



# SPEC® CINT2006 Result

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ASUSTeK Computer Inc.

(Test Sponsor: Intel Corporation)

ASUS A88X-PRO Motherboard (AMD A6-8550 with Radeon R5 Graphics)

SPECint®\_rate2006 = 47.3

SPECint\_rate\_base2006 = 44.8

CPU2006 license: 13

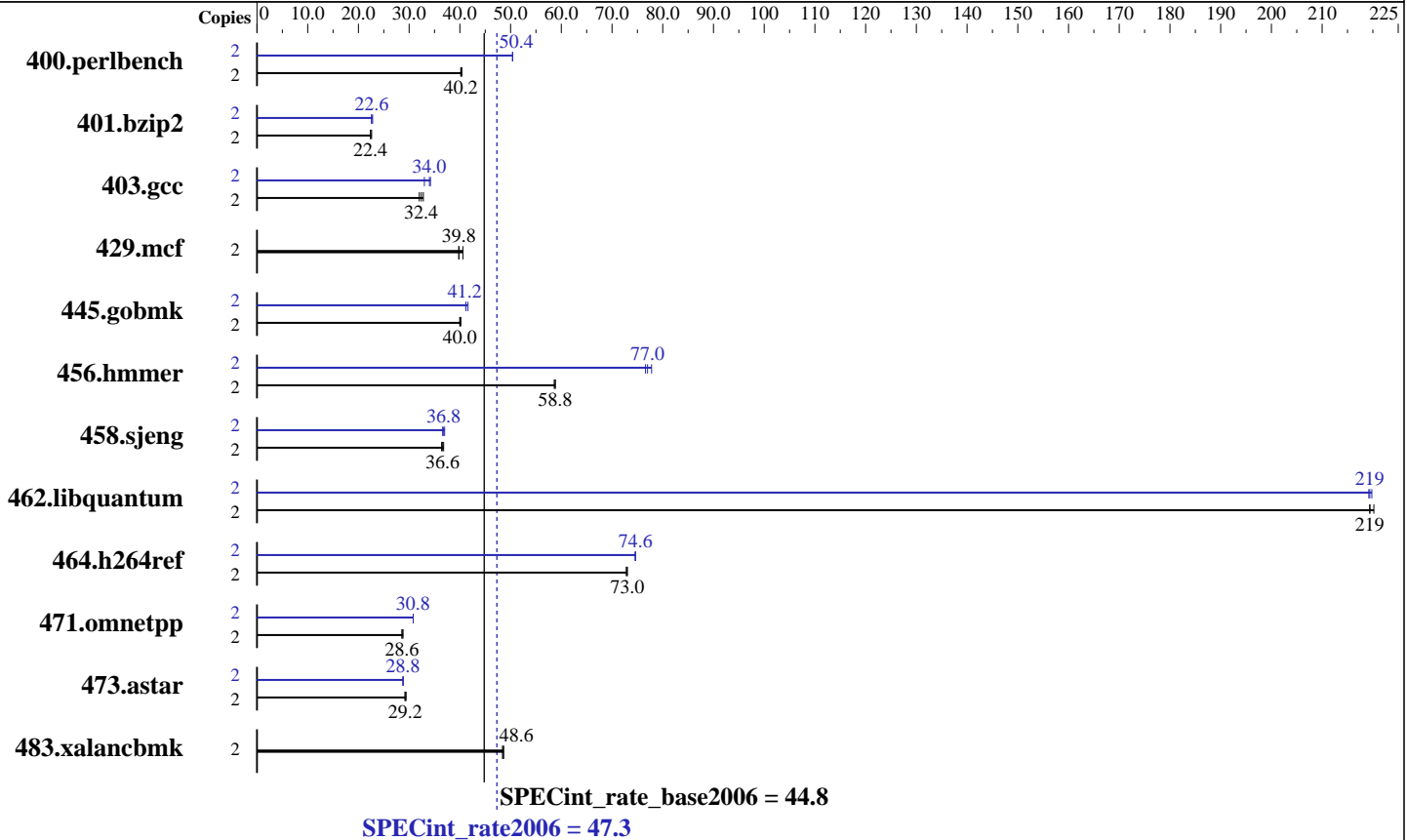
Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: Jul-2016

Hardware Availability: Dec-2015

Software Availability: Aug-2015



## Hardware

CPU Name: AMD A6-8550  
 CPU Characteristics: AMD Turbo CORE technology up to 4.00 GHz  
 CPU MHz: 3700  
 FPU: Integrated  
 CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip  
 CPU(s) orderable: 1 chip  
 Primary Cache: 96 KB I on chip per chip; 16 KB D on chip per core  
 Secondary Cache: 1 MB I+D on chip per chip  
 L3 Cache: None  
 Other Cache: None  
 Memory: 8 GB (2 x 4 GB 2Rx8 PC3-10600U-11)  
 Disk Subsystem: Seagate Barracuda 250 GB SATA, 7200 RPM  
 Other Hardware: None

