# SPEC® CINT2006 Result

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## Intel Corporation

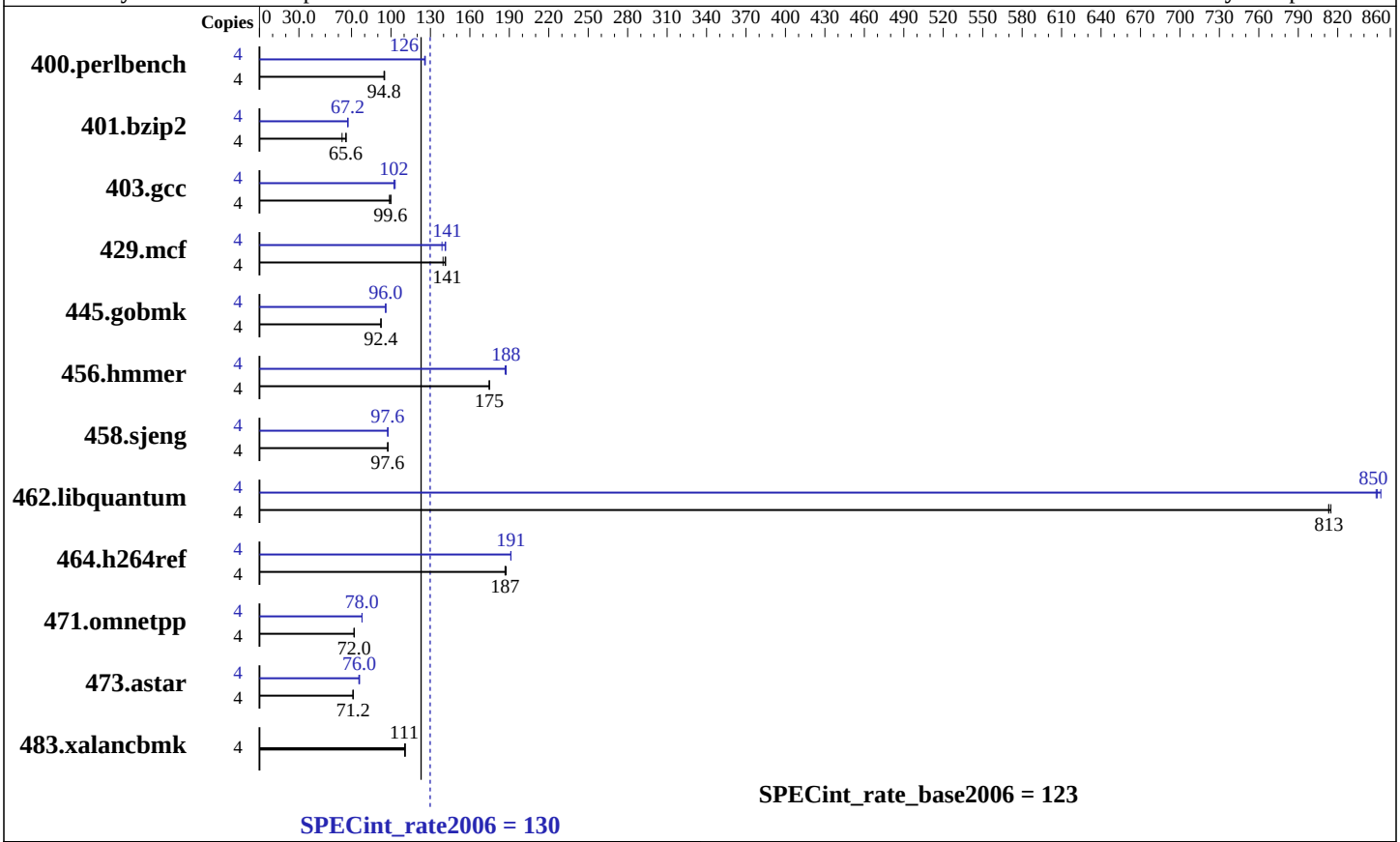
Intel DH67BLB3 Motherboard (Intel Core i5-2400)

