



# SPEC® CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.  
(Test Sponsor: Intel Corporation)

SPECint®\_rate2006 = 141

ASUS Q170M-C motherboard (Intel Core i3-6320)

SPECint\_rate\_base2006 = 134

CPU2006 license: 13

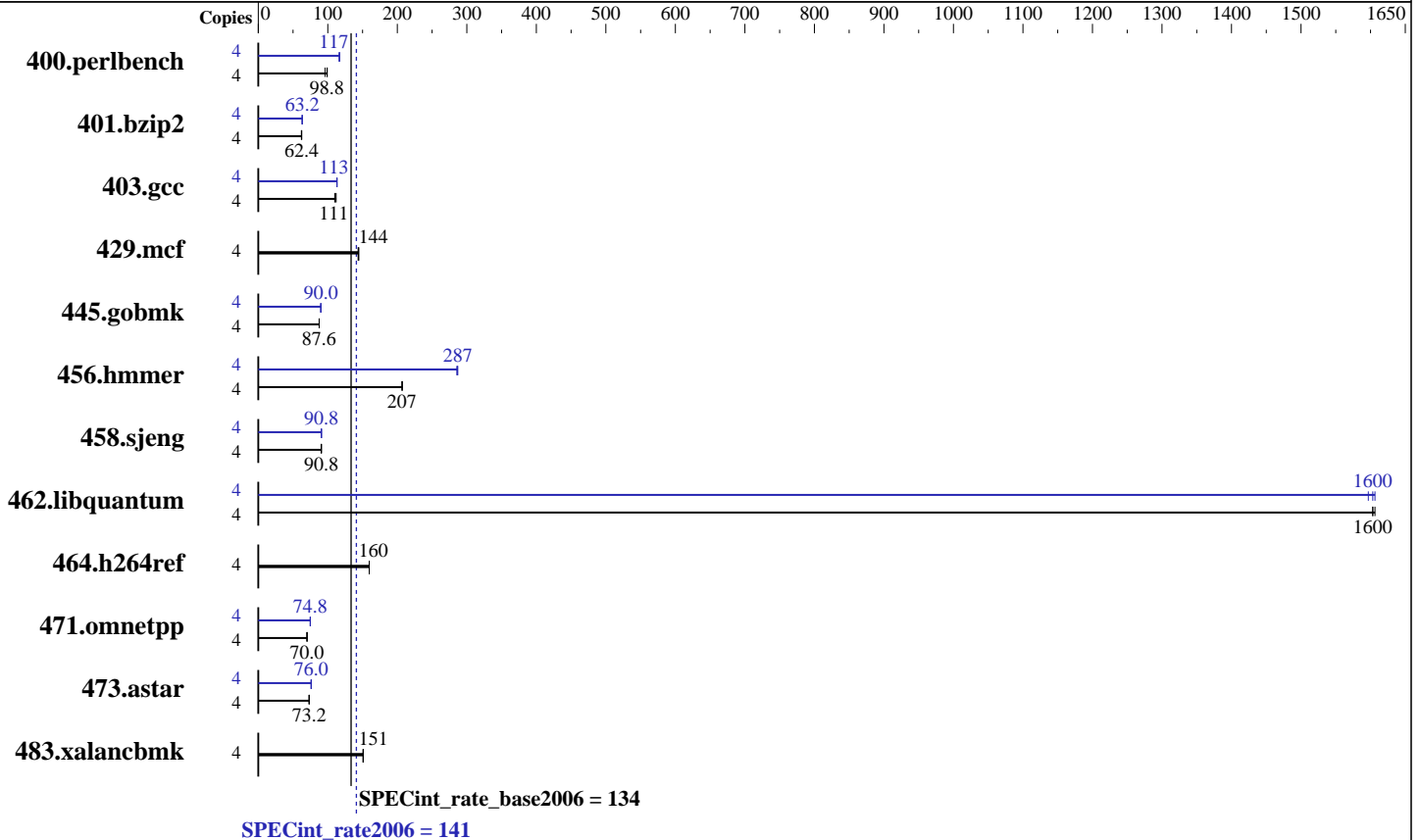
Test date: Mar-2016

Test sponsor: Intel Corporation

Hardware Availability: Sep-2015

Tested by: Intel Corporation

Software Availability: Aug-2015



## Hardware

CPU Name: Intel Core i3-6320  
 CPU Characteristics: 3900  
 CPU MHz: Integrated  
 FPU: Integrated  
 CPU(s) enabled: 2 cores, 1 chip, 2 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: 4 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/>



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.  
(Test Sponsor: Intel Corporation)

