SPEC® CFP2006 Result

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Intel Corporation

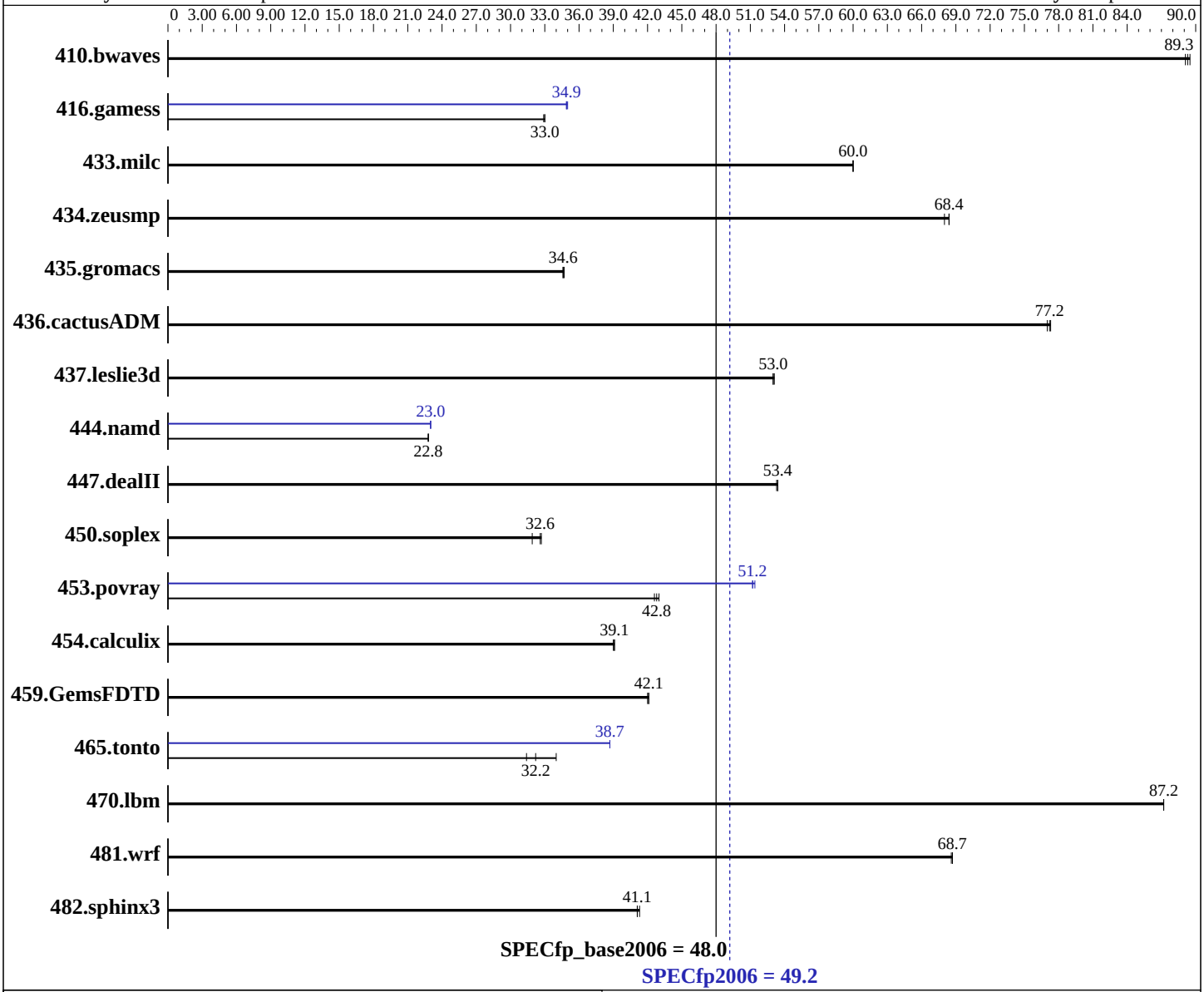
Intel DQ77MK motherboard (Intel Core i3-3220)

SPECfp®2006 = 49.2

SPECfp_base2006 = 48.0

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

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



Hardware

CPU Name:	Intel Core i3-3220
CPU Characteristics:	
CPU MHz:	3300
FPU:	Integrated
CPU(s) enabled:	2 cores, 1 chip, 2 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

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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:	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	153	89.1	**152**	**89.3**	152	89.5	153	89.1	**152**	**89.3**	152	89.5
416.gamess	**594**	**33.0**	595	32.9	594	33.0	**561**	**34.9**	560	35.0	561	34.9
433.milc	153	60.0	**153**	**60.0**	153	60.0	153	60.0	**153**	**60.0**	153	60.0
434.zeusmp	**133**	**68.4**	133	68.4	134	68.0	**133**	**68.4**	133	68.4	134	68.0
435.gromacs	206	34.7	**206**	**34.6**	206	34.6	206	34.7	**206**	**34.6**	206	34.6
436.cactusADM	155	77.3	**155**	**77.2**	155	77.0	155	77.3	**155**	**77.2**	155	77.0
437.leslie3d	177	53.1	178	53.0	**177**	**53.0**	177	53.1	178	53.0	**177**	**53.0**
444.namd	**351**	**22.8**	351	22.8	351	22.8	**349**	**23.0**	349	23.0	349	23.0
447.dealII	214	53.4	**214**	**53.4**	215	53.3	214	53.4	**214**	**53.4**	215	53.3
450.soplex	255	32.7	262	31.9	**256**	**32.6**	255	32.7	262	31.9	**256**	**32.6**
453.povray	125	42.6	124	43.0	**124**	**42.8**	104	51.2	104	51.4	**104**	**51.2**
454.calculix	211	39.1	211	39.0	**211**	**39.1**	211	39.1	211	39.0	**211**	**39.1**
459.GemsFDTD	252	42.1	**252**	**42.1**	252	42.0	252	42.1	**252**	**42.1**	252	42.0
465.tonto	290	34.0	**305**	**32.2**	313	31.4	254	38.7	254	38.7	**254**	**38.7**
470.lbm	**158**	**87.2**	158	87.2	158	87.2	**158**	**87.2**	158	87.2	158	87.2
481.wrf	163	68.6	**163**	**68.7**	163	68.7	163	68.6	**163**	**68.7**	163	68.7
482.sphinx3	**474**	**41.1**	474	41.1	472	41.3	**474**	**41.1**	474	41.1	472	41.3

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:\SPEC13.1/Docs/sysinfo
$Rev: 6775 $ $Date:: 2011-08-16 #$ \8787f7622badcf24e01c368b1db4377c
running on Clt7054D217ADD3 Sat Dec  7 16:13:00 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   : DQ77MK__
    Processor(s)   : 1 Processor(s) Installed.
         [01]: Intel64 Family 6 Model 58 Stepping 9 GenuineIntel ~3300 Mhz
    BIOS Version   : Intel Corp. MKQ7710H.86A.0054.2012.1120.1444, 11/20/2012
    Total Physical Memory: 3,912 MB

    Trying 'wmic cpu get /value'
    DeviceID       : CPU0
    L2CacheSize    : 512
    L3CacheSize    : 3072
    MaxClockSpeed  : 3300
    Name           : Intel(R) Core(TM) i3-3220 CPU @ 3.30GHz
    NumberOfCores  : 2
    NumberOfLogicalProcessors: 4

    (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: -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
```

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: `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 shlW64M.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`

Continued on next page

Peak Optimization Flags (Continued)

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 -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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Tested with SPEC CPU2006 v1.2.
Report generated on Fri Jul 25 01:04:23 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 15 July 2014.