SPECint®_rate2006 = 130

SPECint_rate_base2006 = 123

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

**Test date:** Jul-2011
**Hardware Availability:** Mar-2011
**Software Availability:** Apr-2011




### Hardware

| | |
|---|---|
| CPU Name: | Intel Core i5-2400 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.4 GHz |
| CPU MHz: | 3100 |
| 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 2Rx8 PC3-10600U-9) |
| Disk Subsystem: | Seagate 1 TB SATA, 7200 RPM |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | Windows 7 Ultimate (64-bit) |
| Compiler: | Intel C++ Compiler XE for IA32 and Intel 64 Version 12.0.3.176 Build 20110309<br>Microsoft Visual Studio 2008 Professional SP1 (for libraries) |
| Auto Parallel: | No |
| File System: | NTFS |
| System State: | Default |
| Base Pointers: | 32-bit |
| Peak Pointers: | 32/64-bit |
| Other Software: | SmartHeap Library Version 9.01 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 | 413 | 94.8 | **411** | **94.8** | 411 | 95.2 | 4 | **310** | **126** | 310 | 126 | 311 | 126 |
| 401.bzip2 | 4 | 615 | 62.8 | **588** | **65.6** | 587 | 66.0 | 4 | 573 | 67.2 | **575** | **67.2** | 575 | 67.2 |
| 403.gcc | 4 | 322 | 100 | **324** | **99.6** | 326 | 98.8 | 4 | 315 | 102 | 312 | 103 | **314** | **102** |
| 429.mcf | 4 | **258** | **141** | 261 | 140 | 258 | 142 | 4 | 263 | 139 | 258 | 142 | **258** | **141** |
| 445.gobmk | 4 | 454 | 92.4 | **453** | **92.4** | 453 | 92.4 | 4 | 438 | 96.0 | **437** | **96.0** | 437 | 96.0 |
| 456.hmmer | 4 | 214 | 175 | **214** | **175** | 214 | 175 | 4 | 200 | 187 | 199 | 188 | **199** | **188** |
| 458.sjeng | 4 | 496 | 97.6 | **496** | **97.6** | 496 | 97.6 | 4 | 496 | 97.6 | **497** | **97.6** | 497 | 97.6 |
| 462.libquantum | 4 | **102** | **813** | 102 | 815 | 102 | 813 | 4 | **97.5** | **850** | 97.6 | 849 | 97.2 | 853 |
| 464.h264ref | 4 | **473** | **187** | 473 | 187 | 472 | 188 | 4 | 463 | 191 | 463 | 191 | **463** | **191** |
| 471.omnetpp | 4 | 347 | 72.0 | 347 | 72.0 | **347** | **72.0** | 4 | **321** | **78.0** | 321 | 78.0 | 321 | 78.0 |
| 473.astar | 4 | 395 | 71.2 | 394 | 71.2 | **394** | **71.2** | 4 | 370 | 76.0 | 371 | 75.6 | **370** | **76.0** |
| 483.xalancbmk | 4 | 250 | 110 | 249 | 111 | **249** | **111** | 4 | 250 | 110 | 249 | 111 | **249** | **111** |

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Submit Notes

```
The config file option 'submit' was used.
 The start command with the /affinity switch was used to bind processes to cores
```

## General Notes

```
Tested systems can be used with Shin-G ATX case,
PC Power and Cooling 1200W power supply
```

## Base Compiler Invocation

C benchmarks:

```
icl -Qvc9 -Qstd=c99
```

C++ benchmarks:

```
icl -Qvc9
```

## Base Portability Flags

403.gcc: `-DSPEC_CPU_WIN32`
464.h264ref: `-DWIN32 -DSPEC_CPU_NO_INTTYPES`
483.xalancbmk: `-Qoption,cpp,--no_wchar_t_keyword`

