



SPEC® CFP2006 Result

Copyright 2006-2014 Standard Performance Evaluation Corporation

Microsoft Corporation
(Test Sponsor: Intel Corporation)

SPECfp®2006 = 31.5

Surface Pro 3

SPECfp_base2006 = 30.9

CPU2006 license: 13

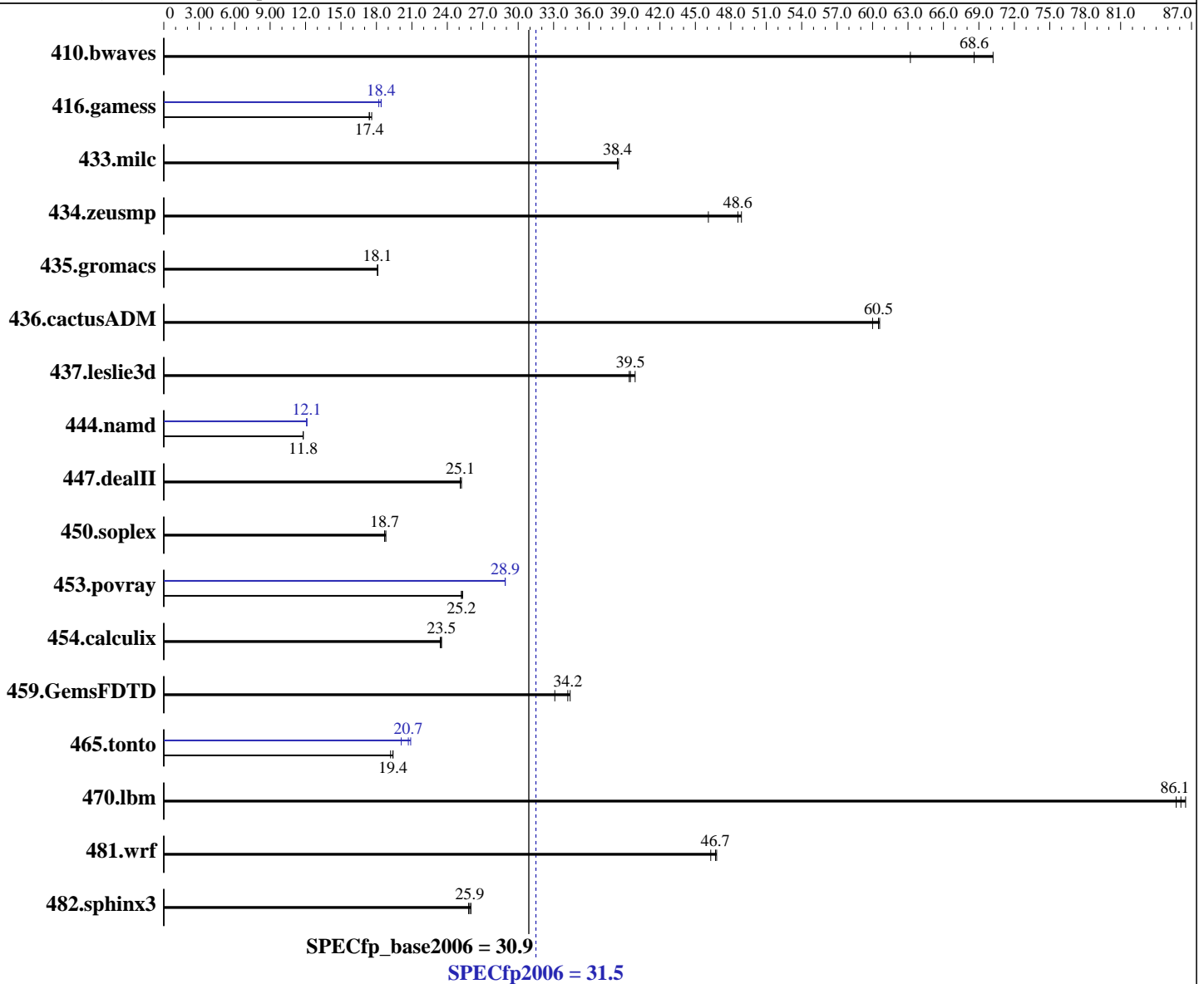
Test date: Sep-2014

Test sponsor: Intel Corporation

Hardware Availability: Jun-2014

Tested by: Intel Corporation

Software Availability: Oct-2013



Hardware

CPU Name: Intel Core i3-4020Y
 CPU Characteristics:
 CPU MHz: 1500
 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 8.1 Pro
 6.3.9600 N/A Build 9600
 Compiler: C/C++: Version 14.0.1.139 of Intel C++ Studio XE for Windows;
 Fortran: Version 14.0.1.139 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 (4 x 1 GB 2Rx32 PC3L-12800U-11)
Disk Subsystem: 64 GB SSD
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	215	63.2	194	70.2	198	68.6	215	63.2	194	70.2	198	68.6
416.gamess	1128	17.4	1124	17.4	1114	17.6	1064	18.4	1066	18.4	1073	18.2
433.milc	239	38.4	239	38.5	239	38.4	239	38.4	239	38.5	239	38.4
434.zeusmp	197	46.1	187	48.6	186	48.9	197	46.1	187	48.6	186	48.9
435.gromacs	394	18.1	395	18.1	395	18.1	394	18.1	395	18.1	395	18.1
436.cactusADM	199	60.0	197	60.6	198	60.5	199	60.0	197	60.6	198	60.5
437.leslie3d	236	39.9	238	39.4	238	39.5	236	39.9	238	39.4	238	39.5
444.namd	679	11.8	679	11.8	679	11.8	662	12.1	662	12.1	662	12.1
447.dealII	455	25.1	455	25.1	454	25.2	455	25.1	455	25.1	454	25.2
450.soplex	443	18.8	446	18.7	447	18.7	443	18.8	446	18.7	447	18.7
453.povray	210	25.3	211	25.2	211	25.2	184	28.9	184	28.9	184	28.9
454.calculix	352	23.4	352	23.5	351	23.5	352	23.4	352	23.5	351	23.5
459.GemsFDTD	321	33.1	310	34.2	309	34.4	321	33.1	310	34.2	309	34.4
465.tonto	513	19.2	506	19.4	507	19.4	471	20.9	488	20.1	475	20.7
470.lbm	160	86.1	160	85.7	159	86.5	160	86.1	160	85.7	159	86.5
481.wrf	241	46.3	239	46.7	239	46.8	241	46.3	239	46.7	239	46.8
482.sphinx3	754	25.8	754	25.9	749	26.0	754	25.8	754	25.9	749	26.0

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 14.0 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:\Users\peca\Desktop\SPEC14.0\SPEC14.0/Docs/sysinfo
\$Rev: 6775 \$ \$Date:: 2011-08-16 #\$ \8787f7622badcf24e01c368b1db4377c
running on peca_i3 Thu Sep 11 03:08:54 2014

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

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Platform Notes (Continued)

<http://www.spec.org/cpu2006/Docs/config.html#sysinfo>

Trying 'systeminfo'

```
OS Name       : Microsoft Windows 8.1 Pro
OS Version    : 6.3.9600 N/A Build 9600
