SPEC® CFP2006 Result
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IBM Corporation

$SPECfp^®\_rate2006 = 519$

IBM System x3850 X5 (Intel Xeon X7550)

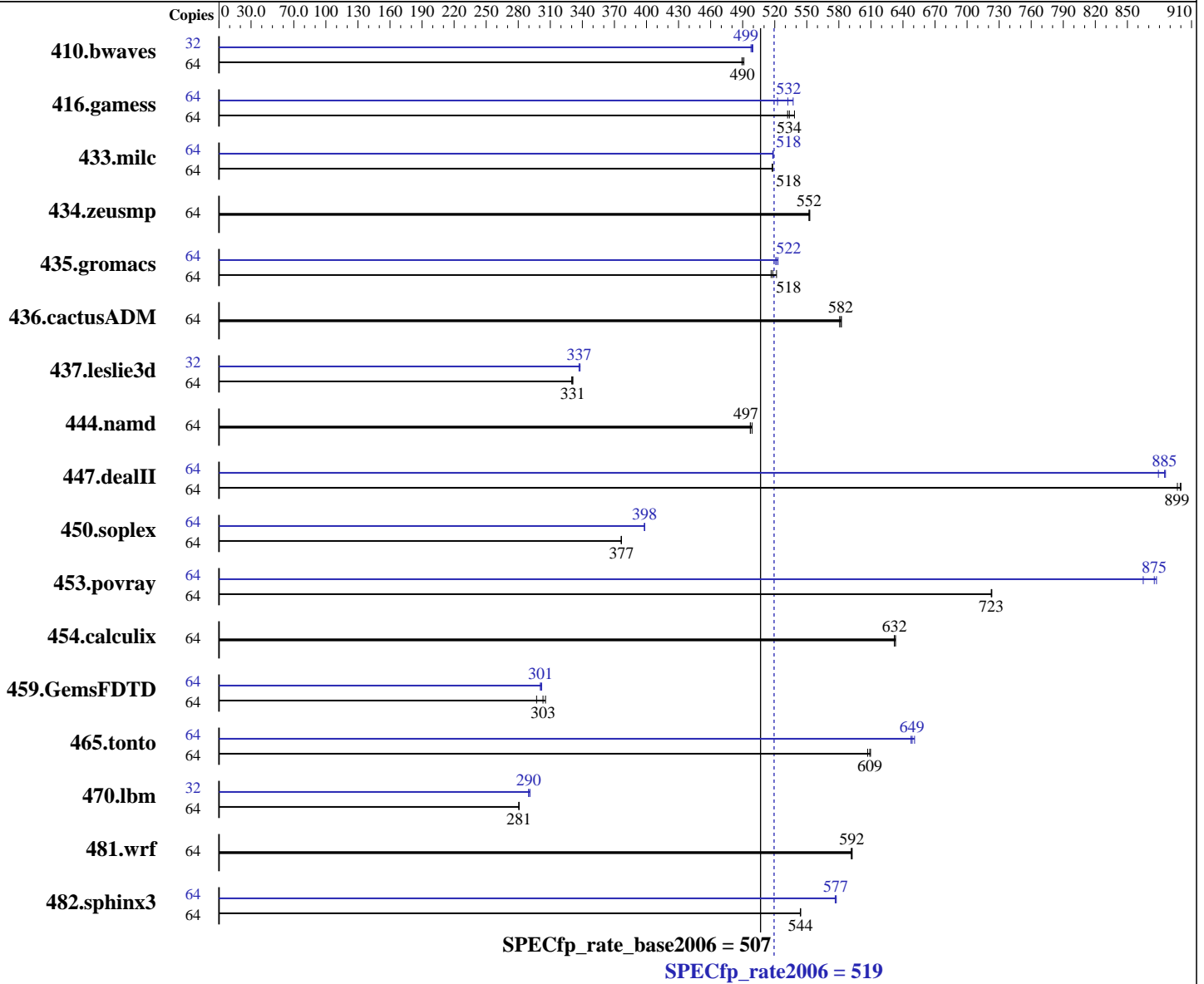$SPECfp\_rate\_base2006 = 507$

CPU2006 license: 11　　　　　　　　　　　　　　　　　　　　　　**Test date:** Apr-2010
Test sponsor: IBM Corporation　　　　　　　　　　　　　　**Hardware Availability:** Mar-2010
Tested by: IBM Corporation　　　　　　　　　　　　　　　**Software Availability:** Jan-2010

