### SPEC® CFP2006 Result

**Supermicro**

SuperServer 6018R-TDTP  
(X10DRD-LTP, Intel Xeon E5-2603 v4)

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

**SPECfp®2006 = 67.5**  
**SPECfp_base2006 = 65.6**

### SPEC_fp2006 Results

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.bwaves</td>
<td></td>
</tr>
<tr>
<td>416.gamess</td>
<td></td>
</tr>
<tr>
<td>433.milc</td>
<td>46.5</td>
</tr>
<tr>
<td>434.zeusmp</td>
<td>140</td>
</tr>
<tr>
<td>435.gromacs</td>
<td>30.1</td>
</tr>
<tr>
<td>436.cactusADM</td>
<td></td>
</tr>
<tr>
<td>437.leslie3d</td>
<td>167</td>
</tr>
<tr>
<td>444.namd</td>
<td>15.4</td>
</tr>
<tr>
<td>447.dealII</td>
<td>34.4</td>
</tr>
<tr>
<td>450.soplex</td>
<td>26.6</td>
</tr>
<tr>
<td>453.povray</td>
<td>34.5</td>
</tr>
<tr>
<td>454.calculix</td>
<td>32.3</td>
</tr>
<tr>
<td>459.GemsFDTD</td>
<td>31.8</td>
</tr>
<tr>
<td>465.tonto</td>
<td>154</td>
</tr>
<tr>
<td>470.lbm</td>
<td>27.0</td>
</tr>
<tr>
<td>481.wrf</td>
<td>62.7</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>49.5</td>
</tr>
</tbody>
</table>

**SPECfp_base2006 = 65.6**

### Hardware

- **CPU Name:** Intel Xeon E5-2603 v4  
- **CPU Characteristics:**  
  - CPU MHz: 1700  
  - FPU: Integrated  
  - CPU(s) enabled: 12 cores, 2 chips, 6 cores/chip  
  - CPU(s) orderable: 1,2 chips  
  - 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**

---

Continue reading at http://www.spec.org/
Supermicro
SuperServer 6018R-TDTP
(X10DRD-LTP, Intel Xeon E5-2603 v4)

SPEC CFP2006 Result

SPECfp2006 = 67.5
SPECfp_base2006 = 65.6

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

L3 Cache: 15 MB I+D on chip per chip
Other Cache: None
Memory: 256 GB (8 x 32 GB 2Rx4 PC4-2400T-R, running at 1866 MHz)
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

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.bwaves</td>
<td>39.5</td>
<td>344</td>
<td>41.1</td>
<td>331</td>
<td>40.3</td>
<td>337</td>
</tr>
<tr>
<td>416.gamess</td>
<td>921</td>
<td>21.3</td>
<td>923</td>
<td>21.2</td>
<td>920</td>
<td>21.3</td>
</tr>
<tr>
<td>433.milc</td>
<td>198</td>
<td>46.4</td>
<td>197</td>
<td>46.5</td>
<td>197</td>
<td>46.5</td>
</tr>
<tr>
<td>434.zesmp</td>
<td>65.1</td>
<td>140</td>
<td>65.1</td>
<td>140</td>
<td>65.1</td>
<td>140</td>
</tr>
<tr>
<td>435.gromacs</td>
<td>237</td>
<td>30.1</td>
<td>237</td>
<td>30.1</td>
<td>237</td>
<td>30.1</td>
</tr>
<tr>
<td>436.cactusADM</td>
<td>26.4</td>
<td>452</td>
<td>26.7</td>
<td>448</td>
<td>26.7</td>
<td>448</td>
</tr>
<tr>
<td>437.leslie3d</td>
<td>56.4</td>
<td>167</td>
<td>57.2</td>
<td>164</td>
<td>56.0</td>
<td>168</td>
</tr>
<tr>
<td>444.namd</td>
<td>536</td>
<td>15.0</td>
<td>536</td>
<td>15.0</td>
<td>536</td>
<td>15.0</td>
</tr>
<tr>
<td>447.dealII</td>
<td>333</td>
<td>34.3</td>
<td>332</td>
<td>34.4</td>
<td>332</td>
<td>34.5</td>
</tr>
<tr>
<td>450.soplex</td>
<td>314</td>
<td>26.6</td>
<td>313</td>
<td>26.6</td>
<td>315</td>
<td>26.4</td>
</tr>
<tr>
<td>453.povray</td>
<td>174</td>
<td>30.5</td>
<td>175</td>
<td>30.4</td>
<td>175</td>
<td>30.4</td>
</tr>
<tr>
<td>454.calculix</td>
<td>259</td>
<td>31.8</td>
<td>259</td>
<td>31.8</td>
<td>260</td>
<td>31.8</td>
</tr>
<tr>
<td>459.GemsFDTD</td>
<td>69.2</td>
<td>153</td>
<td>67.3</td>
<td>158</td>
<td>68.7</td>
<td>154</td>
</tr>
<tr>
<td>465.tonto</td>
<td>364</td>
<td>27.0</td>
<td>365</td>
<td>27.0</td>
<td>364</td>
<td>27.0</td>
</tr>
<tr>
<td>470.lbm</td>
<td>31.9</td>
<td>430</td>
<td>32.3</td>
<td>426</td>
<td>32.1</td>
<td>428</td>
</tr>
<tr>
<td>481.wrf</td>
<td>178</td>
<td>62.7</td>
<td>182</td>
<td>61.3</td>
<td>175</td>
<td>63.7</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>395</td>
<td>49.4</td>
<td>391</td>
<td>49.8</td>
<td>394</td>
<td>49.5</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:
Early Snoop = Disable
Sysinfo program /home/cpu2006_ic16/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on localhost.localdomain Tue May 17 16:16:02 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

