



SPEC[®] CFP2006 Result

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ASUSTeK Computer Inc.
(Test Sponsor: Intel Corporation)

SPECfp[®]2006 = 85.5

ASUS Q170M-C motherboard (Intel Core i3-6300)

SPECfp_base2006 = 84.2

CPU2006 license: 13

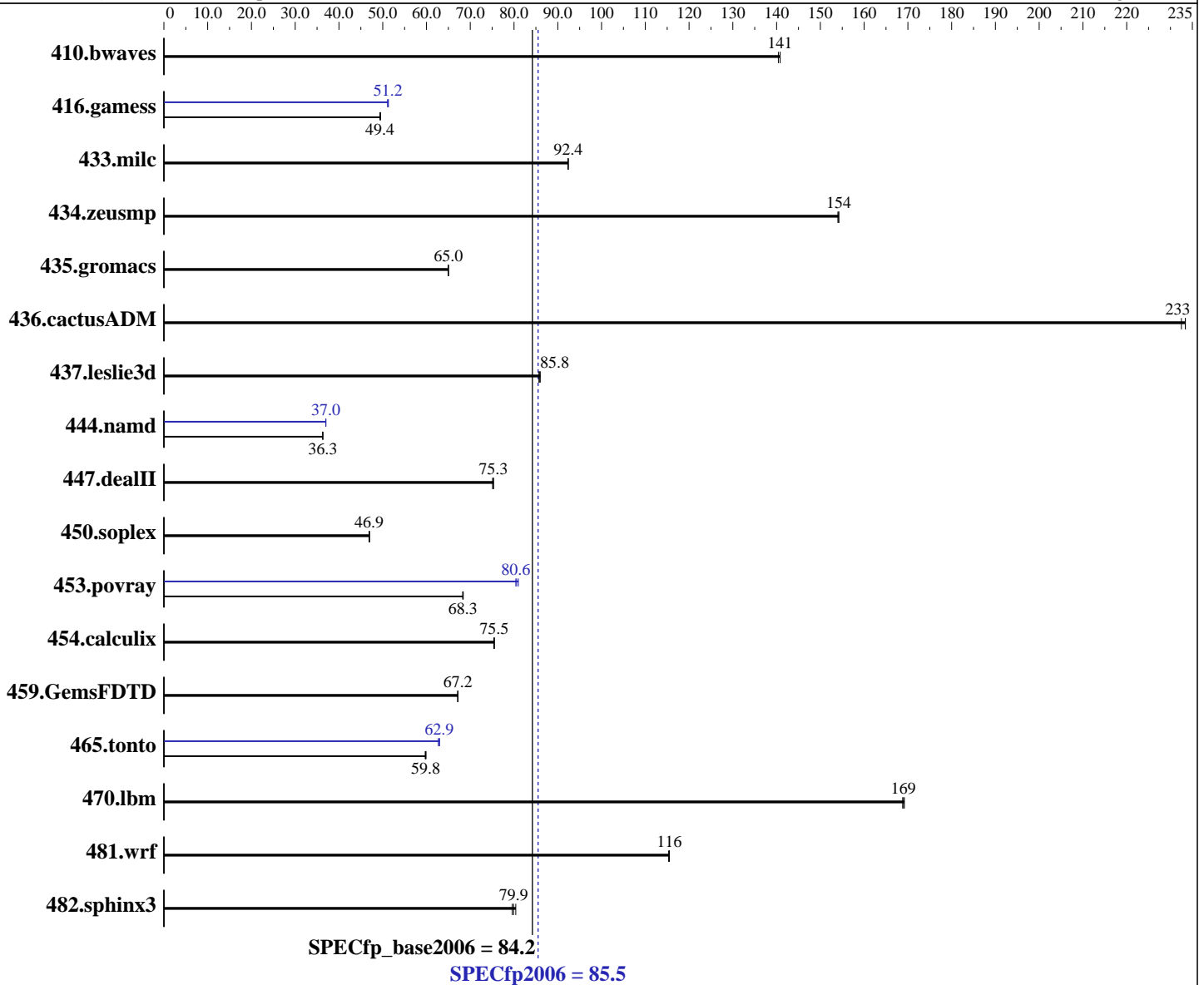
Test date: Mar-2016

Test sponsor: Intel Corporation

Hardware Availability: Sep-2015

Tested by: Intel Corporation

Software Availability: Aug-2015



Hardware

CPU Name: Intel Core i3-6300
 CPU Characteristics:
 CPU MHz: 3800
 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 Professional 6.1.7601 Service Pack 1 Build 7601
 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

