



# SPEC<sup>®</sup> CFP2006 Result

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## Supermicro

Supermicro X11SAE-M motherboard  
(X11SAE-M, Intel Xeon E3-1270 v5)

SPECfp<sup>®</sup>\_rate2006 = 195

SPECfp\_rate\_base2006 = 191

CPU2006 license: 001176

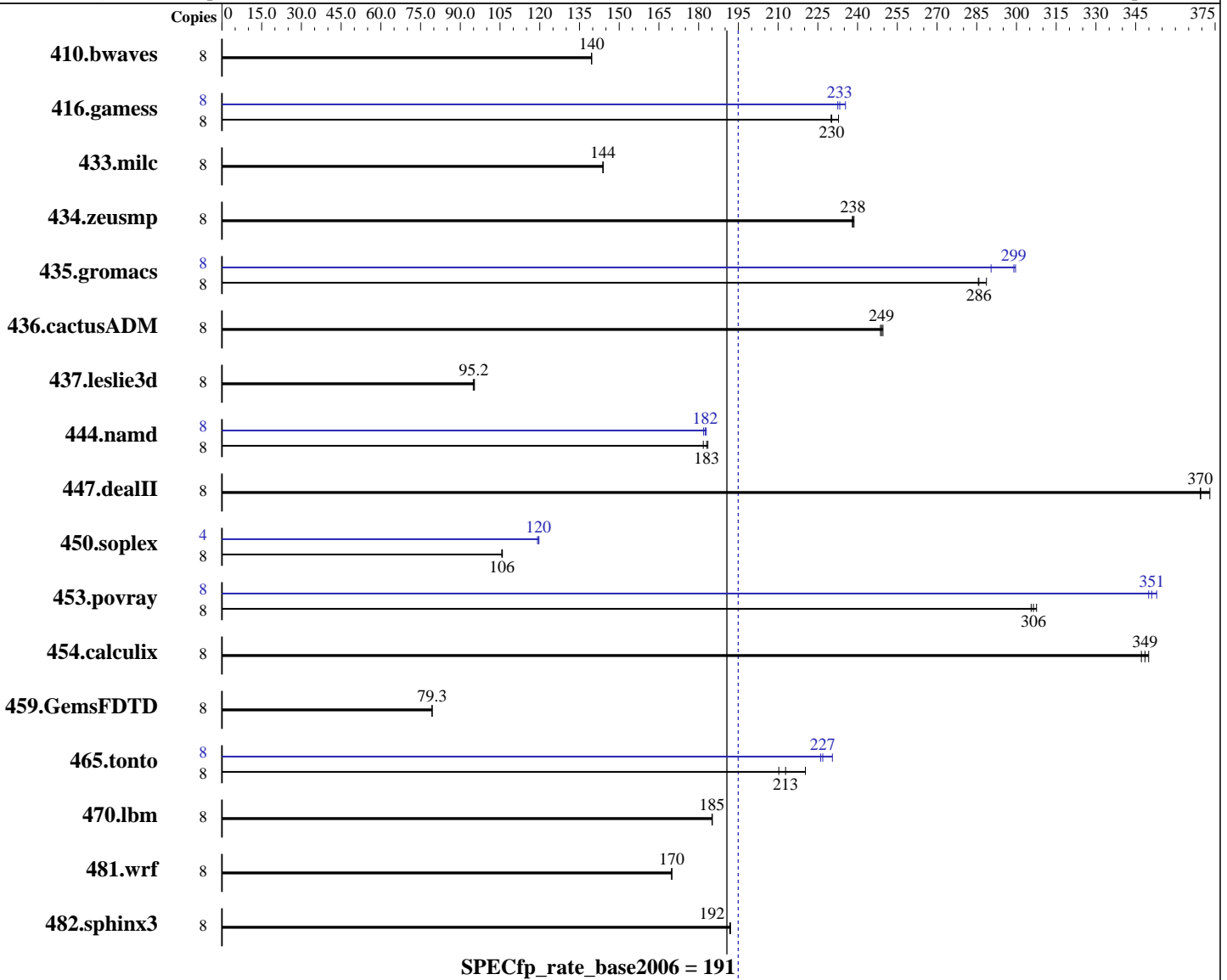
Test sponsor: Supermicro

Tested by: Supermicro

Test date: Feb-2016

Hardware Availability: Oct-2015

Software Availability: Sep-2015



### Hardware

CPU Name: Intel Xeon E3-1270 v5  
 CPU Characteristics: Intel Turbo Boost Technology up to 4.00 GHz  
 CPU MHz: 3600  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 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: Red Hat Enterprise Linux Server release 7.1, Kernel 3.10.0-229.el7.x86\_64  
 Compiler: C/C++: Version 16.0.0.101 of Intel C++ Studio XE for Linux;  
 Fortran: Version 16.0.0.101 of Intel Fortran Studio XE for Linux  
 Auto Parallel: No  
 File System: xfs  
 System State: Run level 3 (multi-user)

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L3 Cache: 8 MB I+D on chip per chip  
Other Cache: None  
Memory: 32 GB (2 x 16 GB 2Rx8 PC4-2133P-E)  
Disk Subsystem: 1 x 400 GB SATA III SSD  
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	8	779	140	779	139	<b>779</b>	<b>140</b>	8	779	140	779	139	<b>779</b>	<b>140</b>
416.gamess	8	<b>680</b>	<b>230</b>	673	233	681	230	8	674	233	665	235	<b>671</b>	<b>233</b>
433.milc	8	<b>510</b>	<b>144</b>	511	144	510	144	8	<b>510</b>	<b>144</b>	511	144	510	144
