SPEC® CFP2006 Result

Hewlett-Packard Company
(Test Sponsor: Intel Corporation)

HP ENVY 15 Notebook PC 15t-j100 (Intel Core i5-4300M)

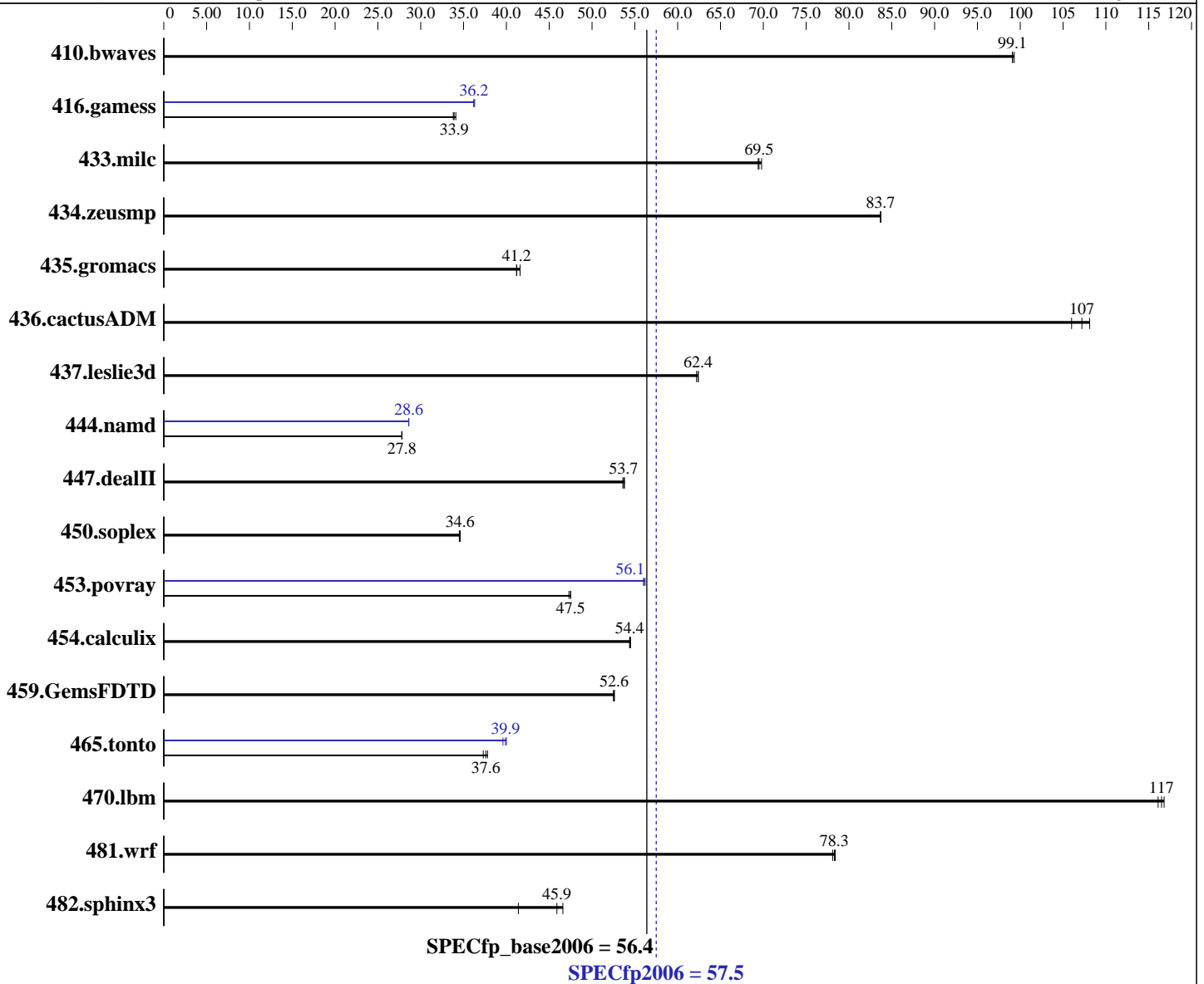$SPECfp^{®}2006 =$ 57.5

$SPECfp\_base2006 =$ 56.4

CPU2006 license: 13

Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: Nov-2015

Hardware Availability: May-2014

Software Availability: Aug-2015

Benchmark	Result
410.bwaves	99.1
416.gamess	36.2 / 33.9
433.milc	69.5
434.zeusmp	83.7
435.gromacs	41.2
436.cactusADM	107
437.leslie3d	62.4
444.namd	28.6 / 27.8
447.dealII	53.7
450.soplex	34.6
453.povray	56.1 / 47.5
454.calculix	54.4
459.GemsFDTD	52.6
465.tonto	39.9 / 37.6
470.lbm	117
481.wrf	78.3
482.sphinx3	45.9

SPECfp_base2006 = 56.4

SPECfp2006 = 57.5

Hardware

CPU Name:	Intel Core i5-4300M
CPU Characteristics:	Intel Turbo Boost Technology up to 3.30 GHz
CPU MHz:	2600
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

Continued on next page

Software

Operating System:	Microsoft Windows 10 Pro 10.0.10240 N/A Build 10240
Compiler:	C/C++: Version 16.0.0.110 of Intel C++ Studio XE for Windows; Fortran: Version 16.0.0.110 of Intel Fortran Studio XE for Windows; Libraries: Version 18.00.30723 of Microsoft Visual Studio 2013
Auto Parallel:	Yes

Continued on next page

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L3 Cache:	3 MB I+D on chip per chip	File System:	NTFS
Other Cache:	None	System State:	Default
Memory:	8 GB (2 x 4 GB 2Rx4 PC3-12800U-11)	Base Pointers:	64-bit
Disk Subsystem:	1 TB HDD, 5400 RPM	Peak Pointers:	64-bit
