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

SPECint®2006 = 63.5
SPECint_base2006 = 61.7

Hardware
CPU Name: Intel Core i5-6400
CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz
CPU MHz: 2700
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
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: Yes
File System: xfs
System State: Run level 3 (multi-user)
Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: Microquill SmartHeap V10.2

CPU2006 license: 001176
Test sponsor: Supermicro
Tested by: Supermicro
Test date: Jan-2016
Hardware Availability: Sep-2015
Software Availability: Sep-2015
Supermicro
Supermicro C7Z170-OCE motherboard
(C7Z170-OCE, Intel Core i5-6400)

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CPU2006 license: 001176
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Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
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<tbody>
<tr>
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<td>42.0</td>
<td>233</td>
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<td>41.9</td>
<td>210</td>
<td>46.6</td>
<td>209</td>
<td>46.7</td>
</tr>
<tr>
<td>401.bzip2</td>
<td>374</td>
<td>25.8</td>
<td>373</td>
<td>25.8</td>
<td>373</td>
<td>25.9</td>
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<td>26.2</td>
<td>368</td>
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<tr>
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<td>123</td>
<td>74.0</td>
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<td>355</td>
<td>29.5</td>
<td>355</td>
<td>29.5</td>
<td>356</td>
<td>29.5</td>
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<td>356</td>
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<td>108</td>
<td>86.3</td>
<td>108</td>
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<td>86.5</td>
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<td>34.2</td>
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<td>193</td>
<td>32.4</td>
<td>194</td>
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<td>161</td>
<td>38.7</td>
<td>162</td>
<td>38.5</td>
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<td>473.astar</td>
<td>203</td>
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<td>204</td>
<td>34.4</td>
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<td>204</td>
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<tr>
<td>483.xalancbmk</td>
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<td>83.7</td>
<td>82.2</td>
<td>83.9</td>
</tr>
</tbody>
</table>

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

Submit Notes

The config file option 'submit' was used.

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 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 C7Z170-01 Fri Jan 1 01:49:29 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) i5-6400 CPU @ 2.70GHz
  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

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

SPECint2006 = 63.5
SPECint_base2006 = 61.7

Platform Notes (Continued)

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 1 01:43

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)

General Notes

Environment variables set by runspec before the start of the run:
KMP_AFFINITY = "granularity=fine,scatter"
LD_LIBRARY_PATH = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64:/usr/cpu2006/sh"
OMP_NUM_THREADS = "4"

Continued on next page
Supermicro
Supermicro C7Z170-OCE motherboard
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SPECint2006 = 63.5
SPECint_base2006 = 61.7

General Notes (Continued)

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

Base Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -DSPEC_CPU_LP64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
471.omnetpp: -DSPEC_CPU_LP64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:
  -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32

C++ benchmarks:
  -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
  -Wl,-z,muldefs -L/sh -lsmartheap64

Base Other Flags

C benchmarks:
  403.gcc: -Dalloca=_alloca
Supermicro
Supermicro C7Z170-OCE motherboard
(C7Z170-OCE, Intel Core i5-6400)

SPECint2006 = 63.5
SPECint_base2006 = 61.7

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

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

Peak Compiler Invocation
C benchmarks (except as noted below):
  icc -m64
  400.perlbench: icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lib ia32_lin
  445.gobmk: icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lib ia32_lin
C++ benchmarks (except as noted below):
  icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lib ia32_lin
  473.astar: icpc -m64

Peak Portability Flags
400.perlbench: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX_IA32
401.bzip2: -DSPEC_CPU_LP64
403.gcc: -DSPEC_CPU_LP64
429.mcf: -DSPEC_CPU_LP64
445.gobmk: -D_FILE_OFFSET_BITS=64
456.hmmer: -DSPEC_CPU_LP64
458.sjeng: -DSPEC_CPU_LP64
462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
464.h264ref: -DSPEC_CPU_LP64
471.omnetpp: -D_FILE_OFFSET_BITS=64
473.astar: -DSPEC_CPU_LP64
483.xalancbmk: -D_FILE_OFFSET_BITS=64 -DSPEC_CPU_LINUX

Peak Optimization Flags
C benchmarks:
  400.perlbench: -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) -opt-prefetch
    -ansi-alias

  401.bzip2: -xCORE-AVX2(pass 2) -prof-gen:threadsafe(pass 1)
    -ipo(pass 2) -O3(pass 2) -no-prec-div
    -par-num-threads=1(pass 1) -prof-use(pass 2) -auto-ilp32
    -opt-prefetch -ansi-alias

  403.gcc: -xCORE-AVX2 -ipo -O3 -no-prec-div -inline-calloc
    -opt-malloc-options=3 -auto-ilp32

  429.mcf: -xCORE-AVX2 -ipo -O3 -no-prec-div -parallel
    -opt-prefetch -auto-p32

Continued on next page
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CPU2006 license: 001176
Test sponsor: Supermicro
Tested by: Supermicro

Peak Optimization Flags (Continued)

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: basepeak = yes

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

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

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)
             -opt-ra-region-strategy=block -ansi-alias
             -Wl,-z,muldefs -L/sh -lsmartheap

473.astar: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
            -auto-p32 -Wl,-z,muldefs -L/sh -lsmartheap64

483.xalancbmk: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
                -ansi-alias -Wl,-z,muldefs -L/sh -lsmartheap

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
## SPEC CINT2006 Result

**Supermicro**

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

| SPECint2006 | 63.5 |
| SPECint_base2006 | 61.7 |

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

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For other inquiries, please contact webmaster@spec.org.

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