# SPEC® CINT2006 Result

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## ASUSTeK Computer Inc.

(Test Sponsor: Intel Corporation)

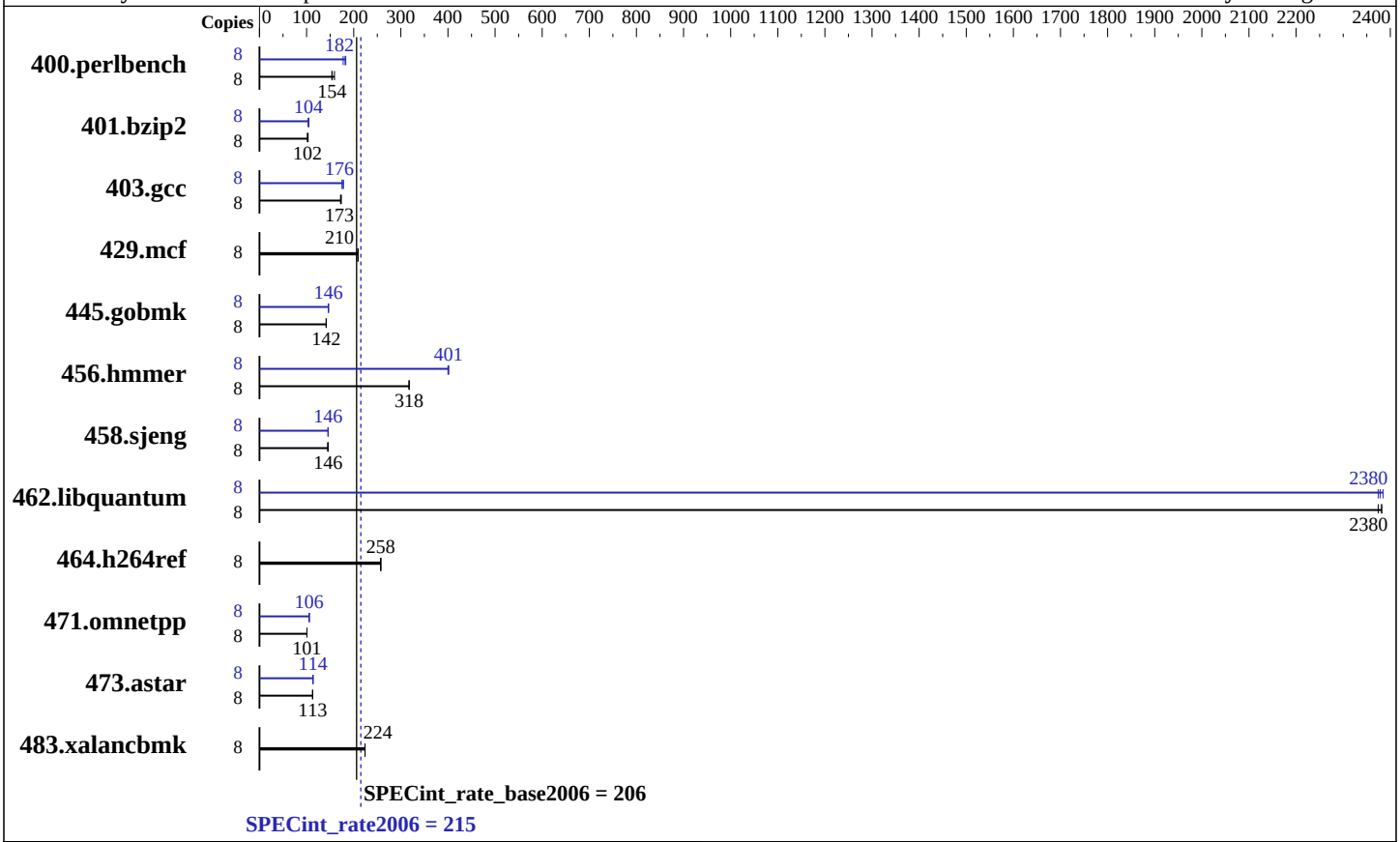
ASUS Q170M-C motherboard (Intel Core i7-6700T)

SPECint®_rate2006 = 215

SPECint_rate_base2006 = 206

**CPU2006 license:** 13
**Test sponsor:** Intel Corporation
**Tested by:** Intel Corporation

**Test date:** May-2016
**Hardware Availability:** Aug-2015
**Software Availability:** Aug-2015




## Hardware

| | |
|---|---|
| CPU Name: | Intel Core i7-6700T |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.60 GHz |
| CPU MHz: | 2800 |
| 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: | 8 GB (2 x 4 GB 2Rx4 PC4-2133P-U) |
| Disk Subsystem: | 1 TB Seagate Barracuda HDD, 7200 RPM |
| Other Hardware: | None |

