SPEC® CFP2006 Result

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Intel Corporation

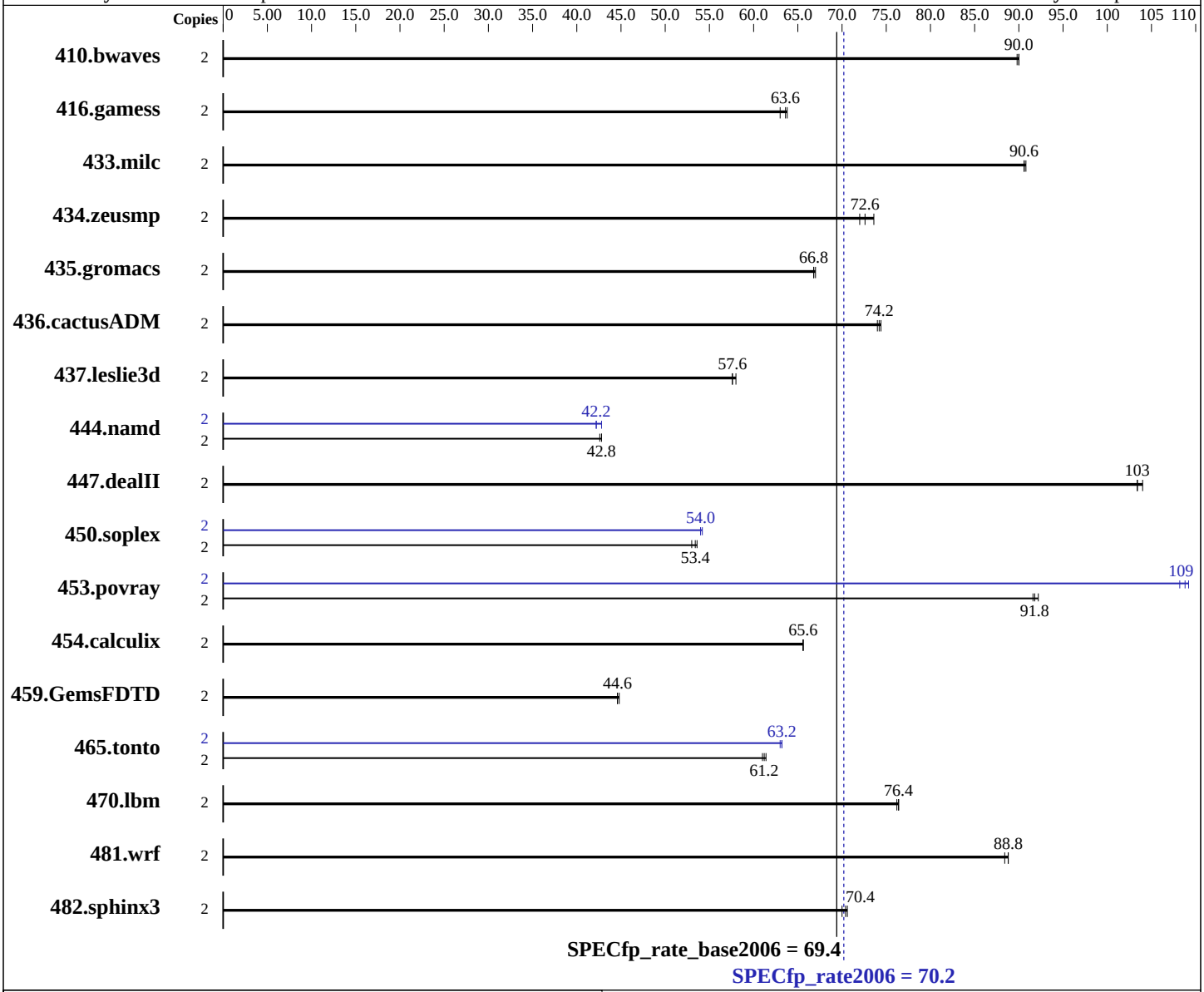
Intel DQ87PG motherboard (Intel Pentium G3420)

SPECfp®_rate2006 = 70.2

SPECfp_rate_base2006 = 69.4

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

Test date: Sep-2013
Hardware Availability: Sep-2013
Software Availability: Sep-2012