Other Hardware:	None	Other Software:	SmartHeap Library Version 11.0 from http://www.microquill.com/

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	137	99.1	137	99.3	**137**	**99.1**	137	99.1	137	99.3	**137**	**99.1**
416.gamess	579	33.8	**578**	**33.9**	575	34.1	**540**	**36.2**	542	36.2	540	36.3
433.milc	132	69.8	**132**	**69.5**	132	69.4	132	69.8	**132**	**69.5**	132	69.4
434.zeusmp	109	83.7	**109**	**83.7**	109	83.7	109	83.7	**109**	**83.7**	109	83.7
435.gromacs	172	41.6	**173**	**41.2**	173	41.2	172	41.6	**173**	**41.2**	173	41.2
436.cactusADM	111	108	**112**	**107**	113	106	111	108	**112**	**107**	113	106
437.leslie3d	151	62.2	151	62.4	**151**	**62.4**	151	62.2	151	62.4	**151**	**62.4**
444.namd	288	27.8	**288**	**27.8**	288	27.8	281	28.6	**281**	**28.6**	281	28.6
447.dealII	213	53.8	**213**	**53.7**	213	53.6	213	53.8	**213**	**53.7**	213	53.6
450.soplex	242	34.5	**241**	**34.6**	241	34.6	242	34.5	**241**	**34.6**	241	34.6
453.povray	112	47.5	**112**	**47.5**	112	47.3	**94.8**	**56.1**	94.6	56.2	95.0	56.0
454.calculix	**152**	**54.4**	151	54.5	152	54.4	**152**	**54.4**	151	54.5	152	54.4
459.GemsFDTD	202	52.6	**202**	**52.6**	202	52.5	202	52.6	**202**	**52.6**	202	52.5
465.tonto	**261**	**37.6**	264	37.3	260	37.8	248	39.6	246	40.0	**246**	**39.9**
470.lbm	**118**	**117**	118	117	118	116	**118**	**117**	118	117	118	116
481.wrf	142	78.4	143	78.1	**143**	**78.3**	142	78.4	143	78.1	**143**	**78.3**
482.sphinx3	471	41.4	**424**	**45.9**	419	46.6	471	41.4	**424**	**45.9**	419	46.6