## Software

| | |
|---|---|
| Operating System: | Microsoft Windows 7 Professional 6.1.7601 Service Pack 1 Build 7601 |
| Compiler: | C/C++: Version 16.0.0.110 of Intel C++ Studio XE for Windows; Libraries: Version 18.00.30723 of Microsoft Visual Studio 2013 |
| Auto Parallel: | No |
| File System: | NTFS |
| System State: | Default |
| Base Pointers: | 32-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | SmartHeap Library Version 11.0 from http://www.microquill.com/ |

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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 | 491 | 159 | **506** | **154** | 509 | 154 | 8 | 440 | 178 | 426 | 183 | **430** | **182** |
| 401.bzip2 | 8 | 759 | 102 | **752** | **102** | 748 | 103 | 8 | 739 | 105 | **745** | **104** | 750 | 103 |
| 403.gcc | 8 | 372 | 174 | **373** | **173** | 375 | 172 | 8 | 368 | 175 | 361 | 178 | **367** | **176** |
| 429.mcf | 8 | **348** | **210** | 348 | 210 | 354 | 206 | 8 | **348** | **210** | 348 | 210 | 354 | 206 |
| 445.gobmk | 8 | 593 | 142 | 593 | 142 | **593** | **142** | 8 | 574 | 146 | **573** | **146** | 573 | 146 |
| 456.hmmer | 8 | 235 | 318 | 235 | 318 | **235** | **318** | 8 | **186** | **401** | 187 | 400 | 186 | 402 |
| 458.sjeng | 8 | 664 | 146 | 667 | 145 | **664** | **146** | 8 | 664 | 146 | **664** | **146** | 666 | 146 |
| 462.libquantum | 8 | 69.8 | 2370 | 69.6 | 2380 | **69.6** | **2380** | 8 | **69.7** | **2380** | 69.5 | 2380 | 69.8 | 2370 |
| 464.h264ref | 8 | 689 | 257 | **688** | **258** | 688 | 258 | 8 | 689 | 257 | **688** | **258** | 688 | 258 |
| 471.omnetpp | 8 | 497 | 101 | 496 | 101 | **496** | **101** | 8 | 474 | 106 | **474** | **106** | 473 | 106 |
| 473.astar | 8 | 498 | 113 | **498** | **113** | 499 | 113 | 8 | 495 | 114 | 493 | 114 | **495** | **114** |
| 483.xalancbmk | 8 | 246 | 224 | **247** | **224** | 247 | 224 | 8 | 246 | 224 | **247** | **224** | 247 | 224 |

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

## Compiler Invocation Notes

```
To compile these binaries, the Intel Compiler 16.0 was set up to
generate 32-bit binaries with the command:
"ipsxe-comp-vars.bat ia32 vs2010" (shortcut provided in the Intel(r)
Parallel Studio XE 2016 program folder)
```

## Platform Notes

```
Sysinfo program C:\SPEC16.0/Docs/sysinfo
$Rev: 6775 $ $Date:: 2011-08-16 #$ \8787f7622badcf24e01c368b1db4377c
running on Clt2C56DC769A36 Wed May  4 01:11:11 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

Trying 'systeminfo'
OS Name       : Microsoft Windows 7 Professional
OS Version    : 6.1.7601 Service Pack 1 Build 7601
System Manufacturer: System manufacturer
System Model  : System Product Name
Processor(s)  : 1 Processor(s) Installed.
     [01]: Intel64 Family 6 Model 94 Stepping 3 GenuineIntel ~2801 Mhz
BIOS Version  : American Megatrends Inc. 0704, 1/12/2016
Total Physical Memory: 8,069 MB

Trying 'wmic cpu get /value'
DeviceID      : CPU0
```

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## Platform Notes (Continued)

```
L2CacheSize   : 1024
L3CacheSize   : 8192
MaxClockSpeed : 2801
Name          : Intel(R) Core(TM) i7-6700T CPU @ 2.80GHz
NumberOfCores : 4
NumberOfLogicalProcessors: 8

(End of data from sysinfo program)
```

## Component Notes

```
Tested systems can be used with Shin-G ATX case,
PC Power and Cooling 1200W power supply
```

## General Notes

```
Binaries compiled on a system with 1x Intel Xeon E5-2699 v3 CPU
+ 64GB memory using Windows 8.1 Enterprise 64-bit
```

# Base Compiler Invocation

C benchmarks:
```
icl -Qvc12 -Qstd=c99
```

C++ benchmarks:
```
icl -Qvc12
```

# Base Portability Flags

403.gcc: `-DSPEC_CPU_WIN32`
464.h264ref: `-DWIN32`
483.xalancbmk: `-Qoption,cpp,--no_wchar_t_keyword`

# Base Optimization Flags

C benchmarks:
```
-QxCORE-AVX2 -Qipo -O3 -Qprec-div- -Qopt-prefetch /F256000000
```

