



# SPEC® CINT2006 Result

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ASUSTeK Computer Inc.

(Test Sponsor: Intel Corporation)

ASUS F2A85-M PRO Motherboard (AMD A4-4000 APU with Radeon HD Graphics)

SPECint®\_rate2006 = 37.3

SPECint\_rate\_base2006 = 35.2

CPU2006 license: 13

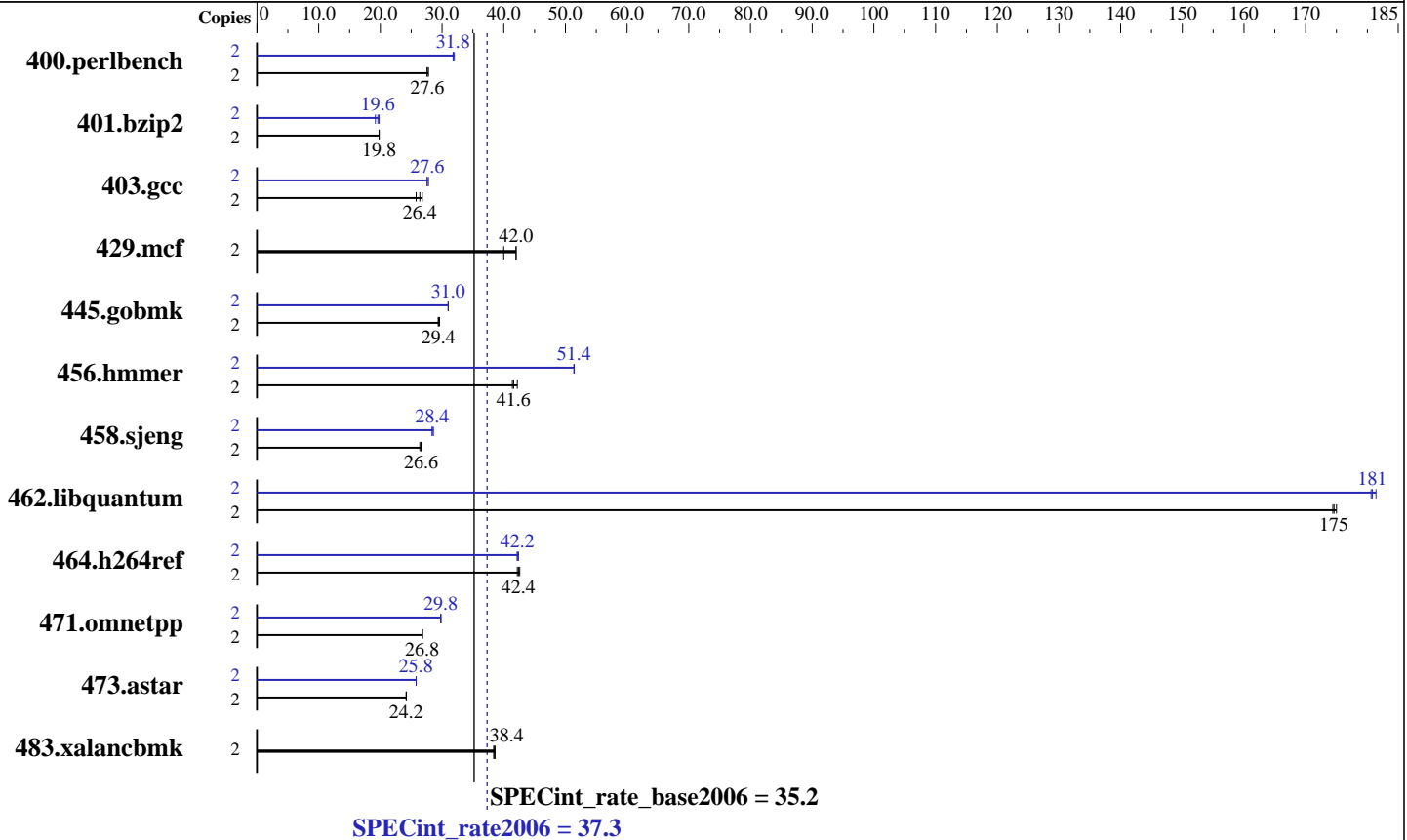
Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: Jul-2014

Hardware Availability: Aug-2013

Software Availability: Oct-2013



## Hardware

CPU Name: AMD A4-4000  
 CPU Characteristics: AMD Turbo CORE technology up to 3.20 GHz  
 CPU MHz: 3000  
 FPU: Integrated  
 CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip  
 CPU(s) orderable: 1 chip  
 Primary Cache: 64 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 2Rx4 PC3-12800U-11, running at 1333 MHz and CL9)  
 Disk Subsystem: 1 TB Seagate SATA HDD, 7200 RPM  
 Other Hardware: None