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 16.0 was set up to
generate 64-bit binaries with the command:
"psxevars.bat intel64" (shortcut provided in the Intel(r)
Parallel Studio XE 2016 program folder)
```

Platform Notes

```
Sysinfo program C:\SPEC16.0/Docs/sysinfo
$Rev: 6775 $ $Date:: 2011-08-16 #$ \8787f7622badcf24e01c368b1db4377c
running on Clt9CB654C10CA6 Thu Nov 12 00:16:18 2015

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 10 Pro
   OS Version      : 10.0.10240 N/A Build 10240
   System Manufacturer: Hewlett-Packard
   System Model    : HP ENVY 15 Notebook PC
   Processor(s)    : 1 Processor(s) Installed.
       [01]: Intel64 Family 6 Model 60 Stepping 3 GenuineIntel ~1600 Mhz
   BIOS Version    : Insyde F.35, 10/3/2013
   Total Physical Memory: 8,128 MB

   Trying 'wmic cpu get /value'
   DeviceID        : CPU0
   L2CacheSize     : 256
   L3CacheSize     : 3072
   MaxClockSpeed   : 2601
   Name            : Intel(R) Core(TM) i5-4300M CPU @ 2.60GHz
   NumberOfCores   : 2
   NumberOfLogicalProcessors: 4

   (End of data from sysinfo program)
```

General Notes

```
450.soplex (base): "getline_test" src.alt was used.

447.dealII (base): "max_prototype" src.alt was used.
447.dealII (base): "cxx11_make_pair" src.alt was used.

450.soplex (base): "getline_test" src.alt was used.

447.dealII (base): "max_prototype" src.alt was used.
447.dealII (base): "cxx11_make_pair" src.alt was used.

 OMP_NUM_THREADS set to number of processors cores
 KMP_AFFINITY set to granularity=fine,scatter
 Binaries compiled on a system with 1x Intel Xeon E5-2699 v3 CPU
 + 64GB memory using Windows 8.1 Enterprise 64-bit
```

Base Compiler Invocation

C benchmarks:
```
    icl -Qvc12 -Qstd=c99
```

C++ benchmarks:
```
    icl -Qvc12
```

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Base Compiler Invocation (Continued)

Fortran benchmarks:
```
ifort
```

Benchmarks using both Fortran and C:
```
icl -Qvc12 -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
              -DSPEC_CPU_BOOST_CONFIG_MSC_VER -DSPEC_NEED_ALGORITHM
   450.soplex: -DSPEC_CPU_P64 -DSPEC_GETLINE_TEST
   453.povray: -DSPEC_CPU_P64
  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 /F1000000000
```

C++ benchmarks:
```
-QxCORE-AVX2 -Qipo -O3 -Qprec-div- -Qparallel -Qansi-alias
-Qopt-prefetch -Qcxx-features /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 /F1000000000
```

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		Software Availability:	Aug-2015

Peak Compiler Invocation

C benchmarks:
```
icl -Qvc12 -Qstd=c99
```

C++ benchmarks:
```
icl -Qvc12
```

Fortran benchmarks:
```
ifort
```

Benchmarks using both Fortran and C:
```
icl -Qvc12 -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 /F1000000000 shlW64M.lib`
               `-link /FORCE:MULTIPLE`

    447.dealII: `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 /F1000000000`
        `shlW64M.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`

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Peak Optimization Flags (Continued)

    434.zeusmp: basepeak = yes

    437.leslie3d: basepeak = yes

    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-ic16.0-official-windows.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-windows.xml

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

Tested with SPEC CPU2006 v1.2.
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