



SPEC® CINT2006 Result

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Gigabyte Technology Co., Ltd.

(Test Sponsor: Intel Corporation)

GigaByte GA-X99-Designare EX motherboard (Intel Core i7-6950X)

SPECint®2006 = 73.6

SPECint_base2006 = 71.4

CPU2006 license: 13

Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: Jun-2016

Hardware Availability: May-2016

Software Availability: Nov-2015



Hardware

CPU Name: Intel Core i7-6950X
 CPU Characteristics: Intel Turbo Boost Technology up to 3.50 GHz
 CPU MHz: 3000
 FPU: Integrated
 CPU(s) enabled: 10 cores, 1 chip, 10 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: 25 MB I+D on chip per chip
 Other Cache: None
 Memory: 32 GB (4 x 8 GB 2Rx4 PC4-2133R-U)
 Disk Subsystem: 1 TB Seagate SATA HDD, 7200 RPM
 Other Hardware: None

Software

Operating System: Microsoft Windows 10 Pro
 10.0.10586 N/A Build 10586
 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: Yes
 File System: NTFS
 System State: Default
 Base Pointers: 32/64-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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	227	43.1	227	43.0	<u>227</u>	<u>43.0</u>	187	52.3	187	52.3	<u>187</u>	<u>52.3</u>
401.bzip2	345	27.9	347	27.8	<u>346</u>	<u>27.9</u>	338	28.6	<u>339</u>	<u>28.5</u>	339	28.5
403.gcc	215	37.5	214	37.6	<u>214</u>	<u>37.5</u>	206	39.1	206	39.1	<u>206</u>	<u>39.1</u>
429.mcf	<u>118</u>	<u>77.3</u>	118	77.3	118	77.4	<u>118</u>	<u>77.3</u>	118	77.3	118	77.4
445.gobmk	309	33.9	<u>309</u>	<u>33.9</u>	310	33.9	<u>293</u>	<u>35.8</u>	293	35.8	293	35.8
456.hammer	96.2	97.0	96.3	96.9	<u>96.2</u>	<u>97.0</u>	96.2	97.0	96.3	96.9	<u>96.2</u>	<u>97.0</u>
458.sjeng	<u>329</u>	<u>36.8</u>	329	36.8	329	36.8	<u>329</u>	<u>36.8</u>	329	36.8	329	36.8
462.libquantum	<u>4.47</u>	<u>4640</u>	4.46	4650	4.47	4640	<u>4.47</u>	<u>4640</u>	4.46	4650	4.47	4640
464.h264ref	<u>265</u>	<u>83.6</u>	264	83.9	266	83.3	<u>265</u>	<u>83.6</u>	264	83.9	266	83.3
471.omnetpp	163	38.4	<u>164</u>	<u>38.2</u>	164	38.2	155	40.4	154	40.6	<u>154</u>	<u>40.5</u>
473.astar	180	39.1	<u>179</u>	<u>39.1</u>	179	39.1	180	39.1	<u>179</u>	<u>39.1</u>	179	39.1
483.xalancbmk	96.4	71.6	96.2	71.7	<u>96.3</u>	<u>71.6</u>	96.4	71.6	96.2	71.7	<u>96.3</u>	<u>71.6</u>

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 64-bit binaries with the command:

```
"psxevars.bat intel64" (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 Clt1C1B0D05C2E5 Sat Jun 18 07:53:38 2016
```

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 : 10.0.10586 N/A Build 10586
```

```
System Manufacturer: Gigabyte Technology Co., Ltd.
```

```
System Model : Default string
```

```
Processor(s) : 1 Processor(s) Installed.
```

```
[01]: Intel64 Family 6 Model 79 Stepping 1 GenuineIntel ~3001 Mhz
```

```
BIOS Version : American Megatrends Inc. F2, 5/22/2016
```

```
Total Physical Memory: 32,606 MB
```

```
Trying 'wmic cpu get /value'
```

```
DeviceID : CPU0
```

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Platform Notes (Continued)

L2CacheSize : 2560
L3CacheSize : 25600
MaxClockSpeed : 3001
Name : Intel(R) Core(TM) i7-6950X CPU @ 3.00GHz
NumberOfCores : 10
NumberOfLogicalProcessors: 20

(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

OMP_NUM_THREADS set to number of processors cores
KMP_AFFINITY set to granularity=fine,scatter
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

400.perlbench: -DSPEC_CPU_P64 -DSPEC_CPU_WIN64_X64
401.bzip2: -DSPEC_CPU_P64
403.gcc: -DSPEC_CPU_P64 -DSPEC_CPU_WIN64
429.mcf: -DSPEC_CPU_P64
445.gobmk: -DSPEC_CPU_P64
456.hmmmer: -DSPEC_CPU_P64
458.sjeng: -DSPEC_CPU_P64
462.libquantum: -DSPEC_CPU_P64
464.h264ref: -DSPEC_CPU_P64 -DWIN32
471.omnetpp: -DSPEC_CPU_P64 -DSPEC_CPU_WIN64
473.astar: -DSPEC_CPU_P64
483.xalancbmk: -DSPEC_CPU_P64 -Qoption,cpp,--no_wchar_t_keyword -DWIN64



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Base Optimization Flags

C benchmarks:

-QxCORE-AVX2 -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qparallel
-Qauto-ilp32 /F64000000

C++ benchmarks:

-QxCORE-AVX2 -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qcxx-features
-Qauto-ilp32 /F64000000 shlw64M.lib -link /FORCE:MULTIPLE

Base Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks:

icl -Qvc12 -Qstd=c99

C++ benchmarks:

icl -Qvc12

Peak Portability Flags

Same as Base Portability Flags

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
-Qauto-ilp32 /F64000000 shlw64M.lib
/F256000000 -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
-Qauto-ilp32 /F64000000

403.gcc: -QxCORE-AVX2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qprec-div- -Qauto-ilp32 /F64000000

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Peak Optimization Flags (Continued)

429.mcf: basepeak = yes

445.gobmk: -QxCORE-AVX2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O2 -Qprec-div- -Qansi-alias -Qauto-ilp32
/F64000000

456.hmmer: basepeak = yes

458.sjeng: basepeak = yes

462.libquantum: basepeak = yes

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 -Qauto-ilp32 /F64000000
shlW64M.lib -link /FORCE:MULTIPLE

473.astar: basepeak = yes

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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