



SPEC® CFP2006 Result

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Gigabyte Technology Co., Ltd.

(Test Sponsor: Intel Corporation)

SPECfp®2006 = 84.3

GigaByte x79-UP4 motherboard (Intel Core i7-4960X)

SPECfp_base2006 = 81.7

CPU2006 license: 13

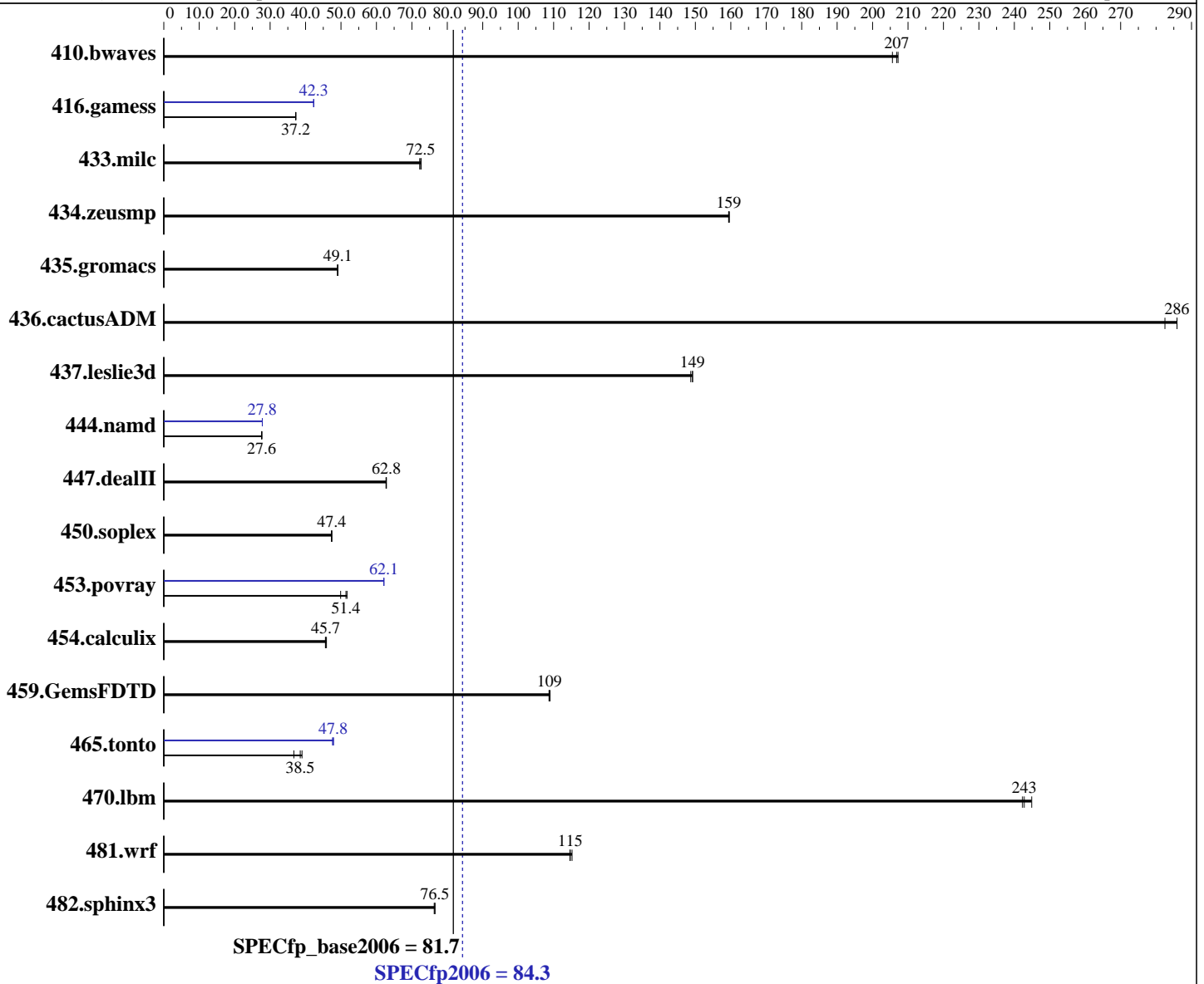
Test date: Aug-2013

Test sponsor: Intel Corporation

Hardware Availability: Sep-2013

Tested by: Intel Corporation

Software Availability: Apr-2013



Hardware

CPU Name: Intel Core i7-4960X
 CPU Characteristics: Intel Turbo Boost Technology up to 4.00 GHz
 CPU MHz: 3600
 FPU: Integrated
 CPU(s) enabled: 6 cores, 1 chip, 6 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

