SPEC® CINT2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Intel Corporation

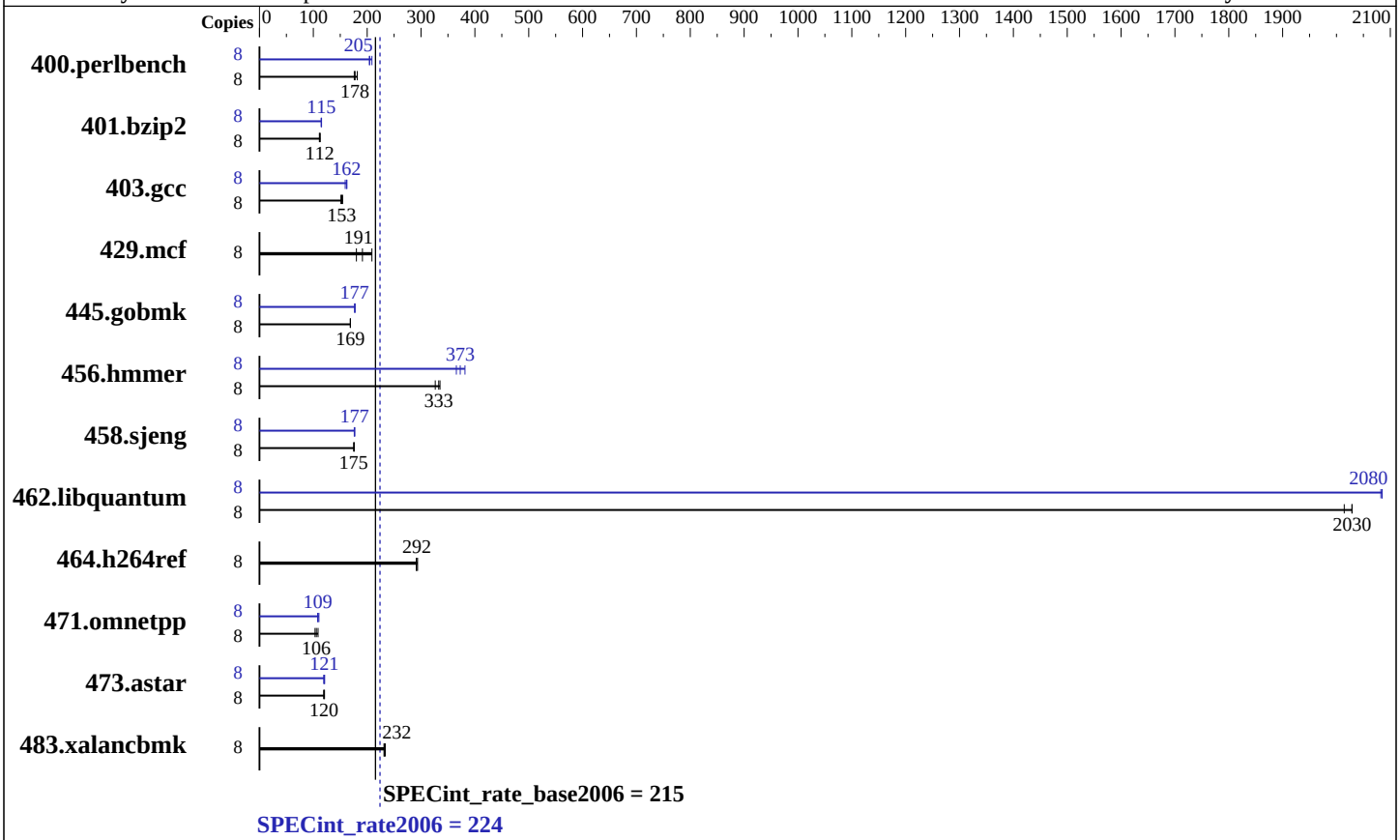
ASUS Z97-A motherboard (Intel Core i7-4790K)

SPECint®_rate2006 = 224

SPECint_rate_base2006 = 215

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

Test date: Mar-2015
Hardware Availability: May-2014
Software Availability: Oct-2013



