# SPEC® CINT2006 Result

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## Intel Corporation

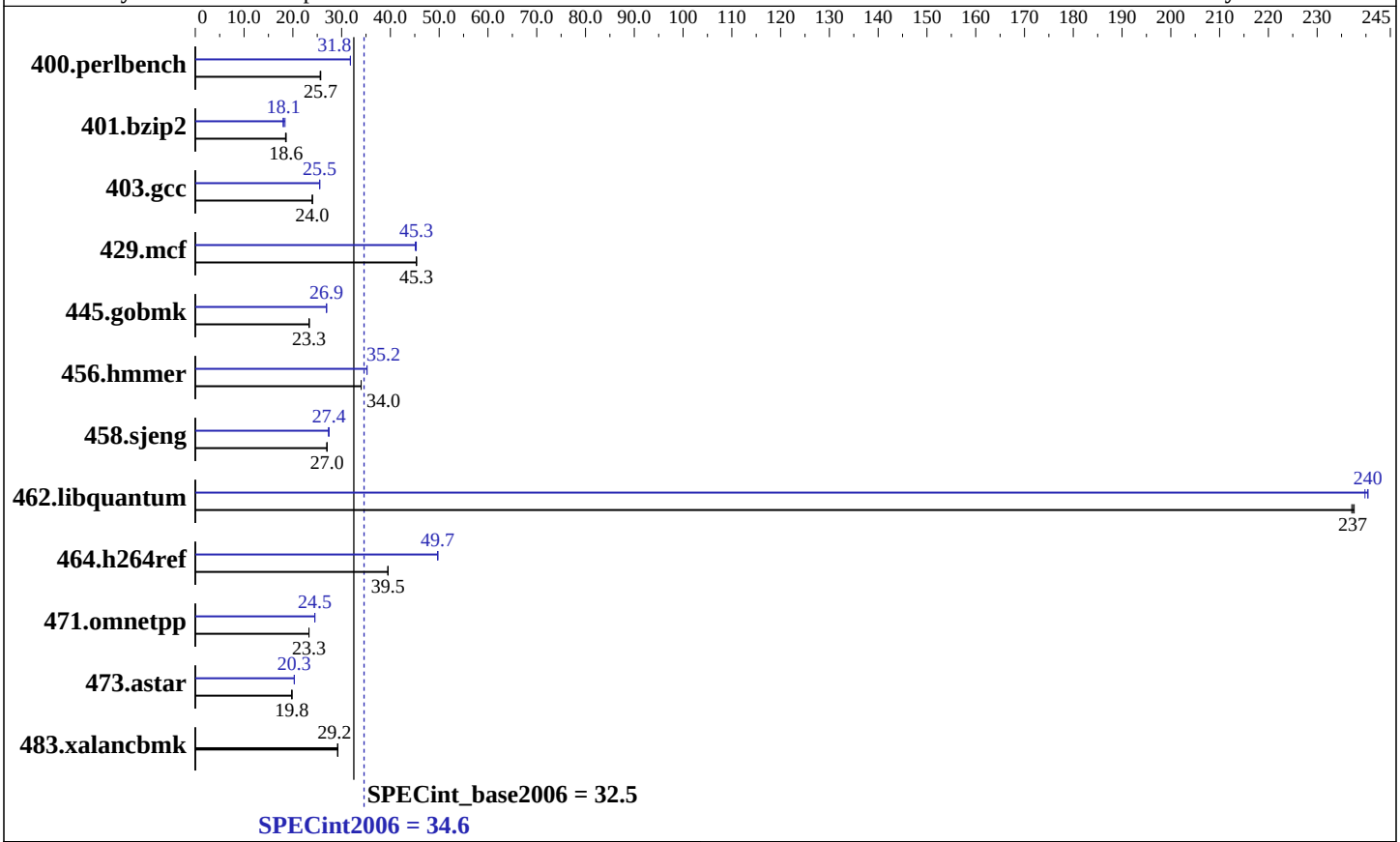
Intel DP55KG motherboard (Intel Core i7-870)

SPECint®2006 = 34.6

SPECint_base2006 = 32.5

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

**Test date:** Jan-2010
**Hardware Availability:** Jun-2009
**Software Availability:** Oct-2009




### Hardware

| | |
|---|---|
| CPU Name: | Intel Core i7-870 |
| CPU Characteristics: | Intel Turbo Boost Technology up to 3.60 GHz |
| CPU MHz: | 2933 |
| FPU: | Integrated |
| CPU(s) enabled: | 4 cores, 1 chip, 4 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: | 8 MB I+D on chip per chip |
| Other Cache: | None |
| Memory: | 4 GB (2x2GB Micron MT16JTF25664AZ-1G4 DDR3-1333 CL9) |
| Disk Subsystem: | Intel X25-M 80GB SSD |
| Other Hardware: | None |