## Base Optimization Flags

C benchmarks:
```
-QxAVX -Qipo -O3 -Qprec-div- -Qopt-prefetch /F512000000
```

C++ benchmarks:
```
-QxAVX -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qcxx-features
/F512000000 shlW32M.lib            -link /FORCE:MULTIPLE
```

## Base Other Flags

C benchmarks:

403.gcc: `-Dalloca=_alloca`

## Peak Compiler Invocation

C benchmarks (except as noted below):
```
icl -Qvc9 -Qstd=c99
```

456.hmmer: `C:/Program Files (x86)/Intel/ComposerXE-2011/bin/intel64/icl.exe`

458.sjeng: `C:/Program Files (x86)/Intel/ComposerXE-2011/bin/intel64/icl.exe`

462.libquantum: `C:/Program Files (x86)/Intel/ComposerXE-2011/bin/intel64/icl.exe -Qstd=c99`

C++ benchmarks (except as noted below):
```
icl -Qvc9
```

473.astar: `C:/Program Files (x86)/Intel/ComposerXE-2011/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 -DSPEC_CPU_NO_INTTYPES`
473.astar: `-DSPEC_CPU_P64`
483.xalancbmk: `-Qoption,cpp,--no_wchar_t_keyword`

# 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 /F512000000 shlW32M.lib -link /FORCE:MULTIPLE

401.bzip2: -QxAVX(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qansi-alias /F512000000

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

429.mcf: -QxAVX -Qipo -O3 -Qprec-div- -Qopt-prefetch /F512000000

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

456.hmmer: -Qauto-ilp32 -QxAVX(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qopt-prefetch /F512000000

458.sjeng: -Qauto-ilp32 -QxAVX(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll4 /F512000000

462.libquantum: -Qauto-ilp32 -QxSSE4.2 -Qipo -O3 -Qprec-div- -Qopt-prefetch /F512000000

464.h264ref: -QxAVX(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll2 -Qansi-alias /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 /F512000000 shlW32M.lib -link /FORCE:MULTIPLE

473.astar: -Qauto-ilp32 -QxSSE4.2 -Qipo -O3 -Qprec-div- -Qopt-prefetch /F512000000 shlW64M.lib -link /FORCE:MULTIPLE

483.xalancbmk: basepeak = yes

# Peak Other Flags

C benchmarks:

Continued on next page

# Peak Other Flags (Continued)

403.gcc: `-Dalloca=_alloca`

456.hmmer: `-link -LIBPATH:C:/Program Files (x86)/Intel/ComposerXE-2011/compiler/lib/intel64`
`-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 9.0/VC/lib/AMD64`
`-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 9.0/VC/lib`
`-link -LIBPATH:C:/Program Files (x86)/Microsoft SDKs/Windows/v7.0A/lib/x64`

458.sjeng: `-link -LIBPATH:C:/Program Files (x86)/Intel/ComposerXE-2011/compiler/lib/intel64`
`-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 9.0/VC/lib/AMD64`
`-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 9.0/VC/lib`
`-link -LIBPATH:C:/Program Files (x86)/Microsoft SDKs/Windows/v7.0A/lib/x64`

462.libquantum: `-link -LIBPATH:C:/Program Files (x86)/Intel/ComposerXE-2011/compiler/lib/intel64`
`-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 9.0/VC/lib/AMD64`
`-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 9.0/VC/lib`
`-link -LIBPATH:C:/Program Files (x86)/Microsoft SDKs/Windows/v7.0A/lib/x64`

C++ benchmarks:

473.astar: `-link -LIBPATH:C:/Program Files (x86)/Intel/ComposerXE-2011/compiler/lib/intel64`
`-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 9.0/VC/lib/AMD64`
`-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 9.0/VC/lib`
`-link -LIBPATH:C:/Program Files (x86)/Microsoft SDKs/Windows/v7.0A/lib/x64`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/Intel-ic12-win32-revB.20110808.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic12-win32-revB.20110808.xml`


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

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