SPEC® CFP2006 Result
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Fujitsu

CELSIUS M470, Intel Xeon W3680

$SPECfp^®\_rate2006 =$ 124

$SPECfp\_rate\_base2006 =$ 120

Results graph (Copies):

Benchmark	Copies	Result
410.bwaves	6	93.1
	12	90.0
416.gamess	6	166
	12	164
433.milc	12	103
	12	103
434.zeusmp	12	148
435.gromacs	12	161
	12	158
436.cactusADM	12	156
437.leslie3d	6	64.0
	12	60.2
444.namd	12	157
	12	153
447.dealII	12	210
	12	213
450.soplex	6	84.8
	12	72.9
453.povray	12	273
	12	226
454.calculix	12	193
459.GemsFDTD	6	58.9
	12	57.9
465.tonto	12	157
	12	152
470.lbm	6	61.3
	12	57.9
481.wrf	12	115
482.sphinx3	12	110
	12	105

SPECfp_rate_base2006 = 120

SPECfp_rate2006 = 124

Hardware
CPU Name:	Intel Xeon W3680
CPU Characteristics:	Intel Turbo Boost Technology up to 3.6 GHz
CPU MHz:	3333
FPU:	Integrated
CPU(s) enabled:	6 cores, 1 chip, 6 cores/chip, 2 threads/core
CPU(s) orderable:	1 chip
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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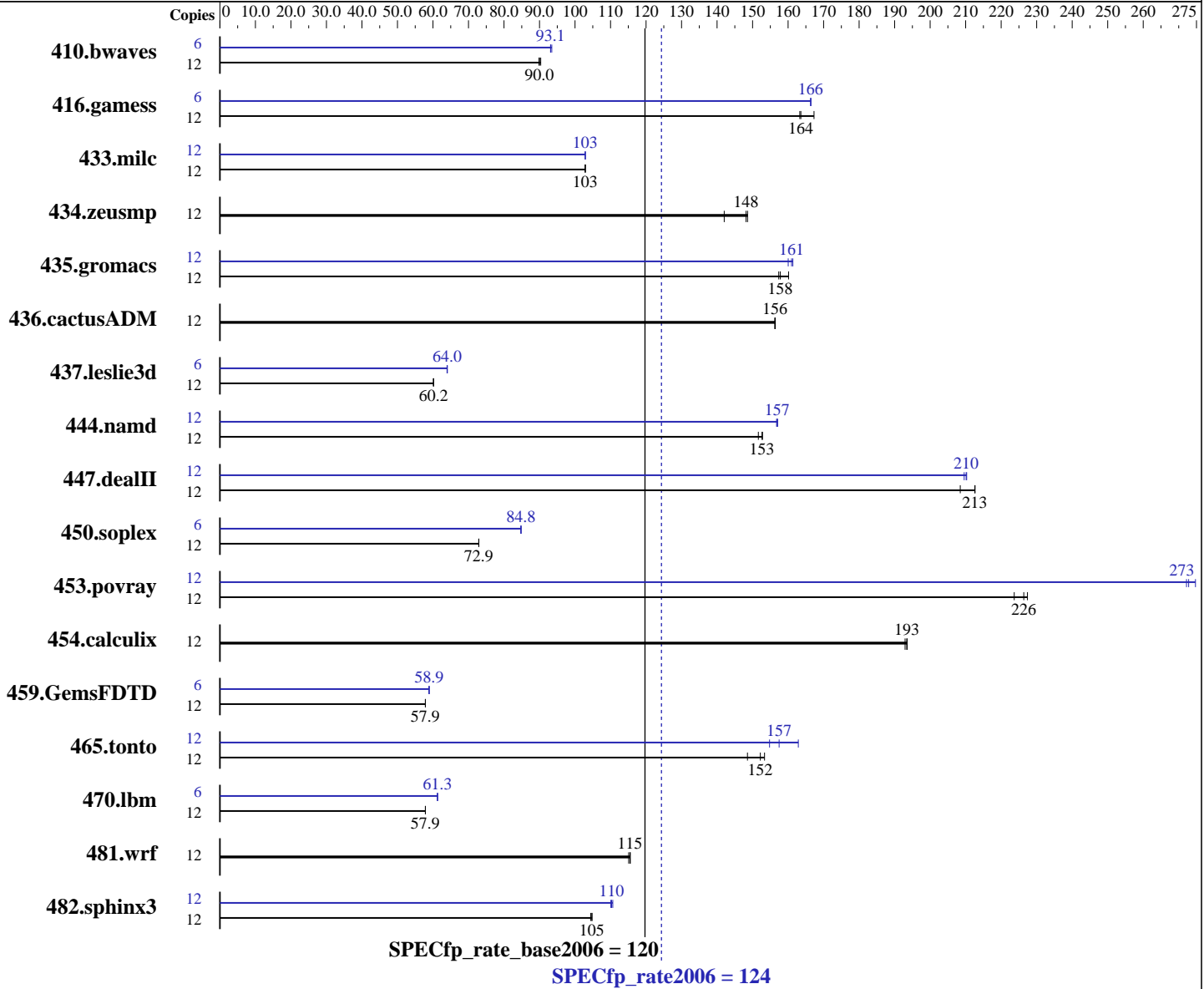$SPECfp_rate_base2006 = $ 120