434.zeusmp	8	<b>305</b>	<b>238</b>	305	239	306	238	8	<b>305</b>	<b>238</b>	305	239	306	238
435.gromacs	8	198	289	200	286	<b>200</b>	<b>286</b>	8	191	300	197	290	<b>191</b>	<b>299</b>
436.cactusADM	8	<b>384</b>	<b>249</b>	383	250	384	249	8	<b>384</b>	<b>249</b>	383	250	384	249
437.leslie3d	8	789	95.4	792	94.9	<b>790</b>	<b>95.2</b>	8	789	95.4	792	94.9	<b>790</b>	<b>95.2</b>
444.namd	8	353	182	<b>351</b>	<b>183</b>	350	183	8	353	182	351	183	<b>352</b>	<b>182</b>
447.dealII	8	<b>248</b>	<b>370</b>	248	369	245	373	8	<b>248</b>	<b>370</b>	248	369	245	373
450.soplex	8	<b>631</b>	<b>106</b>	630	106	631	106	4	<b>279</b>	<b>120</b>	279	120	280	119
453.povray	8	<b>139</b>	<b>306</b>	139	306	138	308	8	121	353	<b>121</b>	<b>351</b>	122	350
454.calculix	8	189	350	190	347	<b>189</b>	<b>349</b>	8	189	350	190	347	<b>189</b>	<b>349</b>
459.GemsFDTD	8	1070	79.3	<b>1070</b>	<b>79.3</b>	1070	79.3	8	1070	79.3	<b>1070</b>	<b>79.3</b>	1070	79.3
465.tonto	8	357	220	374	210	<b>370</b>	<b>213</b>	8	<b>347</b>	<b>227</b>	342	230	348	226
470.lbm	8	<b>594</b>	<b>185</b>	594	185	594	185	8	<b>594</b>	<b>185</b>	594	185	594	185
481.wrf	8	526	170	526	170	<b>526</b>	<b>170</b>	8	526	170	526	170	<b>526</b>	<b>170</b>
482.sphinx3	8	<b>812</b>	<b>192</b>	813	192	812	192	8	<b>812</b>	<b>192</b>	813	192	812	192

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"

## Platform Notes

As tested, the system used a Supermicro CSE-731i-300B chassis. The chassis is configured with 2 PWS-305-PQ redundant power supply, 1 SNK-P0046A4 heatsink, as well as 1 FAN-0108L4 rear cooling fan.

