ASUSTeK Computer Inc.
(Test Sponsor: Intel Corporation)
ASUS Q170M-C motherboard (Intel Core i3-6098P)

SPECfp®_rate2006 = 127
SPECfp_rate_base2006 = 121

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

Test date: Apr-2016
Hardware Availability: Dec-2015
Software Availability: Aug-2015

Hardware
CPU Name: Intel Core i3-6098P
CPU Characteristics:
CPUs: 2 cores, 1 chip, 2 cores/chip, 2 threads/core
CPU MHz: 3600
FPU: Integrated
CPU(s) enabled: 2 cores, 1 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

Software
Operating System: Microsoft Windows 7 Professional
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;
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

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</table>

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)

Submit Notes

Processes were bound to specific processors using the start command with the /affinity switch. The config file option 'submit' was used to generate the affinity mask for each process.
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Platform Notes

Sysinfo program C:\SPEC16.0/Docs/sysinfo  
$Rev: 6775 $ $Date:: 2011-08-16 #$ \8787f7622badcf24e01c368b1db4377c  
running on CltF832E4885A95 Wed Apr 6 05:33:42 2016

This section contains SUT (System Under Test) info as seen by  
some common utilities. To remove or add to this section, see:  
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 ~3600 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 : 3600  
Name          : Intel(R) Core(TM) i3-6098P CPU @ 3.60GHz  
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.

Binaries compiled on a system with 1x Intel Xeon E5-2699 v3 CPU  
+ 64GB memory using Windows 8.1 Enterprise 64-bit
SPEC CFP2006 Result

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Base Compiler Invocation

C benchmarks:
```shell
cl -Qvc12 -Qstd=c99
```

C++ benchmarks:
```shell
cl -Qvc12
```

Fortran benchmarks:
```shell
dfort
```

Benchmarks using both Fortran and C:
```shell
cl -Qvc12 -Qstd=c99 dfort
```

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
459.GemsFDTD: -DSPEC_CPU_P64 /names:lowercase
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:
```shell
-QxCORE-AVX2 -Qipo -O3 -Qprec-div -Qansi-alias -Qopt-prefetch
-Qauto-1lp32 /F1000000000000000 shlW64M.lib
```

C++ benchmarks:
```shell
-QxCORE-AVX2 -Qipo -O3 -Qprec-div -Qansi-alias -Qopt-prefetch
-Qcxx-features -Qauto-1lp32 /F1000000000000000 shlW64M.lib
```

Fortran benchmarks:
```shell
-QxCORE-AVX2 -Qipo -O3 -Qprec-div -Qansi-alias -Qopt-prefetch
/F1000000000000000 shlW64M.lib
```

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Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:
- `QxCORE-AVX2` - `Qipo` - `Qprec-div` - `Qansi-alias` - `Qopt-prefetch`
- `Qauto-ilp32 /F1000000000 shlW64M.lib` - `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: `QxCORE-AVX2` - `Qprof_gen(pass 1)` - `Qprof_use(pass 2)` - `Qipo`
- `Qprec-div` - `Qansi-alias` - `Qopt-prefetch` - `Qauto-ilp32`
  `/F1000000000 shlW64M.lib` - `link /FORCE:MULTIPLE`

482.sphinx3: basepeak = yes

C++ benchmarks:

444.namd: `QxCORE-AVX2(pass 2)` - `Qprof_gen(pass 1)` - `Qprof_use(pass 2)`
- `Qipo` - `Qprec-div` - `Qo` - `Qauto-ilp32` /F10000000000
  `shlW64M.lib` - `link /FORCE:MULTIPLE`

447.dealII: basepeak = yes
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( Test Sponsor: Intel Corporation )

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**SPEC CFP2006 Result**

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</tbody>
</table>

**Peak Optimization Flags (Continued)**

450.soplex: basepeak = yes

453.povray: -QxCORE-AVX2(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: -QxCORE-AVX2 -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div -Qansi-alias -Qopt-prefetch /F1000000000 shlw64M.lib -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: -QxCORE-AVX2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O3 -Qprec-div -Qunroll4 -Qauto /F1000000000 shlw64M.lib -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


You can also download the XML flags source by saving the following link:

## SPEC CFP2006 Result

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

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