SPEC® CINT2006 Result
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ASUSTeK Computer Inc.
(Test Sponsor: Intel Corporation)

ASUS A88X-PRO Motherboard (AMD A10 PRO-7850B with Radeon R7 Graphics)

$SPECint^®\_rate2006 =$ 69.9

$SPECint\_rate\_base2006 =$ 68.5
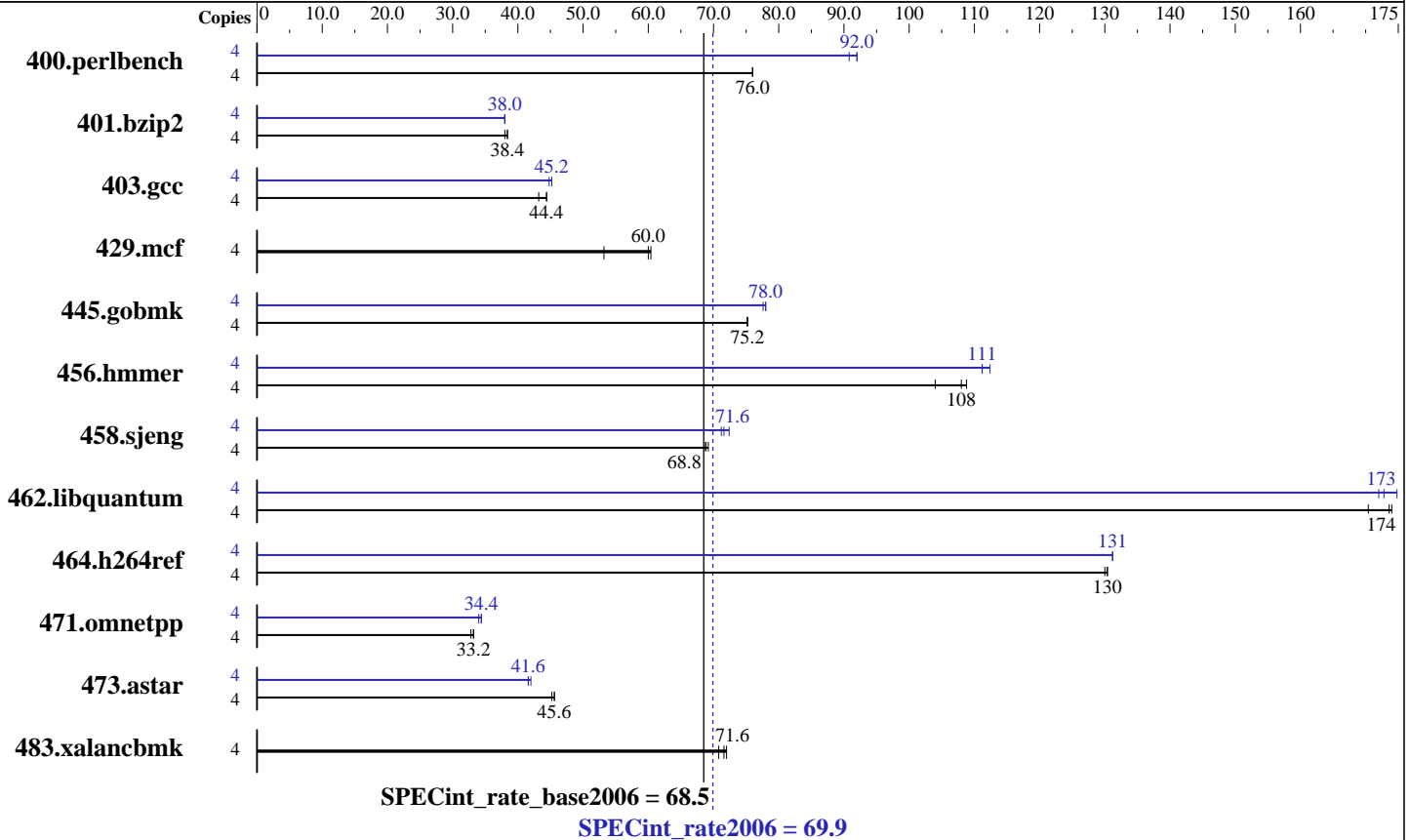
CPU2006 license: 13
Test sponsor: Intel Corporation
Tested by: Intel Corporation