SPECint\_rate2006 = 141

ASUS Q170M-C motherboard (Intel Core i3-6320)

SPECint\_rate\_base2006 = 134

CPU2006 license: 13

Test date: Mar-2016

Test sponsor: Intel Corporation

Hardware Availability: Sep-2015

Tested by: Intel Corporation

Software Availability: Aug-2015

## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	4	407	96.0	394	99.2	<u>395</u>	<u>98.8</u>	4	<u>335</u>	<u>117</u>	335	116	334	117
401.bzip2	4	<u>620</u>	<u>62.4</u>	624	62.0	619	62.4	4	612	63.2	<u>611</u>	<u>63.2</u>	610	63.2
403.gcc	4	<u>290</u>	<u>111</u>	292	110	287	112	4	<u>284</u>	<u>113</u>	285	113	284	113
429.mcf	4	254	144	253	144	<u>253</u>	<u>144</u>	4	254	144	253	144	<u>253</u>	<u>144</u>
445.gobmk	4	<u>479</u>	<u>87.6</u>	479	87.6	480	87.6	4	466	90.0	466	90.0	<u>466</u>	<u>90.0</u>
456.hammer	4	180	207	181	207	<u>180</u>	<u>207</u>	4	130	287	<u>130</u>	<u>287</u>	131	286
458.sjeng	4	<u>534</u>	<u>90.8</u>	533	90.8	535	90.4	4	532	90.8	534	90.8	<u>532</u>	<u>90.8</u>
462.libquantum	4	<u>51.7</u>	<u>1600</u>	51.7	1600	51.6	1610	4	51.9	1600	51.6	1610	<u>51.7</u>	<u>1600</u>
464.h264ref	4	555	160	554	160	<u>555</u>	<u>160</u>	4	555	160	554	160	<u>555</u>	<u>160</u>
471.omnetpp	4	<u>356</u>	<u>70.0</u>	357	70.0	356	70.4	4	<u>334</u>	<u>74.8</u>	334	74.8	334	74.8
473.astar	4	<u>384</u>	<u>73.2</u>	384	73.2	384	73.2	4	<u>369</u>	<u>76.0</u>	369	76.0	368	76.4
483.xalancbmk	4	183	151	183	151	<u>183</u>	<u>151</u>	4	183	151	183	151	<u>183</u>	<u>151</u>

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 CltF832E48856E2 Tue Mar 15 22:29:43 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 ~3900 Mhz
BIOS Version  : American Megatrends Inc. 0704, 1/12/2016
Total Physical Memory: 8,069 MB
```

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

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.  
(Test Sponsor: Intel Corporation)

SPECint\_rate2006 = 141

ASUS Q170M-C motherboard (Intel Core i3-6320)

SPECint\_rate\_base2006 = 134

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

Test date: Mar-2016  
Hardware Availability: Sep-2015  
Software Availability: Aug-2015

## Platform Notes (Continued)

L2CacheSize : 512  
L3CacheSize : 4096  
MaxClockSpeed : 3900  
Name : Intel(R) Core(TM) i3-6320 CPU @ 3.90GHz  
NumberOfCores : 2  
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



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.  
(Test Sponsor: Intel Corporation)

SPECint\_rate2006 = 141

ASUS Q170M-C motherboard (Intel Core i3-6320)

SPECint\_rate\_base2006 = 134

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

Test date: Mar-2016  
Hardware Availability: Sep-2015  
Software Availability: Aug-2015

## 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.bzp2: -QxCORE-AVX2(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qprec-div- -Qopt-prefetch -Qansi-alias  
/F256000000

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.  
(Test Sponsor: Intel Corporation)

SPECint\_rate2006 = 141

ASUS Q170M-C motherboard (Intel Core i3-6320)

SPECint\_rate\_base2006 = 134

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

Test date: Mar-2016  
Hardware Availability: Sep-2015  
Software Availability: Aug-2015

## 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
```

Continued on next page



# SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

**ASUSTeK Computer Inc.**  
(Test Sponsor: Intel Corporation)

**SPECint\_rate2006 = 141**

**ASUS Q170M-C motherboard (Intel Core i3-6320)**

**SPECint\_rate\_base2006 = 134**

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

**Test date:** Mar-2016  
**Hardware Availability:** Sep-2015  
**Software Availability:** Aug-2015

## 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>

SPEC and SPECint are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

Tested with SPEC CPU2006 v1.2.  
Report generated on Tue Sep 13 11:43:52 2016 by SPEC CPU2006 PS/PDF formatter v6932.  
Originally published on 12 July 2016.