



SPEC® CINT2006 Result

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Intel Corporation

SPECint®_rate2006 = 138

Intel DQ87PG motherboard (Intel Core i5-4440S)

SPECint_rate_base2006 = 131

CPU2006 license: 13

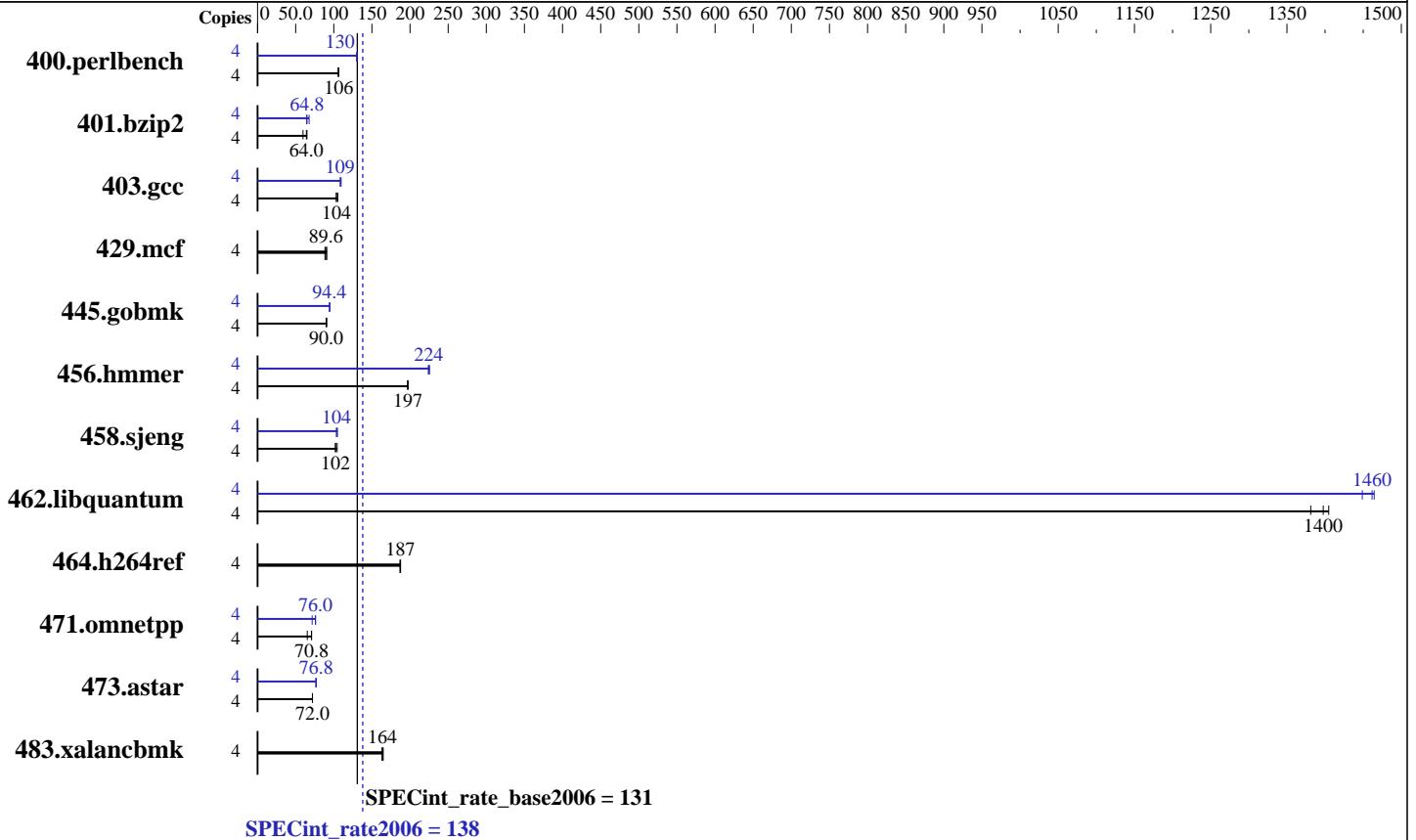
Test date: Dec-2013

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: No
 File System: NTFS
 System State: Default
 Base Pointers: 32-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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	4	<u>368</u>	<u>106</u>	367	106	370	106	4	300	130	<u>300</u>	<u>130</u>	299	130
401.bzip2	4	647	59.6	<u>602</u>	<u>64.0</u>	598	64.8	4	599	64.4	572	67.6	<u>597</u>	<u>64.8</u>
403.gcc	4	<u>311</u>	<u>104</u>	312	103	306	105	4	297	108	294	110	<u>296</u>	<u>109</u>
429.mcf	4	<u>408</u>	<u>89.6</u>	413	88.4	402	90.8	4	<u>408</u>	<u>89.6</u>	413	88.4	402	90.8
445.gobmk	4	<u>465</u>	<u>90.0</u>	465	90.0	463	90.8	4	<u>444</u>	<u>94.4</u>	445	94.4	443	94.8
456.hammer	4	190	197	<u>189</u>	<u>197</u>	189	197	4	167	224	<u>166</u>	<u>224</u>	165	226
458.sjeng	4	463	104	474	102	<u>472</u>	<u>102</u>	4	461	105	468	104	<u>468</u>	<u>104</u>
462.libquantum	4	<u>59.3</u>	<u>1400</u>	60.0	1380	59.0	1400	4	<u>56.7</u>	<u>1460</u>	57.2	1450	56.6	1460
464.h264ref	4	<u>473</u>	<u>187</u>	472	188	474	187	4	<u>473</u>	<u>187</u>	472	188	474	187
471.omnetpp	4	353	70.8	<u>353</u>	<u>70.8</u>	384	65.2	4	349	71.6	330	76.0	<u>330</u>	<u>76.0</u>
473.astar	4	<u>390</u>	<u>72.0</u>	391	72.0	389	72.0	4	367	76.4	363	77.2	<u>365</u>	<u>76.8</u>
483.xalancbmk	4	<u>168</u>	<u>164</u>	168	165	169	163	4	<u>168</u>	<u>164</u>	168	165	169	163

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 32-bit binaries with the command:
"ipsxe-comp-vars.bat ia32 vs2010" (shortcut provided in the Intel(r) Parallel Studio XE 2013 program folder)

Submit Notes

Processes were bound to specific processors using the start command with the /affinity switch. The config file option 'submit' was used to generate the affinity mask for each process.

Platform Notes

Sysinfo program C:\SPEC13.1\Docs\sysinfo
\$Rev: 6775 \$ \$Date:: 2011-08-16 #\$ \8787f7622badcf24e01c368b1db4377c
running on Clt00224D4FB715 Sun Dec 8 01:07:38 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.

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Platform Notes (Continued)

[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
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

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

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



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Base Optimization Flags

C benchmarks:

-QxCORE-AVX2 -Qipo -O3 -Qprec-div- -Qopt-prefetch /F512000000

C++ benchmarks:

-QxCORE-AVX2 -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 -Qvc10 -Qstd=c99