Hardware

CPU Name:	Intel Pentium G3420
CPU Characteristics:	
CPU MHz:	3200
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 15.00.30729.01 of Microsoft Visual Studio 2008 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)
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	**302**	**90.0**	303	89.8	302	90.0	2	**302**	**90.0**	303	89.8	302	90.0
416.gamess	2	615	63.8	621	63.0	**617**	**63.6**	2	615	63.8	621	63.0	**617**	**63.6**
433.milc	2	202	90.8	203	90.6	**203**	**90.6**	2	202	90.8	203	90.6	**203**	**90.6**
434.zeusmp	2	247	73.6	253	72.0	**250**	**72.6**	2	247	73.6	253	72.0	**250**	**72.6**
435.gromacs	2	213	67.0	**214**	**66.8**	214	66.8	2	213	67.0	**214**	**66.8**	214	66.8
436.cactusADM	2	**322**	**74.2**	321	74.4	323	74.0	2	**322**	**74.2**	321	74.4	323	74.0
437.leslie3d	2	**326**	**57.6**	324	58.0	326	57.6	2	**326**	**57.6**	324	58.0	326	57.6
444.namd	2	**375**	**42.8**	376	42.6	375	42.8	2	375	42.8	379	42.2	**379**	**42.2**
447.dealII	2	220	104	**221**	**103**	221	103	2	220	104	**221**	**103**	221	103
450.soplex	2	**312**	**53.4**	311	53.6	315	53.0	2	**309**	**54.0**	309	54.0	308	54.2
453.povray	2	116	92.2	**116**	**91.8**	116	91.6	2	**97.8**	**109**	98.3	108	97.5	109
454.calculix	2	251	65.6	**252**	**65.6**	252	65.6	2	251	65.6	**252**	**65.6**	252	65.6
459.GemsFDTD	2	474	44.8	476	44.6	**476**	**44.6**	2	474	44.8	476	44.6	**476**	**44.6**
465.tonto	2	320	61.4	**321**	**61.2**	323	61.0	2	311	63.2	**311**	**63.2**	312	63.0
470.lbm	2	**360**	**76.4**	360	76.2	360	76.4	2	**360**	**76.4**	360	76.2	360	76.4
481.wrf	2	251	88.8	253	88.4	**251**	**88.8**	2	251	88.8	253	88.4	**251**	**88.8**
482.sphinx3	2	552	70.6	557	70.0	**554**	**70.4**	2	552	70.6	557	70.0	**554**	**70.4**

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 13.0 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 Clt7C05070FB2EF Mon Sep 23 20:08:57 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 ~3200 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 : 3200
 Name          : Intel(R) Pentium(R) CPU G3420 @ 3.20GHz
 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: /Qlowercase
436.cactusADM: -Qlowercase /assume:underscore
444.namd: /TP
447.dealII: -DDEAL_II_MEMBER_VAR_SPECIALIZATION_BUG
-Qoption,cpp,--ms_incompat_treatment_of_commas_in_macros
453.povray: -DSPEC_CPU_NEED_INVHYP -DNEED_INVHYP
454.calculix: -DSPEC_CPU_NOZMODIFIER -Qlowercase
481.wrf: -DSPEC_CPU_WINDOWS_ICL

Base Optimization Flags

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

C++ benchmarks:
-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch
-Qcxx-features /F1000000000 shlW32M.lib
-link /FORCE:MULTIPLE

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

Benchmarks using both Fortran and C:
-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch
/F1000000000 -link /FORCE:MULTIPLE

Peak Compiler Invocation

C benchmarks:
icl -Qvc10 -Qstd=c99

Continued on next page

Peak Compiler Invocation (Continued)

C++ benchmarks:
icl -Qvc10

Fortran benchmarks:
ifort

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

Peak Portability Flags

410.bwaves: /Qlowercase
436.cactusADM: -Qlowercase /assume:underscore
444.namd: /TP
447.dealII: -DDEAL_II_MEMBER_VAR_SPECIALIZATION_BUG
-Qoption,cpp,--ms_incompat_treatment_of_commas_in_macros
453.povray: -DSPEC_CPU_NEED_INVHYP -DNEED_INVHYP
454.calculix: -DSPEC_CPU_NOZMODIFIER -Qlowercase
481.wrf: -DSPEC_CPU_WINDOWS_ICL

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 /F1000000000 shlW32M.lib
-link /FORCE:MULTIPLE

447.dealII: basepeak = yes

450.soplex: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 /F1000000000 shlW32M.lib
-link /FORCE:MULTIPLE

453.povray: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qprec-div- -Qopt-prefetch /F1000000000
shlW32M.lib -link /FORCE:MULTIPLE

Continued on next page

Peak Optimization Flags (Continued)

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

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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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