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## Supermicro

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SPECfp\_rate\_base2006 = 191

**CPU2006 license:** 001176  
**Test sponsor:** Supermicro  
**Tested by:** Supermicro

**Test date:** Feb-2016  
**Hardware Availability:** Oct-2015  
**Software Availability:** Sep-2015

### Platform Notes (Continued)

```
Sysinfo program /usr/cpu2006/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on X10SRA-01 Tue Feb 2 12:56:15 2016
```

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:  
<http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

```
From /proc/cpuinfo
model name : Intel(R) Xeon(R) CPU E3-1270 v5 @ 3.60GHz
1 "physical id"s (chips)
8 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The
following excerpts from /proc/cpuinfo might not be reliable. Use with
caution.)
cpu cores : 4
siblings : 8
physical 0: cores 0 1 2 3
cache size : 8192 KB
```

```
From /proc/meminfo
MemTotal: 32760152 kB
HugePages_Total: 0
Hugepagesize: 2048 kB
```

```
From /etc/*release* /etc/*version*
os-release:
NAME="Red Hat Enterprise Linux Server"
VERSION="7.1 (Maipo)"
ID="rhel"
ID_LIKE="fedora"
VERSION_ID="7.1"
PRETTY_NAME="Red Hat Enterprise Linux Server 7.1 (Maipo)"
ANSI_COLOR="0;31"
CPE_NAME="cpe:/o:redhat:enterprise_linux:7.1:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.1 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.1 (Maipo)
system-release-cpe: cpe:/o:redhat:enterprise_linux:7.1:ga:server
```

```
uname -a:
Linux X10SRA-01 3.10.0-229.el7.x86_64 #1 SMP Thu Jan 29 18:37:38 EST 2015
x86_64 x86_64 x86_64 GNU/Linux
```

```
run-level 3 Feb 2 01:14
```

```
SPEC is set to: /usr/cpu2006
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 xfs 183G 13G 170G 7% /
```

Additional information from dmidecode:

Warning: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately

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## Platform Notes (Continued)

determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS American Megatrends Inc. 1.0a 12/21/2015

Memory:

2x Not Specified Not Specified

2x Samsung M391A2K43BB1-CPB 16 GB 2 rank 2133 MHz

(End of data from sysinfo program)

## General Notes

Environment variables set by runspec before the start of the run:

LD\_LIBRARY\_PATH = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64:/usr/cpu2006/sh"

Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB memory using RedHat EL 7.1

Transparent Huge Pages enabled with:

echo always > /sys/kernel/mm/transparent\_hugepage/enabled

## 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

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CPU2006 license: 001176

Test sponsor: Supermicro

Tested by: Supermicro

Test date: Feb-2016

Hardware Availability: Oct-2015

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## Base Portability Flags (Continued)

```

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:

```

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

```

### C++ benchmarks:

```

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

```

### Fortran benchmarks:

```

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch

```

### Benchmarks using both Fortran and C:

```

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-ansi-alias -opt-mem-layout-trans=3

```

## Peak Compiler Invocation

### C benchmarks:

```

icc -m64

```

### C++ benchmarks (except as noted below):

```

icpc -m64

```

```

450.soplex: icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

```

### Fortran benchmarks:

```

ifort -m64

```

### Benchmarks using both Fortran and C:

```

icc -m64 ifort -m64

```



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## 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
450.soplex: -D_FILE_OFFSET_BITS=64
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

```

## Peak Optimization Flags

C benchmarks:

433.milc: basepeak = yes

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

```

444.namd: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
         -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
         -par-num-threads=1(pass 1) -opt-mem-layout-trans=3(pass 2)
         -prof-use(pass 2) -fno-alias -auto-ilp32

```

447.dealII: basepeak = yes

```

450.soplex: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
          -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
          -par-num-threads=1(pass 1) -opt-mem-layout-trans=3(pass 2)
          -prof-use(pass 2) -opt-malloc-options=3

```

```

453.povray: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
          -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)
          -par-num-threads=1(pass 1) -opt-mem-layout-trans=3(pass 2)
          -prof-use(pass 2) -unroll4 -ansi-alias

```

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## Peak Optimization Flags (Continued)

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)  
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
-par-num-threads=1(pass 1) -prof-use(pass 2) -unroll2  
-inline-level=0 -scalar-rep-

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

465.tonto: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)  
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
-par-num-threads=1(pass 1) -prof-use(pass 2) -unroll4 -auto  
-inline-calloc -opt-malloc-options=3

Benchmarks using both Fortran and C:

435.gromacs: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)  
-ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2)  
-par-num-threads=1(pass 1) -opt-mem-layout-trans=3(pass 2)  
-prof-use(pass 2) -opt-prefetch -auto-ilp32

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-ic16.0-official-linux64.html>

<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revH.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-linux64.xml>

<http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revH.xml>



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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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