SPEC® CINT2006 Result
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ASUSTeK Computer Inc.
(Test Sponsor: Intel Corporation)
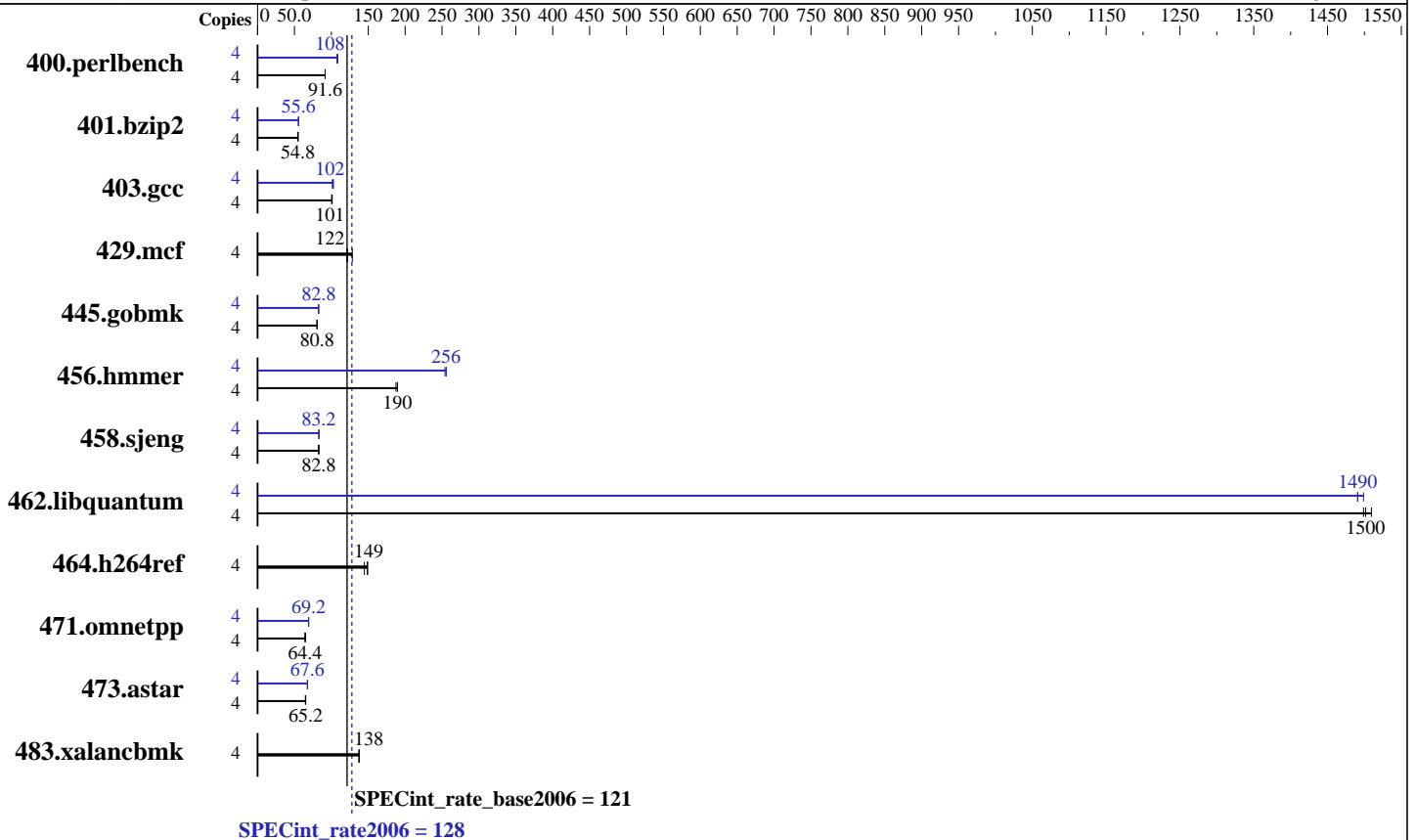
ASUS Q170M-C motherboard (Intel Core i3-6098P)

SPECint®_rate2006 = 128

SPECint_rate_base2006 = 121

CPU2006 license: 13
Test sponsor: Intel Corporation
Tested by: Intel Corporation

Test date: Apr-2016
Hardware Availability: Dec-2015
Software Availability: Aug-2015

SPECint_rate_base2006 = 121

SPECint_rate2006 = 128

Hardware

CPU Name:	Intel Core i3-6098P
CPU Characteristics:	
CPU MHz:	3600
FPU:	Integrated
CPU(s) enabled:	2 cores, 1 chip, 2 cores/chip, 2 threads/core
CPU(s) orderable:	1 chip
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	256 KB I+D on chip per core
L3 Cache:	3 MB I+D on chip per chip
Other Cache:	None
Memory:	8 GB (2 x 4 GB 2Rx4 PC4-2133P-U)
Disk Subsystem:	1 TB Seagate Barracuda HDD, 7200 RPM
Other Hardware:	None

