SPEC® CFP2006 Result
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Supermicro

$SPECfp^®\_rate2006 = \quad 221$

SuperServer 5037A-i (X9SRA, Intel Xeon E5-1650)

$SPECfp\_rate\_base2006 = \quad 215$

CPU2006 license: 001176	**Test date:** May-2012
Test sponsor: Supermicro	**Hardware Availability:** Mar-2012
Tested by: Supermicro	**Software Availability:** Dec-2011

Copies — benchmark results:

- **410.bwaves** — 6: 215, 12: 211
- **416.gamess** — 12: 233, 12: 226
- **433.milc** — 12: 208, 12: 208
- **434.zeusmp** — 12: 251
- **435.gromacs** — 12: 181, 12: 181
- **436.cactusADM** — 12: 235
- **437.leslie3d** — 6: 145, 12: 134
- **444.namd** — 12: 182, 12: 177
- **447.dealII** — 12: 388
- **450.soplex** — 6: 154, 12: 141
- **453.povray** — 12: 358, 12: 306
- **454.calculix** — 12: 285, 12: 286
- **459.GemsFDTD** — 6: 126, 12: 127
- **465.tonto** — 12: 244, 12: 237
- **470.lbm** — 12: 256
- **481.wrf** — 12: 245, 12: 242
- **482.sphinx3** — 12: 199, 12: 205

SPECfp_rate_base2006 = 215

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Hardware

CPU Name:	Intel Xeon E5-1650
CPU Characteristics:	Intel Turbo Boost Technology up to 3.80 GHz
CPU MHz:	3200
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

Continued on next page

Software

Operating System:	Red Hat Enterprise Linux Server Release 6.2, Kernel 2.6.32-220.el6.x86_64
Compiler:	C/C++: Version 12.1.0.225 of Intel C++ Studio XE for Linux; Fortran: Version 12.1.0.225 of Intel Fortran Studio XE for Linux
Auto Parallel:	No
File System:	ext4
System State:	Run level 3 (multi-user)

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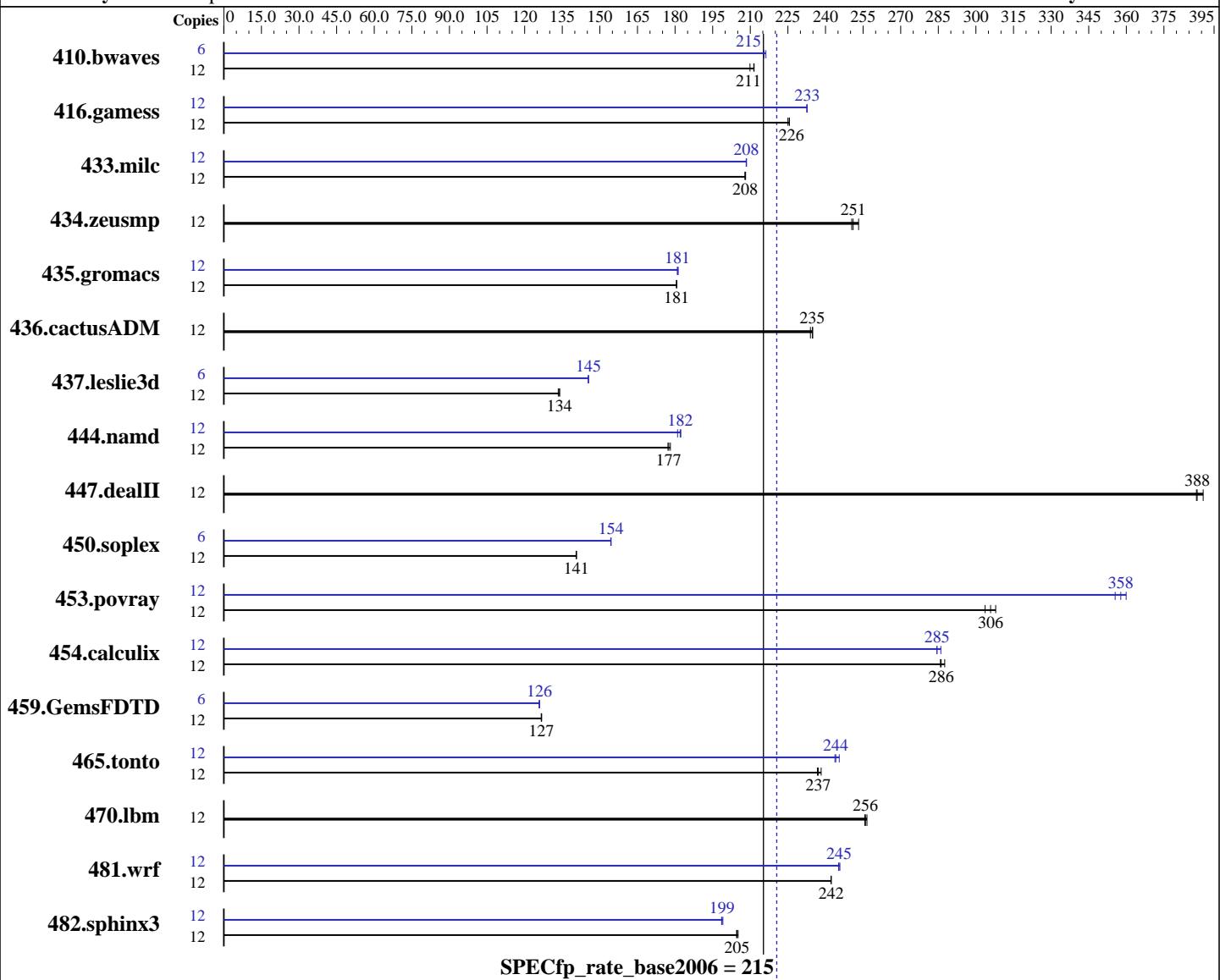$SPECfp\_rate2006 =$ 221

