# SPEC® CINT2006 Result

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## ASUSTeK Computer Inc.

(Test Sponsor: Intel Corporation)

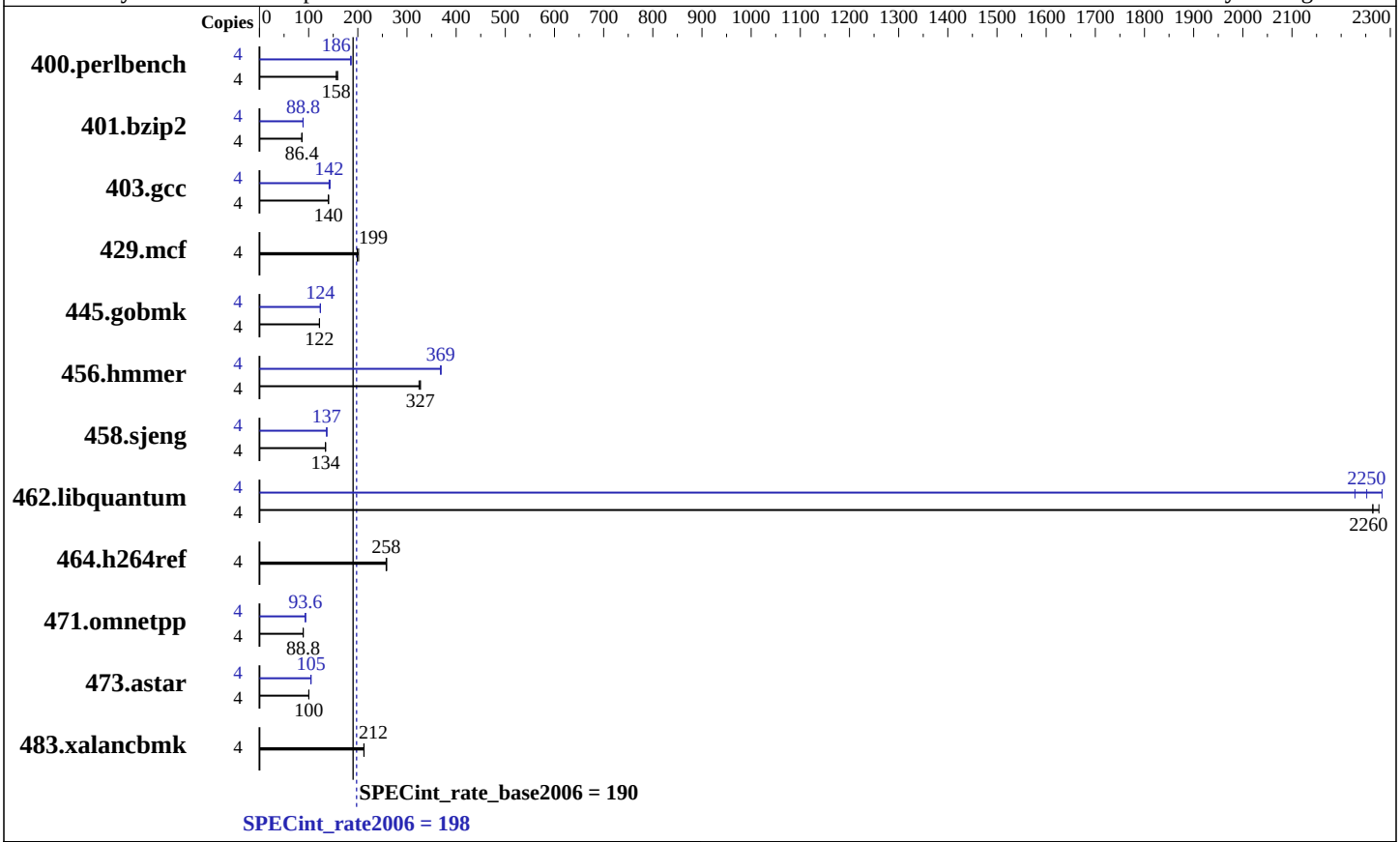
ASUS Z170MPLUS motherboard (Intel Core i5-6600)