Software

Operating System:	Microsoft Windows 7 Professional 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	Copies	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Base Seconds	Base Ratio	Copies	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio	Peak Seconds	Peak Ratio
400.perlbench	4	426	91.6	**426**	**91.6**	426	91.6	4	364	108	**360**	**108**	360	109
401.bzip2	4	707	54.8	703	54.8	**707**	**54.8**	4	**695**	**55.6**	694	55.6	697	55.2
403.gcc	4	**319**	**101**	321	100	319	101	4	313	103	**314**	**102**	318	101
429.mcf	4	301	121	284	128	**300**	**122**	4	301	121	284	128	**300**	**122**
445.gobmk	4	522	80.4	520	80.8	**521**	**80.8**	4	509	82.4	**508**	**82.8**	507	82.8
456.hmmer	4	197	190	**197**	**190**	199	188	4	147	254	146	256	**146**	**256**
458.sjeng	4	581	83.2	584	82.8	**584**	**82.8**	4	**582**	**83.2**	583	83.2	581	83.2
462.libquantum	4	54.9	1510	**55.2**	**1500**	55.3	1500	4	55.3	1500	**55.6**	**1490**	55.6	1490
464.h264ref	4	593	149	611	145	**594**	**149**	4	593	149	611	145	**594**	**149**
471.omnetpp	4	383	65.2	388	64.4	**387**	**64.4**	4	**362**	**69.2**	362	69.2	362	69.2
473.astar	4	431	65.2	433	64.8	**432**	**65.2**	4	**415**	**67.6**	416	67.6	415	67.6
483.xalancbmk	4	200	138	200	138	**200**	**138**	4	200	138	200	138	**200**	**138**

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 CltF832E4885A95 Tue Apr 5 21:30:59 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 Professional
    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]: Intel64 Family 6 Model 94 Stepping 3 GenuineIntel ~3600 Mhz
    BIOS Version   : American Megatrends Inc. 0704, 1/12/2016
    Total Physical Memory: 8,074 MB

    Trying 'wmic cpu get /value'
    DeviceID   : CPU0

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Platform Notes (Continued)

```
    L2CacheSize     : 512
    L3CacheSize     : 3072
    MaxClockSpeed : 3600
    Name            : Intel(R) Core(TM) i3-6098P CPU @ 3.60GHz
    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 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:
```
    -QxCORE-AVX2 -Qipo -O3 -Qprec-div- -Qopt-prefetch /F256000000
```

C++ benchmarks:
```
    -QxCORE-AVX2 -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.hmmer: 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.hmmer: -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: -QxCORE-AVX2(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.bzip2: -QxCORE-AVX2(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: -QxCORE-AVX2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qprec-div- -Qopt-prefetch /F256000000

429.mcf: basepeak = yes

445.gobmk: -QxCORE-AVX2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O2 -Qprec-div- -Qansi-alias /F256000000

456.hmmer: -Qauto-ilp32 -QxCORE-AVX2(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 -QxCORE-AVX2(pass 2) -Qprof_gen(pass 1)
-Qprof_use(pass 2) -Qipo(1) -O3(1) -Qprec-div-(1)
-Qunroll4(1) /F256000000

462.libquantum: -Qauto-ilp32 -QxCORE-AVX2 -Qipo -O3 -Qprec-div-
-Qopt-prefetch /F256000000

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: -QxCORE-AVX2(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 -QxCORE-AVX2 -Qipo -O3 -Qprec-div-
-Qopt-prefetch /F256000000 shlW64M.lib

483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

456.hmmer: -link -LIBPATH:C:\Program Files (x86)\IntelSWTools\parallel_studio_xe_2016.0.041ompilers_and_libraries_2016\windows/compiler/lib/intel64   -link -LIBPATH:C:\Program Files (x86)\Microsoft SDKs\Windows?7.1A\Libd

-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 12.0/VC/lib/AMD6

458.sjeng: -link -LIBPATH:C:\Program Files (x86)\IntelSWTools\parallel_studio_xe_2016.0.041ompilers_and_libraries_2016\windows/compiler/lib/intel64   -link -LIBPATH:C:\Program Files (x86)\Microsoft SDKs\Windows?7.1A\Libd

-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 12.0/VC/lib/AMD6

462.libquantum: -link -LIBPATH:C:\Program Files (x86)\IntelSWTools\parallel_studio_xe_2016.0.041ompilers_and_libraries_2016\windows/compiler/lib/intel64   -link -LIBPATH:C:\Program Files (x86)\Microsoft SDKs\Windows?7.1A\Libd

-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 12.0/VC/lib/AMD6

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Peak Other Flags (Continued)

C++ benchmarks:

473.astar: -link /FORCE:MULTIPLE -link -LIBPATH:C:\Program Files (x86)\IntelSWTools\parallel_studio_xe_2016.0.041ompilers_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/AMD6

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

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

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