



# SPEC® CINT2006 Result

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## Intel Corporation

**SPECint®2006 = 46.5**

Intel DQ87PG motherboard (Intel Core i5-4440S)

**SPECint\_base2006 = 44.8**

CPU2006 license: 13

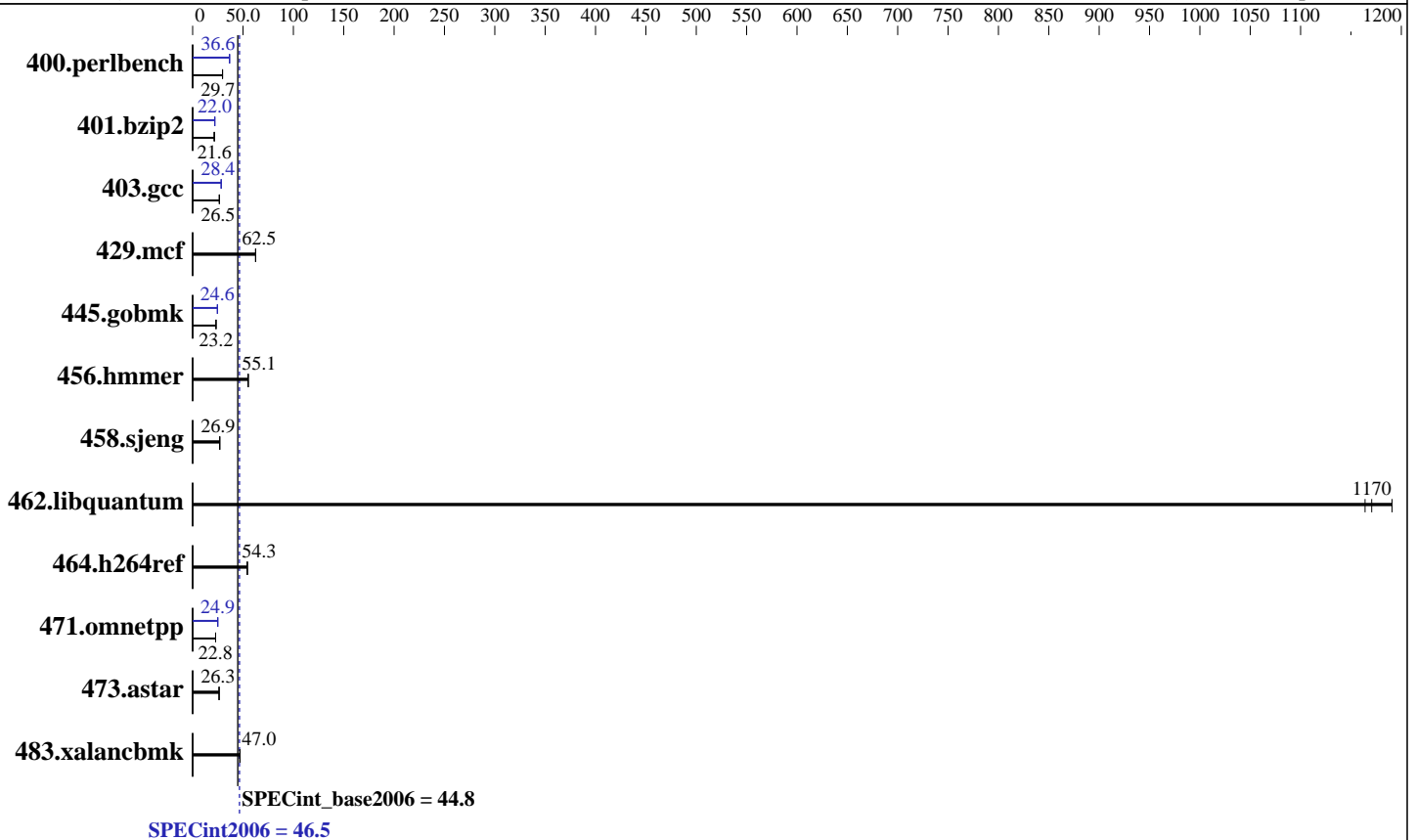
Test date: Dec-2013

Test sponsor: Intel Corporation

Hardware Availability: Sep-2013

Tested by: Intel Corporation

Software Availability: Apr-2013



### Hardware

CPU Name: Intel Core i5-4440S  
 CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz  
 CPU MHz: 2800  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 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: 6 MB I+D on chip per chip  
 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: 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	330	29.6	329	29.7	<b><u>329</u></b>	<b><u>29.7</u></b>	267	36.6	266	36.7	<b><u>267</u></b>	<b><u>36.6</u></b>
401.bzip2	453	21.3	447	21.6	<b><u>448</u></b>	<b><u>21.6</u></b>	438	22.0	<b><u>439</u></b>	<b><u>22.0</u></b>	439	22.0
403.gcc	303	26.6	304	26.5	<b><u>304</u></b>	<b><u>26.5</u></b>	284	28.3	284	28.4	<b><u>284</u></b>	<b><u>28.4</u></b>
429.mcf	146	62.5	146	62.6	<b><u>146</u></b>	<b><u>62.5</u></b>	146	62.5	146	62.6	<b><u>146</u></b>	<b><u>62.5</u></b>
445.gobmk	451	23.2	<b><u>451</u></b>	<b><u>23.2</u></b>	452	23.2	426	24.6	426	24.6	<b><u>426</u></b>	<b><u>24.6</u></b>
456.hmmer	170	55.0	<b><u>169</u></b>	<b><u>55.1</u></b>	169	55.3	170	55.0	<b><u>169</u></b>	<b><u>55.1</u></b>	169	55.3
458.sjeng	449	26.9	<b><u>450</u></b>	<b><u>26.9</u></b>	451	26.9	449	26.9	<b><u>450</u></b>	<b><u>26.9</u></b>	451	26.9
462.libquantum	<b><u>17.7</u></b>	<b><u>1170</u></b>	17.8	1160	17.4	1190	<b><u>17.7</u></b>	<b><u>1170</u></b>	17.8	1160	17.4	1190
464.h264ref	409	54.1	<b><u>408</u></b>	<b><u>54.3</u></b>	407	54.4	409	54.1	<b><u>408</u></b>	<b><u>54.3</u></b>	407	54.4
471.omnetpp	274	22.8	<b><u>274</u></b>	<b><u>22.8</u></b>	274	22.8	251	24.9	<b><u>251</u></b>	<b><u>24.9</u></b>	250	25.0
