## SPEC® CFP2006 Result

### Supermicro
SuperServer 5019S-L  
(X11SSL-F, Intel Xeon E3-1230 v6)

<table>
<thead>
<tr>
<th>SPECfp®2006</th>
<th>101</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECfp_base2006</td>
<td>99.3</td>
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</tbody>
</table>

**CPU2006 license:** 001176  
**Test date:** May-2017  
**Hardware Availability:** Mar-2017  
**Test sponsor:** Supermicro  
**Software Availability:** Sep-2015  
**Tested by:** Supermicro  
**Test date:** May-2017  
**Hardware Availability:** Mar-2017  
**Test sponsor:** Supermicro  
**Software Availability:** Sep-2015  
**Tested by:** Supermicro

### 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)

### Hardware
- **CPU Name:** Intel Xeon E3-1230 v6
- **CPU Characteristics:** Intel Turbo Boost Technology up to 3.90 GHz
- **CPU MHz:** 3500
- **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

### Benchmarks

<table>
<thead>
<tr>
<th>Test</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>bwaves</td>
<td>55.6</td>
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<tr>
<td>gameess</td>
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<td>milc</td>
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<tr>
<td>zeusmp</td>
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<tr>
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<td>68.2</td>
</tr>
<tr>
<td>cactusADM</td>
<td>381</td>
</tr>
<tr>
<td>leslie3d</td>
<td>116</td>
</tr>
<tr>
<td>namd</td>
<td>38.1</td>
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<tr>
<td>dealII</td>
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<td>soplex</td>
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<td>calculix</td>
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<tr>
<td>GemsFDTD</td>
<td>91.0</td>
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<tr>
<td>tonto</td>
<td>89.4</td>
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<tr>
<td>lbm</td>
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**Continued on next page**
## Results Table

<table>
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<tr>
<th>Benchmark</th>
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</tr>
</tbody>
</table>

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 Fri May 19 15:34:15 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 E3-1230 v6 @ 3.50GHz
Continued on next page
Supermicro
SuperServer 5019S-L
(X11SSL-F, Intel Xeon E3-1230 v6)

SPECfp2006 = 101
SPECfp_base2006 = 99.3

CPU2006 license: 001176
Test sponsor: Supermicro
Tested by: Supermicro
Test date: May-2017
Hardware Availability: Mar-2017
Software Availability: Sep-2015

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
cautions.)
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*
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)

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 19 15:28

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)
**SPEC CFP2006 Result**

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**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**

<table>
<thead>
<tr>
<th>Base</th>
<th>Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>410</td>
<td>dwaves: -DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>416</td>
<td>gmesh: -DSPEC_CPU_LP64</td>
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<tr>
<td>433</td>
<td>milc: -DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>434</td>
<td>zeusmp: -DSPEC_CPU_LP64</td>
</tr>
<tr>
<td>435</td>
<td>gromacs: -DSPEC_CPU_LP64 -nofor_main</td>
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<td>436</td>
<td>cactusADM: -DSPEC_CPU_LP64 -nofor_main</td>
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<tr>
<td>437</td>
<td>leslie3d: -DSPEC_CPU_LP64</td>
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<td>444</td>
<td>nAMD: -DSPEC_CPU_LP64</td>
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<td>447</td>
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<td>453</td>
<td>povray: -DSPEC_CPU_LP64</td>
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<td>454</td>
<td>calculix: -DSPEC_CPU_LP64 -nofor_main</td>
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<td>459</td>
<td>GemsFDTD: -DSPEC_CPU_LP64</td>
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<td>465</td>
<td>tonto: -DSPEC_CPU_LP64</td>
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<td>470</td>
<td>lbm: -DSPEC_CPU_LP64</td>
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<tr>
<td>481</td>
<td>wrf: -DSPEC_CPU_LP64   -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX</td>
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<tr>
<td>482</td>
<td>sphinx3: -DSPEC_CPU_LP64</td>
</tr>
</tbody>
</table>
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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:

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Supermicro
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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) -unroll14
           -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
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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 other inquiries, please contact webmaster@spec.org.

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