Continued on next page
SPEC CFP2006 Result

Supermicro
SuperServer 6018R-TDTP
(X10DRD-LTP, Intel Xeon E5-2603 v4)

SPECfp2006 = 67.5
SPECfp_base2006 = 65.6

CPU2006 license: 001176
Test date: May-2016
Test sponsor: Supermicro
Hardware Availability: Mar-2016
Tested by: Supermicro
Software Availability: Sep-2015

Platform Notes (Continued)

From /proc/cpuinfo
model name : Intel(R) Xeon(R) CPU E5-2603 v4@ 1.70GHz
  2 "physical id"s (chips)
  12 "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 : 6
siblings : 6
physical 0: cores 0 1 2 3 4 5
physical 1: cores 0 1 2 3 4 5
cache size : 15360 KB

From /proc/meminfo
MemTotal: 263863552 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 May 16 09:37

SPEC is set to: /home/cpu2006_ic16
  Filesystem Type Size Used Avail Use% Mounted on
  /dev/mapper/rhel-home xfs 216G 5.8G 211G 3% /home

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. 2.0 02/26/2016
Memory:
  8x Micron 36ASF4G72PZ-2G3A1 32 GB 2 rank 2400 MHz, configured at 1866 MHz
Continued on next page
Supermicro
SuperServer 6018R-TDTP
(X10DRD-LTP, Intel Xeon E5-2603 v4)

SPECfp2006 = 67.5
SPECfp_base2006 = 65.6

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

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_ic16/libs/32:/home/cpu2006_ic16/libs/64:/home/cpu2006_ic16/sh"
OMP_NUM_THREADS = "12"

Binaries compiled on a system with 1x Intel Core i5-4670K CPU + 32GB
core 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

Continued on next page
## SPEC CFP2006 Result

**Supermicro**  
SuperServer 6018R-TDTP  
(X10DRD-LTP, Intel Xeon E5-2603 v4)  

<table>
<thead>
<tr>
<th>SPECfp2006</th>
<th>67.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECfp_base2006</td>
<td>65.6</td>
</tr>
</tbody>
</table>

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

### Base Portability Flags

<table>
<thead>
<tr>
<th>Base Portability Flags (Continued)</th>
</tr>
</thead>
<tbody>
<tr>
<td>481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX</td>
</tr>
<tr>
<td>482.sphinx3: -DSPEC_CPU_LP64</td>
</tr>
</tbody>
</table>

### 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:

---

Continued on next page

---
Supermicro
SuperServer 6018R-TDTP
(X10DRD-LTP, Intel Xeon E5-2603 v4)

SPECfp2006 = 67.5
SPECfp_base2006 = 65.6

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

Test date: May-2016
Hardware Availability: Mar-2016
Software Availability: Sep-2015

Peak Optimization Flags (Continued)

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) -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
Supermicro
SuperServer 6018R-TDTP (X10DRD-LTP, Intel Xeon E5-2603 v4)

SPECfp2006 = 67.5
SPECfp_base2006 = 65.6

CPU2006 license: 001176
Test sponsor: Supermicro
Test date: May-2016
Tested by: Supermicro
Hardware Availability: Mar-2016
Software Availability: Sep-2015

Peak Optimization Flags (Continued)

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.
Originally published on 14 June 2016.