SPEC® CINT2006 Result

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Microsoft Corporation

(Test Sponsor: Intel Corporation)

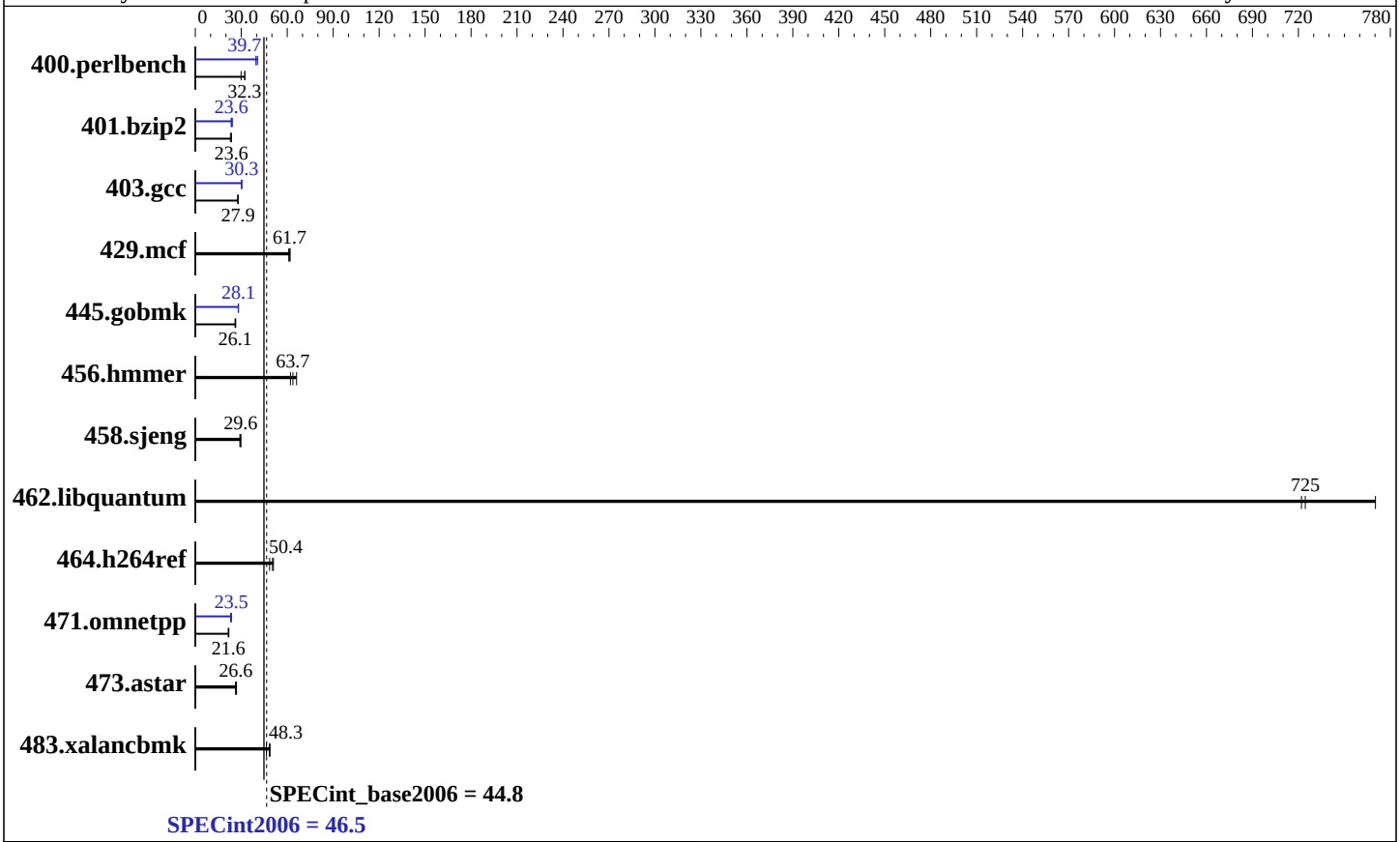
Surface Pro 3

SPECint®2006 = 46.5

SPECint_base2006 = 44.8

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

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



Hardware

CPU Name:	Intel Core i7-4650U
CPU Characteristics:	Intel Turbo Boost Technology up to 3.30 GHz
CPU MHz:	1700
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:	4 MB I+D on chip per chip
Other Cache:	None
Memory:	8 GB (4 x 2 GB 2Rx32 PC3L-12800U-11)
Disk Subsystem:	512 GB SSD
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:	Yes
File System:	NTFS
System State:	Default
Base Pointers:	32/64-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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	327	29.9	302	32.3	**302**	**32.3**	241	40.6	247	39.6	**246**	**39.7**
401.bzip2	**409**	**23.6**	421	22.9	408	23.6	412	23.4	399	24.2	**409**	**23.6**
403.gcc	290	27.7	**289**	**27.9**	289	27.9	267	30.1	**266**	**30.3**	265	30.4
429.mcf	148	61.8	150	61.0	**148**	**61.7**	148	61.8	150	61.0	**148**	**61.7**
445.gobmk	398	26.4	404	26.0	**403**	**26.1**	374	28.0	373	28.2	**374**	**28.1**
456.hmmer	150	62.1	**146**	**63.7**	141	66.1	150	62.1	**146**	**63.7**	141	66.1
458.sjeng	416	29.1	**408**	**29.6**	407	29.7	416	29.1	**408**	**29.6**	407	29.7
462.libquantum	26.9	770	28.7	722	**28.6**	**725**	26.9	770	28.7	722	**28.6**	**725**
464.h264ref	456	48.5	434	51.0	**439**	**50.4**	456	48.5	434	51.0	**439**	**50.4**
471.omnetpp	**289**	**21.6**	289	21.6	286	21.9	**266**	**23.5**	272	23.0	265	23.6
473.astar	**264**	**26.6**	267	26.3	261	26.9	**264**	**26.6**	267	26.3	261	26.9
483.xalancbmk	149	46.4	142	48.8	**143**	**48.3**	149	46.4	142	48.8	**143**	**48.3**

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 64-bit binaries with the command:
"ipsxe-comp-vars.bat intel64 vs2010" (shortcut provided in the Intel(r)
Parallel Studio XE 2013 program folder)
```

Platform Notes

```
Sysinfo program C:\Users\peca\Desktop\SPEC14.0\SPEC14.0/Docs/sysinfo
$Rev: 6775 $ $Date:: 2011-08-16 #$ \8787f7622badcf24e01c368b1db4377c
running on peca_i7 Thu Jul 10 16:14:53 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: Microsoft Corporation
System Model  : Surface Pro 3
Processor(s)  : 1 Processor(s) Installed.
     [01]: Intel64 Family 6 Model 69 Stepping 1 GenuineIntel ~1700 Mhz
BIOS Version  : American Megatrends Inc. 3.10.0250, 8/28/2014
Total Physical Memory: 8,097 MB

Trying 'wmic cpu get /value'
DeviceID      : CPU0
```

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Platform Notes (Continued)

