SPEC® CFP2006 Result

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Gigabyte Technology Co., Ltd.

(Test Sponsor: Intel Corporation)

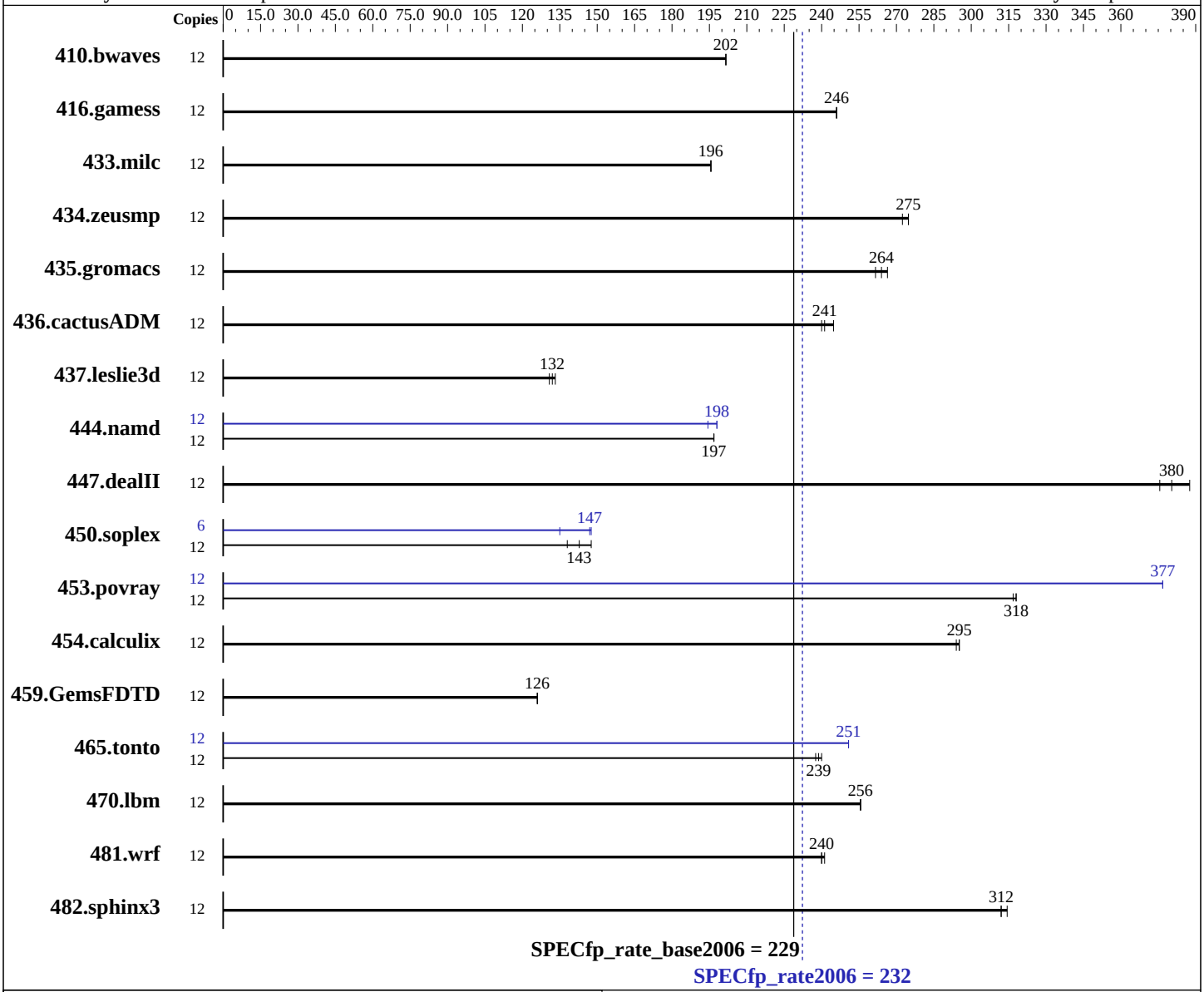
GigaByte x79-UP4 motherboard (Intel Core i7-4960X)

