Supermicro
SuperServer 5019S-M
(X11SSH-F, Intel Xeon E3-1245 v5)

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

Test date: Dec-2015
Hardware Availability: Oct-2015
Software Availability: Sep-2015

SPECfp®2006 = 99.5
SPECfp_base2006 = 97.2

Hardware
CPU Name: Intel Xeon E3-1245 v5
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
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

Software
Operating System: Red Hat Enterprise Linux Server release 7.2,
Kernel 3.10.0-327.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
Supermicro
SuperServer 5019S-M
(X11SSH-F, Intel Xeon E3-1245 v5)

SPECfp2006 = 99.5
SPECfp_base2006 = 97.2

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

L3 Cache: 8 MB I+D on chip per chip
Other Cache: None
Memory: 16 GB (2 x 8 GB 2Rx8 PC4-2133P-U)
Disk Subsystem: 1 x 400 GB SATA III SSD
Other Hardware: None

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Base</td>
<td></td>
<td></td>
<td></td>
<td>Peak</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>410.bwaves</td>
<td>92.8</td>
<td>147</td>
<td>92.6</td>
<td>147</td>
<td>93.0</td>
<td>146</td>
<td>92.8</td>
<td>147</td>
<td>92.6</td>
<td>147</td>
<td>93.0</td>
<td>146</td>
</tr>
<tr>
<td>416.gamess</td>
<td>396</td>
<td>49.5</td>
<td>395</td>
<td>49.5</td>
<td>396</td>
<td>49.5</td>
<td>352</td>
<td>55.6</td>
<td>352</td>
<td>55.5</td>
<td>352</td>
<td>55.5</td>
</tr>
<tr>
<td>433.mile</td>
<td>81.1</td>
<td>113</td>
<td><strong>81.2</strong></td>
<td><strong>113</strong></td>
<td>81.5</td>
<td>113</td>
<td>81.1</td>
<td>113</td>
<td><strong>81.2</strong></td>
<td><strong>113</strong></td>
<td>81.5</td>
<td>113</td>
</tr>
<tr>
<td>434.zeusmp</td>
<td>42.7</td>
<td>213</td>
<td><strong>42.7</strong></td>
<td><strong>213</strong></td>
<td>42.7</td>
<td>213</td>
<td>42.7</td>
<td>213</td>
<td><strong>42.7</strong></td>
<td><strong>213</strong></td>
<td>42.7</td>
<td>213</td>
</tr>
<tr>
<td>435.gromacs</td>
<td>106</td>
<td>67.1</td>
<td>106</td>
<td>67.1</td>
<td>107</td>
<td>66.9</td>
<td><strong>106</strong></td>
<td><strong>67.1</strong></td>
<td>106</td>
<td>67.1</td>
<td>107</td>
<td>66.9</td>
</tr>
<tr>
<td>436.cactusADM</td>
<td>34.0</td>
<td>352</td>
<td><strong>33.2</strong></td>
<td><strong>360</strong></td>
<td>33.1</td>
<td>361</td>
<td>34.0</td>
<td>352</td>
<td><strong>33.2</strong></td>
<td><strong>360</strong></td>
<td>33.1</td>
<td>361</td>
</tr>
<tr>
<td>437.leslie3d</td>
<td>86.0</td>
<td>109</td>
<td>86.3</td>
<td>109</td>
<td><strong>86.2</strong></td>
<td><strong>109</strong></td>
<td>86.0</td>
<td>109</td>
<td>86.3</td>
<td>109</td>
<td><strong>86.2</strong></td>
<td><strong>109</strong></td>
</tr>
<tr>
<td>444.namd</td>
<td>214</td>
<td>37.5</td>
<td><strong>214</strong></td>
<td><strong>37.5</strong></td>
<td>214</td>
<td>37.5</td>
<td>210</td>
<td>38.2</td>
<td>210</td>
<td>38.2</td>
<td>210</td>
<td>38.2</td>
</tr>
<tr>
<td>447.dealII</td>
<td><strong>140</strong></td>
<td><strong>81.8</strong></td>
<td>140</td>
<td>81.7</td>
<td>140</td>
<td>81.8</td>
<td><strong>140</strong></td>
<td><strong>81.8</strong></td>
<td>140</td>
<td>81.7</td>
<td>140</td>
<td>81.8</td>
</tr>
<tr>
<td>450.soplex</td>
<td>148</td>
<td>56.3</td>
<td><strong>148</strong></td>
<td><strong>56.5</strong></td>
<td>147</td>
<td>56.6</td>
<td>148</td>
<td>56.3</td>
<td><strong>148</strong></td>
<td><strong>56.5</strong></td>
<td>147</td>
<td>56.6</td>
</tr>
<tr>
<td>453.povray</td>
<td>73.5</td>
<td>72.4</td>
<td><strong>73.5</strong></td>
<td><strong>72.4</strong></td>
<td>73.4</td>
<td>72.5</td>
<td>65.8</td>
<td>80.8</td>
<td>64.9</td>
<td>82.0</td>
<td><strong>65.2</strong></td>
<td><strong>81.6</strong></td>
</tr>
<tr>
<td>454.calculix</td>
<td>106</td>
<td>77.9</td>
<td>106</td>
<td>77.8</td>
<td>106</td>
<td>77.9</td>
<td>104</td>
<td>79.6</td>
<td><strong>104</strong></td>
<td><strong>79.5</strong></td>
<td>104</td>
<td>79.4</td>
</tr>
<tr>
<td>459.GemsFDTD</td>
<td>126</td>
<td>84.1</td>
<td>126</td>
<td>84.1</td>
<td><strong>126</strong></td>
<td><strong>84.1</strong></td>
<td>124</td>
<td>85.6</td>
<td>124</td>
<td>85.6</td>
<td><strong>124</strong></td>
<td><strong>85.6</strong></td>
</tr>
<tr>
<td>465.tonto</td>
<td>148</td>
<td>66.3</td>
<td>147</td>
<td>66.8</td>
<td><strong>148</strong></td>
<td><strong>66.6</strong></td>
<td>132</td>
<td>74.3</td>
<td>132</td>
<td>74.7</td>
<td><strong>132</strong></td>
<td><strong>74.4</strong></td>
</tr>
<tr>
<td>470.lbm</td>
<td><strong>74.5</strong></td>
<td><strong>184</strong></td>
<td>74.5</td>
<td>184</td>
<td>74.7</td>
<td>184</td>
<td><strong>74.5</strong></td>
<td><strong>184</strong></td>
<td>74.5</td>
<td>184</td>
<td>74.5</td>
<td>184</td>
</tr>
<tr>
<td>481.wrf</td>
<td><strong>85.1</strong></td>
<td><strong>131</strong></td>
<td>85.3</td>
<td>131</td>
<td>85.0</td>
<td>131</td>
<td><strong>85.1</strong></td>
<td><strong>131</strong></td>
<td>85.3</td>
<td>131</td>
<td>85.0</td>
<td>131</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>192</td>
<td>101</td>
<td><strong>192</strong></td>
<td><strong>101</strong></td>
<td>193</td>
<td>101</td>
<td>192</td>
<td>101</td>
<td><strong>192</strong></td>
<td><strong>101</strong></td>
<td>193</td>
<td>101</td>
</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