Continued on next page

Software

Operating System: Microsoft Windows 8 Pro
 6.2.9200 N/A Build 9200
 Compiler: C/C++: Version 13.1.1.171 of Intel C++ Studio XE for Windows;
 Fortran: Version 13.1.1.171 of Intel Fortran Studio XE for Windows;
 Libraries: Version 16.00.30319.01 of Microsoft Visual Studio 2010 Professional SP1
 Auto Parallel: Yes

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L3 Cache: 15 MB I+D on chip per chip
Other Cache: None
Memory: 16 GB (4 x 4 GB 2Rx4 PC3-12800U-11)
Disk Subsystem: 1 TB Seagate SATA, 7200 RPM
Other Hardware: None

File System: NTFS
System State: Default
Base Pointers: 32/64-bit
Peak Pointers: 32/64-bit
Other Software: SmartHeap Library Version 10.0 from <http://www.microquill.com/>

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	66.1	206	65.6	207	<u>65.7</u>	<u>207</u>	66.1	206	65.6	207	<u>65.7</u>	<u>207</u>
416.gamess	525	37.3	<u>526</u>	<u>37.2</u>	526	37.2	463	42.3	463	42.3	<u>463</u>	<u>42.3</u>
433.milc	<u>127</u>	<u>72.5</u>	126	72.6	127	72.2	<u>127</u>	<u>72.5</u>	126	72.6	127	72.2
434.zeusmp	<u>57.1</u>	<u>159</u>	57.0	160	57.1	159	<u>57.1</u>	<u>159</u>	57.0	160	57.1	159
435.gromacs	146	49.1	<u>146</u>	<u>49.1</u>	146	49.0	146	49.1	<u>146</u>	<u>49.1</u>	146	49.0
436.cactusADM	42.3	283	41.8	286	<u>41.8</u>	<u>286</u>	42.3	283	41.8	286	<u>41.8</u>	<u>286</u>
437.leslie3d	63.0	149	<u>63.0</u>	<u>149</u>	63.2	149	63.0	149	<u>63.0</u>	<u>149</u>	63.2	149
444.namd	<u>290</u>	<u>27.6</u>	290	27.6	290	27.7	<u>288</u>	<u>27.8</u>	288	27.8	288	27.8
447.dealII	<u>182</u>	<u>62.8</u>	182	62.7	182	62.8	<u>182</u>	<u>62.8</u>	182	62.7	182	62.8
450.soplex	176	47.3	176	47.4	<u>176</u>	<u>47.4</u>	176	47.3	176	47.4	<u>176</u>	<u>47.4</u>
453.povray	103	51.7	107	49.9	<u>104</u>	<u>51.4</u>	85.6	62.1	<u>85.6</u>	<u>62.1</u>	85.7	62.1
454.calculix	181	45.6	180	45.9	<u>181</u>	<u>45.7</u>	181	45.6	180	45.9	<u>181</u>	<u>45.7</u>
459.GemsFDTD	97.3	109	<u>97.5</u>	<u>109</u>	97.6	109	97.3	109	<u>97.5</u>	<u>109</u>	97.6	109
465.tonto	252	39.0	<u>256</u>	<u>38.5</u>	268	36.7	205	47.9	<u>206</u>	<u>47.8</u>	207	47.6
470.lbm	<u>56.6</u>	<u>243</u>	56.1	245	56.7	242	<u>56.6</u>	<u>243</u>	56.1	245	56.7	242
481.wrf	97.0	115	<u>97.4</u>	<u>115</u>	97.5	115	97.0	115	<u>97.4</u>	<u>115</u>	97.5	115
482.sphinx3	255	76.3	255	76.5	<u>255</u>	<u>76.5</u>	255	76.3	255	76.5	<u>255</u>	<u>76.5</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 13.1 was set up to generate 64-bit binaries with the command:
"ipsxe-comp-vars.bat intel64 vs2010" (shortcut provided in the Intel(r) Parallel Studio XE 2013 program folder)

Platform Notes

Sysinfo program C:\Users\PECA_W~1\Desktop\CPU200~1.APR/Docs/sysinfo
\$Rev: 6775 \$ \$Date:: 2011-08-16 #\$ \8787f7622badcf24e01c368b1db4377c
running on Clt38607738DA9E Sat Aug 3 19:56:30 2013

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:

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Platform Notes (Continued)

<http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

Trying 'systeminfo'

OS Name : Microsoft Windows 8 Pro

OS Version : 6.2.9200 N/A Build 9200

System Manufacturer: Gigabyte Technology Co., Ltd.

