Supermicro
Supermicro C7Z170-OCE motherboard
(C7Z170-OCE , Intel Core i5-6400T)

SPEClnt®_rate2006 = 159
SPEClnt_rate_base2006 = 154

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

50.0 100.0 150.0 200.0 250.0 300.0 350.0 400.0 450.0 500.0 550.0 600.0 650.0 700.0 750.0 800.0 850.0 900.0 950.0 1000.0 1050.0 1100.0 1150.0 1200.0 1250.0 1300.0 1350.0 1400.0 1450.0 1500.0

400.perlbench
401.bzip2
403.gcc
429.mcf
445.gobmk
456.hmmer
458.sjeng
462.libquantum
464.h264ref
471.omnetpp
473.astar
483.xalancbmk

Hardware
CPU Name: Intel Core i5-6400T
CPU Characteristics: Intel Turbo Boost Technology up to 2.80 GHz
CPU MHz: 2200
FPU: Integrated
CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 256 KB I+D on chip per core
L3 Cache: 6 MB I+D on chip per chip
Other Cache: None
Memory: 16 GB (4 x 4 GB 1Rx8 PC4-2800R-U, running at 2133 MHz)
Disk Subsystem: 1 x 200 GB SATA III SSD
Other Hardware: None

Software
Operating System: Red Hat Enterprise Linux Server release 7.1,
                      Kernel 3.10.0-229.el7.x86_64
Compiler: C/C++: Version 16.0.0.101 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 V10.2
Supermicro
Supermicro C7Z170-OCE motherboard
(C7Z170-OCE, Intel Core i5-6400T)

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

SPECint_rate2006 = 159
SPECint_rate_base2006 = 154

Test date: Jan-2016
Hardware Availability: Sep-2015
Software Availability: Sep-2015

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</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>400.perlbench</td>
<td>4</td>
<td>325</td>
<td>120</td>
<td>325</td>
<td>120</td>
<td>325</td>
<td>120</td>
<td>325</td>
<td>120</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>401.bzip2</td>
<td>4</td>
<td>583</td>
<td>66.3</td>
<td>581</td>
<td>66.4</td>
<td>583</td>
<td>66.2</td>
<td>547</td>
<td>70.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>403.gcc</td>
<td>4</td>
<td>267</td>
<td>121</td>
<td>266</td>
<td>121</td>
<td>265</td>
<td>121</td>
<td>265</td>
<td>121</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>429.mcf</td>
<td>4</td>
<td>188</td>
<td>194</td>
<td>189</td>
<td>193</td>
<td>189</td>
<td>193</td>
<td>188</td>
<td>194</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>445.gobmk</td>
<td>4</td>
<td>486</td>
<td>86.3</td>
<td>487</td>
<td>86.2</td>
<td>487</td>
<td>86.1</td>
<td>495</td>
<td>84.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>456.hmmer</td>
<td>4</td>
<td>157</td>
<td>237</td>
<td>157</td>
<td>238</td>
<td>159</td>
<td>235</td>
<td>149</td>
<td>250</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>458.sjeng</td>
<td>4</td>
<td>489</td>
<td>99.0</td>
<td>488</td>
<td>99.1</td>
<td>488</td>
<td>99.1</td>
<td>460</td>
<td>105</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>462.libquantum</td>
<td>4</td>
<td>53.7</td>
<td>1540</td>
<td>53.7</td>
<td>1540</td>
<td>53.8</td>
<td>1540</td>
<td>53.7</td>
<td>1540</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>464.h264ref</td>
<td>4</td>
<td>458</td>
<td>193</td>
<td>457</td>
<td>194</td>
<td>457</td>
<td>194</td>
<td>450</td>
<td>197</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>471.omnetpp</td>
<td>4</td>
<td>293</td>
<td>85.2</td>
<td>293</td>
<td>85.4</td>
<td>292</td>
<td>85.6</td>
<td>279</td>
<td>89.6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>473.astar</td>
<td>4</td>
<td>335</td>
<td>83.8</td>
<td>335</td>
<td>83.7</td>
<td>335</td>
<td>83.9</td>
<td>335</td>
<td>83.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>483.xalancbmk</td>
<td>4</td>
<td>129</td>
<td>214</td>
<td>129</td>
<td>215</td>
<td>128</td>
<td>215</td>
<td>129</td>
<td>215</td>
<td></td>
<td></td>
<td></td>
<td></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-1200B-SQ chassis. The chassis is configured with a PWS-1K25P-PQ power supply, 1 SNK-P0051AP4 heatsink, as well as 1 FAN-0103L4 rear fan and 2 FAN-0104L4 chassis fan.
Sysinfo program /usr/cpu2006/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1 running on C7Z170-01 Tue Jan 5 15:49:15 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

