SPEC® CINT2006 Result
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Supermicro

Supermicro C7Z170-M motherboard
(C7Z170-M, Intel Core i7-6700K)

SPECint®_rate2006 = 263

SPECint_rate_base2006 = 256
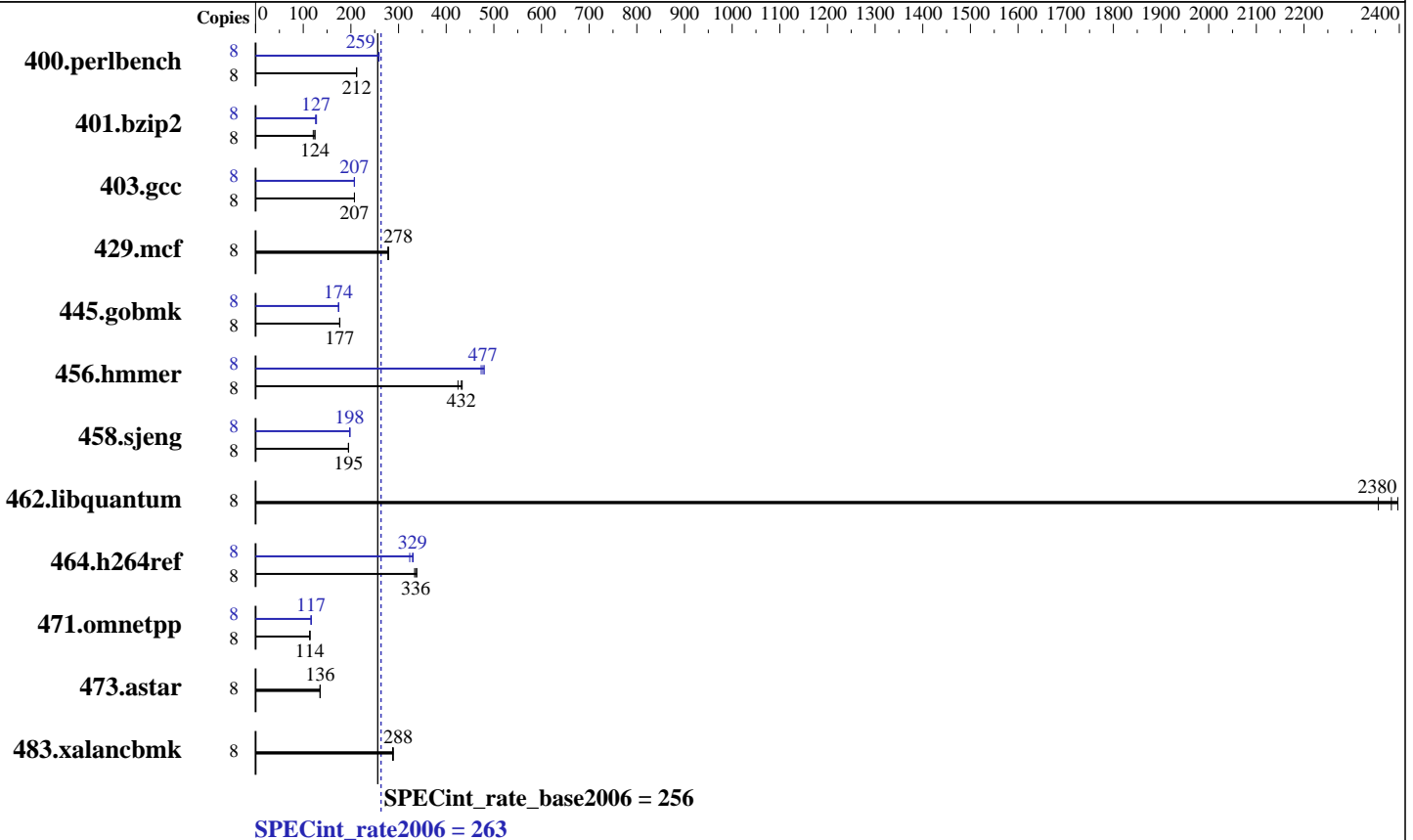
CPU2006 license: 001176   **Test date:** Oct-2015
Test sponsor: Supermicro   **Hardware Availability:** Aug-2015
Tested by: Supermicro   **Software Availability:** Sep-2014

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Hardware

CPU Name: Intel Core i7-6700K
CPU Characteristics: Intel Turbo Boost Technology up to 4.20 GHz
CPU MHz: 4000
FPU: Integrated
CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip, 2 threads/core
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: 8 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: 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

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Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	8	**369**	**212**	369	212	369	212	8	**302**	**259**	302	259	303	258
401.bzip2	8	638	121	**621**	**124**	620	125	8	604	128	612	126	**610**	**127**
403.gcc	8	**310**	**207**	311	207	310	208	8	311	207	**310**	**207**	310	208
429.mcf	8	**262**	**278**	261	279	263	278	8	**262**	**278**	261	279	263	278
445.gobmk	8	475	177	476	176	**475**	**177**	8	**482**	**174**	481	174	482	174
456.hmmer	8	176	425	**173**	**432**	172	434	8	158	473	156	480	**156**	**477**
458.sjeng	8	496	195	**497**	**195**	497	195	8	489	198	**490**	**198**	490	198
462.libquantum	8	**69.5**	**2380**	69.2	2400	70.4	2360	8	**69.5**	**2380**	69.2	2400	70.4	2360
464.h264ref	8	**527**	**336**	523	338	531	334	8	535	331	**538**	**329**	547	323
471.omnetpp	8	438	114	**439**	**114**	440	114	8	**428**	**117**	430	116	428	117
473.astar	8	416	135	414	136	**414**	**136**	8	416	135	414	136	**414**	**136**
483.xalancbmk	8	191	289	**192**	**288**	192	288	8	191	289	**192**	**288**	192	288

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-731i-300B chassis.
  The chassis is configured with a PWS-305-PQ power supply, 1 SNK-P0046A4 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 23 17:34:07 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) i7-6700K CPU @ 4.00GHz
           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.)

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Platform Notes (Continued)

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

 From /proc/meminfo
     MemTotal:       16333964 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)
     system-release-cpe: cpe:/o:redhat:enterprise_linux:7.1:ga:server

 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 23 10:25

 SPEC is set to: /usr/cpu2006
     Filesystem     Type  Size  Used Avail Use% Mounted on
     /dev/sda2      xfs   183G   23G  161G  13% /
 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:
 LD_LIBRARY_PATH = "/usr/cpu2006/libs/32:/usr/cpu2006/libs/64:/usr/cpu2006/sh"
```

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

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

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

Base Other Flags

C benchmarks:

```
        403.gcc: -Dalloca=_alloca
```

Peak Compiler Invocation

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

```
    400.perlbench: icc -m64
```

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Peak Compiler Invocation (Continued)

    401.bzip2: `icc -m64`

  456.hmmer: `icc -m64`

    458.sjeng: `icc -m64`

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

Peak Portability Flags

    400.perlbench: `-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64`
        401.bzip2: `-DSPEC_CPU_LP64`
      456.hmmer: `-DSPEC_CPU_LP64`
        458.sjeng: `-DSPEC_CPU_LP64`
    462.libquantum: `-DSPEC_CPU_LINUX`
    483.xalancbmk: `-DSPEC_CPU_LINUX`

Peak Optimization Flags

C benchmarks:

    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)`
              `-auto-ilp32`

      401.bzip2: `-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`

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

      429.mcf: `basepeak = yes`

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

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

      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 -auto-ilp32`

  462.libquantum: `basepeak = yes`

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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.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-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

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

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