SPEC® CINT2006 Result

ASUSTeK Computer Inc.
(Test Sponsor: Intel Corporation)

ASUS A88X-PRO motherboard (AMD A10-7700K APU with Radeon R7 Graphics)

$SPECint^{®}\_rate2006 =$ 82.1
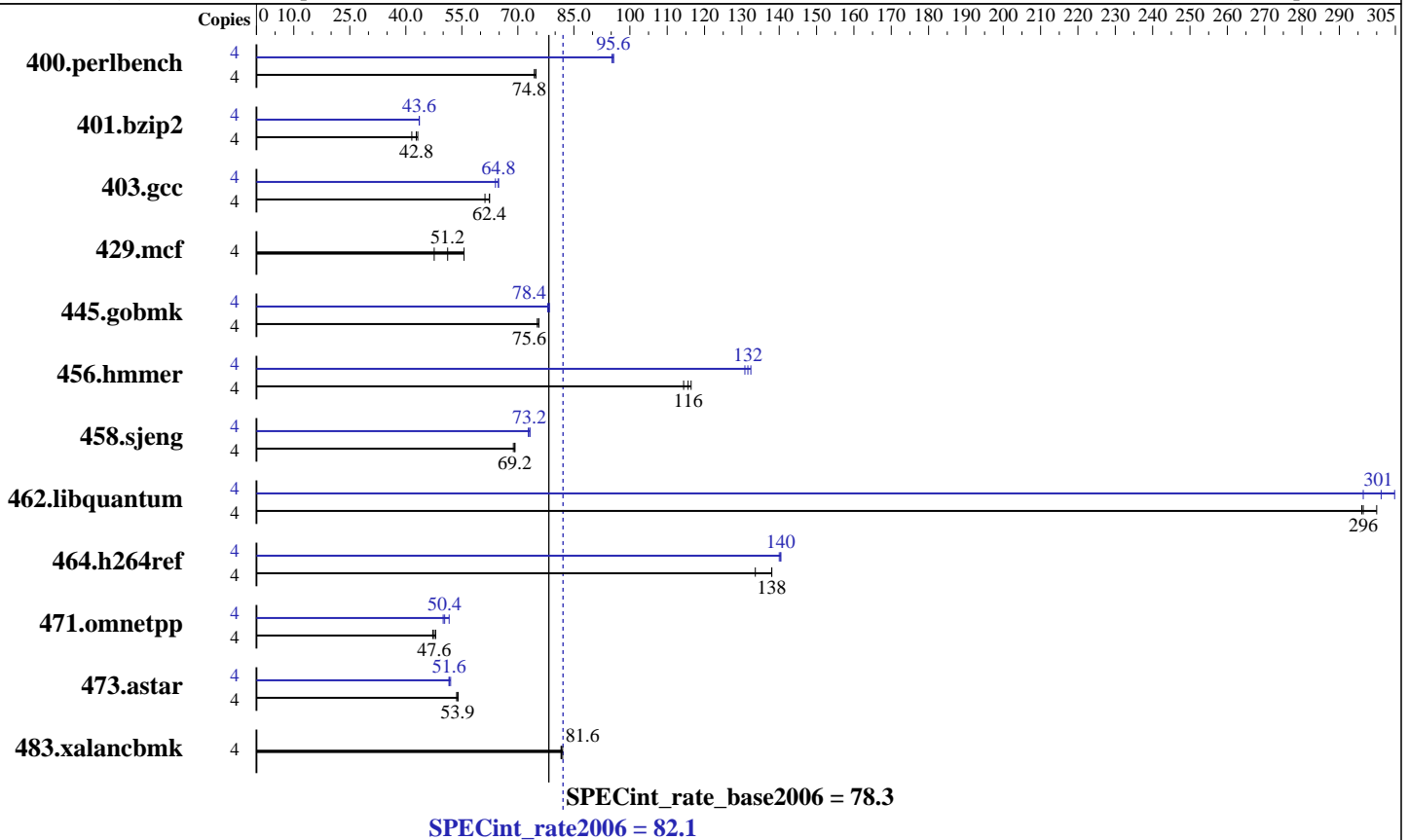
$SPECint\_rate\_base2006 =$ 78.3

CPU2006 license: 13

Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: Jun-2014

Hardware Availability: Jan-2014

Software Availability: Apr-2013

SPECint_rate_base2006 = 78.3

SPECint_rate2006 = 82.1

Hardware

CPU Name: AMD A10-7700K

CPU Characteristics: AMD Turbo CORE technology up to 3.80 GHz

CPU MHz: 3400

FPU: Integrated

CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip

CPU(s) orderable: 1 chip

Primary Cache: 192 KB I on chip per chip, 96 KB I shared / 2 cores; 16 KB D on chip per core

