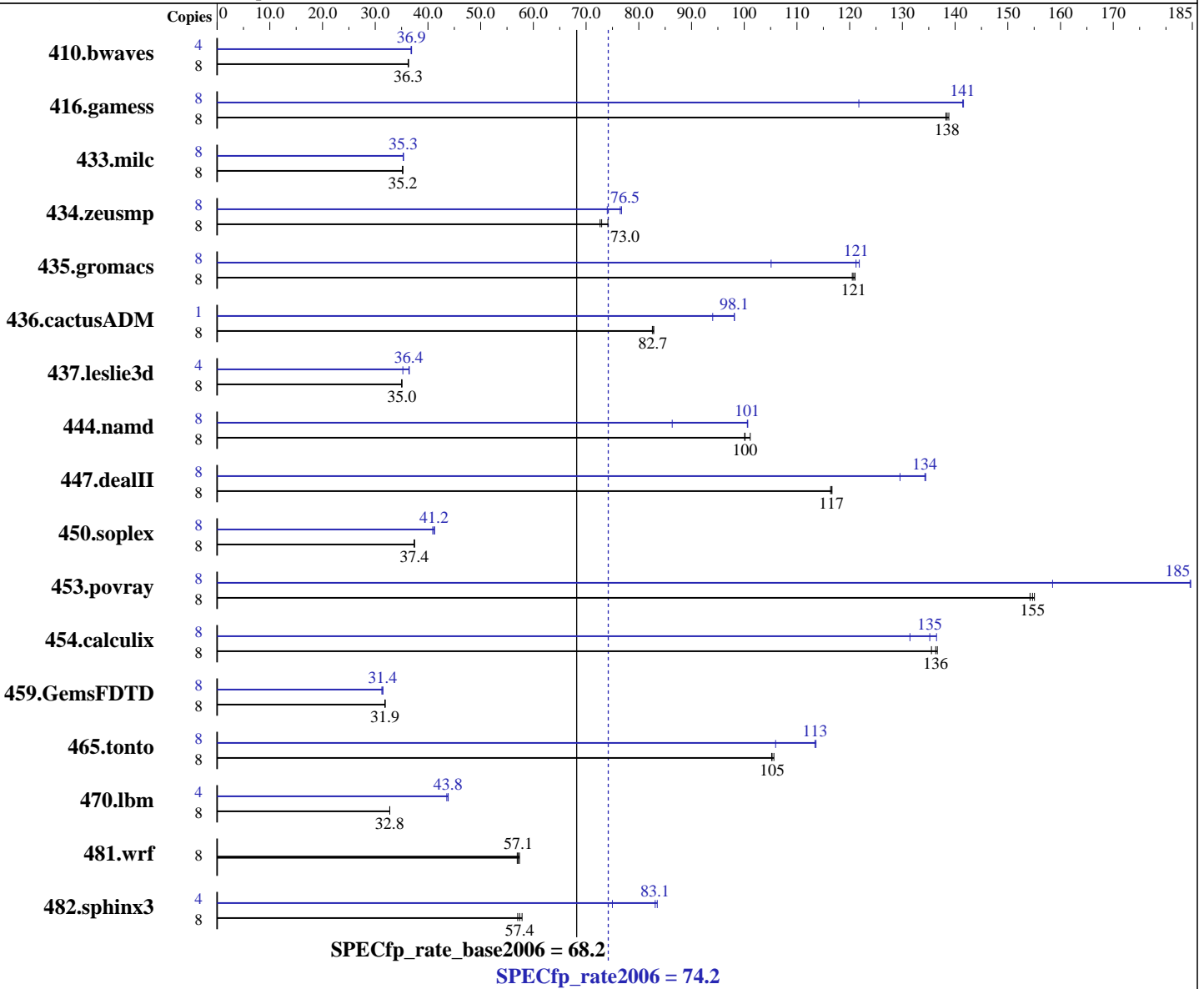
$SPECfp\_rate\_base2006 =$ 68.2

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

Test date: Apr-2009
Hardware Availability: Nov-2008
Software Availability: Feb-2009

