SPEC® CFP2006 Result
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Fujitsu

PRIMERGY BX924 S2, Intel Xeon X5687, 3.60 GHz

$SPECfp^{®}\_rate2006 =$ 237

$SPECfp\_rate\_base2006 =$ 230

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

Copies

Benchmark	
410.bwaves	8: 198 / 16: 192
416.gamess	16: 243
433.milc	16: 216 / 16: 211
434.zeusmp	16: 266
435.gromacs	16: 231 / 16: 231
436.cactusADM	16: 262
437.leslie3d	8: 148 / 16: 141
444.namd	16: 221 / 16: 218
447.dealII	16: 371
450.soplex	8: 167 / 16: 158
453.povray	16: 395 / 16: 336
454.calculix	16: 287
459.GemsFDTD	16: 134
465.tonto	16: 275 / 16: 274
470.lbm	8: 298 / 16: 258
481.wrf	16: 242
482.sphinx3	16: 231 / 16: 220

SPECfp_rate_base2006 = 230

SPECfp_rate2006 = 237

Hardware

CPU Name:	Intel Xeon X5687
CPU Characteristics:	Intel Turbo Boost Technology up to 3.87 GHz
CPU MHz:	3600
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

Continued on next page

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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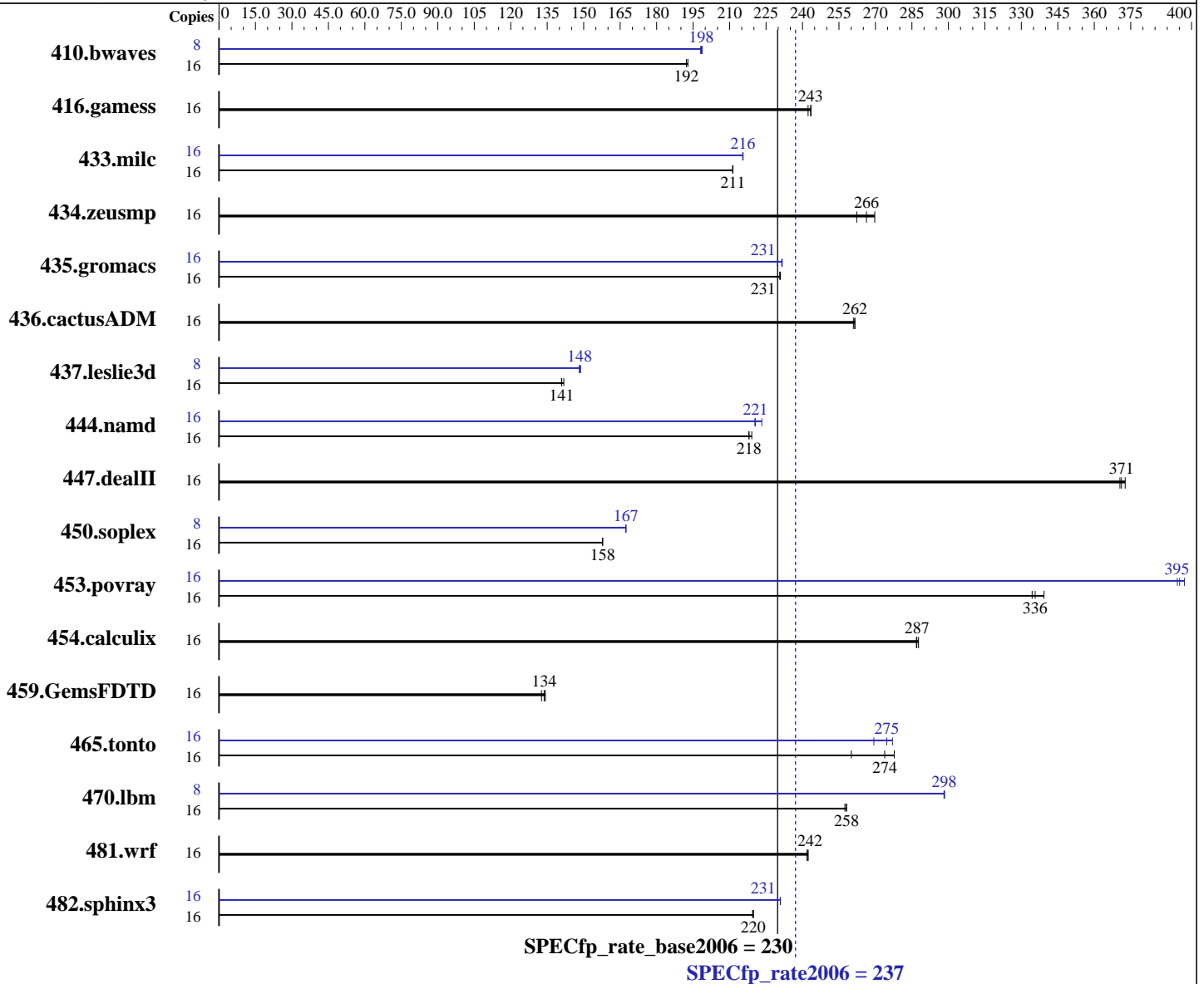
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L3 Cache:	12 MB I+D on chip per chip
Other Cache:	None
Memory:	96 GB (12 x 8 GB 2Rx4 PC3-10600R-9, ECC)
Disk Subsystem:	1 x SAS, 300 GB, 10000 RPM
Other Hardware:	--
Peak Pointers:	32/64-bit
Other Software:	None

