SPEC® CFP2006 Result
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IBM Corporation

$SPECfp^{®}\_rate2006 = \quad 113$

IBM System x3850 M2 (Intel Xeon X7350)

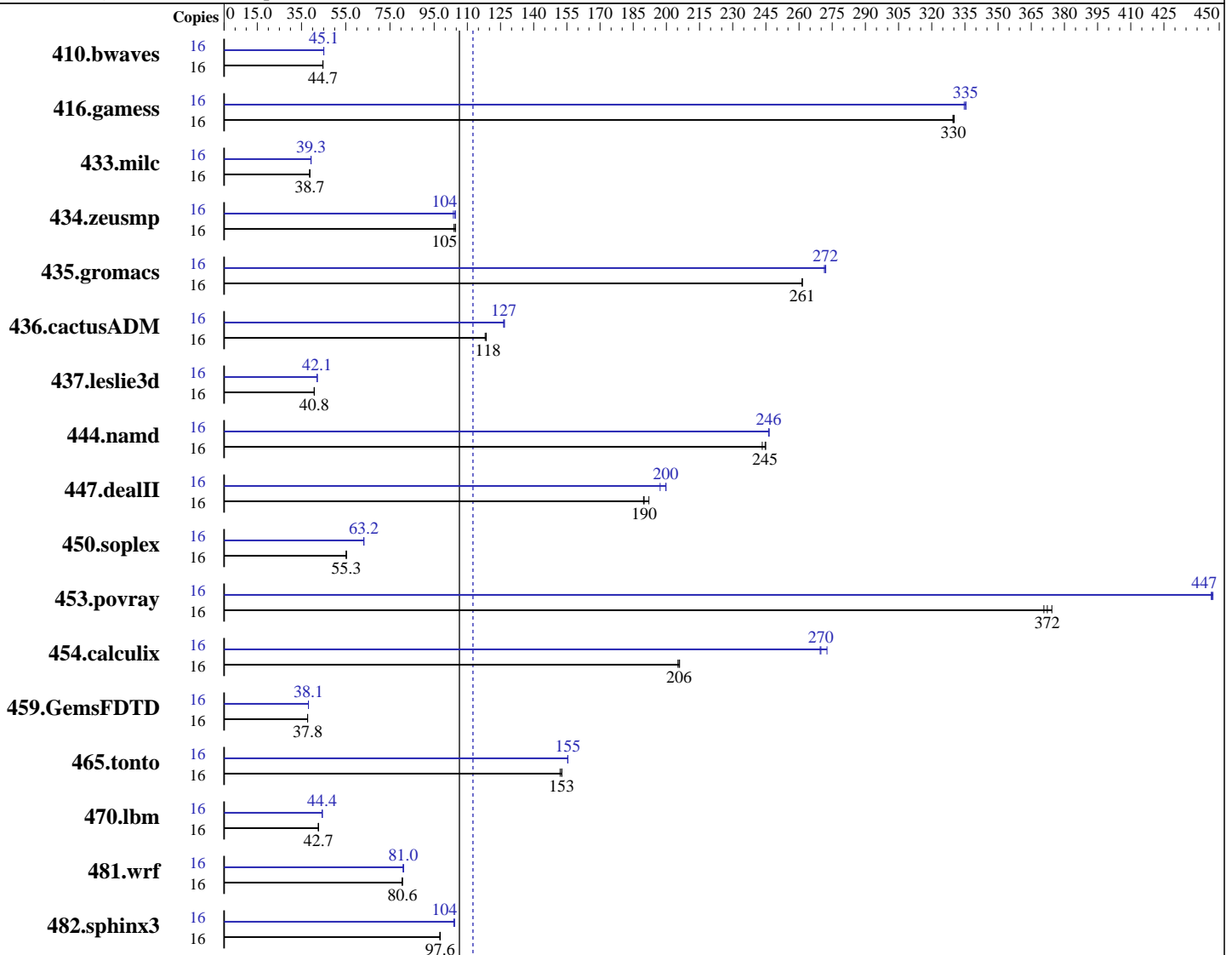$SPECfp\_rate\_base2006 = \quad 106$

CPU2006 license: 11   **Test date:** Aug-2007
Test sponsor: IBM Corporation   **Hardware Availability:** Nov-2007
Tested by: IBM Corporation   **Software Availability:** Nov-2007

Copies 0 15.0 35.0 55.0 75.0 95.0 110 125 140 155 170 185 200 215 230 245 260 275 290 305 320 335 350 365 380 395 410 425 450

Benchmark	Copies	Value
410.bwaves	16	45.1
	16	44.7
416.gamess	16	335
	16	330
433.milc	16	39.3
	16	38.7
434.zeusmp	16	104
	16	105
435.gromacs	16	272
	16	261
436.cactusADM	16	127
	16	118
437.leslie3d	16	42.1
	16	40.8
444.namd	16	246
	16	245
447.dealII	16	200
	16	190
450.soplex	16	63.2
	16	55.3
453.povray	16	447
	16	372
454.calculix	16	270
	16	206
459.GemsFDTD	16	38.1
	16	37.8
465.tonto	16	155
	16	153
470.lbm	16	44.4
	16	42.7
481.wrf	16	81.0
	16	80.6
482.sphinx3	16	104
	16	97.6

SPECfp_rate_base2006 = 106

SPECfp_rate2006 = 113

Hardware

CPU Name:	Intel Xeon X7350
CPU Characteristics:	Quad Core, 2.93 GHz
CPU MHz:	2933
FPU:	Integrated
CPU(s) enabled:	16 cores, 4 chips, 4 cores/chip
CPU(s) orderable:	1,2,4 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	8 MB I+D on chip per chip, 4 MB shared / 2 cores