BIOS Settings:
Hyper-threading = Disabled
Sysinfo program /home/cpu2006/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1

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
Supermicro
SuperServer 5019S-M
(X11SSH-F, Intel Xeon E3-1245 v5)

SPECfp2006 = 99.5
SPECfp_base2006 = 97.2

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

Test date: Dec-2015
Hardware Availability: Oct-2015
Software Availability: Sep-2015

Platform Notes (Continued)

From /proc/cpuinfo
model name : Intel(R) Xeon(R) CPU E3-1245 v5 @ 3.50GHz
  1 "physical id"s (chips)
  4 "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 : 4
  physical 0: cores 0 1 2 3
cache size : 8192 KB

From /proc/meminfo
MemTotal: 16047792 kB
HugePages_Total: 0
Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
os-release:
  NAME="Red Hat Enterprise Linux Server"
  VERSION="7.2 (Maipo)"
  ID="rhel"
  ID_LIKE="fedora"
  VERSION_ID="7.2"
  PRETTY_NAME="Red Hat Enterprise Linux Server 7.2 (Maipo)"
  ANSI_COLOR="0;31"
  CPE_NAME="cpe:/o:redhat:enterprise_linux:7.2:GA:server"
redhat-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)
system-release: Red Hat Enterprise Linux Server release 7.2 (Maipo)

uname -a:
Linux localhost.localdomain 3.10.0-327.el7.x86_64 #1 SMP Thu Oct 29 17:29:29 EDT 2015 x86_64 x86_64 x86_64 GNU/Linux

run-level 3 Dec 15 17:13

SPEC is set to: /home/cpu2006

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 11/13/2015
Memory:
  2x Micron 16ATF1G64AZ-2G1A2 8 GB 2 rank 2133 MHz
  2x Not Specified Not Specified

Continued on next page
Supermicro
SuperServer 5019S-M
(X11SSH-F, Intel Xeon E3-1245 v5)

SPECfp2006 = 99.5
SPECfp_base2006 = 97.2

Platform Notes (Continued)
(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 = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/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.games: -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

Continued on next page
Supermicro
SuperServer 5019S-M
(X11SSH-F, Intel Xeon E3-1245 v5)

SPECfp2006 = 99.5
SPECfp_base2006 = 97.2

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

Test date: Dec-2015
Hardware Availability: Oct-2015
Software Availability: Sep-2015

Base Portability Flags (Continued)

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

Continued on next page
Supermicro
SuperServer 5019S-M
(X11SSH-F, Intel Xeon E3-1245 v5)

SPECfp2006 = 99.5
SPECfp_base2006 = 97.2

CPU2006 license: 001176
Test date: Dec-2015
Test sponsor: Supermicro
Hardware Availability: Oct-2015
Tested by: Supermicro
Software Availability: Sep-2015

Peak Optimization Flags (Continued)

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) -prof-use(pass 2) -fno-alias
            -auto-ilk32
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

Continued on next page
Supermicro
SuperServer 5019S-M
(X11SSH-F, Intel Xeon E3-1245 v5)

SPECfp2006 = 99.5
SPECfp_base2006 = 97.2

CPU2006 license: 001176
Test date: Dec-2015
Test sponsor: Supermicro
Hardware Availability: Oct-2015
Tested by: Supermicro
Software Availability: Sep-2015

Peak Optimization Flags (Continued)

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 Tue Jan 12 15:45:32 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 12 January 2016.