SPEC® CFP2006 Result

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Intel Corporation

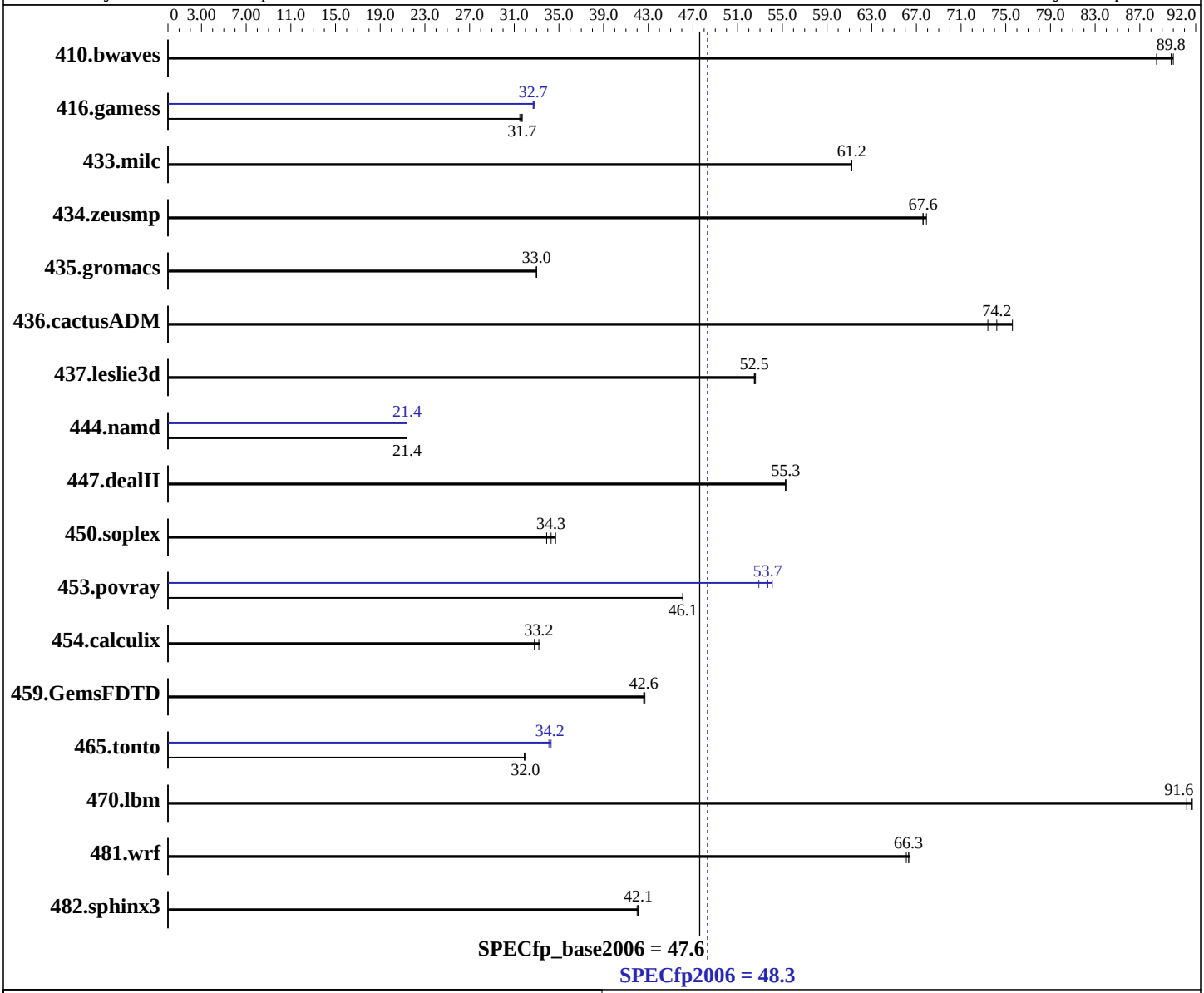
Intel DQ87PG motherboard (Intel Pentium G3420)

SPECfp®2006 = 48.3

SPECfp_base2006 = 47.6

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:	Yes

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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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	**151**	**89.8**	151	90.0	154	88.5	**151**	**89.8**	151	90.0	154	88.5
416.gamess	622	31.5	618	31.7	**618**	**31.7**	**598**	**32.7**	596	32.8	599	32.7
433.milc	150	61.2	**150**	**61.2**	150	61.2	150	61.2	**150**	**61.2**	150	61.2
434.zeusmp	**135**	**67.6**	135	67.6	134	67.9	**135**	**67.6**	135	67.6	134	67.9
435.gromacs	216	33.0	**216**	**33.0**	217	32.9	216	33.0	**216**	**33.0**	217	32.9
436.cactusADM	158	75.6	163	73.4	**161**	**74.2**	158	75.6	163	73.4	**161**	**74.2**
437.leslie3d	179	52.5	179	52.6	**179**	**52.5**	179	52.5	179	52.6	**179**	**52.5**
444.namd	375	21.4	**375**	**21.4**	375	21.4	375	21.4	**375**	**21.4**	375	21.4
447.dealII	207	55.3	**207**	**55.3**	207	55.3	207	55.3	**207**	**55.3**	207	55.3
450.soplex	246	33.9	**243**	**34.3**	241	34.7	246	33.9	**243**	**34.3**	241	34.7
453.povray	115	46.1	**115**	**46.1**	115	46.1	**99.1**	**53.7**	101	52.9	98.4	54.1
454.calculix	**248**	**33.2**	252	32.8	248	33.3	**248**	**33.2**	252	32.8	248	33.3
459.GemsFDTD	**249**	**42.6**	249	42.7	249	42.6	**249**	**42.6**	249	42.7	249	42.6
465.tonto	308	31.9	**308**	**32.0**	308	32.0	289	34.1	287	34.3	**287**	**34.2**
470.lbm	151	91.2	150	91.7	**150**	**91.6**	151	91.2	150	91.7	**150**	**91.6**
481.wrf	**168**	**66.3**	168	66.4	169	66.1	**168**	**66.3**	168	66.4	169	66.1
482.sphinx3	**463**	**42.1**	464	42.0	463	42.1	**463**	**42.1**	464	42.0	463	42.1

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)
```

Platform Notes

```
Sysinfo program C:\SPEC13.1/Docs/sysinfo
$Rev: 6775 $ $Date:: 2011-08-16 #$ \8787f7622badcf24e01c368b1db4377c
running on Clt7C05070FB2EF Mon Sep 23 06:31:52 2013

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

Continued on next page

Platform Notes (Continued)

```
      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

```
  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
```

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: /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- -Qparallel -Qansi-alias
-Qopt-prefetch /F1000000000

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

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

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

Peak Compiler Invocation

C benchmarks:
icl -Qvc10 -Qstd=c99

C++ benchmarks:
icl -Qvc10

Continued on next page

Peak Compiler Invocation (Continued)

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: basepeak = yes

453.povray: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qprec-div- -Qunroll4 -Qansi-alias /F1000000000
shlW32M.lib -link /FORCE:MULTIPLE

Fortran benchmarks:

410.bwaves: basepeak = yes

Continued on next page

Peak Optimization Flags (Continued)

416.gamess: `-QxSSE4.2`(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`

459.GemsFDTD: `basepeak = yes`

465.tonto: `-QxSSE4.2`(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.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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