# SPEC® CFP2006 Result
Copyright 2006-2016 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 5019S-M
(X11SSH-F , Intel Pentium G4400)

$SPECfp^{®}2006 = $ 69.7
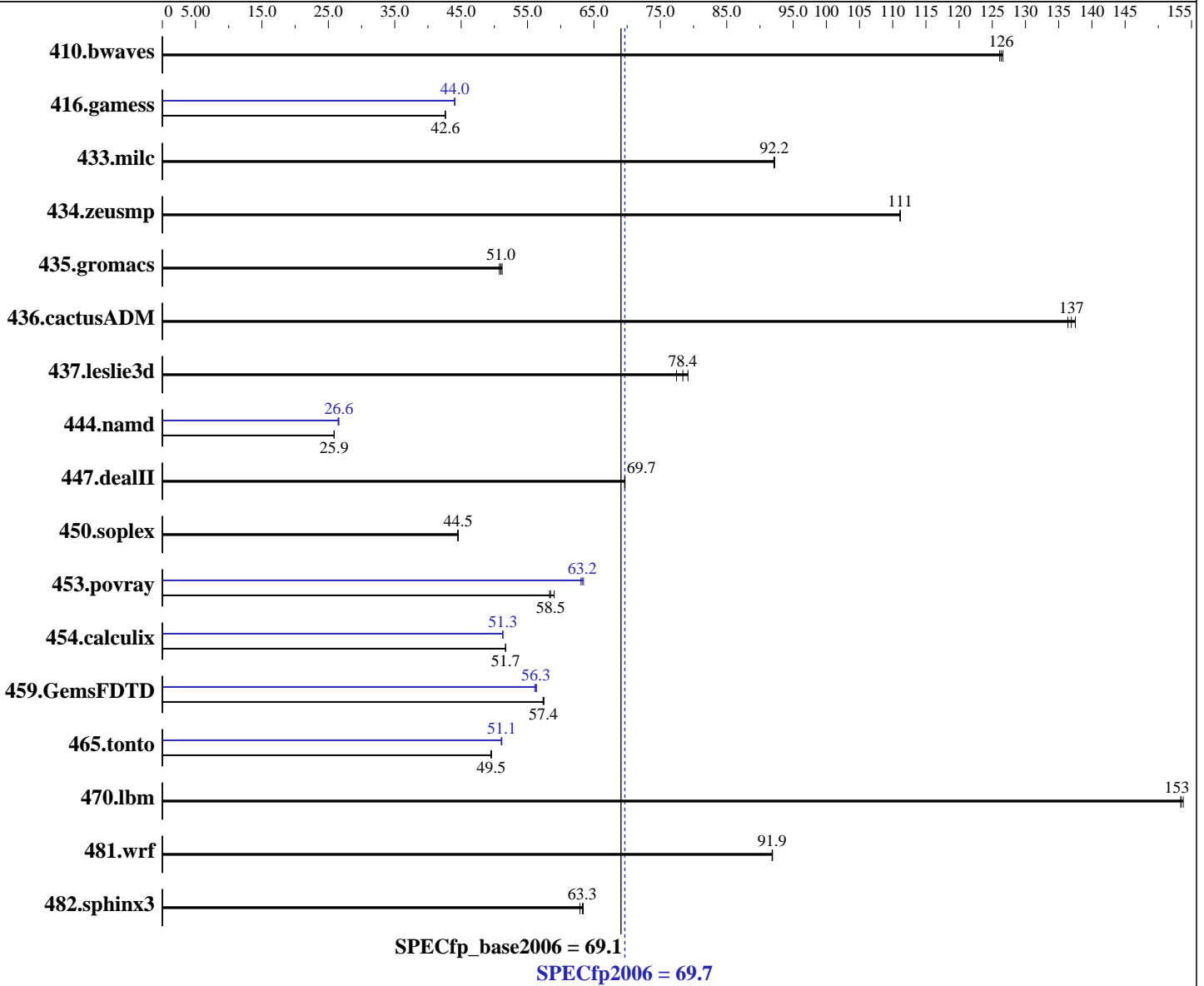
$SPECfp\_base2006 = $ 69.1