Secondary Cache: 4 MB I+D on chip per chip, 2 MB shared / 2 cores

L3 Cache: None

Other Cache: None

Memory: 4 GB (2 x 2 GB 1Rx8 PC3-12800U-11)

Disk Subsystem: 250 GB Seagate SATA HDD, 7200 RPM

Other Hardware: None

Software

Operating System: Microsoft Windows 7 Enterprise 6.1.7601 Service Pack 1 Build 7601

Compiler: C/C++: Version 13.1.1.171 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	Copies	Base Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Peak Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	4	523	74.8	524	74.4	**523**	**74.8**	4	411	95.2	**410**	**95.6**	408	95.6
401.bzip2	4	**906**	**42.8**	898	43.2	928	41.6	4	889	43.6	**887**	**43.6**	884	43.6
403.gcc	4	525	61.2	**516**	**62.4**	515	62.4	4	496	64.8	502	64.0	**497**	**64.8**
429.mcf	4	763	47.6	**714**	**51.2**	658	55.6	4	763	47.6	**714**	**51.2**	658	55.6
445.gobmk	4	**555**	**75.6**	558	75.2	555	75.6	4	534	78.4	**534**	**78.4**	537	78.0
456.hmmer	4	326	114	321	116	**323**	**116**	4	285	131	**284**	**132**	282	132
458.sjeng	4	700	69.2	704	68.8	**701**	**69.2**	4	**661**	**73.2**	660	73.2	666	72.8
462.libquantum	4	**280**	**296**	276	300	280	296	4	280	296	272	305	**275**	**301**
464.h264ref	4	663	134	**641**	**138**	641	138	4	633	140	630	140	**631**	**140**
471.omnetpp	4	**524**	**47.6**	519	48.0	529	47.2	4	499	50.0	485	51.6	**496**	**50.4**
473.astar	4	**521**	**53.9**	521	54.0	523	53.6	4	546	51.6	542	52.0	**545**	**51.6**
483.xalancbmk	4	**338**	**81.6**	337	82.0	339	81.6	4	**338**	**81.6**	337	82.0	339	81.6

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 13.1 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:\SPEC13.1/Docs/sysinfo
$Rev: 6775 $ $Date:: 2011-08-16 #$ \8787f7622badcf24e01c368b1db4377c
running on CltE03F49ADB169 Sat Jun 28 23:13:32 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 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.
```

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Platform Notes (Continued)

```
     [01]: AMD64 Family 21 Model 48 Stepping 1 AuthenticAMD ~3400 Mhz
  BIOS Version  : American Megatrends Inc. 0703, 12/30/2013
  Total Physical Memory: 3,522 MB

  Trying 'wmic cpu get /value'
  DeviceID       : CPU0
  L2CacheSize    : 4096
  L3CacheSize    : 0
  MaxClockSpeed  : 3400
  Name           : AMD A10-7700K APU with Radeon(TM) R7 Graphics
  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
  Micron MT8JTF25664AZ-1G6 Series Memory DIMMs
```

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.hmmer: C:\Program Files (x86)\Intel\Composer XE 2013.171/bin/intel64/icl.exe
```

```
458.sjeng: C:\Program Files (x86)\Intel\Composer XE 2013.171/bin/intel64/icl.exe
```

```
462.libquantum: C:\Program Files (x86)\Intel\Composer XE 2013.171/bin/intel64/icl.exe
                -Qstd=c99
```

C++ benchmarks (except as noted below):
```
icl -Qvc10
```

```
473.astar: C:\Program Files (x86)\Intel\Composer XE 2013.171/bin/intel64/icl.exe
```

Peak Portability Flags

```
     403.gcc: -DSPEC_CPU_WIN32
   456.hmmer: -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.hmmer: -link -LIBPATH:C:\Program Files (x86)\Intel\Composer XE 2013.171/compiler/lib/intel64
               -link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 10.0/VC/lib/AMD6
               -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 2013.171/compiler/lib/intel64
               -link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 10.0/VC/lib/AMD6
               -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 2013.171/compiler/lib/intel64
               -link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 10.0/VC/lib/AMD6
               -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 2013.171/compiler/lib/intel64
               -link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 10.0/VC/lib/AMD6
               -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-ic13.1-official-windows.20130924.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic13.1-official-windows.20130924.xml`

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.
Report generated on Tue Aug 12 15:06:21 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 15 July 2014.