## Software

Operating System: Microsoft Windows 7 Ultimate 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	2	<b>485</b>	<b>40.2</b>	484	40.4	487	40.2	2	388	50.4	<b>387</b>	<b>50.4</b>	387	50.4
401.bzip2	2	<b>858</b>	<b>22.4</b>	857	22.6	859	22.4	2	<b>853</b>	<b>22.6</b>	850	22.8	854	22.6
403.gcc	2	503	32.0	490	32.8	<b>496</b>	<b>32.4</b>	2	470	34.2	<b>473</b>	<b>34.0</b>	489	33.0
429.mcf	2	450	40.6	<b>459</b>	<b>39.8</b>	459	39.8	2	450	40.6	<b>459</b>	<b>39.8</b>	459	39.8
445.gobmk	2	524	40.0	<b>524</b>	<b>40.0</b>	523	40.2	2	509	41.2	<b>508</b>	<b>41.2</b>	506	41.6
456.hammer	2	317	58.8	<b>318</b>	<b>58.8</b>	318	58.6	2	240	77.8	<b>242</b>	<b>77.0</b>	243	76.6
458.sjeng	2	664	36.4	659	36.8	<b>662</b>	<b>36.6</b>	2	660	36.6	654	37.0	<b>656</b>	<b>36.8</b>
462.libquantum	2	188	220	<b>189</b>	<b>219</b>	189	219	2	189	220	<b>189</b>	<b>219</b>	189	219
464.h264ref	2	609	72.8	606	73.0	<b>607</b>	<b>73.0</b>	2	<b>594</b>	<b>74.6</b>	594	74.6	594	74.6
471.omnetpp	2	437	28.6	<b>436</b>	<b>28.6</b>	435	28.8	2	<b>405</b>	<b>30.8</b>	405	30.8	405	30.8
473.astar	2	479	29.4	<b>479</b>	<b>29.2</b>	481	29.2	2	488	28.8	486	28.8	<b>486</b>	<b>28.8</b>
483.xalancbmk	2	284	48.6	285	48.4	<b>284</b>	<b>48.6</b>	2	284	48.6	285	48.4	<b>284</b>	<b>48.6</b>

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 Clt1C872C5DF572 Wed Jul 13 11:05:48 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 Ultimate
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]: AMD64 Family 21 Model 56 Stepping 1 AuthenticAMD ~3700 Mhz
BIOS Version  : American Megatrends Inc. 2502, 12/11/2015
Total Physical Memory: 7,108 MB
```

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

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## Platform Notes (Continued)

L2CacheSize : 25359  
L3CacheSize : 0  
MaxClockSpeed : 3700  
Name : AMD A6-8550 Radeon R5, 6 Compute Cores 2C+4G  
NumberOfCores : 1  
NumberOfLogicalProcessors: 2

(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:

/arch:AVX -Qipo -O3 -Qprec-div- -Qopt-prefetch /F256000000

C++ benchmarks:

/arch:AVX -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qcxx-features  
/F256000000 shlw32M.lib -link /FORCE:MULTIPLE



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**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: /arch:AVX(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: /arch:AVX(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: /arch:AVX(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qprec-div- -Qopt-prefetch /F256000000

429.mcf: basepeak = yes

445.gobmk: /arch:AVX(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O2 -Qprec-div- -Qansi-alias /F256000000

456.hmmer: -Qauto-ilp32 /arch:AVX(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 /arch:AVX(pass 2) -Qprof\_gen(pass 1)  
-Qprof\_use(pass 2) -Qipo(1) -O3(1) -Qprec-div-(1)  
-Qunroll4(1) /F256000000

462.libquantum: -Qauto-ilp32 /arch:AVX -Qipo -O3 -Qprec-div-  
-Qopt-prefetch /F256000000

464.h264ref: /arch:AVX(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qprec-div- -Qunroll2 -Qansi-alias /F256000000

C++ benchmarks:

471.omnetpp: /arch:AVX(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 /arch:AVX -Qipo -O3 -Qprec-div-  
-Qopt-prefetch /F256000000 shlW64M.lib

483.xalancbmk: basepeak = yes

## Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

456hmmer -link -LIBPATH:C:\Program Files (x86)\IntelSWTools\parallel\_studio\_xe\_2016.0.041\compilers\_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  
458sjeng -link -LIBPATH:C:\Program Files (x86)\IntelSWTools\parallel\_studio\_xe\_2016.0.041\compilers\_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  
462libquantum -link -LIBPATH:C:\Program Files (x86)\IntelSWTools\parallel\_studio\_xe\_2016.0.041\compilers\_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)\Intel\IntelTool\parallel_studio_w_2016.0.04\compiler_and_libraries_2016\windows\compiler\lib\intel64 -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 questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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