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

**Test date:** Jan-2016
**Hardware Availability:** Sep-2015
**Software Availability:** Sep-2015



| Benchmark | Result |
|-----------|--------|
| 410.bwaves | 126 |
| 416.gamess | 44.0 / 42.6 |
| 433.milc | 92.2 |
| 434.zeusmp | 111 |
| 435.gromacs | 51.0 |
| 436.cactusADM | 137 |
| 437.leslie3d | 78.4 |
| 444.namd | 26.6 / 25.9 |
| 447.dealII | 69.7 |
| 450.soplex | 44.5 |
| 453.povray | 63.2 / 58.5 |
| 454.calculix | 51.3 / 51.7 |
| 459.GemsFDTD | 56.3 / 57.4 |
| 465.tonto | 51.1 / 49.5 |
| 470.lbm | 153 |
| 481.wrf | 91.9 |
| 482.sphinx3 | 63.3 |

SPECfp_base2006 = 69.1
SPECfp2006 = 69.7

## Hardware

| | |
|---|---|
| CPU Name: | Intel Pentium G4400 |
| CPU Characteristics: | |
| CPU MHz: | 3300 |
| FPU: | Integrated |
| CPU(s) enabled: | 2 cores, 1 chip, 2 cores/chip |
| 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 7.1, 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: | Yes |
| File System: | xfs |
| System State: | Run level 3 (multi-user) |

**Continued on next page**

# SPEC CFP2006 Result
Copyright 2006-2016 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 5019S-M
(X11SSH-F , Intel Pentium G4400)

$SPECfp2006 =$ 69.7

$SPECfp\_base2006 =$ 69.1

| | |
|---|---|
| L3 Cache: | 3 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 16 GB (4 x 4 GB 1Rx8 PC4-2133P-E) |
| Disk Subsystem: | 1 x 200 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 | **108** | **126** | 107 | 127 | 108 | 126 | **108** | **126** | 107 | 127 | 108 | 126 |
| 416.gamess | 460 | 42.6 | 459 | 42.6 | **459** | **42.6** | 445 | 44.0 | 444 | 44.1 | **445** | **44.0** |
| 433.milc | 99.7 | 92.1 | 99.5 | 92.2 | **99.6** | **92.2** | 99.7 | 92.1 | 99.5 | 92.2 | **99.6** | **92.2** |
| 434.zeusmp | **81.9** | **111** | 81.9 | 111 | 81.9 | 111 | **81.9** | **111** | 81.9 | 111 | 81.9 | 111 |
| 435.gromacs | 140 | 51.2 | **140** | **51.0** | 141 | 50.8 | 140 | 51.2 | **140** | **51.0** | 141 | 50.8 |
| 436.cactusADM | 86.9 | 138 | **87.3** | **137** | 87.6 | 136 | 86.9 | 138 | **87.3** | **137** | 87.6 | 136 |
| 437.leslie3d | 121 | 77.4 | 119 | 79.2 | **120** | **78.4** | 121 | 77.4 | 119 | 79.2 | **120** | **78.4** |
| 444.namd | **310** | **25.9** | 310 | 25.9 | 310 | 25.9 | 302 | 26.6 | **302** | **26.6** | 303 | 26.5 |
| 447.dealII | 164 | 69.7 | 164 | 69.6 | **164** | **69.7** | 164 | 69.7 | 164 | 69.6 | **164** | **69.7** |
| 450.soplex | 187 | 44.6 | **187** | **44.5** | 187 | 44.5 | 187 | 44.6 | **187** | **44.5** | 187 | 44.5 |
| 453.povray | **91.0** | **58.5** | 91.2 | 58.3 | 90.1 | 59.0 | 84.4 | 63.0 | 83.9 | 63.4 | **84.1** | **63.2** |
| 454.calculix | 160 | 51.7 | 160 | 51.7 | **160** | **51.7** | 161 | 51.3 | **161** | **51.3** | 161 | 51.2 |
| 459.GemsFDTD | 185 | 57.5 | **185** | **57.4** | 185 | 57.3 | 189 | 56.1 | **189** | **56.3** | 188 | 56.3 |
| 465.tonto | **199** | **49.5** | 199 | 49.5 | 198 | 49.6 | **193** | **51.1** | 193 | 51.0 | 192 | 51.1 |
| 470.lbm | 89.6 | 153 | **89.6** | **153** | 89.4 | 154 | 89.6 | 153 | **89.6** | **153** | 89.4 | 154 |
| 481.wrf | **122** | **91.9** | 122 | 91.9 | 122 | 91.8 | **122** | **91.9** | 122 | 91.9 | 122 | 91.8 |
| 482.sphinx3 | 307 | 63.4 | **308** | **63.3** | 310 | 62.9 | 307 | 63.4 | **308** | **63.3** | 310 | 62.9 |

