SPEC® CFP2006 Result

Fujitsu

PRIMERGY TX200 S6, Intel Xeon X5660, 2.80 GHz

$SPECfp^®\_rate2006 =$ 125

$SPECfp\_rate\_base2006 =$ 121

Results chart (Copies shown at left of each benchmark):

Benchmark	Copies	Result
410.bwaves	6	101
410.bwaves	12	99.2
416.gamess	12	146
433.milc	12	113
433.milc	12	113
434.zeusmp	12	152
435.gromacs	12	143
435.gromacs	12	142
436.cactusADM	12	161
437.leslie3d	6	70.9
437.leslie3d	12	67.9
444.namd	12	139
444.namd	12	136
447.dealII	12	208
447.dealII	12	207
450.soplex	6	89.5
450.soplex	12	79.9
453.povray	12	237
453.povray	12	198
454.calculix	12	176
459.GemsFDTD	6	66.2
459.GemsFDTD	12	65.5
465.tonto	12	156
465.tonto	12	142
470.lbm	6	67.1
470.lbm	12	64.8
481.wrf	12	127
482.sphinx3	12	119
482.sphinx3	12	113

SPECfp_rate_base2006 = 121

SPECfp_rate2006 = 125

Hardware

CPU Name:	Intel Xeon X5660
CPU Characteristics:	Intel Turbo Boost Technology up to 3.2 GHz
CPU MHz:	2800
FPU:	Integrated
CPU(s) enabled:	6 cores, 1 chip, 6 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), 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:	Multi-User Run Level 3

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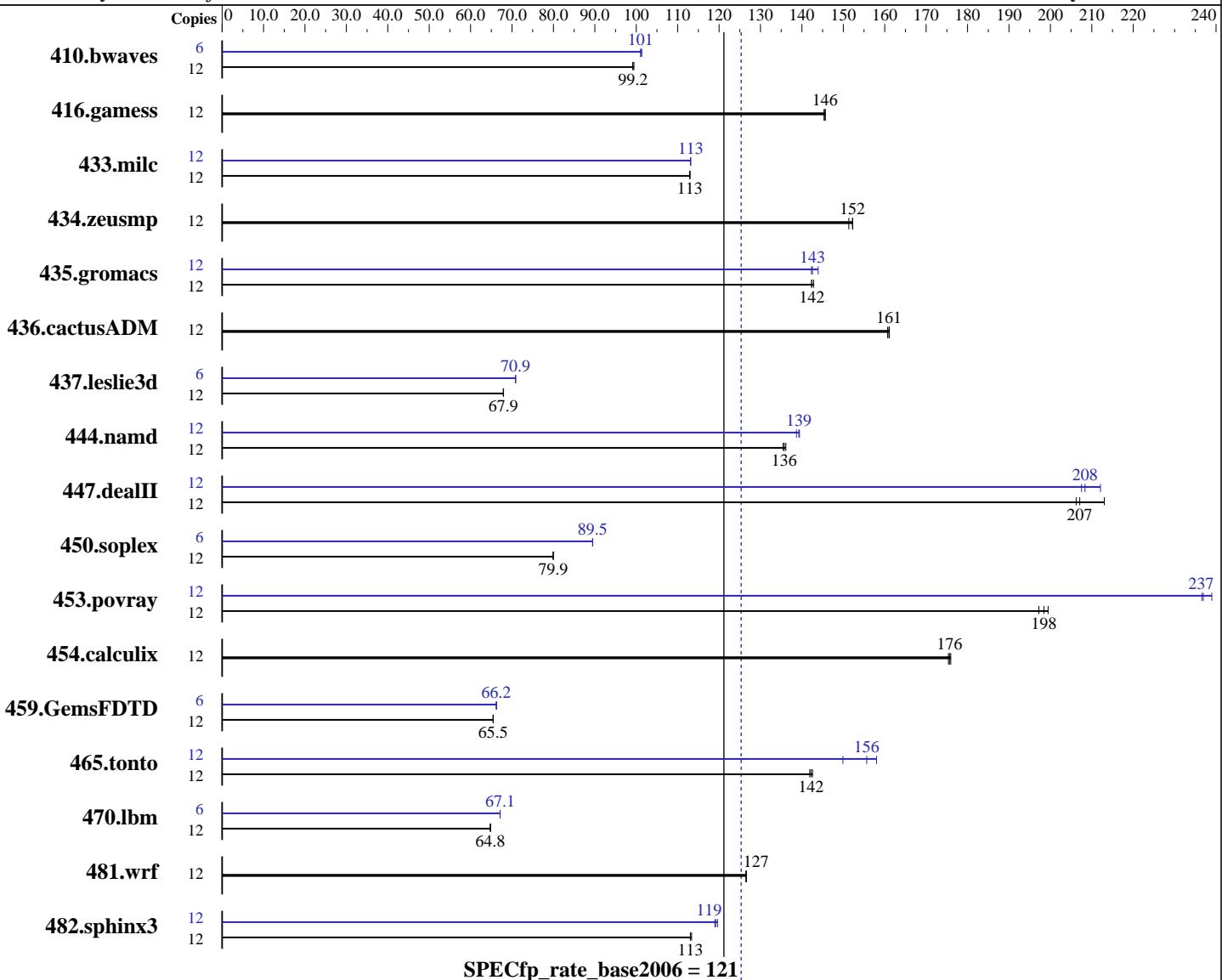$SPECfp\_rate2006 =$ 125

