# SPEC® CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

## Supermicro

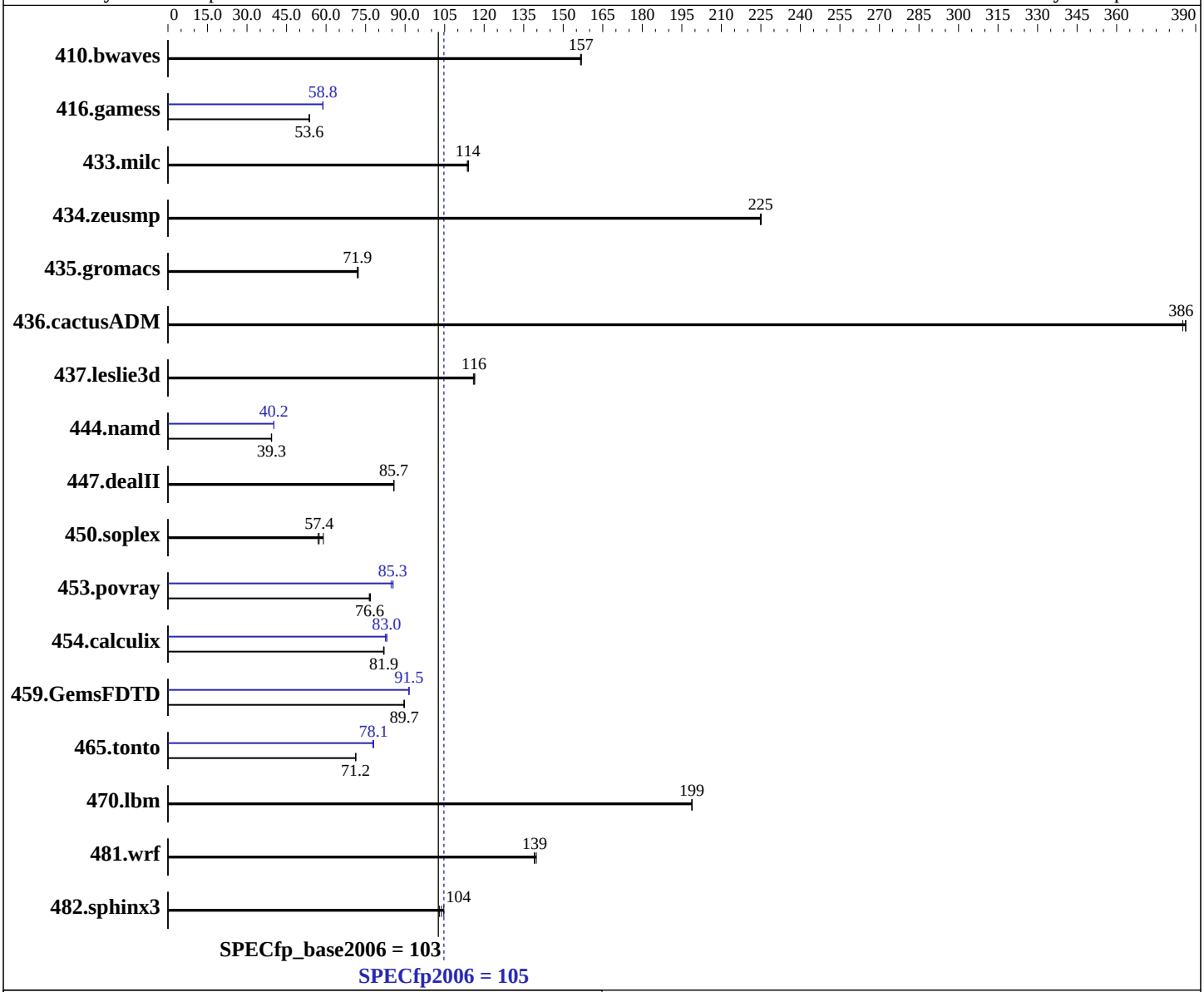
SuperServer 5019S-L
(X11SSL-F , Intel Xeon E3-1240 v6)

