SPEC® CFP2006 Result
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IBM Corporation

IBM System x iDataPlex dx360 M3 (Intel Xeon X5667)

$SPECfp^®2006 =$ 46.2
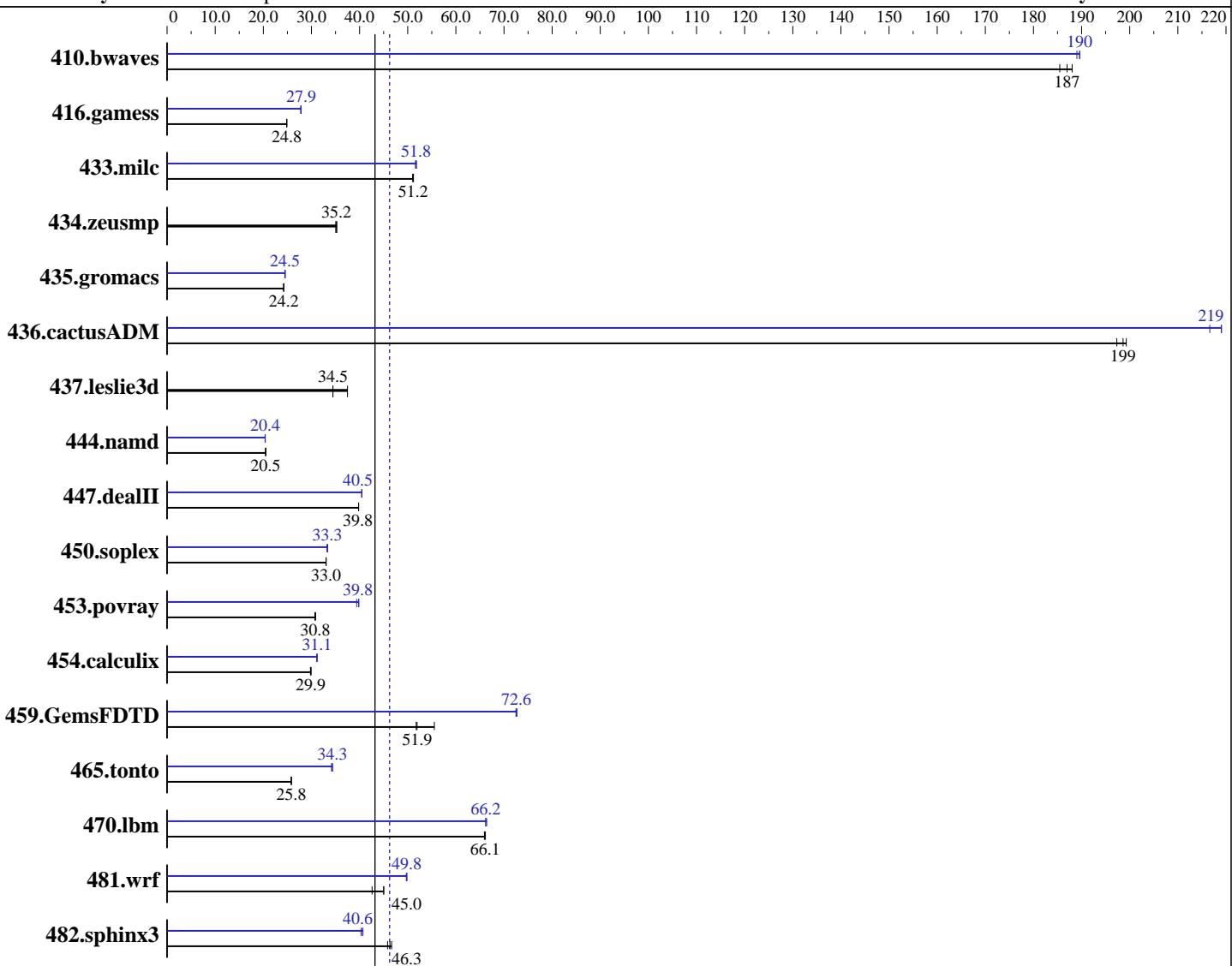
$SPECfp\_base2006 =$ 43.2

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

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

Benchmark	Result (blue)	Result (base)
410.bwaves	190	187
416.gamess	27.9	24.8
433.milc	51.8	51.2
434.zeusmp		35.2
435.gromacs	24.5	24.2
436.cactusADM	219	199
437.leslie3d		34.5
444.namd	20.4	20.5
447.dealII	40.5	39.8
450.soplex	33.3	33.0
453.povray	39.8	30.8
454.calculix	31.1	29.9
459.GemsFDTD	72.6	51.9
465.tonto	34.3	25.8
470.lbm	66.2	66.1
481.wrf	49.8	45.0
482.sphinx3	40.6	46.3

