Supermicro C7H170-M motherboard (C7H170-M, Intel Core i7-6700K)

<table>
<thead>
<tr>
<th>CPU2006 license</th>
<th>001176</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test sponsor</td>
<td>Supermicro</td>
</tr>
<tr>
<td>Tested by</td>
<td>Supermicro</td>
</tr>
<tr>
<td>Test date</td>
<td>Oct-2015</td>
</tr>
<tr>
<td>Hardware Availability</td>
<td>Aug-2015</td>
</tr>
<tr>
<td>Software Availability</td>
<td>Sep-2014</td>
</tr>
</tbody>
</table>

### Software

<table>
<thead>
<tr>
<th>Software</th>
<th>Operating System</th>
<th>Compiler</th>
<th>Auto Parallel</th>
<th>File System</th>
<th>System State</th>
<th>Base Pointers</th>
<th>Peak Pointers</th>
<th>Other Software</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Red Hat Enterprise Linux Server release 7.1, Kernel 3.10.0-229.el7.x86_64</td>
<td>C/C++: Version 15.0.0.0.090 of Intel C++ Studio XE for Linux</td>
<td>No</td>
<td>xfs</td>
<td>Run level 3 (multi-user)</td>
<td>32-bit</td>
<td>32/64-bit</td>
<td>Microquill SmartHeap V10.0</td>
</tr>
</tbody>
</table>

### Hardware

<table>
<thead>
<tr>
<th>Hardware</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU Name</td>
<td>Intel Core i7-6700K</td>
</tr>
<tr>
<td>CPU Characteristics</td>
<td>Intel Turbo Boost Technology up to 4.20 GHz</td>
</tr>
<tr>
<td>CPU MHz</td>
<td>4000</td>
</tr>
<tr>
<td>FPU</td>
<td>Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled</td>
<td>4 cores, 1 chip, 4 cores/chip, 2 threads/core</td>
</tr>
<tr>
<td>CPU(s) orderable</td>
<td>1 chip</td>
</tr>
<tr>
<td>Primary Cache</td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td>Secondary Cache</td>
<td>256 KB I+D on chip per core</td>
</tr>
<tr>
<td>L3 Cache</td>
<td>8 MB I+D on chip per chip</td>
</tr>
<tr>
<td>Other Cache</td>
<td>None</td>
</tr>
<tr>
<td>Memory</td>
<td>16 GB (4 x 4 GB 1Rx8 PC4-2800R-U, running at 2133 MHz)</td>
</tr>
<tr>
<td>Disk Subsystem</td>
<td>1 x 200 GB SATA III SSD</td>
</tr>
<tr>
<td>Other Hardware</td>
<td>None</td>
</tr>
</tbody>
</table>

### Benchmark Results

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>SPECint_rate2006</th>
<th>SPECint_rate_base2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>perlbench</td>
<td>263</td>
<td>256</td>
</tr>
<tr>
<td>bzip2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>gcc</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mcf</td>
<td></td>
<td></td>
</tr>
<tr>
<td>gobmk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>hammer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sjeng</td>
<td></td>
<td></td>
</tr>
<tr>
<td>libquantum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>h264ref</td>
<td></td>
<td></td>
</tr>
<tr>
<td>omnetpp</td>
<td></td>
<td></td>
</tr>
<tr>
<td>astar</td>
<td></td>
<td></td>
</tr>
<tr>
<td>xalancbmk</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**SPECint_rate2006 = 263**

**SPECint_rate_base2006 = 256**
Supermicro C7H170-M motherboard (C7H170-M, Intel Core i7-6700K)

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

SPECint_rate2006 = 263
SPECint_rate_base2006 = 256

Test date: Oct-2015
Hardware Availability: Aug-2015
Software Availability: Sep-2014

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Base</th>
<th>Peak</th>
<th>Base</th>
<th>Peak</th>
<th>Base</th>
<th>Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Copies</td>
<td>Seconds</td>
<td>Ratio</td>
<td>Seconds</td>
<td>Ratio</td>
<td>Copies</td>
</tr>
<tr>
<td>400.perlbench</td>
<td>8</td>
<td>366</td>
<td>213</td>
<td>369</td>
<td>212</td>
<td>367</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>8</td>
<td>639</td>
<td>121</td>
<td>625</td>
<td>124</td>
<td>621</td>
</tr>
<tr>
<td>403.mcf</td>
<td>8</td>
<td>312</td>
<td>206</td>
<td>310</td>
<td>208</td>
<td>312</td>
</tr>
<tr>
<td>429.mcf</td>
<td>8</td>
<td>271</td>
<td>269</td>
<td>273</td>
<td>267</td>
<td>264</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>8</td>
<td>469</td>
<td>179</td>
<td>475</td>
<td>177</td>
<td>475</td>
</tr>
<tr>
<td>456.hmer</td>
<td>8</td>
<td>173</td>
<td>432</td>
<td>172</td>
<td>433</td>
<td>172</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>8</td>
<td>496</td>
<td>195</td>
<td>498</td>
<td>195</td>
<td>495</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>8</td>
<td>70.8</td>
<td>2340</td>
<td>69.5</td>
<td>2390</td>
<td>69.5</td>
</tr>
<tr>
<td>464.h264ref</td>
<td>8</td>
<td>515</td>
<td>344</td>
<td>519</td>
<td>341</td>
<td>544</td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>8</td>
<td>438</td>
<td>114</td>
<td>439</td>
<td>114</td>
<td>438</td>
</tr>
<tr>
<td>473.astar</td>
<td>8</td>
<td>415</td>
<td>135</td>
<td>413</td>
<td>136</td>
<td>413</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>8</td>
<td>193</td>
<td>286</td>
<td>191</td>
<td>289</td>
<td>192</td>
</tr>
</tbody>
</table>

