SPEC® CFP2006 Result

ASUSTeK Computer Inc.
(Test Sponsor: Intel Corporation)

ASUS Q170M-C motherboard (Intel Pentium G4500T)

SPECfp®2006 = 63.3
SPECfp_base2006 = 62.4

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

410.bwaves
416.gamess
433.milc
434.zeusmp
435.gromacs
436.cactusADM
437.leslie3d
444.namd
447.dealII
450.soplex
453.povray
454.calculix
459.GemsFDTD
465.tonto
470.lbm
481.wrf
482.sphinx3

SPECfp_base2006 = 62.4

SPECfp2006 = 63.3

Hardware

CPU Name: Intel Pentium G4500T
CPU Characteristics:
CPU MHz: 3000
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

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;

Auto Parallel: Yes

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Hardware Availability: Sep-2015
Software Availability: Aug-2015

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

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Seconds Base</th>
<th>Ratio Base</th>
<th>Seconds Peak</th>
<th>Ratio Peak</th>
</tr>
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<tbody>
<tr>
<td>410.bwaves</td>
<td>106</td>
<td>128</td>
<td>104</td>
<td>131</td>
</tr>
<tr>
<td>416.gamess</td>
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<td>36.9</td>
<td>532</td>
<td>36.8</td>
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<td>99.0</td>
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<td>152</td>
<td>46.9</td>
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<td>436.cactusADM</td>
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<td>130</td>
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<td>130</td>
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<tr>
<td>437.leslie3d</td>
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<tr>
<td>444.namd</td>
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<td>23.4</td>
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<td>23.5</td>
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<td>447.dealII</td>
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<td>453.povray</td>
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<td>454.calcix</td>
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<td>59.0</td>
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<td>465.tonto</td>
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<td>482.sphinx3</td>
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<td>57.8</td>
<td>337</td>
<td>57.8</td>
</tr>
</tbody>
</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)

Platform Notes

Sysinfo program C:\SPEC16.0\Docs/sysinfo
$Rev: 6775 $ $Date:: 2011-08-16 $$ \8787f7622badcf24e01c368b1db4377c
running on CltF832E4885A95 Mon Apr 25 18:00:58 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 ~3001 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 : 3072  
MaxClockSpeed : 3001  
Name : Intel(R) Pentium(R) CPU G4500T @ 3.00GHz  
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 (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.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 -Qparallel -Qansi-alias
-Qopt-prefetch /F1000000000

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

Fortran benchmarks:
-QxSSE4.2 -Qipo -O3 -Qprec-div -Qparallel -Qansi-alias
-Qopt-prefetch /F1000000000
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Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:
- `-QxSSE4.2  -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: -QxSSE4.2(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: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qprec-div- -Qunroll14 -Qansi-alias /F1000000000
shlw64m.lib -link /FORCE:MULTIPLE

Fortran benchmarks:

410.bwaves: basepeak = yes
416.gamess: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qprec-div- -Qunroll12 -Ob0 -Qansi-alias
-Qscalar-rep- /F1000000000

434.zeusmp: basepeak = yes
437.leslie3d: basepeak = yes
459.GemsFDTD: basepeak = yes
465.tonto: -QxSSE4.2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qprec-div- -Qunroll14 -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

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

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