SPECfp®_rate2006 = 232

SPECfp_rate_base2006 = 229

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

Test date: Aug-2013
Hardware Availability: Sep-2013
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:	No

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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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	12	**810**	**202**	810	202	808	202	12	**810**	**202**	810	202	808	202
416.gamess	12	956	246	956	246	**956**	**246**	12	956	246	956	246	**956**	**246**
433.milc	12	565	196	562	196	**562**	**196**	12	565	196	562	196	**562**	**196**
434.zeusmp	12	397	275	401	272	**398**	**275**	12	397	275	401	272	**398**	**275**
435.gromacs	12	328	262	321	266	**324**	**264**	12	328	262	321	266	**324**	**264**
436.cactusADM	12	597	240	**594**	**241**	586	245	12	597	240	**594**	**241**	586	245
437.leslie3d	12	**857**	**132**	847	133	859	131	12	**857**	**132**	847	133	859	131
444.namd	12	490	197	489	197	**489**	**197**	12	**487**	**198**	486	198	494	194
447.dealII	12	365	376	355	388	**361**	**380**	12	365	376	355	388	**361**	**380**
450.soplex	12	727	138	678	148	**701**	**143**	6	370	135	**340**	**147**	339	148
453.povray	12	201	318	201	317	**201**	**318**	12	**169**	**377**	169	377	169	377
454.calculix	12	**336**	**295**	336	294	336	295	12	**336**	**295**	336	294	336	295
459.GemsFDTD	12	1013	126	1012	126	**1012**	**126**	12	1013	126	1012	126	**1012**	**126**
465.tonto	12	**494**	**239**	496	238	492	240	12	471	251	470	251	**471**	**251**
470.lbm	12	**646**	**256**	646	256	646	256	12	**646**	**256**	646	256	646	256
481.wrf	12	556	241	**558**	**240**	559	240	12	556	241	**558**	**240**	559	240
482.sphinx3	12	**748**	**312**	749	312	743	314	12	**748**	**312**	749	312	743	314

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)
```

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:\Users\PECA_W~1\Desktop\CPU200~1.APR/Docs/sysinfo
$Rev: 6775 $ $Date:: 2011-08-16 #$ \8787f7622badcf24e01c368b1db4377c
running on Clt38607738DA9E Sun Aug  4 10:32:44 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 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

```
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
```

Continued on next page

Base Compiler Invocation (Continued)

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
icl -Qvc10 -Qstd=c99 ifort

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- -Qansi-alias -Qopt-prefetch
-Qauto-ilp32 /F1000000000 -link /FORCE:MULTIPLE

C++ benchmarks:
-QxAVX -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch
-Qcxx-features -Qauto-ilp32 /F1000000000 shlW64M.lib
-link /FORCE:MULTIPLE

Fortran benchmarks:
-QxAVX -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch
/F1000000000 -link /FORCE:MULTIPLE

Benchmarks using both Fortran and C:
-QxAVX -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch
-Qauto-ilp32 /F1000000000 -link /FORCE:MULTIPLE

Peak 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
```

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 shlW64M.lib -link /FORCE:MULTIPLE`

447.dealII: `basepeak = yes`

450.soplex: `-QxAVX`(pass 2) `-Qprof_gen`(pass 1) `-Qprof_use`(pass 2) `-Qipo -O3 -Qauto-ilp32 /F1000000000 shlW64M.lib -link /FORCE:MULTIPLE`

453.povray: `-QxAVX`(pass 2) `-Qprof_gen`(pass 1) `-Qprof_use`(pass 2) `-Qipo -O3 -Qprec-div- -Qopt-prefetch -Qauto-ilp32 /F1000000000 shlW64M.lib -link /FORCE:MULTIPLE`

Fortran benchmarks:

410.bwaves: `basepeak = yes`

Continued on next page

Peak Optimization Flags (Continued)

416.gamess: basepeak = yes

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

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

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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