



# SPEC® CINT2006 Result

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ASUSTeK Computer Inc.  
(Test Sponsor: Intel Corporation)

SPECint®\_rate2006 = 183

ASUS Q170M-C motherboard (Intel Core i5-6500)

SPECint\_rate\_base2006 = 176

CPU2006 license: 13

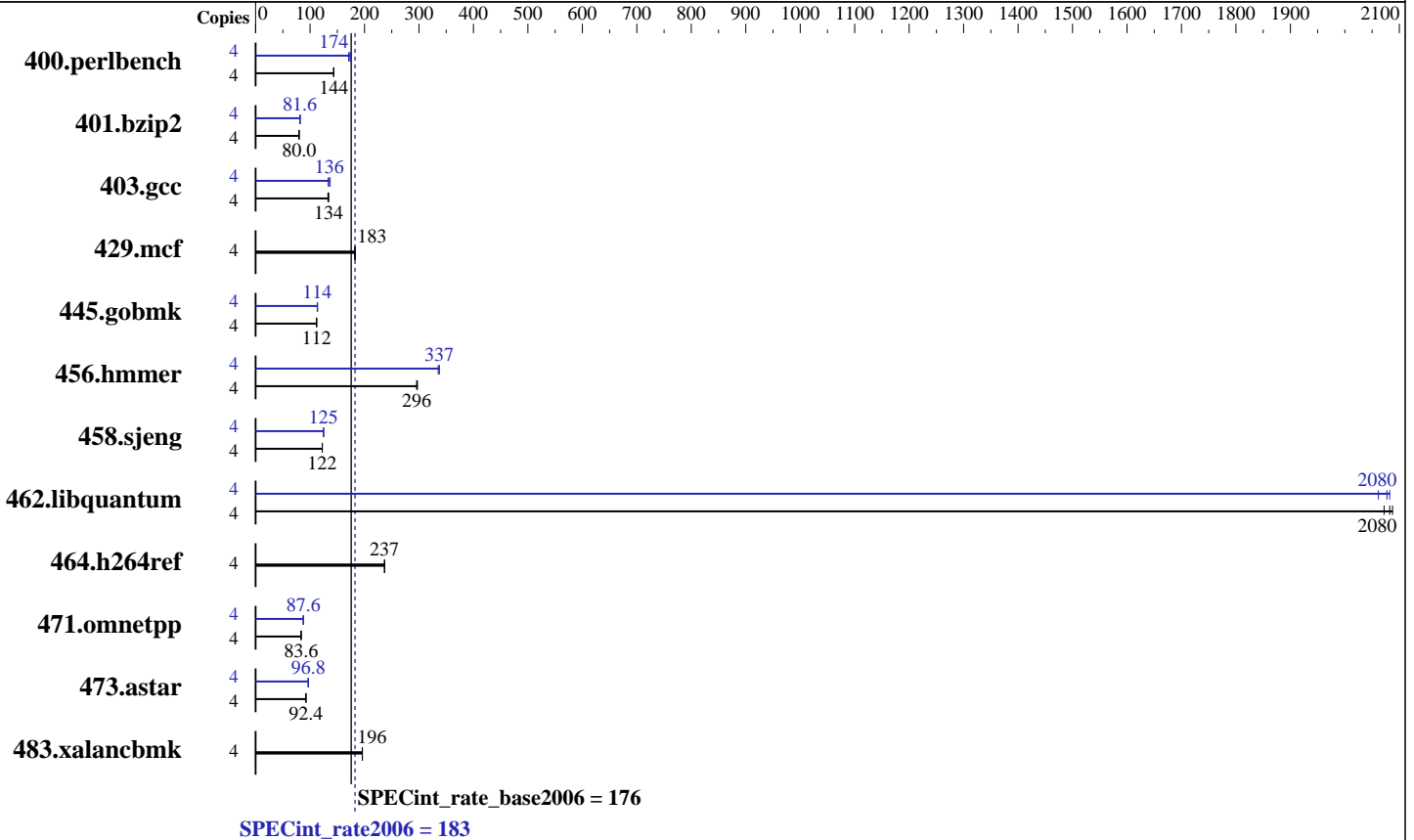
Test date: Apr-2016

Test sponsor: Intel Corporation

Hardware Availability: Sep-2015

Tested by: Intel Corporation

Software Availability: Aug-2015



## Hardware

CPU Name: Intel Core i5-6500  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.60 GHz  
 CPU MHz: 3200  
 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: 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	4	273	143	272	144	<u>272</u>	<u>144</u>	4	229	171	225	174	<u>225</u>	<u>174</u>
401.bzip2	4	484	79.6	<u>483</u>	<u>80.0</u>	482	80.0	4	475	81.2	471	82.0	<u>472</u>	<u>81.6</u>
403.gcc	4	240	134	<u>241</u>	<u>134</u>	243	133	4	241	133	236	137	<u>237</u>	<u>136</u>
429.mcf	4	<u>200</u>	<u>183</u>	200	183	201	182	4	<u>200</u>	<u>183</u>	200	183	201	182
445.gobmk	4	375	112	375	112	<u>375</u>	<u>112</u>	4	370	113	370	114	<u>370</u>	<u>114</u>
456.hammer	4	<u>126</u>	<u>296</u>	126	296	126	297	4	111	335	111	337	<u>111</u>	<u>337</u>
458.sjeng	4	<u>396</u>	<u>122</u>	396	122	395	122	4	388	125	388	125	<u>388</u>	<u>125</u>
462.libquantum	4	39.7	2090	40.0	2070	<u>39.8</u>	<u>2080</u>	4	39.8	2080	<u>39.9</u>	<u>2080</u>	40.2	2060
464.h264ref	4	374	237	<u>374</u>	<u>237</u>	374	237	4	374	237	<u>374</u>	<u>237</u>	374	237
471.omnetpp	4	300	83.6	300	83.6	<u>300</u>	<u>83.6</u>	4	285	87.6	<u>285</u>	<u>87.6</u>	285	87.6
473.astar	4	304	92.4	<u>304</u>	<u>92.4</u>	305	92.4	4	291	96.8	291	96.4	<u>291</u>	<u>96.8</u>
483.xalancbmk	4	<u>141</u>	<u>196</u>	141	196	141	196	4	<u>141</u>	<u>196</u>	141	196	141	196

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 CltF832E48859C5 Sat Apr 23 02:19:42 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 ~3201 Mhz
BIOS Version  : American Megatrends Inc. 0704, 1/12/2016
Total Physical Memory: 8,070 MB
```

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

