Supermicro

Supermicro C7Z170-SQ motherboard
(C7Z170-SQ, Intel Core i5-6600T)

SPECint®2006 = 66.9
SPECint_base2006 = 64.9

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

Software
Operating System: Red Hat Enterprise Linux Server release 7.1, Kernel 3.10.0-229.e17.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

Hardware
CPU Name: Intel Core i5-6600T
CPU Characteristics: Intel Turbo Boost Technology up to 3.50 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 PC4-2133P-U)
Disk Subsystem: 1 x 400 GB SATA III SSD
Other Hardware: None

Test date: Dec-2015
Hardware Availability: Sep-2015
Software Availability: Sep-2015

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

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Results Table

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<tr>
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<th>Ratio</th>
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<td>87.9</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-732G-903B chassis.
The chassis is configured with a PWG-903-P0 power supply, 1 SNK-P0051AP4 heatsink, as well as 1 FAN-0124L4 rear cooling fan.
Sysinfo program /usr/cpu2006/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on localhost.localdomain Mon Dec 7 08:56:22 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) i5-6600T 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
siblings : 4

Continued on next page
Supermicro

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Platform Notes (Continued)

   physical 0: cores 0 1 2 3
   cache size : 6144 KB

From /proc/meminfo
   MemTotal: 16169696 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 localhost.localdomain 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 Dec 7 08:51

SPEC is set to: /usr/cpu2006
Filesystem     Type  Size  Used Avail Use% Mounted on
/dev/sda2      xfs   369G  164G  206G  45% /
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 Micron 8ATF51264AZ-2G1A2 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/cpu2006/32:/usr/cpu2006/64:/usr/cpu2006/sh"
OMP_NUM_THREADS = "4"

Continued on next page
SPEC CINT2006 Result

Supermicro

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Hardware Availability: Sep-2015
Software Availability: Sep-2015

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
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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_lin
  445.gobmk: icc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/lib/ia32_lin

C++ benchmarks (except as noted below):
  icpc -m32 -L/opt/intel/compilers_and_libraries_2016/linux/compiler/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
**SPEC CINT2006 Result**

Supermicro

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**Test sponsor:** Supermicro  
**Tested by:** Supermicro

**Test date:** Dec-2015  
**Hardware Availability:** Sep-2015  
**Software Availability:** Sep-2015

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**Peak Optimization Flags (Continued)**

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

456.hmmer: basepeak = yes

458.sjeng: \(-\text{xCORE-AVX2}(\text{pass 2})\) \(-\text{prof-gen:threadsafe}(\text{pass 1})\)  
\(-\text{ipo}(\text{pass 2})\) \(-\text{O3}(\text{pass 2})\) \(-\text{no-prec-div}(\text{pass 2})\)  
\(-\text{par-num-threads}=1(\text{pass 1})\) \(-\text{prof-use}(\text{pass 2})\) \(-\text{unroll4}\)

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

**C++ benchmarks:**

471.omnetpp: \(-\text{xCORE-AVX2}(\text{pass 2})\) \(-\text{prof-gen:threadsafe}(\text{pass 1})\)  
\(-\text{ipo}(\text{pass 2})\) \(-\text{O3}(\text{pass 2})\) \(-\text{no-prec-div}(\text{pass 2})\)  
\(-\text{par-num-threads}=1(\text{pass 1})\) \(-\text{prof-use}(\text{pass 2})\) \(-\text{ansi-alias}\)  
\(-\text{Wl,-z,muldefs -L/sh -lsmartheap}\)

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

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

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**Peak Other Flags**

C benchmarks:

403.gcc: \(-\text{Dalloca=_alloca}\)

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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

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Standard Performance Evaluation Corporation
info@spec.org
http://www.spec.org/
### SPEC CINT2006 Result

**Supermicro**  
Supermicro C7Z170-SQ motherboard  
(C7Z170-SQ, Intel Core i5-6600T)  

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| SPECint_base2006 | 64.9  |

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- **Test date:** Dec-2015  
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For other inquiries, please contact webmaster@spec.org.

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