Supermicro

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

| SPECint®2006 | 52.7 |
| SPECint_base2006 | 51.5 |

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

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
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 PC4-2666P-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 15.0.0.090 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 V10.0
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Results Table

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</tr>
</tbody>
</table>

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-731i-300B chassis.
The chassis is configured with a PWS-105-PQ power supply, 1 SNK-P0046A8 heatsink, as well as 1 FAN-0108L4 rear cooling fan.
Sysinfo program /usr/cpu2006/config/sysinfo.rev6914
$Rev: 6914 $ $Date:: 2014-06-25 #$ e3fbb8667b5a285932ceab81e28219e1
running on C7Z170-01 Fri Oct 30 17:07:13 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) i5-6400T 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 caution.)
cpu cores : 4
siblings : 4

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SPEC CINT2006 Result

Supermicro
Supermicro C7Z170-M motherboard
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Platform Notes (Continued)

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

From /proc/meminfo
   MemTotal: 16334556 kB
   HugePages_Total: 0
   Hugepagesize: 2048 kB

From /etc/*release* /etc/*version*
   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 Oct 30 01:22

SPEC is set to: /usr/cpu2006
   Filesystem Type Size Used Avail Use% Mounted on
   /dev/sda2 xfs 183G 36G 147G 20% /

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 F4-2666C15-4GRR 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"

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**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 -m64`

C++ benchmarks:
`icpc -m64`

---

**Base Portability Flags**

C benchmarks:
- DSPEC_CPU_LP64
- DSPEC_CPU_LINUX_X64

C++ benchmarks:
- DSPEC_CPU_LP64
- DSPEC_CPU_LINUX

---

**Base Optimization Flags**

C benchmarks:
-xCORE-AVX2
-ipo
-03
-no-prec-div
-parallel
-opt-prefetch
-auto-p32

C++ benchmarks:
-xCORE-AVX2
-ipo
-03
-no-prec-div
-opt-prefetch
-auto-p32
-Wl,-z,muldefs
-L/sh
-lsmartheap64

---

**Base Other Flags**

C benchmarks:
`403.gcc -Dalloca=_alloca`
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Peak Compiler Invocation

C benchmarks (except as noted below):

```bash
icc  -m64
```

400.perlbench: `icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32`
445.gobmk: `icc -m32 -L/opt/intel/composer_xe_2015/lib/ia32`

C++ benchmarks (except as noted below):

```bash
icpc -m32 -L/opt/intel/composer_xe_2015/lib/ia32
```

473.astar: `icpc -m64`

Peak Portability Flags

400.perlbench: `-DSPEC_CPU_LINUX_IA32`
401.bzip2: `-DSPEC_CPU_LP64`
403.gcc: `-DSPEC_CPU_LP64`
429.mcf: `-DSPEC_CPU_LP64`
456.hmmer: `-DSPEC_CPU_LP64`
458.sjeng: `-DSPEC_CPU_LP64`
462.libquantum: `-DSPEC_CPU_LP64`
464.h264ref: `-DSPEC_CPU_LP64`
473.astar: `-DSPEC_CPU_LP64`
483.xalancbmk: `-DSPEC_CPU_LINUX`

Peak Optimization Flags

C benchmarks:

```bash
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)
-opt-prefetch -ansi-alias
```

401.bzip2: `-xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-o3(pass 2) -no-prec-div -prof-use(pass 2) -auto-1lp32
-opt-prefetch -ansi-alias`

403.gcc: `-xCORE-AVX2 -ipo -o3 -no-prec-div -inline-calloc
-opt-malloc-options=3 -auto-1lp32`

429.mcf: `-xCORE-AVX2 -ipo -o3 -no-prec-div -parallel
-opt-prefetch -auto-p32`

445.gobmk: `-xCORE-AVX2(pass 2) -prof-gen(pass 1) -prof-use(pass 2)
-ansi-alias`

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Peak Optimization Flags (Continued)

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

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

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

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)
-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-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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