SPECfp_base2006 = 43.2

SPECfp2006 = 46.2

Hardware

CPU Name: Intel Xeon X5667
CPU Characteristics: Intel Turbo Boost Technology up to 3.46 GHz
CPU MHz: 3067
FPU: Integrated
CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip, 2 threads/core
CPU(s) orderable: 1,2 chip
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: Yes
File System: ext3
System State: Run level 3 (multi-user)

Continued on next page

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L3 Cache:	12 MB I+D on chip per chip
Other Cache:	None
Memory:	48 GB (12 x 4 GB PC3-10600R-ECC)
Disk Subsystem:	1 x 73 GB SAS, 15000RPM
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 Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
410.bwaves	73.3	185	72.3	188	**72.7**	**187**	71.9	189	**71.7**	**190**	71.7	190
416.gamess	787	24.9	**788**	**24.8**	788	24.8	703	27.9	706	27.7	**703**	**27.9**
433.milc	**179**	**51.2**	180	51.0	179	51.2	177	51.8	178	51.6	**177**	**51.8**
434.zeusmp	**258**	**35.2**	260	35.0	258	35.3	**258**	**35.2**	260	35.0	258	35.3
435.gromacs	295	24.2	294	24.2	**295**	**24.2**	292	24.5	291	24.6	**291**	**24.5**
436.cactusADM	60.0	199	60.6	197	**60.2**	**199**	54.5	219	**54.6**	**219**	55.2	217
437.leslie3d	**273**	**34.5**	273	34.4	251	37.5	**273**	**34.5**	273	34.4	251	37.5
444.namd	**392**	**20.5**	392	20.5	391	20.5	394	20.4	393	20.4	**393**	**20.4**
447.dealII	287	39.8	288	39.8	**287**	**39.8**	283	40.4	**283**	**40.5**	283	40.5
450.soplex	**253**	**33.0**	252	33.1	253	33.0	250	33.4	251	33.2	**251**	**33.3**
453.povray	**173**	**30.8**	172	30.8	173	30.7	**134**	**39.8**	134	39.8	135	39.4
454.calculix	276	29.9	277	29.8	**276**	**29.9**	265	31.1	265	31.2	**265**	**31.1**
459.GemsFDTD	**204**	**51.9**	205	51.8	191	55.5	**146**	**72.6**	146	72.5	146	72.7
465.tonto	**381**	**25.8**	381	25.8	382	25.8	286	34.4	288	34.2	**287**	**34.3**
470.lbm	208	65.9	**208**	**66.1**	208	66.1	207	66.4	208	66.2	**208**	**66.2**
481.wrf	**248**	**45.0**	248	45.0	262	42.6	224	49.8	225	49.7	**224**	**49.8**
482.sphinx3	**421**	**46.3**	418	46.7	425	45.8	**480**	**40.6**	479	40.7	483	40.3

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Platform Notes

```
    Turbo Mode Enable
    CPU C State Enable
```

General Notes

```
    'ulimit -s unlimited' was used to set the stack size to unlimited prior to run
    OMP_NUM_THREADS set to number of cores
    KMP_AFFINITY set to granularity=fine,scatter
    KMP_STACKSIZE set to 200M
```

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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 -parallel -opt-prefetch
```

C++ benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
```

Fortran benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
```

Benchmarks using both Fortran and C:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -parallel -opt-prefetch
```

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Peak Compiler Invocation

C benchmarks:
        icc   -m64

C++ benchmarks:
        icpc   -m64

Fortran benchmarks:
        ifort -m64

Benchmarks using both Fortran and C:
        icc   -m64 ifort -m64

Peak Portability Flags

Same as Base Portability Flags

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)
                -ansi-alias

        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)
                -parallel -ansi-alias -auto-ilp32

        482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32
                -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- -auto-ilp32

        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 -auto-ilp32

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Peak Optimization Flags (Continued)

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
-parallel

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: basepeak = yes

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 -parallel

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)
-inline-calloc -opt-malloc-options=3 -auto -unroll4

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: -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 -parallel -auto-ilp32

454.calculix: -xSSE4.2 -ipo -O3 -no-prec-div -static -auto-ilp32

481.wrf: Same as 454.calculix

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.20100330.00.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.20100330.00.xml

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

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