Hardware

CPU Name:	Intel Core i7-4790K
CPU Characteristics:	Intel Turbo Boost Technology up to 4.40 GHz
CPU MHz:	4000
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:	8 GB (2 x 4 GB 2Rx4 PC3-12800U-11)
Disk Subsystem:	1 TB Seagate HDD 7200 RPM
Other Hardware:	None

Software

Operating System:	Microsoft Windows 8.1 Pro 6.3.9600 N/A Build 9600
Compiler:	C/C++: Version 14.0.1.139 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	8	430	182	**439**	**178**	444	176	8	**381**	**205**	374	209	382	204
401.bzip2	8	694	111	**687**	**112**	684	113	8	**670**	**115**	673	114	668	115
403.gcc	8	**421**	**153**	417	154	426	151	8	397	162	**398**	**162**	404	159
429.mcf	8	406	180	349	209	**382**	**191**	8	406	180	349	209	**382**	**191**
445.gobmk	8	**498**	**169**	497	169	498	169	8	476	177	474	178	**474**	**177**
456.hmmer	8	229	326	**224**	**333**	223	335	8	204	366	**200**	**373**	196	382
458.sjeng	8	553	175	551	176	**552**	**175**	8	548	177	550	176	**548**	**177**
462.libquantum	8	81.7	2030	82.3	2010	**81.7**	**2030**	8	79.5	2080	79.6	2080	**79.5**	**2080**
464.h264ref	8	607	291	**607**	**292**	604	294	8	607	291	**607**	**292**	604	294
471.omnetpp	8	460	109	485	103	**473**	**106**	8	462	108	451	110	**459**	**109**
473.astar	8	470	119	465	121	**469**	**120**	8	464	121	**466**	**121**	472	119
483.xalancbmk	8	239	231	**238**	**232**	237	234	8	239	231	**238**	**232**	237	234

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 14.0 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 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:\SPEC14.0/Docs/sysinfo
$Rev: 6775 $ $Date:: 2011-08-16 #$ \8787f7622badcf24e01c368b1db4377c
running on Z97A Wed Mar 25 11:06:49 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 8.1 Pro
OS Version    : 6.3.9600 N/A Build 9600
System Manufacturer: ASUS
System Model  : All Series
Processor(s)  : 1 Processor(s) Installed.
```

Continued on next page

Platform Notes (Continued)

```
     [01]: Intel64 Family 6 Model 60 Stepping 3 GenuineIntel ~4001 Mhz
BIOS Version  : American Megatrends Inc. 0702, 4/23/2014
Total Physical Memory: 8,069 MB

Trying 'wmic cpu get /value'
DeviceID      : CPU0
L2CacheSize   : 1024
L3CacheSize   : 8192
MaxClockSpeed : 4001
Name          : Intel(R) Core(TM) i7-4790K CPU @ 4.00GHz
NumberOfCores : 4
NumberOfLogicalProcessors: 8

(End of data from sysinfo program)
BIOS: SATA mode set to RAID
Windows Disk Driver: Intel Rapid Storage Technology 12.9.0.1001
```

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 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`

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.hmmer: `C:\Program Files (x86)\Intel\Composer XE 2013 SP1/bin/intel64/icl.exe`

458.sjeng: `C:\Program Files (x86)\Intel\Composer XE 2013 SP1/bin/intel64/icl.exe`

462.libquantum: `C:\Program Files (x86)\Intel\Composer XE 2013 SP1/bin/intel64/icl.exe -Qstd=c99`

C++ benchmarks (except as noted below):
```
icl -Qvc10
```

473.astar: `C:\Program Files (x86)\Intel\Composer XE 2013 SP1/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: -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.hmmer: -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

Peak Other Flags (Continued)

403.gcc: `-Dalloca=_alloca`

456.hmmer: `-link -LIBPATH:C:\Program Files (x86)\Intel\Composer XE 2013 SP1/compiler/lib/intel64`
`-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 10.0/VC/lib/AMD6`
`-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 SP1/compiler/lib/intel64`
`-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 10.0/VC/lib/AMD6`
`-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 SP1/compiler/lib/intel64`
`-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 10.0/VC/lib/AMD6`
`-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 SP1/compiler/lib/intel64`
`-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 10.0/VC/lib/AMD6`
`-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-ic14.0-official-windows.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-windows.xml`

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