From /proc/cpuinfo
model name : Intel(R) Core(TM) i5-6400T CPU @ 2.20GHz
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
Continued on next page
SPEC CINT2006 Result

Supermicro

Supermicro C7Z170-OCE motherboard
(C7Z170-OCE , Intel Core i5-6400T)

| SPECint_rate2006 | = 159 |
| SPECint_rate_base2006 | = 154 |

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

Test date: Jan-2016
Hardware Availability: Sep-2015
Software Availability: Sep-2015

Platform Notes (Continued)

caution.)
cpu cores : 4
siblings : 4
physical 0: cores 0 1 2 3
cache size : 6144 KB

From /proc/meminfo
MemTotal: 16206808 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 C7Z170-01 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 Jan 5 04:57

SPEC is set to: /usr/cpu2006

Filesystem Type Size Used Avail Use% Mounted on
/dev/sda2 xfs 183G 32G 151G 18% /

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. 1.0 12/14/2015
Memory:
4x 0420 F4-2800C16-4GRK 4 GB 1 rank 2133 MHz

(End of data from sysinfo program)
Supermicro C7Z170-OCE motherboard
(C7Z170-OCE, Intel Core i5-6400T)
Supermicro
Supermicro C7Z170-OCE motherboard
(C7Z170-OCE, Intel Core i5-6400T)

**SPEC CINT2006 Result**

| SPECint_rate2006 = | 159 |
| SPECint_rate_base2006 = | 154 |

**CPU2006 license:** 001176

**Test sponsor:** Supermicro

**Tested by:** Supermicro

**Test date:** Jan-2016

**Hardware Availability:** Sep-2015

**Software Availability:** Sep-2015

**Base Other Flags (Continued)**

403.gcc: -Dalloca=_alloca

**Peak Compiler Invocation**

C benchmarks (except as noted below):

- icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

**C benchmarks (Continued)**

- icc -m64

- icc -m64

- icc -m64

- icc -m64

- icc -m64

- icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

**Peak Portability Flags**

- D_FILE_OFFSET_BITS=64

- DSPEC_CPU_LP64

- DSPEC_CPU_LINUX_X64

**C++ benchmarks:**

- icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

**Peak Optimization Flags**

C benchmarks:

- -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)

- -auto-ilp32

- D_FILE_OFFSET_BITS=64

Continued on next page
Supermicro
Supermicro C7Z170-OCE motherboard
(C7Z170-OCE, Intel Core i5-6400T)

SPEC_int_rate2006 = 159
SPECint_rate_base2006 = 154

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

Peak Optimization Flags (Continued)

403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div

429.mcf: basepeak = yes

445.gobmk: -xCORE-AVX2 (pass 2) -prof-gen:threadsafe (pass 1)
           -prof-use (pass 2) -par-num-threads=1 (pass 1) -ansi-alias

456.hmmer: -xCORE-AVX2 -ipo -O3 -no-prec-div -unroll2 -auto-ilp32

458.sjeng: -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
           -auto-ilp32

462.libquantum: basepeak = yes

464.h264ref: -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
             -ansi-alias

C++ benchmarks:

471.omnetpp: -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) -ansi-alias
             -opt-ra-region-strategy=block
             -L/sh -lsmartheap

473.astar: basepeak = yes

483.xalancbmk: 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-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
## Supermicro C7Z170-OCE Result

<table>
<thead>
<tr>
<th>SPECint_rate2006</th>
<th>159</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECint_rate_base2006</td>
<td>154</td>
</tr>
</tbody>
</table>

### System Details
- **Supermicro C7Z170-OCE motherboard**
- **CPU**: Intel Core i5-6400T
- **CPU2006 license**: 001176
- **Test sponsor**: Supermicro
- **Tested by**: Supermicro
- **Test date**: Jan-2016
- **Hardware Availability**: Sep-2015
- **Software Availability**: Sep-2015

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.
Report generated on Tue Jan 26 15:11:51 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 26 January 2016.