$SPECfp\_rate\_base2006 =$ 215

L3 Cache:	12 MB I+D on chip per chip
Other Cache:	None
Memory:	64 GB (8 x 8 GB 2Rx4 PC3-12800R-11, ECC)
Disk Subsystem:	1 x 300 GB SATA II, 10000 RPM
Other Hardware:	None
Base Pointers:	32/64-bit
Peak Pointers:	32/64-bit
Other Software:	None

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	12	771	212	**771**	**211**	777	210	6	379	215	377	216	**378**	**215**
416.gamess	12	1044	225	1041	226	**1042**	**226**	12	**1010**	**233**	1010	233	1010	233
433.milc	12	530	208	**530**	**208**	529	208	12	529	208	**528**	**208**	528	208
434.zeusmp	12	431	253	**435**	**251**	436	250	12	431	253	**435**	**251**	436	250
435.gromacs	12	**474**	**181**	475	181	474	181	12	**473**	**181**	474	181	473	181
436.cactusADM	12	**611**	**235**	610	235	613	234	12	**611**	**235**	610	235	613	234
437.leslie3d	12	**842**	**134**	842	134	846	133	6	388	145	**388**	**145**	388	145
444.namd	12	540	178	**542**	**177**	543	177	12	528	182	532	181	**529**	**182**
447.dealII	12	**354**	**388**	351	391	354	388	12	**354**	**388**	351	391	354	388
450.soplex	12	712	141	711	141	**712**	**141**	6	324	154	**324**	**154**	324	154
453.povray	12	210	304	**209**	**306**	207	308	12	**178**	**358**	177	360	180	356
454.calculix	12	344	288	346	286	**346**	**286**	12	348	284	346	286	**348**	**285**
459.GemsFDTD	12	1004	127	**1005**	**127**	1006	127	6	506	126	**505**	**126**	505	126
465.tonto	12	499	237	496	238	**498**	**237**	12	484	244	**484**	**244**	481	245
470.lbm	12	643	257	645	256	**644**	**256**	12	643	257	645	256	**644**	**256**
481.wrf	12	553	242	553	242	**553**	**242**	12	**546**	**245**	547	245	545	246
482.sphinx3	12	1143	205	**1143**	**205**	1140	205	12	1175	199	1178	199	**1177**	**199**

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

    The taskset mechanism was used to bind copies to processors. The config file option 'submit'
    was used to generate taskset commands to bind each copy to a specific processor.
    For details, please see the config file.

Operating System Notes

    Stack size set to unlimited using "ulimit -s unlimited"
    Transparent Huge Pages enabled with:
    echo never > /sys/kernel/mm/redhat_transparent_hugepage/enabled

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CPU2006 license: 001176
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Test date: May-2012
Hardware Availability: Mar-2012
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General Notes

```
Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64"

 Binaries compiled on a system with 1x Core i7-860 CPU + 8GB
 memory using RHEL5.5
```

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:
```
    -xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
    -ansi-alias -opt-mem-layout-trans=3
```

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Supermicro

SuperServer 5037A-i (X9SRA, Intel Xeon E5-1650)

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$SPECfp\_rate\_base2006 =$ 215

CPU2006 license: 001176	**Test date:** May-2012
Test sponsor: Supermicro	**Hardware Availability:** Mar-2012
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Base Optimization Flags (Continued)

C++ benchmarks:

```
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3
```

Fortran benchmarks:

```
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch
```

Benchmarks using both Fortran and C:

```
-xAVX -ipo -O3 -no-prec-div -static -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3
```

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
         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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Tested by:	Supermicro	**Software Availability:**	Dec-2011

Peak Optimization Flags

C benchmarks:

>   433.milc: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
>   -no-prec-div(pass 2) -prof-use(pass 2) -static -auto-ilp32
>   -opt-mem-layout-trans=3

>   470.lbm: basepeak = yes

>   482.sphinx3: -xAVX -ipo -O3 -no-prec-div -unroll2

C++ benchmarks:

>   444.namd: -xAVX(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: -xAVX(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

>   453.povray: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
>   -no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -ansi-alias

Fortran benchmarks:

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

>   416.gamess: -xAVX(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2)
>   -no-prec-div(pass 2) -prof-use(pass 2) -unroll2
>   -inline-level=0 -scalar-rep- -static

>   434.zeusmp: basepeak = yes

>   437.leslie3d: -xAVX -ipo -O3 -no-prec-div -static -opt-prefetch

>   459.GemsFDTD: -xAVX(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

>   465.tonto: -xAVX(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

Benchmarks using both Fortran and C:

>   435.gromacs: -xAVX(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 -opt-mem-layout-trans=3

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CPU2006 license: 001176

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Peak Optimization Flags (Continued)

436.cactusADM: basepeak = yes

454.calculix: `-xAVX -ipo -O3 -no-prec-div -static -auto-ilp32`
`-opt-mem-layout-trans=3`

481.wrf: `Same as 454.calculix`

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.html
http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-revA.html

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You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12.1-official-linux64.20111122.xml
http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-revA.xml

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