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L3 Cache: 4 MB I+D on chip per chip
Other Cache: None
Memory: 8 GB (2 x 4 GB 2Rx4 PC4-2133P-U)
Disk Subsystem: 1 TB Seagate Barracuda 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 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	96.8	140	96.5	141	<u>96.5</u>	<u>141</u>	96.8	140	96.5	141	<u>96.5</u>	<u>141</u>
416.gamess	397	49.4	<u>396</u>	<u>49.4</u>	395	49.5	<u>382</u>	<u>51.2</u>	382	51.3	383	51.1
433.milc	99.5	92.3	99.3	92.4	<u>99.4</u>	<u>92.4</u>	99.5	92.3	99.3	92.4	<u>99.4</u>	<u>92.4</u>
434.zeusmp	59.1	154	59.0	154	<u>59.0</u>	<u>154</u>	59.1	154	59.0	154	<u>59.0</u>	<u>154</u>
435.gromacs	110	65.0	<u>110</u>	<u>65.0</u>	110	65.0	110	65.0	<u>110</u>	<u>65.0</u>	110	65.0
436.cactusADM	51.2	233	51.4	233	<u>51.2</u>	<u>233</u>	51.2	233	51.4	233	<u>51.2</u>	<u>233</u>
437.leslie3d	109	86.0	<u>110</u>	<u>85.8</u>	110	85.7	109	86.0	<u>110</u>	<u>85.8</u>	110	85.7
444.namd	221	36.3	221	36.3	<u>221</u>	<u>36.3</u>	217	37.0	217	37.0	<u>217</u>	<u>37.0</u>
447.dealII	152	75.3	<u>152</u>	<u>75.3</u>	152	75.1	152	75.3	<u>152</u>	<u>75.3</u>	152	75.1
450.soplex	178	46.9	<u>178</u>	<u>46.9</u>	178	47.0	178	46.9	<u>178</u>	<u>46.9</u>	178	47.0
453.povray	<u>77.9</u>	<u>68.3</u>	77.8	68.4	77.9	68.3	65.7	81.0	66.2	80.4	<u>66.0</u>	<u>80.6</u>
454.calculix	109	75.5	109	75.4	<u>109</u>	<u>75.5</u>	109	75.5	109	75.4	<u>109</u>	<u>75.5</u>
459.GemsFDTD	158	67.1	158	67.2	<u>158</u>	<u>67.2</u>	158	67.1	158	67.2	<u>158</u>	<u>67.2</u>
465.tonto	164	59.9	165	59.7	<u>165</u>	<u>59.8</u>	<u>156</u>	<u>62.9</u>	157	62.7	156	63.0
470.lbm	81.2	169	<u>81.3</u>	<u>169</u>	81.4	169	81.2	169	<u>81.3</u>	<u>169</u>	81.4	169
481.wrf	96.7	116	<u>96.7</u>	<u>116</u>	96.9	115	96.7	116	<u>96.7</u>	<u>116</u>	96.9	115
482.sphinx3	245	79.6	<u>244</u>	<u>79.9</u>	243	80.4	245	79.6	<u>244</u>	<u>79.9</u>	243	80.4

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 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 CltF832E4885A95 Wed Mar 16 21:52:48 2016

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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Software Availability: Aug-2015

Platform Notes (Continued)

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

Trying 'systeminfo'

OS Name : Microsoft Windows 7 Professional
OS Version : 6.1.7601 Service Pack 1 Build 7601
System Manufacturer: System manufacturer
System Model : System Product Name
Processor(s) : 1 Processor(s) Installed.
 [01]: Intel64 Family 6 Model 94 Stepping 3 GenuineIntel ~3800 Mhz
BIOS Version : American Megatrends Inc. 0704, 1/12/2016
Total Physical Memory: 8,070 MB

Trying 'wmic cpu get /value'

DeviceID : CPU0
L2CacheSize : 512
L3CacheSize : 4096
MaxClockSpeed : 3800
Name : Intel(R) Core(TM) i3-6300 CPU @ 3.80GHz
NumberOfCores : 2
NumberOfLogicalProcessors: 4

(End of data from sysinfo program)

Component Notes

Tested systems can be used with Shin-G ATX case,
PC Power and Cooling 1200W power supply

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



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Base 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

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

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Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:

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

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

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Peak Optimization Flags (Continued)

```
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
```

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>

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For other inquiries, please contact webmaster@spec.org.

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