Benchmark	Copies	Result
410.bwaves	32	499
	64	490
416.gamess	64	532
	64	534
433.milc	64	518
	64	518
434.zeusmp	64	552
435.gromacs	64	522
	64	518
436.cactusADM	64	582
437.leslie3d	32	337
	64	331
444.namd	64	497
447.dealII	64	885
	64	899
450.soplex	64	398
	64	377
453.povray	64	875
	64	723
454.calculix	64	632
459.GemsFDTD	64	301
	64	303
465.tonto	64	649
	64	609
470.lbm	32	290
	64	281
481.wrf	64	592
482.sphinx3	64	577
	64	544

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Hardware

CPU Name: Intel Xeon X7550
CPU Characteristics: Intel Turbo Boost Technology up to 2.40 GHz
CPU MHz: 2000
FPU: Integrated
CPU(s) enabled: 32 cores, 4 chips, 8 cores/chip, 2 threads/core
CPU(s) orderable: 2,4 chips
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 256 KB I+D on chip per core

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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:	18 MB I+D on chip per chip	Base Pointers:	64-bit
Other Cache:	None	Peak Pointers:	32/64-bit
Memory:	256 GB (64 x 4 GB PC3-8500R, Quad Rank)	Other Software:	Binutils 2.18.50.0.7.20080502
Disk Subsystem:	3 x 50 GB SATA, SSD		
Other Hardware:	None		

Results Table

Benchmark	Base Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	64	1771	491	**1776**	**490**	1777	489	32	**872**	**499**	874	498	871	500
416.gamess	64	2355	532	2327	538	**2348**	**534**	64	2333	537	2398	523	**2354**	**532**
433.milc	64	1134	518	1135	518	**1135**	**518**	64	**1133**	**518**	1133	519	1134	518
434.zeusmp	64	**1054**	**552**	1055	552	1053	553	64	**1054**	**552**	1055	552	1053	553
435.gromacs	64	**882**	**518**	885	517	876	522	64	874	523	877	521	**876**	**522**
436.cactusADM	64	1313	582	1317	581	**1315**	**582**	64	1313	582	1317	581	**1315**	**582**
437.leslie3d	64	**1818**	**331**	1817	331	1823	330	32	893	337	890	338	**893**	**337**
444.namd	64	1033	497	1029	499	**1032**	**497**	64	1033	497	1029	499	**1032**	**497**
447.dealII	64	816	897	**814**	**899**	813	900	64	833	879	827	886	**828**	**885**
450.soplex	64	1417	377	**1418**	**377**	1418	376	64	1341	398	**1341**	**398**	1340	398
453.povray	64	**471**	**723**	471	723	471	723	64	394	865	**389**	**875**	388	877
454.calculix	64	835	632	834	633	**835**	**632**	64	835	632	834	633	**835**	**632**
459.GemsFDTD	64	2285	297	**2240**	**303**	2222	306	64	**2256**	**301**	2258	301	2249	302
465.tonto	64	**1034**	**609**	1033	610	1038	607	64	972	648	**971**	**649**	968	651
470.lbm	64	3132	281	**3133**	**281**	3134	281	32	**1517**	**290**	1517	290	1511	291
481.wrf	64	**1207**	**592**	1207	592	1208	592	64	**1207**	**592**	1207	592	1208	592
482.sphinx3	64	**2292**	**544**	2292	544	2293	544	64	**2162**	**577**	2163	577	2160	578

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

```
   Turbo Boost set to Traditional
   Demand Scrub disabled
```

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: basepeak = yes

    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

        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-ic11.1-linux64-revE.20100330.03.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.20100330.03.xml`

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