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

Submit Notes

The taskset mechanism was used to bind copies to processors. The config file option 'submit' was used to generate taskset commands to bind each copy to a specific processor. For details, please see the config file.

Operating System Notes

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

Platform Notes

As tested, the system used a Supermicro CSE-743TQ-865B-SQ chassis.
The chassis is configured with a PWS-865-PQ power supply, 1 SNK-P0046A4 heatsink, as well as 1 PAN-0103L4 rear fan and 2 PAN-0104L4 chassis fan.

Sysinfo program /usr/cpu2006/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on C7H170-01 Sat Oct 31 07:11:52 2015

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) Core(TM) i7-6700K CPU @ 4.00GHz
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.)

Continued on next page
Supermicro

Supermicro C7H170-M motherboard
(C7H170-M, Intel Core i7-6700K)

SPECint_rate2006 = 263
SPECint_rate_base2006 = 256

Platform Notes (Continued)

cpu cores : 4
siblings : 8
physical 0: cores 0 1 2 3
cache size : 8192 KB

From /proc/meminfo
MemTotal: 16334168 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)

uname -a:
Linux C7H170-01 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 Oct 31 03:13

SPEC is set to: /usr/cpu2006
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 xfs 183G 24G 159G 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. T20151015150001 10/15/2015
Memory:
4x 0420 F4-2800C16-4GRK 4 GB 1 rank 2133 MHz

(End of data from sysinfo program)

General Notes

Environment variables set by runspec before the start of the run:
LD_LIBRARY_PATH = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64:/usr/cpu2006/sh"

Continued on next page
Supermicro C7H170-M motherboard
(C7H170-M, Intel Core i7-6700K)

SUPERCINT_RATE2006 = 263
SUPERCINT_RATE_BASE2006 = 256

CPU2006 license: 001176
Test sponsor: Supermicro
Test date: Oct-2015
Tested by: Supermicro
Hardware Availability: Aug-2015
Software Availability: Sep-2014

General Notes (Continued)

Binaries compiled on a system with 1x Core i5-4670K CPU + 16GB memory using RedHat EL 7.0
Transparent Huge Pages enabled with:
  echo always > /sys/kernel/mm/transparent_hugepage/enabled

Base Compiler Invocation

C benchmarks:
  icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

C++ benchmarks:
  icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

Base Portability Flags

400.perlbench: -DSPEC_CPU_LINUX_IA32
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
  -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch

C++ benchmarks:
  -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -Wl,-z,muldefs
  -L/sh -lsmartheap

Base Other Flags

C benchmarks:
  403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):
  icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

400.perlbench: icc -m64

Continued on next page
Supermicro  
Supermicro C7H170-M motherboard  
(C7H170-M, Intel Core i7-6700K)  

SPECint_rate2006 = 263  
SPECint_rate_base2006 = 256  

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

Test date: Oct-2015  
Hardware Availability: Aug-2015  
Software Availability: Sep-2014  

Peak Compiler Invocation (Continued)

401.bzip2: icc -m64
456.hmmer: icc -m64
458.sjeng: icc -m64

C++ benchmarks:
icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32

Peak Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LINUX
483.xalancbmk: -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

400.perlbench: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -auto-ilp32
401.bzip2: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -opt-prefetch -auto-ilp32 -ansi-alias
403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div
429.mcf: basepeak = yes
445.gobmk: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -ansi-alias
456.hmmer: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32
458.sjeng: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll4 -auto-ilp32
462.libquantum: basepeak = yes

Continued on next page
Supermicro
Supermicro C7H170-M motherboard
(C7H170-M, Intel Core i7-6700K)

SPECint\_rate\_2006 = 263
SPECint\_rate\_base\_2006 = 256

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

Test date: Oct-2015
Hardware Availability: Aug-2015
Software Availability: Sep-2014

Peak Optimization Flags (Continued)

464.h264ref: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-o3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-unroll2 -ansi-alias

C++ benchmarks:

471.omnetpp: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-o3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-ansi-alias -opt-ra-region-strategy=block -Wl,-z,muldefs
-L/sh -lsmartheap

473.astar: basepeak = yes
483.xalanchbmk: basepeak = yes

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.html
http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revG.20141230.00.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic15.0-official-linux64.xml
http://www.spec.org/cpu2006/flags/Supermicro-Platform-Settings-V1.2-revG.20141230.00.xml

SPEC and SPECint 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 17 November 2015.