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 X11SSH-01 Sat Jan  9 03:16:51 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) Pentium(R) CPU G4400 @ 3.30GHz

## Supermicro

SuperServer 5019S-M
(X11SSH-F , Intel Pentium G4400)

$SPECfp2006 = $ 69.7

$SPECfp\_base2006 = $ 69.1

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

**Test date:** Jan-2016
**Hardware Availability:** Sep-2015
**Software Availability:** Sep-2015

## Platform Notes (Continued)

```
      1 "physical id"s (chips)
      2 "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 : 2
      siblings  : 2
      physical 0: cores 0 1
   cache size : 3072 KB

From /proc/meminfo
   MemTotal:       16213292 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 X11SSH-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 Jan 8 22:05

SPEC is set to: /usr/cpu2006
   Filesystem      Type  Size  Used Avail Use% Mounted on
   /dev/sda2       xfs   183G   23G  160G  13% /
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. 1.0a 12/29/2015
   Memory:
   4x Micron 9ASF51272AZ-2G1A1 4 GB 1 rank 2133 MHz

(End of data from sysinfo program)
```

# SPEC CFP2006 Result
Copyright 2006-2016 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 5019S-M
(X11SSH-F , Intel Pentium G4400)

$SPECfp2006 =$    69.7

$SPECfp\_base2006 =$    69.1

| | |
|---|---|
| **CPU2006 license:** 001176 | **Test date:** Jan-2016 |
| **Test sponsor:** Supermicro | **Hardware Availability:** Sep-2015 |
| **Tested by:** Supermicro | **Software Availability:** Sep-2015 |

## 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 = "2"

 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
```

# SPEC CFP2006 Result
Copyright 2006-2016 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 5019S-M
(X11SSH-F , Intel Pentium G4400)

$SPECfp2006 = $  69.7

$SPECfp\_base2006 = $  69.1

**CPU2006 license:** 001176

**Test sponsor:** Supermicro

**Tested by:** Supermicro

**Test date:** Jan-2016

**Hardware Availability:** Sep-2015

**Software Availability:** Sep-2015

## Base Optimization Flags

C benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -ansi-alias
```

C++ benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -opt-prefetch -ansi-alias
```

Fortran benchmarks:
```
-xSSE4.2 -ipo -O3 -no-prec-div -parallel -opt-prefetch
```

Benchmarks using both Fortran and C:
```
-xSSE4.2 -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:

> 444.namd: `-xSSE4.2(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`

Continued on next page

## Supermicro

SuperServer 5019S-M
(X11SSH-F , Intel Pentium G4400)

$SPECfp2006 =$ 69.7

$SPECfp\_base2006 =$ 69.1

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

**Test date:** Jan-2016
**Hardware Availability:** Sep-2015
**Software Availability:** Sep-2015

# Peak Optimization Flags (Continued)

```
      447.dealII: basepeak = yes

      450.soplex: basepeak = yes

      453.povray: -xSSE4.2(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: -xSSE4.2(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: -xSSE4.2(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: -xSSE4.2(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: -xSSE4.2 -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 CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

## Supermicro

SuperServer 5019S-M
(X11SSH-F , Intel Pentium G4400)

$SPECfp2006 =$ 69.7

$SPECfp\_base2006 =$ 69.1

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

**Test date:** Jan-2016
**Hardware Availability:** Sep-2015
**Software Availability:** Sep-2015

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 Tue Jan 26 15:12:21 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 26 January 2016.