SPEC® CINT2006 Result
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ASUSTeK Computer Inc.
(Test Sponsor: Intel Corporation)
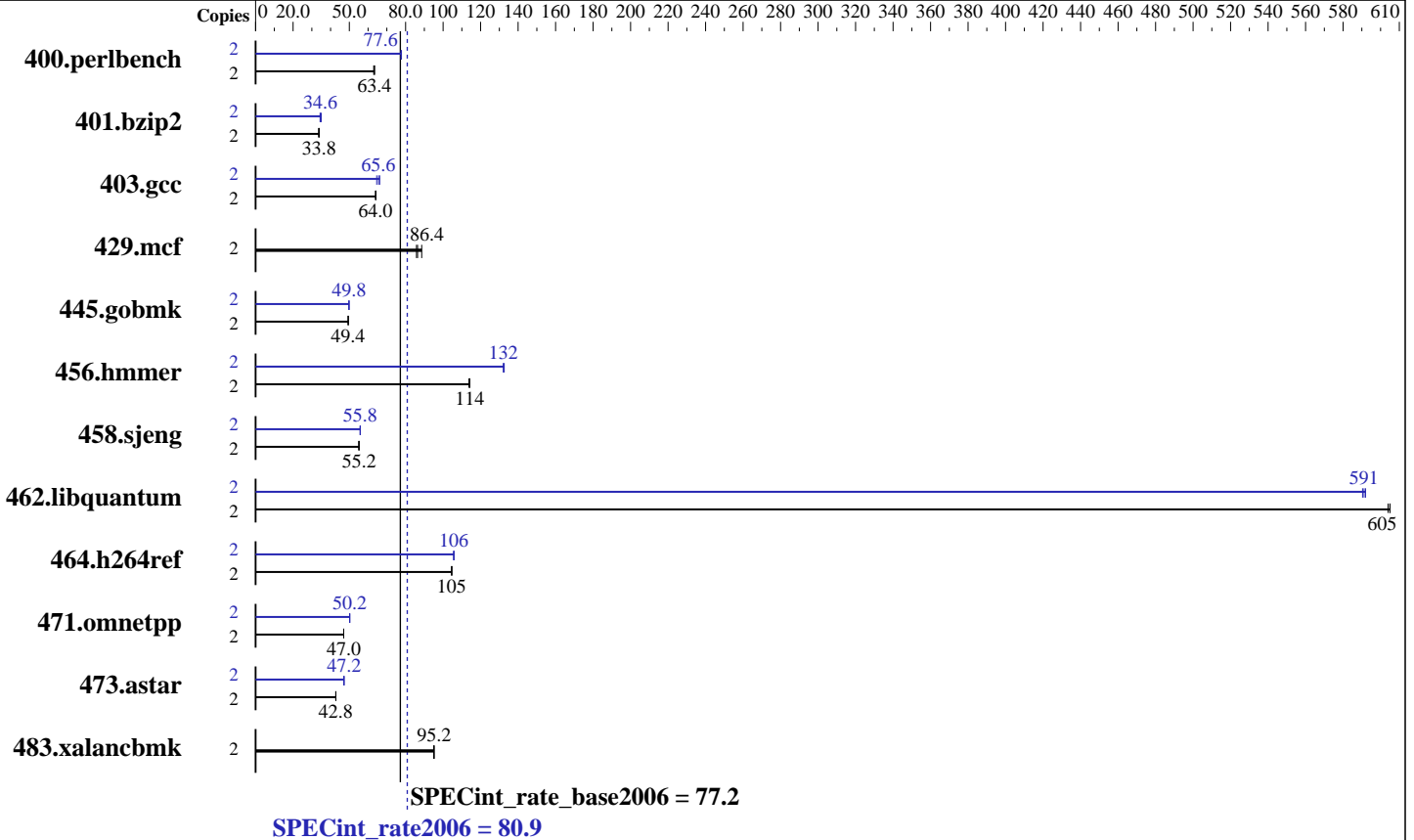
ASUS Q170M-C motherboard (Intel Celeron G3920)