SPECfp®2006 = 105

SPECfp_base2006 = 103

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

**Test date:** May-2017
**Hardware Availability:** Mar-2017
**Software Availability:** Sep-2015




### Hardware

| | |
|---|---|
| CPU Name: | Intel Xeon E3-1240 v6 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 4.10 GHz |
| CPU MHz: | 3700 |
| 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 |

Continued on next page

### Software

| | |
|---|---|
| Operating System: | Red Hat Enterprise Linux Server release 7.3, Kernel 3.10.0-514.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: | Yes |
| File System: | xfs |
| System State: | Run level 3 (multi-user) |

Continued on next page

# SPEC CFP2006 Result

Copyright 2006-2017 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 5019S-L
(X11SSL-F , Intel Xeon E3-1240 v6)

SPECfp2006 = 105

SPECfp_base2006 = 103

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

**Test date:** May-2017
**Hardware Availability:** Mar-2017
**Software Availability:** Sep-2015

L3 Cache: 8 MB I+D on chip per chip
Other Cache: None
Memory: 32 GB (4 x 8 GB 1Rx8 PC4-2400T-E)
Disk Subsystem: 1 x 400 GB SATA III SSD
Other Hardware: None

Base Pointers: 64-bit
Peak Pointers: 32/64-bit
Other Software: None

## Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 86.8 | 157 | **86.7** | **157** | 86.6 | 157 | 86.8 | 157 | **86.7** | **157** | 86.6 | 157 |
| 416.gamess | 365 | 53.6 | 365 | 53.7 | **365** | **53.6** | 333 | 58.9 | **333** | **58.8** | 333 | 58.8 |
| 433.milc | 80.5 | 114 | **80.6** | **114** | 80.8 | 114 | 80.5 | 114 | **80.6** | **114** | 80.8 | 114 |
| 434.zeusmp | 40.5 | 225 | **40.5** | **225** | 40.4 | 225 | 40.5 | 225 | **40.5** | **225** | 40.4 | 225 |
| 435.gromacs | 98.8 | 72.2 | 99.3 | 71.9 | **99.2** | **71.9** | 98.8 | 72.2 | 99.3 | 71.9 | **99.2** | **71.9** |
| 436.cactusADM | **30.9** | **386** | 30.9 | 386 | 31.0 | 385 | **30.9** | **386** | 30.9 | 386 | 31.0 | 385 |
| 437.leslie3d | 80.7 | 116 | **80.9** | **116** | 81.1 | 116 | 80.7 | 116 | **80.9** | **116** | 81.1 | 116 |
| 444.namd | 204 | 39.3 | **204** | **39.3** | 205 | 39.2 | 200 | 40.2 | 199 | 40.2 | **199** | **40.2** |
| 447.dealII | 133 | 85.8 | 134 | 85.7 | **133** | **85.7** | 133 | 85.8 | 134 | 85.7 | **133** | **85.7** |
| 450.soplex | 141 | 59.0 | **145** | **57.4** | 146 | 57.0 | 141 | 59.0 | **145** | **57.4** | 146 | 57.0 |
| 453.povray | **69.4** | **76.6** | 69.6 | 76.4 | 69.3 | 76.8 | 62.3 | 85.4 | 62.8 | 84.7 | **62.4** | **85.3** |
| 454.calculix | 101 | 82.0 | **101** | **81.9** | 101 | 81.8 | 99.3 | 83.0 | **99.4** | **83.0** | 100 | 82.5 |
| 459.GemsFDTD | **118** | **89.7** | 118 | 89.7 | 119 | 89.5 | **116** | **91.5** | 116 | 91.5 | 116 | 91.4 |
| 465.tonto | 138 | 71.3 | 138 | 71.2 | **138** | **71.2** | **126** | **78.1** | 126 | 78.1 | 127 | 77.7 |
| 470.lbm | 69.1 | 199 | **69.1** | **199** | 69.1 | 199 | 69.1 | 199 | **69.1** | **199** | 69.1 | 199 |
| 481.wrf | 79.9 | 140 | 80.4 | 139 | **80.3** | **139** | 79.9 | 140 | 80.4 | 139 | **80.3** | **139** |
| 482.sphinx3 | 186 | 105 | **188** | **104** | 189 | 103 | 186 | 105 | **188** | **104** | 189 | 103 |