```
 L2CacheSize   : 512
 L3CacheSize   : 4096
 MaxClockSpeed : 2301
 Name          : Intel(R) Core(TM) i7-4650U CPU @ 1.70GHz
 NumberOfCores : 2
 NumberOfLogicalProcessors: 4

 (End of data from sysinfo program)
```

Component Notes

```
Test ran with power supply connected
Power Supply: 12V, 2.58A
```

General Notes

```
 OMP_NUM_THREADS set to number of processors cores
 KMP_AFFINITY set to granularity=fine,scatter
 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

```
    400.perlbench: -DSPEC_CPU_P64 -DSPEC_CPU_WIN64_X64
                   -DSPEC_CPU_NO_NEED_VA_COPY
      401.bzip2: -DSPEC_CPU_P64
        403.gcc: -DSPEC_CPU_P64 -DSPEC_CPU_WIN64
        429.mcf: -DSPEC_CPU_P64
      445.gobmk: -DSPEC_CPU_P64
      456.hmmer: -DSPEC_CPU_P64
       458.sjeng: -DSPEC_CPU_P64
    462.libquantum: -DSPEC_CPU_P64
      464.h264ref: -DSPEC_CPU_P64 -DWIN32 -DSPEC_CPU_NO_INTTYPES
    471.omnetpp: -DSPEC_CPU_P64 -DSPEC_CPU_WIN64
        473.astar: -DSPEC_CPU_P64
    483.xalancbmk: -DSPEC_CPU_P64 -Qoption,cpp,--no_wchar_t_keyword
```

Base Optimization Flags

C benchmarks:
```
-QxCORE-AVX2 -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qparallel
-Qauto-ilp32 /F512000000
```

C++ benchmarks:
```
-QxCORE-AVX2 -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qcxx-features
-Qauto-ilp32 /F512000000 shlW64M.lib            -link /FORCE:MULTIPLE
```

Base Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

Peak Compiler Invocation

C benchmarks:
```
icl -Qvc10 -Qstd=c99
```

C++ benchmarks:
```
icl -Qvc10
```

Peak Portability Flags

Same as Base Portability Flags

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`
`-Qauto-ilp32 /F512000000 shlW64M.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`
`-Qauto-ilp32 /F512000000`

403.gcc: `-QxCORE-AVX2`(pass 2) `-Qprof_gen`(pass 1) `-Qprof_use`(pass 2)
`-Qipo -O3 -Qprec-div- -Qauto-ilp32 /F512000000`

Continued on next page

Peak Optimization Flags (Continued)

429.mcf: basepeak = yes

445.gobmk: -QxCORE-AVX2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O2 -Qprec-div- -Qansi-alias -Qauto-ilp32 /F512000000

456.hmmer: basepeak = yes

458.sjeng: basepeak = yes

462.libquantum: basepeak = yes

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 -Qauto-ilp32 /F512000000 shlW64M.lib -link /FORCE:MULTIPLE

473.astar: basepeak = yes

483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

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 other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.
Report generated on Thu Nov 6 13:46:31 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 6 November 2014.