SPEC® CFP2006 Result

Fujitsu

PRIMERGY RX200 S6, Intel Xeon X5647, 2.93 GHz

$SPECfp^{®}_rate2006 = $ 195

$SPECfp_rate_base2006 = $ 189

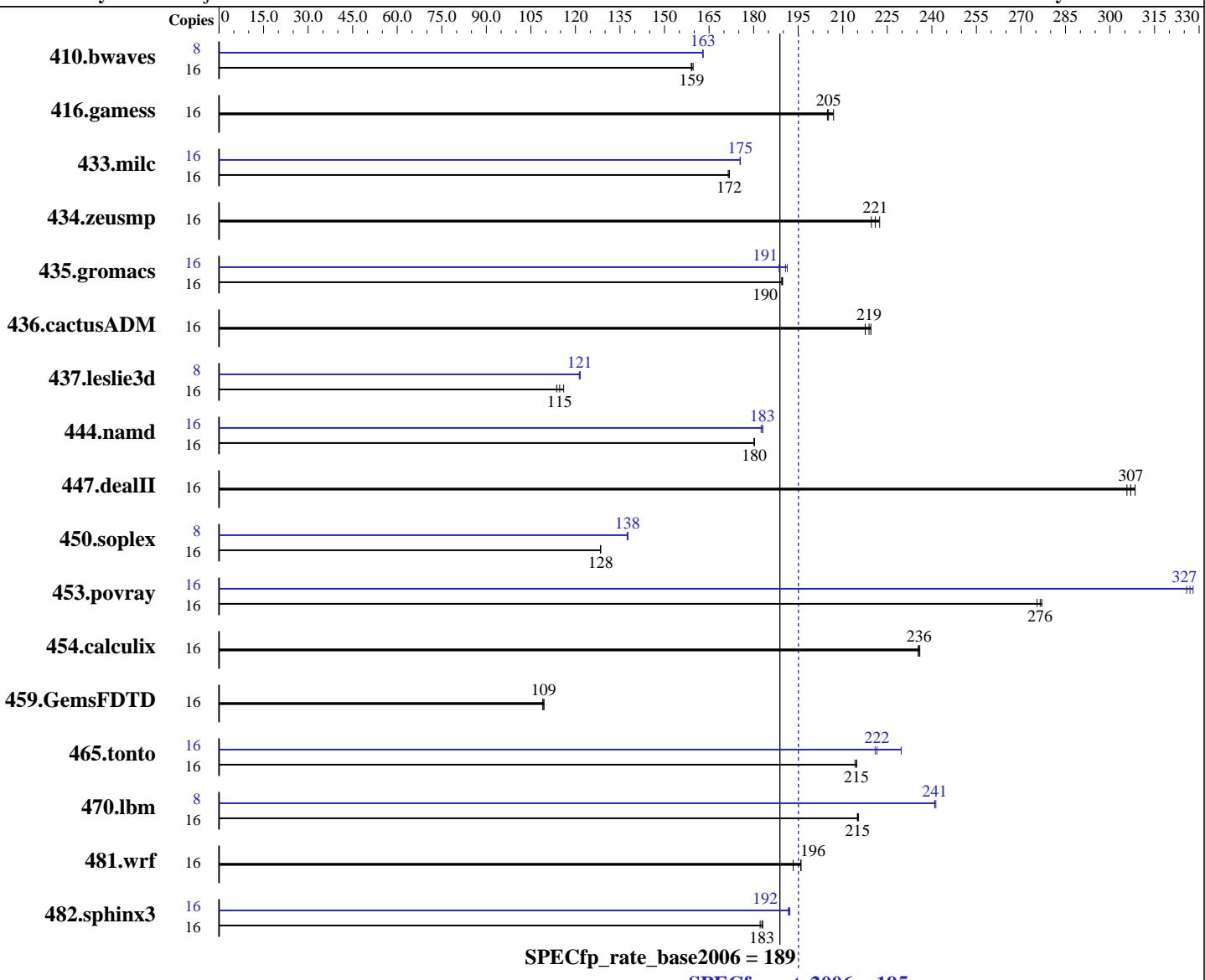| **CPU2006 license:** 19	**Test date:** Jan-2011
Test sponsor: Fujitsu	**Hardware Availability:** Feb-2011
Tested by: Fujitsu	**Software Availability:** Jan-2011

Results bar chart (Copies scale 0 to 330):

- **410.bwaves** — 8: 163; 16: 159
- **416.gamess** — 16: 205
- **433.milc** — 16: 175; 16: 172
- **434.zeusmp** — 16: 221
- **435.gromacs** — 16: 191; 16: 190
- **436.cactusADM** — 16: 219
- **437.leslie3d** — 8: 121; 16: 115
- **444.namd** — 16: 183; 16: 180
- **447.dealII** — 16: 307
- **450.soplex** — 8: 138; 16: 128
- **453.povray** — 16: 327; 16: 276
- **454.calculix** — 16: 236
- **459.GemsFDTD** — 16: 109
- **465.tonto** — 16: 222; 16: 215
- **470.lbm** — 8: 241; 16: 215
- **481.wrf** — 16: 196
- **482.sphinx3** — 16: 192; 16: 183

