



SPEC® CINT2006 Result

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ASUSTeK Computer Inc.

(Test Sponsor: Intel Corporation)

ASUS A88X-PRO Motherboard (AMD A6-7400K with Radeon R5 Graphics)

SPECint®_rate2006 = 45.9

SPECint_rate_base2006 = 43.5

CPU2006 license: 13

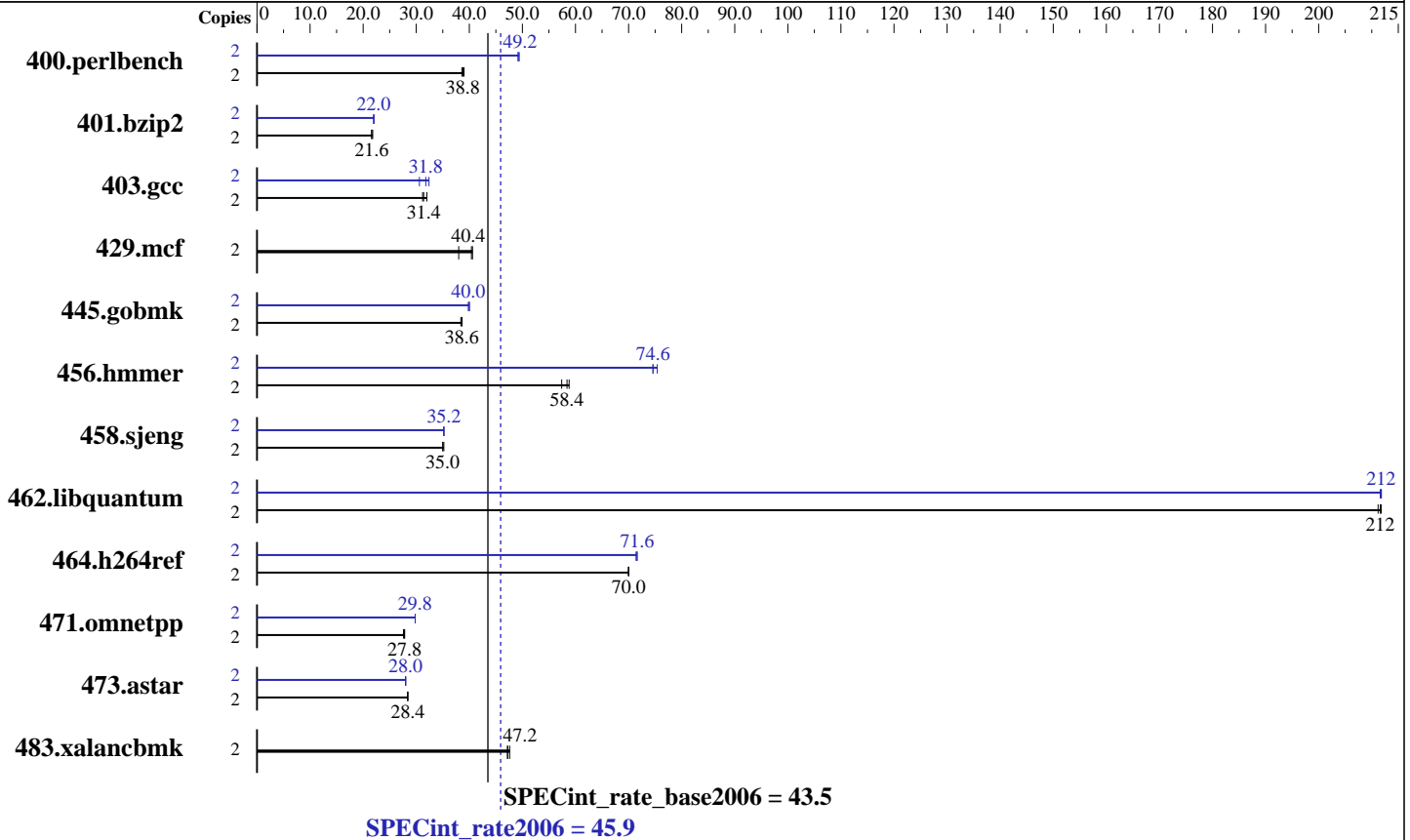
Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: Mar-2016

Hardware Availability: Jul-2014

Software Availability: Aug-2015



Hardware

CPU Name: AMD A6-7400K
 CPU Characteristics: AMD Turbo CORE technology up to 3.90 GHz
 CPU MHz: 3500
 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 Enterprise 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	507	38.6	<u>502</u>	<u>38.8</u>	502	39.0	2	<u>396</u>	<u>49.2</u>	396	49.4	398	49.2
401.bzip2	2	888	21.8	894	21.6	<u>890</u>	<u>21.6</u>	2	880	22.0	875	22.0	<u>879</u>	<u>22.0</u>
403.gcc	2	515	31.2	502	32.0	<u>514</u>	<u>31.4</u>	2	<u>505</u>	<u>31.8</u>	527	30.6	497	32.4
429.mcf	2	<u>451</u>	<u>40.4</u>	448	40.6	479	38.0	2	<u>451</u>	<u>40.4</u>	448	40.6	479	38.0
445.gobmk	2	546	38.4	544	38.6	<u>545</u>	<u>38.6</u>	2	<u>525</u>	<u>40.0</u>	526	39.8	525	40.0
456.hammer	2	325	57.4	317	58.8	<u>319</u>	<u>58.4</u>	2	<u>250</u>	<u>74.6</u>	250	74.6	248	75.4
458.sjeng	2	<u>690</u>	<u>35.0</u>	689	35.2	692	35.0	2	<u>688</u>	<u>35.2</u>	689	35.2	688	35.2
462.libquantum	2	196	212	<u>196</u>	<u>212</u>	196	211	2	196	212	<u>196</u>	<u>212</u>	196	212
464.h264ref	2	632	70.0	<u>632</u>	<u>70.0</u>	632	70.0	2	620	71.4	618	71.6	<u>618</u>	<u>71.6</u>
471.omnetpp	2	<u>451</u>	<u>27.8</u>	452	27.6	451	27.8	2	419	29.8	<u>420</u>	<u>29.8</u>	420	29.8
473.astar	2	496	28.4	494	28.4	<u>494</u>	<u>28.4</u>	2	503	28.0	<u>503</u>	<u>28.0</u>	501	28.0
483.xalancbmk	2	290	47.6	<u>292</u>	<u>47.2</u>	293	47.2	2	290	47.6	<u>292</u>	<u>47.2</u>	293	47.2

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 CltE03F49ACBFDE Fri Mar 18 12:46:34 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 Enterprise
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 48 Stepping 1 AuthenticAMD ~3500 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 : 3500
Name : AMD A6-7400K 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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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 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 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 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 other inquiries, please contact webmaster@spec.org.

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