$SPECfp\_rate\_base2006 =$ 121

CPU2006 license: 19	**Test date:** Sep-2010
Test sponsor: Fujitsu	**Hardware Availability:** Jul-2010
Tested by: Fujitsu	**Software Availability:** Jan-2010

L3 Cache:	12 MB I+D on chip per chip	Base Pointers:	64-bit
Other Cache:	None	Peak Pointers:	32/64-bit
Memory:	24 GB (6x4 GB PC3-10600R, 2 rank, CL9-9-9, ECC)	Other Software:	None
Disk Subsystem:	1 x SATA, 160 GB, 5.4 krpm		
Other Hardware:	None		

Results Table

Benchmark	Base Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	12	1640	99.4	**1644**	**99.2**	1645	99.1	6	807	101	805	101	**807**	**101**
416.gamess	12	1617	145	1613	146	**1614**	**146**	12	1617	145	1613	146	**1614**	**146**
433.milc	12	976	113	975	113	**975**	**113**	12	974	113	974	113	**974**	**113**
434.zeusmp	12	717	152	**717**	**152**	722	151	12	717	152	**717**	**152**	722	151
435.gromacs	12	**602**	**142**	602	142	600	143	12	**601**	**143**	602	142	595	144
436.cactusADM	12	**891**	**161**	890	161	892	161	12	**891**	**161**	890	161	892	161
437.leslie3d	12	1660	68.0	1661	67.9	**1661**	**67.9**	6	796	70.8	796	70.9	**796**	**70.9**
444.namd	12	707	136	**709**	**136**	710	135	12	690	139	694	139	**691**	**139**
447.dealII	12	644	213	**663**	**207**	666	206	12	**659**	**208**	662	208	647	212
450.soplex	12	1251	80.0	1252	79.9	**1252**	**79.9**	6	559	89.5	559	89.5	**559**	**89.5**
453.povray	12	324	197	**322**	**198**	320	199	12	267	239	**269**	**237**	270	237
454.calculix	12	563	176	565	175	**564**	**176**	12	563	176	565	175	**564**	**176**
459.GemsFDTD	12	1945	65.5	**1945**	**65.5**	1946	65.4	6	961	66.3	**961**	**66.2**	962	66.2
465.tonto	12	832	142	**830**	**142**	828	143	12	**759**	**156**	788	150	747	158
470.lbm	12	2545	64.8	**2545**	**64.8**	2545	64.8	6	1228	67.1	**1228**	**67.1**	1228	67.1
481.wrf	12	1060	126	1059	127	**1059**	**127**	12	1060	126	1059	127	**1059**	**127**
482.sphinx3	12	2063	113	**2068**	**113**	2068	113	12	1955	120	**1962**	**119**	1966	119

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
```

Platform Notes

```
   BIOS configuration:
   Data Reuse Optimization = Disable
```

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Test date: Sep-2010
Hardware Availability: Jul-2010
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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

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

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
```

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) -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`

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

 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: `basepeak = yes`

 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`

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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-ic11.1-linux64-revE.20100708.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.20100708.xml

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