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

## Operating System Notes

```
Stack size set to unlimited using "ulimit -s unlimited"
```

## Platform Notes

```
Sysinfo program /usr/cpu2006/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on localhost.localdomain Mon May 22 12:48:03 2017

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 E3-1240 v6 @ 3.70GHz
```

Continued on next page

## Platform Notes (Continued)

```
        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:       32795828 kB
     HugePages_Total:       0
     Hugepagesize:       2048 kB

  From /etc/*release* /etc/*version*
     os-release:
        NAME="Red Hat Enterprise Linux Server"
        VERSION="7.3 (Maipo)"
        ID="rhel"
        ID_LIKE="fedora"
        VERSION_ID="7.3"
        PRETTY_NAME="Red Hat Enterprise Linux Server 7.3 (Maipo)"
        ANSI_COLOR="0;31"
        CPE_NAME="cpe:/o:redhat:enterprise_linux:7.3:GA:server"
     redhat-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)
     system-release: Red Hat Enterprise Linux Server release 7.3 (Maipo)
     system-release-cpe: cpe:/o:redhat:enterprise_linux:7.3:ga:server

  uname -a:
     Linux localhost.localdomain 3.10.0-514.el7.x86_64 #1 SMP Wed Oct 19 11:24:13
     EDT 2016 x86_64 x86_64 x86_64 GNU/Linux

  run-level 3 May 22 11:56

  SPEC is set to: /usr/cpu2006
     Filesystem            Type  Size  Used Avail Use% Mounted on
     /dev/mapper/rhel-root xfs    50G   11G   40G  21% /
  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
     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. 2.0a 05/15/2017
    Memory:
     4x Micron 9ASF1G72AZ-2G3A1 8 GB 1 rank 2400 MHz

  (End of data from sysinfo program)
```

## General Notes

```
Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,compact,1,0"
LD_LIBRARY_PATH = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64:/usr/cpu2006/sh"
OMP_NUM_THREADS = "4"

 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
    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 -parallel -opt-prefetch
-ansi-alias
```

C++ benchmarks:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias
```

Fortran benchmarks:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch
```

Benchmarks using both Fortran and C:
```
-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch
-ansi-alias
```

## Peak Compiler Invocation

C benchmarks:
```
icc   -m64
```

C++ benchmarks:
```
icpc  -m64
```

Fortran benchmarks:
```
ifort -m64
```

Benchmarks using both Fortran and C:
```
icc   -m64 ifort -m64
```

## Peak Portability Flags

```
Same as Base Portability Flags
```

## Peak Optimization Flags

C benchmarks:

433.milc: `basepeak = yes`

470.lbm: `basepeak = yes`

482.sphinx3: `basepeak = yes`

C++ benchmarks:

Continued on next page

## Peak Optimization Flags (Continued)

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) -prof-use(pass 2) -fno-alias -auto-ilp32

447.dealII: basepeak = yes

450.soplex: basepeak = yes

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) -prof-use(pass 2) -unroll4 -ansi-alias

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: -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 -opt-prefetch -parallel

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) -inline-calloc -opt-malloc-options=3 -auto -unroll4

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: -xCORE-AVX2 -ipo -O3 -no-prec-div -auto-ilp32 -ansi-alias

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


SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.


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

Tested with SPEC CPU2006 v1.2.
Report generated on Wed Jun 14 10:46:09 2017 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 13 June 2017.