456.hmmr: C:\Program Files (x86)\Intel\Composer XE 2013.171\bin\intel64\icl.exe

458.sjeng: C:\Program Files (x86)\Intel\Composer XE 2013.171\bin\intel64\icl.exe

462.libquantum: C:\Program Files (x86)\Intel\Composer XE 2013.171\bin\intel64\icl.exe -Qstd=c99

C++ benchmarks (except as noted below):

icl -Qvc10

473.astar: C:\Program Files (x86)\Intel\Composer XE 2013.171\bin\intel64\icl.exe

Peak Portability Flags

403.gcc: -DSPEC_CPU_WIN32

456.hmmr: -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



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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
/F512000000 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
/F512000000

403.gcc: -QxCORE-AVX2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qprec-div- -Qopt-prefetch /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 /F512000000

456.hmmcr: -Qauto-ilp32 -QxCORE-AVX2(pass 2) -Qprof_gen(pass 1)
-Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qopt-prefetch
/F512000000

458.sjeng: -Qauto-ilp32 -QxCORE-AVX2(pass 2) -Qprof_gen(pass 1)
-Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll4
/F512000000

462.libquantum: -Qauto-ilp32 -QxCORE-AVX2 -Qipo -O3 -Qprec-div-
-Qopt-prefetch /F512000000

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 /F512000000 shlw32M.lib
-link /FORCE:MULTIPLE

473.astar: -Qauto-ilp32 -QxCORE-AVX2 -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



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Peak Other Flags (Continued)

403.gcc: -Dalloca=_alloca

456.hmmr: -link -LIBPATH:C:\Program Files (x86)\Intel\Composer XE 2013.171/compiler/lib/intel64
-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 10.0/VC/lib/AMD64
-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 10.0/VC/lib
-link -LIBPATH:C:/Program Files (x86)/Microsoft SDKs/Windows/v7.0A/lib/x64

458.sjeng: -link -LIBPATH:C:\Program Files (x86)\Intel\Composer XE 2013.171/compiler/lib/intel64
-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 10.0/VC/lib/AMD64
-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 10.0/VC/lib
-link -LIBPATH:C:/Program Files (x86)/Microsoft SDKs/Windows/v7.0A/lib/x64

462.libquantum: -link -LIBPATH:C:\Program Files (x86)\Intel\Composer XE 2013.171/compiler/lib/intel64
-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 10.0/VC/lib/AMD64
-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 10.0/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\Composer XE 2013.171/compiler/lib/intel64
-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 10.0/VC/lib/AMD64
-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 10.0/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-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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