## Software

Operating System: Microsoft Windows 8.1 Pro  
 6.3.9600 N/A Build 9600  
 Compiler: C/C++: Version 14.0.1.139 of Intel C++ Studio XE for Windows;  
 Libraries: Version 16.00.30319.01 of Microsoft Visual Studio 2010 Professional SP1  
 Auto Parallel: No  
 File System: NTFS  
 System State: Default  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: SmartHeap Library Version 10.0 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>706</b> | <b>27.6</b> | 705         | 27.8        | 706        | 27.6        | 2      | 614         | 31.8        | <b>613</b> | <b>31.8</b> | 612        | 32.0        |
| 401.bzip2      | 2      | 978        | 19.8        | <b>978</b>  | <b>19.8</b> | 975        | 19.8        | 2      | 1004        | 19.2        | <b>982</b> | <b>19.6</b> | 979        | 19.8        |
| 403.gcc        | 2      | <b>612</b> | <b>26.4</b> | 600         | 26.8        | 626        | 25.8        | 2      | <b>582</b>  | <b>27.6</b> | 585        | 27.6        | 578        | 27.8        |
| 429.mcf        | 2      | 456        | 40.0        | <b>435</b>  | <b>42.0</b> | 434        | 42.0        | 2      | 456         | 40.0        | <b>435</b> | <b>42.0</b> | 434        | 42.0        |
| 445.gobmk      | 2      | 711        | 29.6        | <b>712</b>  | <b>29.4</b> | 713        | 29.4        | 2      | 677         | 31.0        | <b>677</b> | <b>31.0</b> | 676        | 31.0        |
| 456.hmmer      | 2      | <b>450</b> | <b>41.6</b> | 443         | 42.2        | 451        | 41.4        | 2      | <b>363</b>  | <b>51.4</b> | 363        | 51.4        | 363        | 51.4        |
| 458.sjeng      | 2      | 909        | 26.6        | 914         | 26.4        | <b>910</b> | <b>26.6</b> | 2      | 851         | 28.4        | 848        | 28.6        | <b>850</b> | <b>28.4</b> |
| 462.libquantum | 2      | 238        | 174         | <b>237</b>  | <b>175</b>  | 237        | 175         | 2      | <b>229</b>  | <b>181</b>  | 229        | 181         | 229        | 181         |
| 464.h264ref    | 2      | 1047       | 42.2        | <b>1044</b> | <b>42.4</b> | 1041       | 42.6        | 2      | <b>1047</b> | <b>42.2</b> | 1046       | 42.4        | 1048       | 42.2        |
| 471.omnetpp    | 2      | 467        | 26.8        | 465         | 26.8        | <b>466</b> | <b>26.8</b> | 2      | <b>420</b>  | <b>29.8</b> | 420        | 29.8        | 419        | 29.8        |
| 473.astar      | 2      | 579        | 24.2        | <b>582</b>  | <b>24.2</b> | 582        | 24.2        | 2      | 544         | 25.8        | <b>544</b> | <b>25.8</b> | 543        | 25.8        |
| 483.xalancbmk  | 2      | 358        | 38.6        | 360         | 38.4        | <b>359</b> | <b>38.4</b> | 2      | 358         | 38.6        | 360        | 38.4        | <b>359</b> | <b>38.4</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 14.0 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 2013 program folder)

## Submit Notes

Processes were bound to specific processors using the start command with the /affinity switch. The config file option 'submit' was used to generate the affinity mask for each process.

## Platform Notes

Sysinfo program C:\SPEC14.0\Docs\sysinfo  
\$Rev: 6775 \$ \$Date:: 2011-08-16 #\$ \8787f7622badcf24e01c368b1db4377c  
running on Clt08606E747443 Tue Jul 1 19:06:26 2014

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 8.1 Pro  
OS Version : 6.3.9600 N/A Build 9600  
System Manufacturer: System manufacturer  
System Model : System Product Name  
Processor(s) : 1 Processor(s) Installed.