473.astar	<b><u>267</u></b>	<b><u>26.3</u></b>	267	26.3	268	26.2	<b><u>267</u></b>	<b><u>26.3</u></b>	267	26.3	268	26.2
483.xalancbmk	147	47.0	<b><u>147</u></b>	<b><u>47.0</u></b>	148	46.8	147	47.0	<b><u>147</u></b>	<b><u>47.0</u></b>	148	46.8

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 13.1 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:\SPEC13.1\Docs\sysinfo  
 \$Rev: 6775 \$ \$Date:: 2011-08-16 #\$ \8787f7622badcf24e01c368b1db4377c  
 running on Clt00224D4FB715 Sat Dec 7 12:54:24 2013

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: INTEL_
System Model   : DQ87PG__
Processor(s)  : 1 Processor(s) Installed.
               [01]: Intel64 Family 6 Model 60 Stepping 3 GenuineIntel ~2801 Mhz
BIOS Version  : Intel(R) Corp. PGQ8710H.86A.0036.2013.0702.1908, 7/2/2013
Total Physical Memory: 3,749 MB
```

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

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## Platform Notes (Continued)

```

L2CacheSize      : 1024
L3CacheSize      : 6144
MaxClockSpeed    : 2801
Name              : Intel(R) Core(TM) i5-4440S CPU @ 2.80GHz
NumberOfCores    : 4
NumberOfLogicalProcessors: 4

```

(End of data from sysinfo program)

BIOS: SATA mode set to RAID

Windows Disk Driver: Intel Rapid Storage Technology 12.5.0.1066

Windows Chipset Driver: Intel Chipset Driver 9.4.0.1027

## 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

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

```

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## Base Portability Flags (Continued)

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

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## Peak Optimization Flags (Continued)

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

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-ic13.1-official-windows.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.xml>



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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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