# SPEC® CINT2006 Result

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## Intel Corporation

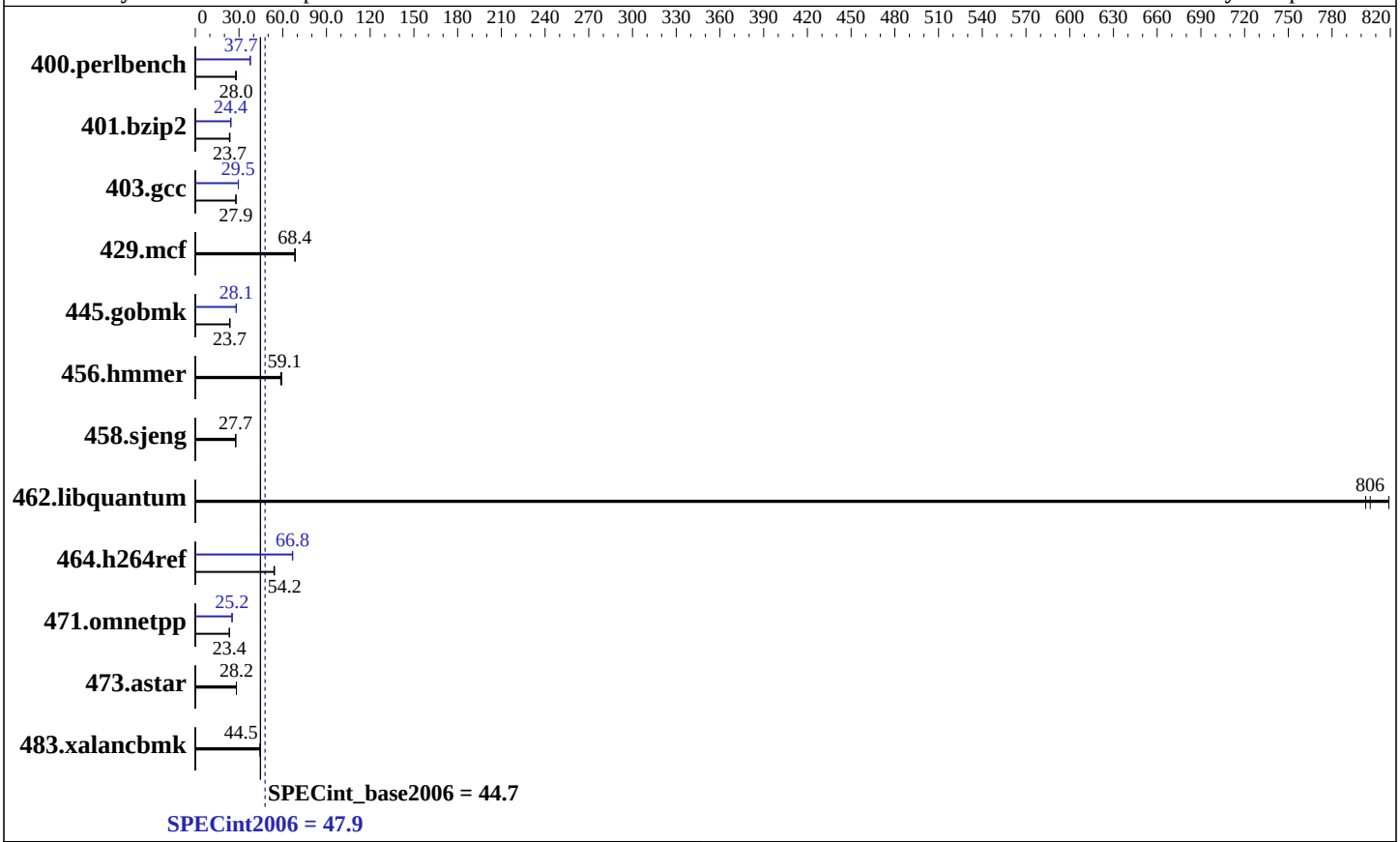
Intel DQ77MK motherboard (Intel Core i5-3450S)

SPECint®2006 = 47.9

SPECint_base2006 = 44.7

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

**Test date:** Nov-2013
**Hardware Availability:** Nov-2012
**Software Availability:** Apr-2013




### Hardware

| | |
|---|---|
| CPU Name: | Intel Core i5-3450S |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.50 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 | 352 | 27.7 | 348 | 28.1 | **348** | **28.0** | 259 | 37.7 | **259** | **37.7** | 259 | 37.7 |
| 401.bzip2 | 412 | 23.4 | 407 | 23.7 | **407** | **23.7** | 396 | 24.3 | 395 | 24.4 | **395** | **24.4** |
| 403.gcc | 288 | 27.9 | 289 | 27.9 | **288** | **27.9** | 273 | 29.5 | **273** | **29.5** | 272 | 29.6 |
| 429.mcf | 133 | 68.7 | **133** | **68.4** | 134 | 68.3 | 133 | 68.7 | **133** | **68.4** | 134 | 68.3 |
| 445.gobmk | 443 | 23.7 | 443 | 23.7 | **443** | **23.7** | **374** | **28.1** | 374 | 28.1 | 373 | 28.1 |
| 456.hmmer | 159 | 58.6 | **158** | **59.1** | 158 | 59.2 | 159 | 58.6 | **158** | **59.1** | 158 | 59.2 |
| 458.sjeng | **437** | **27.7** | 437 | 27.7 | 437 | 27.7 | **437** | **27.7** | 437 | 27.7 | 437 | 27.7 |
| 462.libquantum | **25.7** | **806** | 25.3 | 819 | 25.8 | 803 | **25.7** | **806** | 25.3 | 819 | 25.8 | 803 |
| 464.h264ref | 410 | 54.0 | 408 | 54.3 | **409** | **54.2** | 333 | 66.6 | 332 | 66.8 | **332** | **66.8** |
| 471.omnetpp | 267 | 23.4 | **267** | **23.4** | 268 | 23.4 | 248 | 25.2 | 248 | 25.3 | **248** | **25.2** |
| 473.astar | **249** | **28.2** | 249 | 28.2 | 249 | 28.2 | **249** | **28.2** | 249 | 28.2 | 249 | 28.2 |
| 483.xalancbmk | **155** | **44.5** | 155 | 44.6 | 155 | 44.5 | **155** | **44.5** | 155 | 44.6 | 155 | 44.5 |

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 Clt7054D218890C Sat Nov  9 05:28:13 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  : DQ77MK__
Processor(s)  : 1 Processor(s) Installed.
     [01]: Intel64 Family 6 Model 58 Stepping 9 GenuineIntel ~2801 Mhz
BIOS Version  : Intel Corp. MKQ7710H.86A.0054.2012.1120.1444, 11/20/2012
Total Physical Memory: 3,912 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) i5-3450S 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:
-QxAVX -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qparallel -Qauto-ilp32 /F512000000

C++ benchmarks:
-QxAVX -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: -QxAVX(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: -QxAVX(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qansi-alias -Qauto-ilp32 /F512000000

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

429.mcf: basepeak = yes

445.gobmk: -QxAVX(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: -QxAVX(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll2 -Qansi-alias -Qauto-ilp32 /F512000000

C++ benchmarks:

471.omnetpp: -QxAVX(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.

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