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Software

Operating System:	SLES 10 SP1 (x86_64), 2.6.16.46-0.12-smp
Compiler:	Intel C++ and Fortran Compiler for Linux32 and Linux64 version 10.1 Build 20070725
Auto Parallel:	No
File System:	ReiserFS
System State:	Multi-user run level 3
Base Pointers:	64-bit

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L3 Cache:	None
Other Cache:	None
Memory:	64 GB (16 * 4GB DDR2-5300 ECC)
Disk Subsystem:	73 GB SATA, 10k RPM
Other Hardware:	None

Peak Pointers:	32/64-bit
Other Software:	None

Results Table

Benchmark	Base Copies	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Peak Copies	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
410.bwaves	16	**4863**	**44.7**	4861	44.7	4873	44.6	16	**4825**	**45.1**	4819	45.1	4826	45.1
416.gamess	16	**950**	**330**	949	330	951	330	16	934	335	936	335	**934**	**335**
433.milc	16	3790	38.8	**3791**	**38.7**	3791	38.7	16	3733	39.3	**3735**	**39.3**	3741	39.3
434.zeusmp	16	1400	104	1392	105	**1392**	**105**	16	**1394**	**104**	1392	105	1404	104
435.gromacs	16	437	261	**437**	**261**	437	261	16	**420**	**272**	421	271	420	272
436.cactusADM	16	**1614**	**118**	1620	118	1613	119	16	1512	126	**1511**	**127**	1508	127
437.leslie3d	16	**3688**	**40.8**	3686	40.8	3691	40.7	16	3581	42.0	**3577**	**42.1**	3565	42.2
444.namd	16	**524**	**245**	527	243	524	245	16	**521**	**246**	521	247	521	246
447.dealII	16	**964**	**190**	953	192	965	190	16	**916**	**200**	916	200	928	197
450.soplex	16	2416	55.2	**2414**	**55.3**	2414	55.3	16	2112	63.2	**2112**	**63.2**	2111	63.2
453.povray	16	227	374	**229**	**372**	230	371	16	**191**	**447**	190	447	191	446
454.calculix	16	641	206	**642**	**206**	643	205	16	490	270	**489**	**270**	484	273
459.GemsFDTD	16	4495	37.8	**4494**	**37.8**	4494	37.8	16	4452	38.1	**4450**	**38.1**	4449	38.2
465.tonto	16	1036	152	**1031**	**153**	1031	153	16	1013	155	1013	155	**1013**	**155**
470.lbm	16	5154	42.7	5152	42.7	**5154**	**42.7**	16	**4953**	**44.4**	4953	44.4	4954	44.4
481.wrf	16	2222	80.4	2216	80.7	**2217**	**80.6**	16	**2206**	**81.0**	2202	81.2	2207	81.0
482.sphinx3	16	3196	97.6	**3193**	**97.6**	3189	97.8	16	**2997**	**104**	3002	104	2992	104

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

General Notes

```
Bios settings:
Hardware Prefetcher:      Disabled
Adjacent Sector Prefetch: Disabled
All benchmarks compiled in 64-bit mode except 437.leslie3d,
450.soplex, 470.lbm and 482.sphinx3, for peak, are
compiled in 32-bit mode
taskset utility used to bind CPU(s) to processes
```

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:
    -fast

C++ benchmarks:
    -fast

Fortran benchmarks:
    -fast

Benchmarks using both Fortran and C:
    -fast

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Peak Compiler Invocation

C benchmarks (except as noted below):
```
/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/icc
-L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib
-I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include
```

```
    433.milc: icc
```

C++ benchmarks (except as noted below):
```
    icpc
```

```
  450.soplex: /home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/icpc
            -L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib
            -I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include
```

Fortran benchmarks (except as noted below):
```
    ifort
```

```
  437.leslie3d: /home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/bin/ifort
            -L/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/lib
            -I/home/cmplr/usr3/alrahate/compilers/ic10.1mainline/20070725/Linux32/include
```

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
       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) -fast -fno-alias
            -auto-ilp32
```

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Peak Optimization Flags (Continued)

470.lbm: `-prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -scalar-rep- -prefetch -opt-malloc-options=3`

482.sphinx3: `-fast -unroll2`

C++ benchmarks:

444.namd: `-prof-gen(pass 1) -prof-use(pass 2) -fast -fno-alias -auto-ilp32`

447.dealII: `-prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -ansi-alias -scalar-rep-`

450.soplex: `-prof-gen(pass 1) -prof-use(pass 2) -fast -opt-malloc-options=3`

453.povray: `-prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -ansi-alias`

Fortran benchmarks:

410.bwaves: `-fast -prefetch`

416.gamess: `-prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0 -ansi-alias -scalar-rep-`

434.zeusmp: `-prof-gen(pass 1) -prof-use(pass 2) -fast`

437.leslie3d: `-prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch -opt-malloc-options=3`

459.GemsFDTD: `-prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -Ob0 -prefetch`

465.tonto: `-prof-gen(pass 1) -prof-use(pass 2) -fast -unroll4 -auto`

Benchmarks using both Fortran and C:

435.gromacs: `-prof-gen(pass 1) -prof-use(pass 2) -fast -prefetch -auto-ilp32`

436.cactusADM: `-prof-gen(pass 1) -prof-use(pass 2) -fast -unroll2 -prefetch -auto-ilp32`

454.calculix: `-fast -unroll-aggressive -auto-ilp32`

481.wrf: `-fast -auto-ilp32`

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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-ic10.1-FP-intel64-linux-flags.20090714.12.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic10.1-FP-intel64-linux-flags.20090714.12.xml

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