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## Platform Notes (Continued)

L2CacheSize : 1024  
L3CacheSize : 6144  
MaxClockSpeed : 3201  
Name : Intel(R) Core(TM) i5-6500 CPU @ 3.20GHz  
NumberOfCores : 4  
NumberOfLogicalProcessors: 4

(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



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## Base Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

## Peak Compiler Invocation

C benchmarks (except as noted below):

icl -Qvc12 -Qstd=c99

456.hmmr: 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.hmmr: -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)  
-Qunroll14(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_2016.0.041\compiler_and_libraries_2016\windows\compiler\lib\intel64 -link -LIBPATH:C:\Program Files (x86)\Microsoft SDKs\Windows7.1A\lib
-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 12.0/VC/lib/AMD64
458.sjeng -link -LIBPATH:C:\Program Files (x86)\IntelSWTools\parallel_studio_xe_2016.0.041\compiler_and_libraries_2016\windows\compiler\lib\intel64 -link -LIBPATH:C:\Program Files (x86)\Microsoft SDKs\Windows7.1A\lib
-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 12.0/VC/lib/AMD64
462.libquantum -link -LIBPATH:C:\Program Files (x86)\IntelSWTools\parallel_studio_xe_2016.0.041\compiler_and_libraries_2016\windows\compiler\lib\intel64 -link -LIBPATH:C:\Program Files (x86)\Microsoft SDKs\Windows7.1A\lib
-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 12.0/VC/lib/AMD64
```

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## Peak Other Flags (Continued)

C++ benchmarks:

```
473.exe -link /FORCE:MULTIPLE -link -LIBPATH:C:\Program Files (x86)\IntelSWTools\parallel_studio_xe_2016.0.04\compiler_and_libraries_2016\windows\compiler\lib\intel64 -link -LIBPATH:C:\Program Files (x86)\Microsoft SDKs\Windows7.1A\lib
```

```
-link -LIBPATH:C:\Program Files (x86)\Microsoft Visual Studio 12.0\VC\lib\AMD64
```

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 other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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