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	1127	193	**1131**	**192**	1131	192	8	**548**	**198**	547	199	549	198
416.gamess	16	1287	243	**1287**	**243**	1293	242	16	1287	243	**1287**	**243**	1293	242
433.milc	16	695	211	**695**	**211**	695	211	16	**681**	**216**	682	215	681	216
434.zeusmp	16	555	262	540	270	**547**	**266**	16	555	262	540	270	**547**	**266**
435.gromacs	16	495	231	495	231	**495**	**231**	16	497	230	493	232	**494**	**231**
436.cactusADM	16	731	262	733	261	**731**	**262**	16	731	262	733	261	**731**	**262**
437.leslie3d	16	**1067**	**141**	1061	142	1068	141	8	508	148	505	149	**507**	**148**
444.namd	16	586	219	589	218	**589**	**218**	16	575	223	582	220	**582**	**221**
447.dealII	16	**493**	**371**	494	371	491	373	16	**493**	**371**	494	371	491	373
450.soplex	16	**846**	**158**	846	158	846	158	8	399	167	399	167	**399**	**167**
453.povray	16	255	334	251	339	**254**	**336**	16	216	394	214	397	**215**	**395**
454.calculix	16	460	287	459	288	**460**	**287**	16	460	287	459	288	**460**	**287**
459.GemsFDTD	16	1280	133	1265	134	**1269**	**134**	16	1280	133	1265	134	**1269**	**134**
465.tonto	16	605	260	567	278	**575**	**274**	16	585	269	568	277	**573**	**275**
470.lbm	16	852	258	854	257	**852**	**258**	8	368	298	**369**	**298**	369	298
481.wrf	16	737	242	**739**	**242**	739	242	16	737	242	**739**	**242**	739	242
482.sphinx3	16	1421	219	1419	220	**1419**	**220**	16	**1351**	**231**	1350	231	1351	231

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
    Hugepages were not configured on the system
```

Platform Notes

```
    BIOS configuration:
    Data Reuse Optimization = Disable
    Performance/Power Setting = Traditional
```

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General Notes

     For information about Fujitsu please visit: http://www.fujitsu.com
     Binaries were compiled on RHEL5.5 with binutils-2.17.50.0.6-14.el5

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

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Hardware Availability: Feb-2011

Software Availability: Jan-2011

Base Optimization Flags (Continued)

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

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
```

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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) -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 files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.20110316.html
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revA.20110316.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revB.20110316.xml
http://www.spec.org/cpu2006/flags/Intel-ic12.0-linux64-revA.20110316.xml

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

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