SPEC® CFP2006 Result

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ASUSTeK Computer Inc.

(Test Sponsor: Intel Corporation)

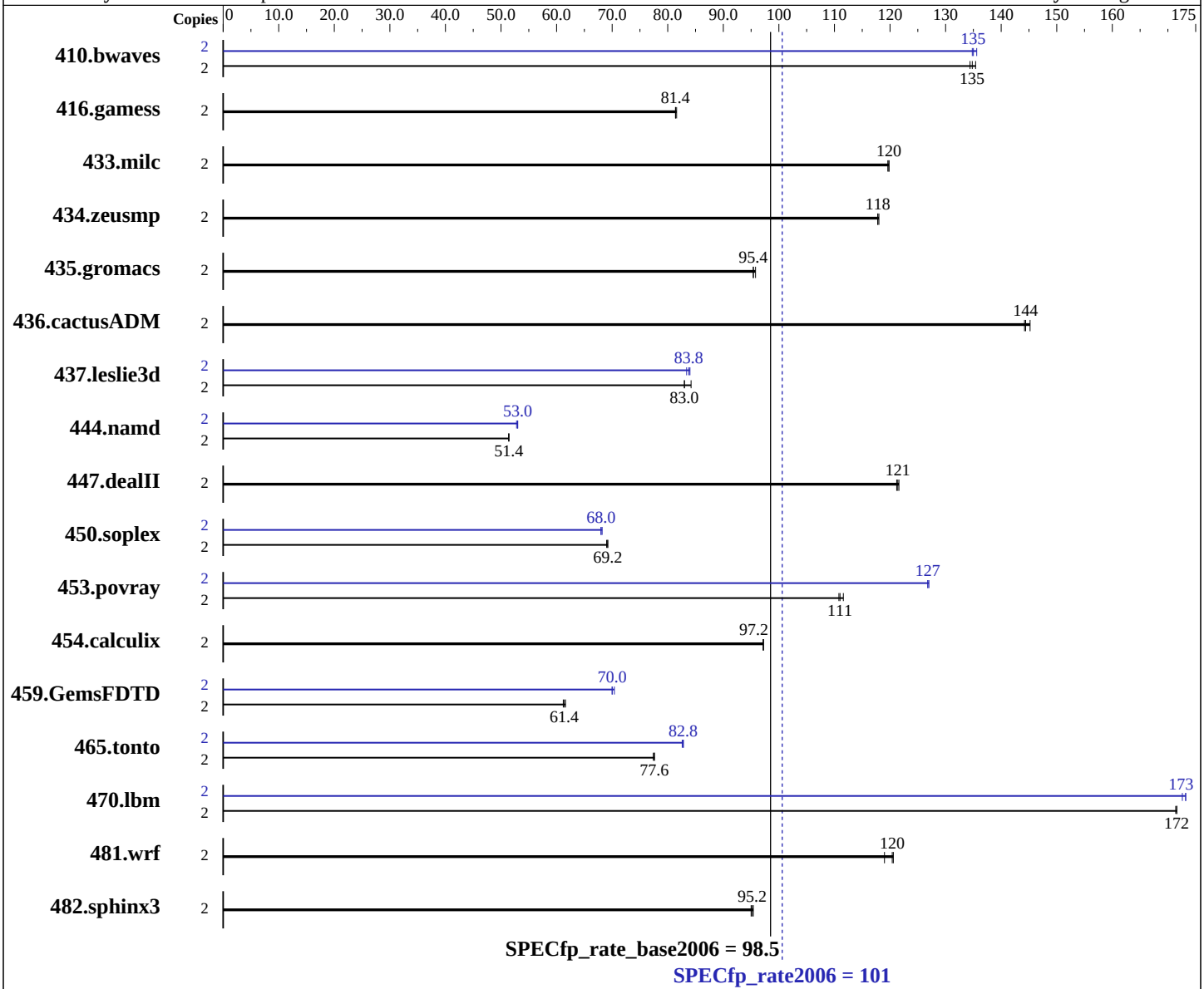
ASUS Q170M-C motherboard (Intel Pentium G4400)

SPECfp®_rate2006 = 101

SPECfp_rate_base2006 = 98.5

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

Test date: Mar-2016
Hardware Availability: Sep-2015
Software Availability: Aug-2015