Test date: Nov-2014
Hardware Availability: Jul-2014
Software Availability: Oct-2013

SPECint_rate_base2006 = 68.5

SPECint_rate2006 = 69.9

Benchmark	Copies	base	peak
400.perlbench	4	76.0	92.0
401.bzip2	4	38.4	38.0
403.gcc	4	44.4	45.2
429.mcf	4	60.0	
445.gobmk	4	75.2	78.0
456.hmmer	4	108	111
458.sjeng	4	68.8	71.6
462.libquantum	4	174	173
464.h264ref	4	130	131
471.omnetpp	4	33.2	34.4
473.astar	4	45.6	41.6
483.xalancbmk	4	71.6	

Hardware

CPU Name:	AMD A10 PRO-7850B
CPU Characteristics:	AMD Turbo CORE technology up to 4.00 GHz
CPU MHz:	3700
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:	8 GB (2 x 4 GB 2Rx4 PC3-17000U-14)
Disk Subsystem:	160 GB Western Digital 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:	Microquill SmartHeap V10.0

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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	4	515	76.0	514	76.0	**515**	**76.0**	4	430	90.8	**426**	**92.0**	424	92.0
401.bzip2	4	**1010**	**38.4**	1019	38.0	1010	38.4	4	1017	38.0	**1014**	**38.0**	1013	38.0
403.gcc	4	724	44.4	748	43.2	**726**	**44.4**	4	**710**	**45.2**	716	44.8	709	45.2
429.mcf	4	687	53.2	**606**	**60.0**	604	60.4	4	687	53.2	**606**	**60.0**	604	60.4
445.gobmk	4	558	75.2	**559**	**75.2**	559	75.2	4	540	77.6	538	78.0	**538**	**78.0**
456.hmmer	4	343	109	359	104	**345**	**108**	4	336	111	332	112	**336**	**111**
458.sjeng	4	703	68.8	**702**	**68.8**	699	69.2	4	678	71.2	669	72.4	**677**	**71.6**
462.libquantum	4	486	170	476	174	**478**	**174**	4	**479**	**173**	474	175	482	172
464.h264ref	4	680	130	**679**	**130**	679	130	4	**675**	**131**	675	131	674	131
471.omnetpp	4	759	32.8	**755**	**33.2**	752	33.2	4	732	34.0	726	34.4	**729**	**34.4**
473.astar	4	621	45.2	**618**	**45.6**	617	45.6	4	**674**	**41.6**	667	42.0	677	41.6
483.xalancbmk	4	**387**	**71.6**	384	72.0	391	70.8	4	**387**	**71.6**	384	72.0	391	70.8

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 CltE03F49B01E0D Thu Nov  6 20:53:07 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 48 Stepping 1 AuthenticAMD ~3700 Mhz
   BIOS Version  : American Megatrends Inc. 1301, 6/24/2014
   Total Physical Memory: 7,105 MB

   Trying 'wmic cpu get /value'
   DeviceID       : CPU0
   L2CacheSize    : 25359
   L3CacheSize    : 0
   MaxClockSpeed : 3700
   Name           : AMD A10 PRO-7850B R7, 12 Compute Cores 4C+8G
   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 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
```

Continued on next page

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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 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.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:

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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:

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Test date: Nov-2014

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Peak Other Flags (Continued)

```
     403.gcc: -Dalloca=_alloca

  456.hmmer: -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/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 SP1/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 SP1/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 SP1/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-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`

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

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