CPU2006 license: 19
Test sponsor: Fujitsu
Tested by: Fujitsu

Test date: Mar-2010
Hardware Availability: Mar-2010
Software Availability: Dec-2009

L3 Cache:	12 MB I+D on chip per chip
Other Cache:	None
Memory:	12 GB (6x2 GB PC3-10600E, 2 rank, CL9, ECC)
Disk Subsystem:	1 x SATA II, 400 GB, 7200 rpm
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							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	12	1805	90.3	**_1812_**	**_90.0_**	1815	89.9	6	**_876_**	**_93.1_**	872	93.5	876	93.1
416.gamess	12	1404	167	**_1436_**	**_164_**	1439	163	6	**_706_**	**_166_**	706	166	706	166
433.milc	12	1070	103	**_1071_**	**_103_**	1071	103	12	**_1071_**	**_103_**	1071	103	1071	103
434.zeusmp	12	735	149	769	142	**_737_**	**_148_**	12	735	149	769	142	**_737_**	**_148_**
435.gromacs	12	544	157	535	160	**_543_**	**_158_**	12	535	160	531	161	**_532_**	**_161_**
436.cactusADM	12	918	156	**_918_**	**_156_**	917	156	12	918	156	**_918_**	**_156_**	917	156
437.leslie3d	12	1875	60.2	**_1875_**	**_60.2_**	1876	60.1	6	882	64.0	**_881_**	**_64.0_**	881	64.0
444.namd	12	630	153	**_630_**	**_153_**	635	152	12	613	157	614	157	**_613_**	**_157_**
447.dealII	12	**_646_**	**_213_**	646	213	658	208	12	**_653_**	**_210_**	653	210	655	210
450.soplex	12	1372	72.9	**_1373_**	**_72.9_**	1373	72.9	6	**_590_**	**_84.8_**	590	84.8	590	84.8
453.povray	12	285	224	281	227	**_282_**	**_226_**	12	**_234_**	**_273_**	235	272	232	275
454.calculix	12	**_512_**	**_193_**	513	193	512	194	12	**_512_**	**_193_**	513	193	512	194
459.GemsFDTD	12	**_2201_**	**_57.9_**	2201	57.9	2201	57.9	6	1080	58.9	1081	58.9	**_1081_**	**_58.9_**
465.tonto	12	770	153	**_776_**	**_152_**	795	149	12	725	163	763	155	**_750_**	**_157_**
470.lbm	12	2849	57.9	**_2850_**	**_57.9_**	2850	57.9	6	1345	61.3	**_1346_**	**_61.3_**	1346	61.3
481.wrf	12	1165	115	**_1161_**	**_115_**	1160	116	12	1165	115	**_1161_**	**_115_**	1160	116
482.sphinx3	12	2232	105	**_2233_**	**_105_**	2240	104	12	2114	111	**_2120_**	**_110_**	2125	110

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 --localalloc --physcpubind was used to bind processes to cores and it's local memory.
     Details on the parameters used may be found in the config file.
```

Operating System Notes

```
    'ulimit -s unlimited' was used to set the stacksize to unlimited prior to run
```

Platform Notes

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

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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: -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: -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
```

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Peak Optimization Flags (Continued)

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.20100316.01.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.20100316.01.xml

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

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