Hardware

CPU Name:	Intel Pentium G4400
CPU Characteristics:	
CPU MHz:	3300
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 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:	No

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L3 Cache:	3 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						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	2	202	134	**202**	**135**	201	135	2	**201**	**135**	200	136	202	135
416.gamess	2	**481**	**81.4**	480	81.6	481	81.4	2	**481**	**81.4**	480	81.6	481	81.4
433.milc	2	153	120	**153**	**120**	154	120	2	153	120	**153**	**120**	154	120
434.zeusmp	2	**155**	**118**	154	118	155	118	2	**155**	**118**	154	118	155	118
435.gromacs	2	150	95.4	149	95.8	**150**	**95.4**	2	150	95.4	149	95.8	**150**	**95.4**
436.cactusADM	2	165	145	**165**	**144**	166	144	2	165	145	**165**	**144**	166	144
437.leslie3d	2	**226**	**83.0**	223	84.2	227	83.0	2	**225**	**83.8**	224	84.0	225	83.4
444.namd	2	312	51.4	312	51.4	**312**	**51.4**	2	304	52.8	303	53.0	**303**	**53.0**
447.dealII	2	188	122	**188**	**121**	189	121	2	188	122	**188**	**121**	189	121
450.soplex	2	242	69.0	241	69.2	**241**	**69.2**	2	246	68.0	**245**	**68.0**	244	68.2
453.povray	2	96.0	111	**95.9**	**111**	95.4	112	2	83.8	127	**83.9**	**127**	83.9	127
454.calculix	2	170	97.2	**170**	**97.2**	170	97.2	2	170	97.2	**170**	**97.2**	170	97.2
459.GemsFDTD	2	345	61.6	**346**	**61.4**	347	61.2	2	302	70.4	**303**	**70.0**	303	70.0
465.tonto	2	254	77.4	254	77.6	**254**	**77.6**	2	238	82.6	238	82.8	**238**	**82.8**
470.lbm	2	160	172	160	171	**160**	**172**	2	159	173	159	173	**159**	**173**
481.wrf	2	185	121	**186**	**120**	188	119	2	185	121	**186**	**120**	188	119
482.sphinx3	2	**409**	**95.2**	409	95.4	410	95.0	2	**409**	**95.2**	409	95.4	410	95.0

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 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 CltF832E48859C5 Tue Mar  8 13:58:37 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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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 ~3300 Mhz
  BIOS Version  : American Megatrends Inc. 0704, 1/12/2016
  Total Physical Memory: 8,074 MB

  Trying 'wmic cpu get /value'
  DeviceID      : CPU0
  L2CacheSize   : 512
  L3CacheSize   : 3072
  MaxClockSpeed : 3300
  Name          : Intel(R) Pentium(R) CPU G4400 @ 3.30GHz
  NumberOfCores : 2
  NumberOfLogicalProcessors: 2

  (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 (peak): "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.

 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
```

Continued on next page

Base Compiler Invocation (Continued)

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:
-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch -Qauto-ilp32 /F1000000000 -link /FORCE:MULTIPLE

C++ benchmarks:
-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch -Qcxx-features -Qauto-ilp32 /F1000000000 shlW64M.lib -link /FORCE:MULTIPLE

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

Continued on next page

Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:
-QxSSE4.2 -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch
-Qauto-ilp32 /F1000000000 -link /FORCE:MULTIPLE

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: -QxSSE4.2 -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3
-Qprec-div- -Qansi-alias -Qopt-prefetch -Qauto-ilp32
/F1000000000 -link /FORCE:MULTIPLE

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 -Qauto-ilp32 /F1000000000
shlW64M.lib -link /FORCE:MULTIPLE

447.dealII: basepeak = yes

450.soplex: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qauto-ilp32 /F1000000000 shlW64M.lib
-link /FORCE:MULTIPLE

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Peak Optimization Flags (Continued)

453.povray: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qauto-ilp32 /F1000000000 shlW64M.lib -link /FORCE:MULTIPLE

Fortran benchmarks:

410.bwaves: -QxSSE4.2 -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch /F1000000000 -link /FORCE:MULTIPLE

416.gamess: basepeak = yes

434.zeusmp: basepeak = yes

437.leslie3d: Same as 410.bwaves

459.GemsFDTD: Same as 410.bwaves

465.tonto: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll4 -Qauto /F1000000000 -link /FORCE:MULTIPLE

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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