Copies

Benchmark	Copies	Value
410.bwaves	4	36.9
	8	36.3
416.gamess	8	141
	8	138
433.milc	8	35.3
	8	35.2
434.zeusmp	8	76.5
	8	73.0
435.gromacs	8	121
	8	121
436.cactusADM	1	98.1
	8	82.7
437.leslie3d	4	36.4
	8	35.0
444.namd	8	101
	8	100
447.dealII	8	134
	8	117
450.soplex	8	41.2
	8	37.4
453.povray	8	185
	8	155
454.calculix	8	135
	8	136
459.GemsFDTD	8	31.4
	8	31.9
465.tonto	8	113
	8	105
470.lbm	4	43.8
	8	32.8
481.wrf	8	57.1
482.sphinx3	4	83.1
	8	57.4

SPECfp_rate_base2006 = 68.2

SPECfp_rate2006 = 74.2

Hardware

CPU Name:	Intel Xeon L5410
CPU Characteristics:	1333MHz system bus
CPU MHz:	2333
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	Peak Pointers:	32/64-bit
Other Cache:	None	Other Software:	Binutils 2.18.50.0.7.20080502
Memory:	16 GB (8 x 2 GB DDR2-5300F ECC)		
Disk Subsystem:	1 x 250 GB SATA, 7200 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	8	3000	36.2	**2997**	**36.3**	2993	36.3	4	1478	36.8	**1474**	**36.9**	1473	36.9
416.gamess	8	1133	138	1128	139	**1131**	**138**	8	**1107**	**141**	1106	142	1287	122
433.milc	8	2086	35.2	2087	35.2	**2086**	**35.2**	8	**2079**	**35.3**	2077	35.4	2080	35.3
434.zeusmp	8	982	74.1	1002	72.7	**998**	**73.0**	8	**952**	**76.5**	949	76.7	984	74.0
435.gromacs	8	**473**	**121**	474	120	472	121	8	469	122	**471**	**121**	543	105
436.cactusADM	8	1154	82.8	**1156**	**82.7**	1158	82.6	1	122	98.1	**122**	**98.1**	127	94.0
437.leslie3d	8	2146	35.0	2147	35.0	**2146**	**35.0**	4	1031	36.5	**1033**	**36.4**	1067	35.2
444.namd	8	634	101	641	100	**641**	**100**	8	**638**	**101**	637	101	743	86.3
447.dealII	8	785	117	786	116	**785**	**117**	8	**682**	**134**	681	134	706	130
450.soplex	8	1782	37.4	1784	37.4	**1783**	**37.4**	8	**1621**	**41.2**	1617	41.3	1631	40.9
453.povray	8	**275**	**155**	274	155	276	154	8	230	185	**231**	**185**	269	158
454.calculix	8	483	137	487	136	**484**	**136**	8	484	136	502	131	**488**	**135**
459.GemsFDTD	8	2663	31.9	**2665**	**31.9**	2665	31.8	8	2699	31.5	**2703**	**31.4**	2716	31.3
465.tonto	8	**748**	**105**	745	106	748	105	8	693	114	743	106	**694**	**113**
470.lbm	8	3356	32.8	**3356**	**32.8**	3355	32.8	4	1254	43.8	1261	43.6	**1254**	**43.8**
481.wrf	8	1558	57.4	1569	56.9	**1564**	**57.1**	8	1558	57.4	1569	56.9	**1564**	**57.1**
482.sphinx3	8	2695	57.9	2734	57.0	**2716**	**57.4**	4	934	83.5	1040	75.0	**938**	**83.1**

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

    tasket was used to bind processes to cores except
    for 436.cactusADM peak
    Hardware Sector Prefetch Enable and Adjacent Sector Prefetch Disable
    OMP_NUM_THREADS set to number of processors
    KMP_AFFINITY set to "physical,0"
    KMP_STACKSIZE set to 64M

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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.20090710.18.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.20090710.18.xml`

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

Tested with SPEC CPU2006 v1.1.
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