SPEC® CINT2006 Result

Supermicro

Supermicro C7H170-M motherboard
(C7H170-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

Copies

Benchmark	Copies	Value (base / peak)
400.perlbench	8 / 8	259 / 213
401.bzip2	8 / 8	127 / 124
403.gcc	8 / 8	208 / 206
429.mcf	8	269
445.gobmk	8 / 8	174 / 177
456.hmmer	8 / 8	479 / 433
458.sjeng	8 / 8	198 / 195
462.libquantum	8	2380
464.h264ref	8 / 8	337 / 341
471.omnetpp	8 / 8	117 / 114
473.astar	8	136
483.xalancbmk	8	288

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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 PC4-2800R-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 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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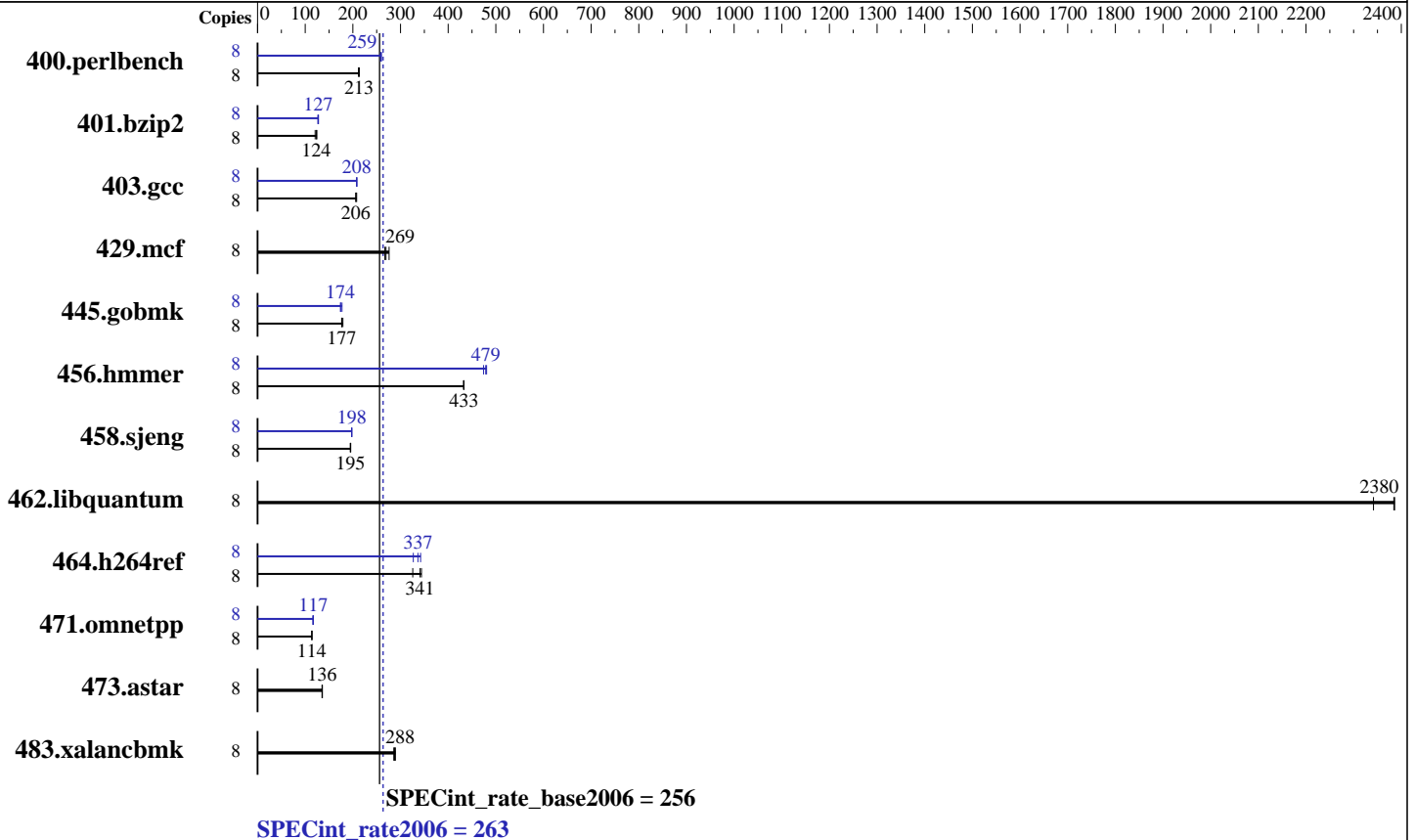SPECint_rate_base2006 = 256

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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	366	213	369	212	**367**	**213**	8	301	260	303	258	**302**	**259**
401.bzip2	8	639	121	**625**	**124**	621	124	8	604	128	610	127	**606**	**127**
403.gcc	8	**312**	**206**	310	208	312	206	8	309	208	310	208	**309**	**208**
429.mcf	8	**271**	**269**	273	267	264	276	8	**271**	**269**	273	267	264	276
445.gobmk	8	469	179	**475**	**177**	475	177	8	473	177	482	174	**481**	**174**
456.hmmer	8	173	432	**172**	**433**	172	433	8	**156**	**479**	157	474	155	481
458.sjeng	8	**496**	**195**	498	195	495	195	8	**490**	**198**	489	198	490	198
462.libquantum	8	70.8	2340	69.5	2390	**69.5**	**2380**	8	70.8	2340	69.5	2390	**69.5**	**2380**
464.h264ref	8	515	344	**519**	**341**	544	326	8	**526**	**337**	542	327	517	342
471.omnetpp	8	**438**	**114**	439	114	438	114	8	427	117	431	116	**427**	**117**
473.astar	8	415	135	413	136	**413**	**136**	8	415	135	413	136	**413**	**136**
483.xalancbmk	8	193	286	191	289	**192**	**288**	8	193	286	191	289	**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-743TQ-865B-SQ chassis.
    The chassis is configured with a PWS-865-PQ power supply, 1 SNK-P0046A4 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 C7H170-01 Sat Oct 31 07:11:52 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:       16334168 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 C7H170-01 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 31 03:13

SPEC is set to: /usr/cpu2006
   Filesystem     Type  Size  Used Avail Use% Mounted on
   /dev/sda2      xfs   183G   24G  159G  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 F4-2800C16-4GRK 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:
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
```

Continued on next page

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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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