### Software

| | |
|---|---|
| Operating System: | Windows Vista Ultimate w/ SP1 (64-bit) |
| Compiler: | Intel C++ Compiler Professional 11.1 for Intel 64 Build 20090903 Package ID: w_cproc_p_11.1.045 Microsoft Visual Studio 2008 Professional SP1 (for libraries) |
| Auto Parallel: | Yes |
| File System: | NTFS |
| System State: | Default |
| Base Pointers: | 64-bit |
| Peak Pointers: | 64-bit |
| Other Software: | None SmartHeap Library Version 8.1 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 | 381 | 25.6 | **381** | **25.7** | 380 | 25.7 | 307 | 31.8 | **307** | **31.8** | 307 | 31.8 |
| 401.bzip2 | 520 | 18.6 | 520 | 18.5 | **520** | **18.6** | 523 | 18.4 | 536 | 18.0 | **533** | **18.1** |
| 403.gcc | **335** | **24.0** | 335 | 24.0 | 335 | 24.0 | 316 | 25.5 | **316** | **25.5** | 316 | 25.5 |
| 429.mcf | 202 | 45.3 | 201 | 45.4 | **201** | **45.3** | 201 | 45.3 | **202** | **45.3** | 202 | 45.1 |
| 445.gobmk | **449** | **23.3** | 449 | 23.4 | 450 | 23.3 | **390** | **26.9** | 390 | 26.9 | 390 | 26.9 |
| 456.hmmer | 275 | 34.0 | 275 | 34.0 | **275** | **34.0** | **265** | **35.2** | 265 | 35.2 | 265 | 35.2 |
| 458.sjeng | 448 | 27.0 | **448** | **27.0** | 448 | 27.0 | 442 | 27.4 | 443 | 27.3 | **442** | **27.4** |
| 462.libquantum | 87.4 | 237 | **87.3** | **237** | 87.2 | 238 | 86.4 | 240 | 86.2 | 240 | **86.2** | **240** |
| 464.h264ref | 560 | 39.5 | **560** | **39.5** | 560 | 39.5 | **445** | **49.7** | 445 | 49.7 | 445 | 49.7 |
| 471.omnetpp | **268** | **23.3** | 268 | 23.3 | 268 | 23.3 | **255** | **24.5** | 255 | 24.5 | 255 | 24.5 |
| 473.astar | 354 | 19.8 | **354** | **19.8** | 354 | 19.8 | **345** | **20.3** | 345 | 20.3 | 345 | 20.3 |
| 483.xalancbmk | 237 | 29.2 | 236 | 29.2 | **236** | **29.2** | 237 | 29.2 | 236 | 29.2 | **236** | **29.2** |

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

## General Notes

```
Tested systems can be used with Shin-G ATX case,
PC Power and Cooling 1200W power supply
OMP_NUM_THREADS set to number of processors cores
KMP_AFFINITY set to granularity=fine,scatter
System was configured with an ATI 5970 discrete graphics card
```

## Base Compiler Invocation

C benchmarks:

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

C++ benchmarks:

```
icl -Qvc9
```

## 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`

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## Base Portability Flags (Continued)

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:
`-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qparallel -Qauto-ilp32 /F512000000`

C++ benchmarks:
`-QxSSE4.2 -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 -Qvc9 -Qstd=c99`

C++ benchmarks:
`icl -Qvc9`

## Peak Portability Flags

`Same as Base Portability Flags`

## Peak Optimization Flags

C benchmarks:

Continued on next page

# Peak Optimization Flags (Continued)

400.perlbench: -QxSSE4.2(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: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qansi-alias -Qauto-ilp32 /F512000000

403.gcc: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qauto-ilp32 /F512000000

429.mcf: -QxSSE4.2 -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qauto-ilp32 /F512000000

445.gobmk: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O2 -Qprec-div- -Qansi-alias -Qauto-ilp32 /F512000000

456.hmmer: -QxSSE4.2 -Qipo -O3 -Qprec-div- -Qunroll2 -Qansi-alias -Qauto-ilp32 /F512000000

458.sjeng: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll4 -Qauto-ilp32 /F512000000

462.libquantum: -QxSSE4.2 -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qparallel -Qpar-schedule-static:32768 -Qansi-alias -Qauto-ilp32 /F512000000

464.h264ref: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll2 -Qansi-alias -Qauto-ilp32 /F512000000

C++ benchmarks:

471.omnetpp: -QxSSE4.2(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: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-ra-region-strategy=routine -Qauto-ilp32 /F512000000 shlW64M.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-ic11.0-winx64-revA.20100302.01.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic11.0-winx64-revA.20100302.01.xml`


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