$SPECint^®\_rate2006 =$ 80.9

SPECint_rate_base2006 = 77.2

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 = 77.2

SPECint_rate2006 = 80.9

Benchmark	Copies	Peak	Base
400.perlbench	2 / 2	77.6	63.4
401.bzip2	2 / 2	34.6	33.8
403.gcc	2 / 2	65.6	64.0
429.mcf	2		86.4
445.gobmk	2 / 2	49.8	49.4
456.hmmer	2 / 2	132	114
458.sjeng	2 / 2	55.8	55.2
462.libquantum	2 / 2	591	605
464.h264ref	2 / 2	106	105
471.omnetpp	2 / 2	50.2	47.0
473.astar	2 / 2	47.2	42.8
483.xalancbmk	2		95.2

Hardware

CPU Name: Intel Celeron G3920

CPU Characteristics:

CPU MHz: 2900

FPU: Integrated

CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip

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: 2 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	Base						Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	2	310	63.0	308	63.4	**308**	**63.4**	2	252	77.6	**252**	**77.6**	251	77.8
401.bzip2	2	574	33.6	**570**	**33.8**	567	34.0	2	560	34.4	**558**	**34.6**	553	35.0
403.gcc	2	252	64.0	**251**	**64.0**	251	64.2	2	**245**	**65.6**	244	66.2	250	64.6
429.mcf	2	213	85.8	206	88.6	**211**	**86.4**	2	213	85.8	206	88.6	**211**	**86.4**
445.gobmk	2	425	49.4	426	49.4	**425**	**49.4**	2	422	49.8	**421**	**49.8**	421	49.8
456.hmmer	2	163	114	**164**	**114**	164	114	2	**141**	**132**	141	133	141	132
458.sjeng	2	**439**	**55.2**	440	55.0	439	55.2	2	**434**	**55.8**	434	55.8	433	55.8
462.libquantum	2	68.5	605	**68.5**	**605**	68.6	604	2	70.0	592	70.2	590	**70.1**	**591**
464.h264ref	2	**423**	**105**	423	105	423	105	2	**418**	**106**	418	106	419	106
471.omnetpp	2	266	47.0	266	47.0	**266**	**47.0**	2	249	50.2	249	50.2	**249**	**50.2**
473.astar	2	**328**	**42.8**	328	42.8	328	42.8	2	297	47.2	**297**	**47.2**	299	47.0
483.xalancbmk	2	**145**	**95.2**	145	95.0	145	95.2	2	**145**	**95.2**	145	95.0	145	95.2

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 CltF832E4885693 Sat Apr 23 18:19:22 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 ~2900 Mhz
    BIOS Version   : American Megatrends Inc. 0704, 1/12/2016
    Total Physical Memory: 8,070 MB

    Trying 'wmic cpu get /value'
    DeviceID   : CPU0

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Platform Notes (Continued)

```
   L2CacheSize   : 512
   L3CacheSize   : 2048
   MaxClockSpeed : 2900
   Name          : Intel(R) Celeron(R) CPU G3920 @ 2.90GHz
   NumberOfCores : 2
   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:
```
     -QxSSE4.2 -Qipo -O3 -Qprec-div- -Qopt-prefetch /F256000000
```

C++ benchmarks:
```
     -QxSSE4.2 -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: -QxSSE4.2(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: -QxSSE4.2(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: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
             -Qipo -O3 -Qprec-div- -Qopt-prefetch /F256000000

    429.mcf: basepeak = yes

  445.gobmk: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
             -Qipo -O2 -Qprec-div- -Qansi-alias /F256000000

  456.hmmer: -Qauto-ilp32 -QxSSE4.2(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 -QxSSE4.2(pass 2) -Qprof_gen(pass 1)
             -Qprof_use(pass 2) -Qipo(1) -O3(1) -Qprec-div-(1)
             -Qunroll4(1) /F256000000

462.libquantum: -Qauto-ilp32 -QxSSE4.2 -Qipo -O3 -Qprec-div-
             -Qopt-prefetch /F256000000

  464.h264ref: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
             -Qipo -O3 -Qprec-div- -Qunroll2 -Qansi-alias /F256000000
```

C++ benchmarks:

```
  471.omnetpp: -QxSSE4.2(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 -QxSSE4.2 -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\Windows\7.1A\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

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For other inquiries, please contact webmaster@spec.org.

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