SPEC® CFP2006 Result

Intel Corporation

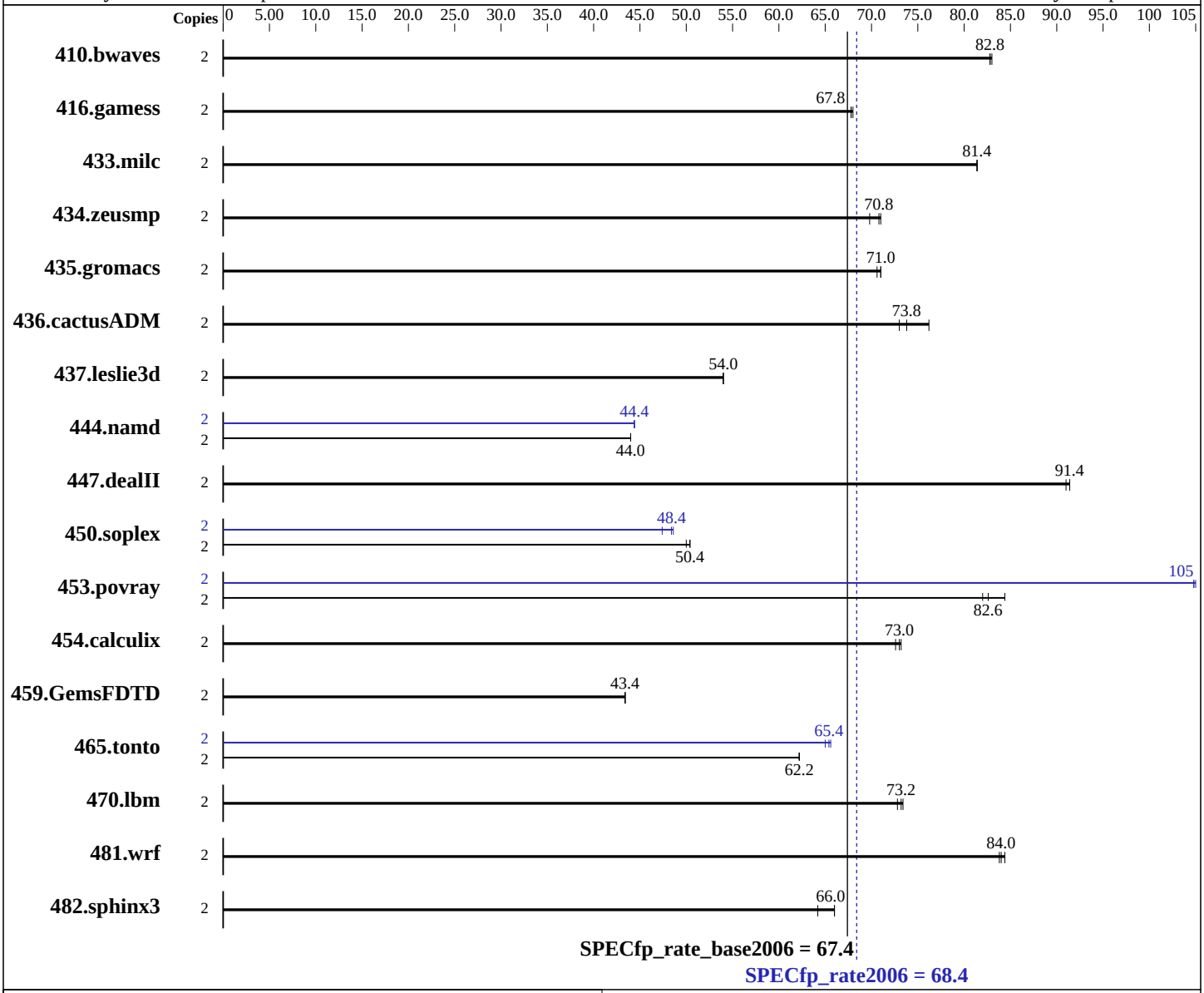
Intel DQ87PG motherboard (Intel Pentium G3220)

SPECfp®_rate2006 = 68.4

SPECfp_rate_base2006 = 67.4

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

Test date: Sep-2013
Hardware Availability: Sep-2013
Software Availability: Apr-2013