System Manufacturer: Microsoft Corporation
System Model   : Surface Pro 3
Processor(s)  : 1 Processor(s) Installed.
               [01]: Intel64 Family 6 Model 69 Stepping 1 GenuineIntel ~1500 Mhz
BIOS Version  : American Megatrends Inc. 3.10.0250, 8/28/2014
Total Physical Memory: 4,001 MB
```

Trying 'wmic cpu get /value'

```
DeviceID      : CPU0
L2CacheSize   : 512
L3CacheSize   : 3072
MaxClockSpeed : 1501
Name          : Intel(R) Core(TM) i3-4020Y CPU @ 1.50GHz
NumberOfCores : 2
NumberOfLogicalProcessors: 4
```

(End of data from sysinfo program)

Component Notes

Test ran with power supply connected
Power Supply: 12V, 2.58A

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

Fortran benchmarks:
ifort

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



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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:

```

-QxCORE-AVX2 -Qipo -O3 -Qprec-div- -Qparallel -Qansi-alias
-Qopt-prefetch -Qauto-ilp32 /F1000000000

```

C++ benchmarks:

```

-QxCORE-AVX2 -Qipo -O3 -Qprec-div- -Qparallel -Qansi-alias
-Qopt-prefetch -Qcxx-features -Qauto-ilp32 /F1000000000 shlw64M.lib
-link /FORCE:MULTIPLE

```

Fortran benchmarks:

```

-QxCORE-AVX2 -Qipo -O3 -Qprec-div- -Qparallel -Qansi-alias
-Qopt-prefetch /F1000000000

```

Benchmarks using both Fortran and C:

```

-QxCORE-AVX2 -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
```

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Peak Compiler Invocation (Continued)

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: -QxCORE-AVX2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qprec-div- -Oa -Qauto-ilp32 /F1000000000
sh1W64M.lib -link /FORCE:MULTIPLE

447.dealIII: basepeak = yes

450.soplex: basepeak = yes

453.povray: -QxCORE-AVX2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qprec-div- -Qunroll4 -Qansi-alias -Qauto-ilp32
/F1000000000 sh1W64M.lib -link /FORCE:MULTIPLE

Fortran benchmarks:

410.bwaves: basepeak = yes

416.gamess: -QxCORE-AVX2(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

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Peak Optimization Flags (Continued)

459.GemsFDTD: basepeak = yes

465.tonto: -QxCORE-AVX2(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-ic14.0-official-windows.html>

You can also download the XML flags source by saving the following link:
<http://www.spec.org/cpu2006/flags/Intel-ic14.0-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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