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## Platform Notes (Continued)

[01]: AMD64 Family 21 Model 19 Stepping 1 AuthenticAMD ~3000 Mhz  
BIOS Version : American Megatrends Inc. 6303, 8/13/2013  
Total Physical Memory: 7,366 MB

Trying 'wmic cpu get /value'

DeviceID : CPU0

L2CacheSize : 1024

L3CacheSize : 0

MaxClockSpeed : 3000

Name : AMD A4-4000 APU with Radeon(tm) HD Graphics

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 Core i7-860 CPU  
+ 8GB memory using Windows 7 Enterprise 64-bit

## Base Compiler Invocation

C benchmarks:

icl -Qvc10 -Qstd=c99

C++ benchmarks:

icl -Qvc10

## Base Portability Flags

403.gcc: -DSPEC\_CPU\_WIN32

464.h264ref: -DWIN32 -DSPEC\_CPU\_NO\_INTTYPES

483.xalancbmk: -Qoption,cpp,--no\_wchar\_t\_keyword

## Base Optimization Flags

C benchmarks:

/arch:AVX -Qipo -O3 -Qprec-div- -Qopt-prefetch /F512000000

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## Base Optimization Flags (Continued)

C++ benchmarks:

```
/arch:AVX -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qcxx-features
/F512000000 shlw32M.lib -link /FORCE:MULTIPLE
```

## Base Other Flags

C benchmarks:

```
403.gcc: -Dalloca=_alloca
```

## Peak Compiler Invocation

C benchmarks (except as noted below):

```
icl -Qvc10 -Qstd=c99
```

```
456.hmmmer: C:\Program Files (x86)\Intel\Composer XE 2013 SP1/bin/intel64/icl.exe
```

```
458.sjeng: C:\Program Files (x86)\Intel\Composer XE 2013 SP1/bin/intel64/icl.exe
```

```
462.libquantum: C:\Program Files (x86)\Intel\Composer XE 2013 SP1/bin/intel64/icl.exe
-Qstd=c99
```

C++ benchmarks (except as noted below):

```
icl -Qvc10
```

```
473.astar: C:\Program Files (x86)\Intel\Composer XE 2013 SP1/bin/intel64/icl.exe
```

## Peak Portability Flags

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

## Peak Optimization Flags

C benchmarks:

Continued on next page



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## Peak Optimization Flags (Continued)

400.perlbench: /arch:AVX(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch  
/F512000000 shlw32M.lib -link /FORCE:MULTIPLE

401.bzip2: /arch:AVX(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qprec-div- -Qopt-prefetch -Qansi-alias  
/F512000000

403.gcc: /arch:AVX(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qprec-div- -Qopt-prefetch /F512000000

429.mcf: basepeak = yes

445.gobmk: /arch:AVX(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O2 -Qprec-div- -Qansi-alias /F512000000

456.hmmer: -Qauto-ilp32 /arch:AVX(pass 2) -Qprof\_gen(pass 1)  
-Qprof\_use(pass 2) -Qipo -O3 -Qprec-div- -Qopt-prefetch  
/F512000000

458.sjeng: -Qauto-ilp32 /arch:AVX(pass 2) -Qprof\_gen(pass 1)  
-Qprof\_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll4  
/F512000000

462.libquantum: -Qauto-ilp32 /arch:AVX -Qipo -O3 -Qprec-div-  
-Qopt-prefetch /F512000000

464.h264ref: /arch:AVX(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qprec-div- -Qunroll2 -Qansi-alias /F512000000

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 /F512000000 shlw32M.lib  
-link /FORCE:MULTIPLE

473.astar: -Qauto-ilp32 /arch:AVX -Qipo -O3 -Qprec-div-  
-Qopt-prefetch /F512000000 shlw64M.lib  
-link /FORCE:MULTIPLE

483.xalancbmk: basepeak = yes

## Peak Other Flags

C benchmarks:

Continued on next page



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## Peak Other Flags (Continued)

403.gcc: -Dalloca=\_alloca

456.hmmr: -link -LIBPATH:C:\Program Files (x86)\Intel\Composer XE 2013 SP1/compiler/lib/intel64  
-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 10.0/VC/lib/AMD64  
-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 10.0/VC/lib  
-link -LIBPATH:C:/Program Files (x86)/Microsoft SDKs/Windows/v7.0A/lib/x64

458.sjeng: -link -LIBPATH:C:\Program Files (x86)\Intel\Composer XE 2013 SP1/compiler/lib/intel64  
-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 10.0/VC/lib/AMD64  
-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 10.0/VC/lib  
-link -LIBPATH:C:/Program Files (x86)/Microsoft SDKs/Windows/v7.0A/lib/x64

462.libquantum: -link -LIBPATH:C:\Program Files (x86)\Intel\Composer XE 2013 SP1/compiler/lib/intel64  
-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 10.0/VC/lib/AMD64  
-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 10.0/VC/lib  
-link -LIBPATH:C:/Program Files (x86)/Microsoft SDKs/Windows/v7.0A/lib/x64

C++ benchmarks:

473.astar: -link -LIBPATH:C:\Program Files (x86)\Intel\Composer XE 2013 SP1/compiler/lib/intel64  
-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 10.0/VC/lib/AMD64  
-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 10.0/VC/lib  
-link -LIBPATH:C:/Program Files (x86)/Microsoft SDKs/Windows/v7.0A/lib/x64

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-windows.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-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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