C++ benchmarks:
```
-QxCORE-AVX2 -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qcxx-features
/F256000000 shlW32M.lib            -link /FORCE:MULTIPLE
```

## Base Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

## Peak Compiler Invocation

C benchmarks (except as noted below):
`icl -Qvc12 -Qstd=c99`

456.hmmer: `C:\Program Files (x86)\IntelSWTools\parallel_studio_xe_2016.0.041ompilers_and_libraries_2016\windows/bin/intel64/icl.exe`

458.sjeng: `C:\Program Files (x86)\IntelSWTools\parallel_studio_xe_2016.0.041ompilers_and_libraries_2016\windows/bin/intel64/icl.exe`

462.libquantum: `C:\Program Files (x86)\IntelSWTools\parallel_studio_xe_2016.0.041ompilers_and_libraries_2016\windows/bin/intel64/icl.exe -Qstd=c99`

C++ benchmarks (except as noted below):
`icl -Qvc12`

473.astar: `C:\Program Files (x86)\IntelSWTools\parallel_studio_xe_2016.0.041ompilers_and_libraries_2016\windows/bin/intel64/icl.exe`

## Peak Portability Flags

403.gcc: `-DSPEC_CPU_WIN32`
456.hmmer: `-DSPEC_CPU_P64`
458.sjeng: `-DSPEC_CPU_P64`
462.libquantum: `-DSPEC_CPU_P64`
464.h264ref: `-DWIN32`
473.astar: `-DSPEC_CPU_P64`
483.xalancbmk: `-Qoption,cpp,--no_wchar_t_keyword`

## Peak Optimization Flags

C benchmarks:

400.perlbench: `-QxCORE-AVX2`(pass 2) `-Qprof_gen`(pass 1) `-Qprof_use`(pass 2) `-Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch /F256000000 shlW32M.lib -link /FORCE:MULTIPLE`

401.bzip2: `-QxCORE-AVX2`(pass 2) `-Qprof_gen`(pass 1) `-Qprof_use`(pass 2) `-Qipo -O3 -Qprec-div- -Qopt-prefetch -Qansi-alias /F256000000`

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## Peak Optimization Flags (Continued)

403.gcc: -QxCORE-AVX2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qopt-prefetch /F256000000

429.mcf: basepeak = yes

445.gobmk: -QxCORE-AVX2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O2 -Qprec-div- -Qansi-alias /F256000000

456.hmmer: -Qauto-ilp32 -QxCORE-AVX2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo(1) -O3(1) -Qprec-div-(1) -Qopt-prefetch(1) /F256000000

458.sjeng: -Qauto-ilp32 -QxCORE-AVX2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo(1) -O3(1) -Qprec-div-(1) -Qunroll4(1) /F256000000

462.libquantum: -Qauto-ilp32 -QxCORE-AVX2 -Qipo -O3 -Qprec-div- -Qopt-prefetch /F256000000

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: -QxCORE-AVX2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-ra-region-strategy=block /F256000000 shlW32M.lib -link /FORCE:MULTIPLE

473.astar: -Qauto-ilp32 -QxCORE-AVX2 -Qipo -O3 -Qprec-div- -Qopt-prefetch /F256000000 shlW64M.lib

483.xalancbmk: basepeak = yes

## Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

456.hmmer: -link -LIBPATH:C:\Program Files (x86)\IntelSWTools\parallel_studio_xe_2016.0.041ompilers_and_libraries_2016\windows/compiler/lib/intel64 -link -LIBPATH:C:\Program Files (x86)\Microsoft SDKs\Windows\7.1A\Libd

-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 12.0/VC/lib/AMD6

458.sjeng: -link -LIBPATH:C:\Program Files (x86)\IntelSWTools\parallel_studio_xe_2016.0.041ompilers_and_libraries_2016\windows/compiler/lib/intel64 -link -LIBPATH:C:\Program Files (x86)\Microsoft SDKs\Windows\7.1A\Libd

-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 12.0/VC/lib/AMD6

462.libquantum: -link -LIBPATH:C:\Program Files (x86)\IntelSWTools\parallel_studio_xe_2016.0.041ompilers_and_libraries_2016\windows/compiler/lib/intel64 -link -LIBPATH:C:\Program Files (x86)\Microsoft SDKs\Windows\7.1A\Libd

-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 12.0/VC/lib/AMD6

Continued on next page

## Peak Other Flags (Continued)

C++ benchmarks:

473.astar: -link /FORCE:MULTIPLE -link -LIBPATH:C:\Program Files (x86)\IntelSWTools\parallel_studio_xe_2016.0.041compilers_and_libraries_2016\windows/compiler/lib/intel64 -link -LIBPATH:C:\Program Files (x86)\Microsoft SDKs\Windows77.1A\Lib

```
-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 12.0/VC/lib/AMD6
```

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-windows.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-windows.xml


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

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