System Model : To be filled by O.E.M.

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

[01]: Intel64 Family 6 Model 62 Stepping 4 GenuineIntel ~3601 Mhz

BIOS Version : American Megatrends Inc. F4, 7/1/2013

Total Physical Memory: 16,307 MB

Trying 'wmic cpu get /value'

DeviceID : CPU0

L2CacheSize : 256

L3CacheSize : 15360

MaxClockSpeed : 3601

Name : Intel(R) Core(TM) i7-4960X CPU @ 3.60GHz

NumberOfCores : 6

NumberOfLogicalProcessors: 12

(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 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

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

icl -Qvc10 -Qstd=c99 ifort



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Base Portability Flags

```

410.bwaves: -DSPEC_CPU_P64
416.gamess: -DSPEC_CPU_P64
433.milc: -DSPEC_CPU_P64
434.zeusmp: -DSPEC_CPU_P64
435.gromacs: -DSPEC_CPU_P64
436.cactusADM: -DSPEC_CPU_P64 -names:lowercase /assume:underscore
437.leslie3d: -DSPEC_CPU_P64
444.namd: -DSPEC_CPU_P64 /TP
447.dealII: -DSPEC_CPU_P64 -DDEAL_II_MEMBER_VAR_SPECIALIZATION_BUG
-Qoption,cpp,--ms_incompat_treatment_of_commas_in_macros
450.soplex: -DSPEC_CPU_P64
453.povray: -DSPEC_CPU_P64 -DSPEC_CPU_NEED_INVHYP -DNEED_INVHYP
454.calculix: -DSPEC_CPU_P64 -DSPEC_CPU_NOZMODIFIER -names:lowercase
459.GemsFDTD: -DSPEC_CPU_P64
465.tonto: -DSPEC_CPU_P64
470.lbm: -DSPEC_CPU_P64
481.wrf: -DSPEC_CPU_P64 -DSPEC_CPU_WINDOWS_ICL
482.sphinx3: -DSPEC_CPU_P64

```

Base Optimization Flags

C benchmarks:

```

-QxAVX -Qipo -O3 -Qprec-div- -Qparallel -Qansi-alias -Qopt-prefetch
-Qauto-ilp32 /F1000000000

```

C++ benchmarks:

```

-QxAVX -Qipo -O3 -Qprec-div- -Qparallel -Qansi-alias -Qopt-prefetch
-Qcxx-features -Qauto-ilp32 /F1000000000 shlw64M.lib
-link /FORCE:MULTIPLE

```

Fortran benchmarks:

```

-QxAVX -Qipo -O3 -Qprec-div- -Qparallel -Qansi-alias -Qopt-prefetch
/F1000000000

```

Benchmarks using both Fortran and C:

```

-QxAVX -Qipo -O3 -Qprec-div- -Qparallel -Qansi-alias -Qopt-prefetch
-Qauto-ilp32 /F1000000000

```

Peak Compiler Invocation

C benchmarks:

```

icl -Qvc10 -Qstd=c99

```

C++ benchmarks:

```

icl -Qvc10

```

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Peak Compiler Invocation (Continued)

Fortran benchmarks:

ifort

Benchmarks using both Fortran and C:

icl -Qvc10 -Qstd=c99 ifort

Peak Portability Flags

Same as Base Portability Flags

Peak Optimization Flags

C benchmarks:

433.milc: basepeak = yes

470.lbm: basepeak = yes

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: -QxAVX(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo
-O3 -Qprec-div- -Oa -Qauto-ilp32 /F1000000000 sh1W64M.lib
-link /FORCE:MULTIPLE

447.dealIII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -QxAVX(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo
-O3 -Qprec-div- -Qunroll4 -Qansi-alias -Qauto-ilp32
/F1000000000 sh1W64M.lib -link /FORCE:MULTIPLE

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -QxAVX(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo
-O3 -Qprec-div- -Qunroll2 -Ob0 -Qansi-alias -Qscalar-rep-
/F1000000000

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

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Peak Optimization Flags (Continued)

459.GemsFDTD: basepeak = yes

465.tonto: -QxAVX(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo
-O3 -Qprec-div- -Qunroll4 -Qauto -Qinline-calloc
/F1000000000

Benchmarks using both Fortran and C:

435.gromacs: basepeak = yes

436.cactusADM: basepeak = yes

454.calculix: basepeak = yes

481.wrf: basepeak = yes

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.20130924.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.20130924.xml>

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For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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