SPECfp_rate_base2006 = 189

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Hardware

CPU Name:	Intel Xeon X5647
CPU Characteristics:	Intel Turbo Boost Technology up to 3.20 GHz
CPU MHz:	2933
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip, 2 threads/core
CPU(s) orderable:	1,2 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) with SP1, Kernel 2.6.32.12-0.7-default
Compiler:	Intel C++ and Fortran Intel 64 Compiler XE for applications running on Intel 64 Version 12.0.1.116 Build 20101116
Auto Parallel:	No
File System:	ext3
System State:	Run level 3 (multi-user)
Base Pointers:	64-bit

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L3 Cache:	12 MB I+D on chip per chip	Peak Pointers:	32/64-bit
Other Cache:	None	Other Software:	Binaries compiled on RHEL5.5 with
Memory:	48 GB (12 x 4 GB 2Rx4 PC3-10600R-9, ECC)		binutils-2.17.50.0.6-14.el5
Disk Subsystem:	1 x SAS, 300 GB, 10000 RPM		
Other Hardware:	--		

Results Table

Benchmark	Base						Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	16	1362	160	**1366**	**159**	1368	159	8	667	163	**667**	**163**	667	163
416.gamess	16	1514	207	1529	205	**1527**	**205**	16	1514	207	1529	205	**1527**	**205**
433.milc	16	**855**	**172**	855	172	857	171	16	837	176	837	175	**837**	**175**
434.zeusmp	16	655	222	663	220	**659**	**221**	16	655	222	663	220	**659**	**221**
435.gromacs	16	602	190	**602**	**190**	603	189	16	597	191	606	189	**599**	**191**
436.cactusADM	16	**874**	**219**	871	219	879	218	16	**874**	**219**	871	219	879	218
437.leslie3d	16	**1311**	**115**	1323	114	1296	116	8	**619**	**121**	620	121	618	122
444.namd	16	712	180	712	180	**712**	**180**	16	**701**	**183**	701	183	703	183
447.dealII	16	593	308	**596**	**307**	599	306	16	593	308	**596**	**307**	599	306
450.soplex	16	1038	128	1039	128	**1039**	**128**	8	485	137	**485**	**138**	485	138
453.povray	16	307	277	**308**	**276**	309	275	16	260	328	**260**	**327**	261	326
454.calculix	16	559	236	**560**	**236**	561	235	16	559	236	**560**	**236**	561	235
459.GemsFDTD	16	**1552**	**109**	1552	109	1558	109	16	**1552**	**109**	1552	109	1558	109
465.tonto	16	733	215	**734**	**215**	735	214	16	**711**	**222**	713	221	685	230
470.lbm	16	1021	215	1023	215	**1022**	**215**	8	456	241	455	241	**456**	**241**
481.wrf	16	**912**	**196**	924	193	912	196	16	**912**	**196**	924	193	912	196
482.sphinx3	16	**1706**	**183**	1712	182	1703	183	16	1627	192	**1625**	**192**	1622	192

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

Operating System Notes

   'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
   Large pages were not enabled for this run

Platform Notes

   BIOS configuration:
   Data Reuse Optimization = Disable

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General Notes

For information about Fujitsu please visit: http://www.fujitsu.com

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 -ansi-alias

C++ benchmarks:
    -xSSE4.2 -ipo -O3 -no-prec-div -static -ansi-alias

Fortran benchmarks:
    -xSSE4.2 -ipo -O3 -no-prec-div -static

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Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:
```
-xSSE4.2 -ipo -O3 -no-prec-div -static -ansi-alias
```

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:

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Peak Optimization Flags (Continued)

```
  433.milc: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
            -no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32

  470.lbm: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
           -no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3
           -ansi-alias -opt-prefetch -static -auto-ilp32

482.sphinx3: -xSSE4.2 -ipo -O3 -no-prec-div -unroll2
```

C++ benchmarks:

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

447.dealII: basepeak = yes

450.soplex: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
            -no-prec-div(pass 2) -prof-use(pass 2) -opt-malloc-options=3
            -B /usr/share/libhugetlbfs/ -Wl,-hugetlbfs-link=BDT

453.povray: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
            -no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias
            -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT
```

Fortran benchmarks:

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

416.gamess: basepeak = yes

434.zeusmp: basepeak = yes

437.leslie3d: -xSSE4.2 -ipo -O3 -no-prec-div
              -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT

459.GemsFDTD: basepeak = yes

  465.tonto: -xSSE4.2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
             -no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -auto
             -inline-calloc -opt-malloc-options=3
             -B /usr/share/libhugetlbfs/ -Wl,-melf_x86_64 -Wl,-hugetlbfs-link=BDT
```

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) -prof-use(pass 2) -opt-prefetch
             -static -auto-ilp32
```

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Peak Optimization Flags (Continued)

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: basepeak = yes

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revA.20110222.00.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revA.20110222.00.xml

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

Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 17:10:30 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 21 February 2011.