Hardware

CPU Name:	Intel Pentium G3220
CPU Characteristics:	
CPU MHz:	3000
FPU:	Integrated
CPU(s) enabled:	2 cores, 1 chip, 2 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

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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; 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: 3 MB I+D on chip per chip
Other Cache: None
Memory: 4 GB (2 x 2 GB 1Rx8 PC3-12800U-11, running at 1333 MHz and CL9)
Disk Subsystem: 250 GB Seagate SATA HDD, 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	2	**328**	**82.8**	328	83.0	329	82.8	2	**328**	**82.8**	328	83.0	329	82.8
416.gamess	2	**577**	**67.8**	575	68.0	578	67.8	2	**577**	**67.8**	575	68.0	578	67.8
433.milc	2	226	81.4	225	81.4	**226**	**81.4**	2	226	81.4	225	81.4	**226**	**81.4**
434.zeusmp	2	256	71.0	**257**	**70.8**	261	69.8	2	256	71.0	**257**	**70.8**	261	69.8
435.gromacs	2	201	71.0	**201**	**71.0**	202	70.6	2	201	71.0	**201**	**71.0**	202	70.6
436.cactusADM	2	327	73.0	314	76.2	**324**	**73.8**	2	327	73.0	314	76.2	**324**	**73.8**
437.leslie3d	2	348	54.0	348	54.0	**348**	**54.0**	2	348	54.0	348	54.0	**348**	**54.0**
444.namd	2	**365**	**44.0**	365	44.0	365	44.0	2	362	44.4	361	44.4	**361**	**44.4**
447.dealII	2	**251**	**91.4**	250	91.4	252	91.0	2	**251**	**91.4**	250	91.4	252	91.0
450.soplex	2	333	50.0	**331**	**50.4**	331	50.4	2	352	47.4	344	48.6	**344**	**48.4**
453.povray	2	126	84.4	**129**	**82.6**	130	82.0	2	102	105	**102**	**105**	101	105
454.calculix	2	225	73.2	227	72.6	**226**	**73.0**	2	225	73.2	227	72.6	**226**	**73.0**
459.GemsFDTD	2	**490**	**43.4**	490	43.4	490	43.4	2	**490**	**43.4**	490	43.4	490	43.4
465.tonto	2	316	62.2	316	62.2	**316**	**62.2**	2	303	65.0	300	65.6	**301**	**65.4**
470.lbm	2	378	72.8	375	73.4	**375**	**73.2**	2	378	72.8	375	73.4	**375**	**73.2**
481.wrf	2	264	84.4	266	83.8	**266**	**84.0**	2	264	84.4	266	83.8	**266**	**84.0**
482.sphinx3	2	607	64.2	**591**	**66.0**	591	66.0	2	607	64.2	**591**	**66.0**	591	66.0

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:\SPEC13.1/Docs/sysinfo
 $Rev: 6775 $ $Date:: 2011-08-16 #$ \8787f7622badcf24e01c368b1db4377c
 running on Clt7C05070FB2AD Fri Sep 20 03:15:38 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.
      [01]: Intel64 Family 6 Model 60 Stepping 3 GenuineIntel ~3000 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   : 512
 L3CacheSize   : 3072
 MaxClockSpeed : 3000
 Name          : Intel(R) Pentium(R) CPU G3220 @ 3.00GHz
 NumberOfCores : 2
 NumberOfLogicalProcessors: 2

 (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
```

Continued on next page

Base Compiler Invocation (Continued)

C++ benchmarks:
icl -Qvc10

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:
-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch -Qauto-ilp32 /F1000000000 -link /FORCE:MULTIPLE

C++ benchmarks:
-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch -Qcxx-features -Qauto-ilp32 /F1000000000 shlW64M.lib -link /FORCE:MULTIPLE

Fortran benchmarks:
-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch /F1000000000 -link /FORCE:MULTIPLE

Continued on next page

Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:
-QxSSE4.2 -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: -QxSSE4.2(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: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qauto-ilp32 /F1000000000 shlW64M.lib
-link /FORCE:MULTIPLE

Continued on next page

Peak Optimization Flags (Continued)

453.povray: -QxSSE4.2(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

416.gamess: basepeak = yes

434.zeusmp: basepeak = yes

437.leslie3d: basepeak = yes

459.GemsFDTD: basepeak = yes

465.tonto: -QxSSE4.2(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.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

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

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