**SPECint®_rate2006 = 198**

**SPECint_rate_base2006 = 190**

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

**Test date:** Oct-2015
**Hardware Availability:** Sep-2015
**Software Availability:** Aug-2015




## Hardware

| | |
|---|---|
| CPU Name: | Intel Core i5-6600 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.90 GHz |
| CPU MHz: | 3300 |
| 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: | 8 GB (2 x 4 GB 2Rx4 PC4-2133P-U) |
| Disk Subsystem: | 1 TB Seagate SATA HDD, 7200 RPM |
| Other Hardware: | None |

## Software

| | |
|---|---|
| Operating System: | Microsoft Windows 10 Pro 10.0.10240 N/A Build 10240 |
| 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 | 4 | 246 | 159 | **247** | **158** | 251 | 156 | 4 | **211** | **186** | 211 | 186 | 210 | 186 |
| 401.bzip2 | 4 | 449 | 86.0 | 446 | 86.8 | **446** | **86.4** | 4 | 437 | 88.4 | 434 | 88.8 | **435** | **88.8** |
| 403.gcc | 4 | 230 | 140 | **230** | **140** | 230 | 140 | 4 | **227** | **142** | 227 | 142 | 224 | 144 |
| 429.mcf | 4 | **183** | **199** | 181 | 202 | 184 | 199 | 4 | **183** | **199** | 181 | 202 | 184 | 199 |
| 445.gobmk | 4 | 344 | 122 | 344 | 122 | **344** | **122** | 4 | 339 | 124 | 338 | 124 | **339** | **124** |
| 456.hmmer | 4 | **114** | **327** | 114 | 327 | 115 | 324 | 4 | **101** | **369** | 101 | 368 | 101 | 369 |
| 458.sjeng | 4 | 361 | 134 | **361** | **134** | 360 | 134 | 4 | 354 | 137 | **354** | **137** | 354 | 137 |
| 462.libquantum | 4 | **36.6** | **2260** | 36.6 | 2260 | 36.4 | 2280 | 4 | 36.3 | 2280 | **36.8** | **2250** | 37.2 | 2230 |
| 464.h264ref | 4 | 343 | 258 | **343** | **258** | 342 | 259 | 4 | 343 | 258 | **343** | **258** | 342 | 259 |
| 471.omnetpp | 4 | **281** | **88.8** | 281 | 88.8 | 281 | 89.2 | 4 | 268 | 93.2 | 267 | 93.6 | **268** | **93.6** |
| 473.astar | 4 | **280** | **100** | 279 | 100 | 280 | 100 | 4 | 269 | 104 | **268** | **105** | 268 | 105 |
| 483.xalancbmk | 4 | 130 | 213 | **130** | **212** | 130 | 212 | 4 | 130 | 213 | **130** | **212** | 130 | 212 |

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 Clt305A3A7B76F6 Wed Oct 14 09:37:25 2015

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 10 Pro
OS Version    : 10.0.10240 N/A Build 10240
System Manufacturer: System manufacturer
System Model  : System Product Name
Processor(s)  : 1 Processor(s) Installed.
     [01]: Intel64 Family 6 Model 94 Stepping 3 GenuineIntel ~3301 Mhz
BIOS Version  : American Megatrends Inc. 0408, 8/28/2015
Total Physical Memory: 8,084 MB

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

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## Platform Notes (Continued)

```
L2CacheSize   : 1024
L3CacheSize   : 6144
MaxClockSpeed : 3301
Name          : Intel(R) Core(TM) i5-6600 CPU @ 3.30GHz
NumberOfCores : 4
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
```

## Base Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

## Peak Compiler Invocation

C benchmarks (except as noted below):
`icl -Qvc12 -Qstd=c99`

C++ benchmarks (except as noted below):
`icl -Qvc12`

## 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`

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`

464.h264ref: `basepeak = yes`

Continued on next page

## Peak Optimization Flags (Continued)

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`

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-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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