**Supermicro**

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

<table>
<thead>
<tr>
<th>Hardware</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPU Name:</strong></td>
<td>Intel Core i7-6700</td>
</tr>
<tr>
<td><strong>CPU Characteristics:</strong></td>
<td>Intel Turbo Boost Technology up to 4.00 GHz</td>
</tr>
<tr>
<td><strong>CPU MHz:</strong></td>
<td>3400</td>
</tr>
<tr>
<td><strong>FPU:</strong></td>
<td>Integrated</td>
</tr>
<tr>
<td><strong>CPU(s) enabled:</strong></td>
<td>4 cores, 1 chip, 4 cores/chip, 2 threads/core</td>
</tr>
<tr>
<td><strong>CPU(s) orderable:</strong></td>
<td>1 chip</td>
</tr>
<tr>
<td><strong>Primary Cache:</strong></td>
<td>32 KB I + 32 KB D on chip per core</td>
</tr>
<tr>
<td><strong>Secondary Cache:</strong></td>
<td>256 KB I+D on chip per core</td>
</tr>
<tr>
<td><strong>L3 Cache:</strong></td>
<td>8 MB I+D on chip per chip</td>
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<tr>
<td><strong>Other Cache:</strong></td>
<td>None</td>
</tr>
<tr>
<td><strong>Memory:</strong></td>
<td>16 GB (4 x 4 GB 1Rx8 PC4-2800R-U, running at 2133 MHz)</td>
</tr>
<tr>
<td><strong>Disk Subsystem:</strong></td>
<td>1 x 200 GB SATA III SSD</td>
</tr>
<tr>
<td><strong>Other Hardware:</strong></td>
<td>None</td>
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<tr>
<td><strong>Operating System:</strong></td>
<td>Red Hat Enterprise Linux Server release 7.1, Kernel 3.10.0-229.el7.x86_64</td>
</tr>
<tr>
<td><strong>Compiler:</strong></td>
<td>C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux</td>
</tr>
<tr>
<td><strong>Auto Parallel:</strong></td>
<td>No</td>
</tr>
<tr>
<td><strong>File System:</strong></td>
<td>xfs</td>
</tr>
<tr>
<td><strong>System State:</strong></td>
<td>Run level 3 (multi-user)</td>
</tr>
<tr>
<td><strong>Base Pointers:</strong></td>
<td>32-bit</td>
</tr>
<tr>
<td><strong>Peak Pointers:</strong></td>
<td>32/64-bit</td>
</tr>
<tr>
<td><strong>Other Software:</strong></td>
<td>Microquill SmartHeap V10.0</td>
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</tbody>
</table>

**SPECint**

| SPECint_rate2006 | 246 |
| SPECint_rate_base2006 | 238 |

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

**Copies**

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<th>Benchmark</th>
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<th>SPECint_rate_base2006</th>
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<tr>
<td>400.perlbench</td>
<td>234</td>
<td>230</td>
</tr>
<tr>
<td>401.bzip2</td>
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<td>115</td>
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<tr>
<td>403.gcc</td>
<td>197</td>
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<td>429.mcf</td>
<td>268</td>
<td>268</td>
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<tr>
<td>445.gobmk</td>
<td>157</td>
<td>160</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>444</td>
<td>398</td>
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<tr>
<td>458.sjeng</td>
<td>179</td>
<td>176</td>
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<tr>
<td>462.libquantum</td>
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<td>464.h264ref</td>
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<tr>
<td>471.omnetpp</td>
<td>114</td>
<td>112</td>
</tr>
<tr>
<td>473.astar</td>
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<tr>
<td>483.xalancbmk</td>
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</tbody>
</table>

**Software**

- Operating System: Red Hat Enterprise Linux Server release 7.1, Kernel 3.10.0-229.el7.x86_64
- Compiler: C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux
- Auto Parallel: No
- File System: xfs
- System State: Run level 3 (multi-user)
- Base Pointers: 32-bit
- Peak Pointers: 32/64-bit
- Other Software: Microquill SmartHeap V10.0
SPEC CINT2006 Result

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

SPECint_rate2006 = 246
SPECint_rate_base2006 = 238

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

Results Table

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<tr>
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<th>Seconds</th>
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<td>8</td>
<td>206</td>
<td>268</td>
<td>205</td>
<td>269</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 Tue Oct 20 03:01:56 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) i7-6700 CPU @ 3.40GHz
 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 i7-6700)

SPECint_rate2006 = 246
SPECint_rate_base2006 = 238

Platform Notes (Continued)

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

From /proc/meminfo
MemTotal: 16334164 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 20 02:57

SPEC is set to: /usr/cpu2006
Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 xfs 183G 18G 166G 10% /

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
## SPEC CINT2006 Result

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

<table>
<thead>
<tr>
<th>SPECint_rate2006 =</th>
<th>246</th>
</tr>
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<tbody>
<tr>
<td>SPECint_rate_base2006 =</td>
<td>238</td>
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</table>

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

**Test date:** Oct-2015  
**Hardware Availability:** Sep-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:**
```sh
icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32
```

**C++ benchmarks:**
```sh
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:**
```sh
-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
```

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

### Base Other Flags

**C benchmarks:**
```sh
403.gcc: -Dalloca=_alloca
```

### Peak Compiler Invocation

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

```sh
400.perlbench: icc -m64
```
Supermicro
Supermicro C7H170-M motherboard
(C7H170-M, Intel Core i7-6700)

| SPECint_rate2006 | 246 |
| SPECint_rate_base2006 | 238 |

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

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

Peak Compiler Invocation (Continued)

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<tr>
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<th>Compiler Flags</th>
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</thead>
<tbody>
<tr>
<td>401.bzip2</td>
<td>icc -m64</td>
</tr>
<tr>
<td>456.hmmer</td>
<td>icc -m64</td>
</tr>
<tr>
<td>458.sjeng</td>
<td>icc -m64</td>
</tr>
</tbody>
</table>

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

Peak Portability Flags

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>-DSPEC_CPU_LP64</td>
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<tr>
<td>456.hmmer</td>
<td>-DSPEC_CPU_LP64</td>
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<tr>
<td>458.sjeng</td>
<td>-DSPEC_CPU_LP64</td>
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<tr>
<td>462.libquantum</td>
<td>-DSPEC_CPU_LINUX</td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>-DSPEC_CPU_LINUX</td>
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</table>

Peak Optimization Flags

C benchmarks:

<table>
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<tr>
<th>Benchmark</th>
<th>Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>400.perlbench</td>
<td>-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</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>-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</td>
</tr>
<tr>
<td>403.gcc</td>
<td>-xCORE-AVX2 -ipo -O3 -no-prec-div</td>
</tr>
<tr>
<td>429.mcf</td>
<td>basepeak = yes</td>
</tr>
<tr>
<td>445.gobmk</td>
<td>-xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2) -ansi-alias</td>
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<tr>
<td>456.hmmer</td>
<td>-xCORE-AVX2 -ipo -O3 -no-prec-div -unroll12 -auto-ilp32</td>
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<td>458.sjeng</td>
<td>-xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2) -O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2) -unroll14 -auto-ilp32</td>
</tr>
<tr>
<td>462.libquantum</td>
<td>basepeak = yes</td>
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</tbody>
</table>

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

SPECint_rate2006 = 246
SPECint_rate_base2006 = 238

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

Test date: Oct-2015
Hardware Availability: Sep-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.xalanchbm: 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

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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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