**SPEC® CFP2006 Result**

ASUSTeK Computer Inc.  
(Test Sponsor: Intel Corporation)  
ASUS A88X-PRO Motherboard (AMD A8-8650 with Radeon R7 Graphics)

### SPECfp2006 = 36.4
### SPECfp_base2006 = 35.2

<table>
<thead>
<tr>
<th>Test Date: May-2016</th>
<th>Test Sponsor: Intel Corporation</th>
<th>Hardware Availability: Dec-2015</th>
<th>Software Availability: Aug-2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPU2006 license: 13</td>
<td>Tested by: Intel Corporation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPU Name: AMD A8-8650</td>
<td>CPU Characteristics: AMD Turbo CORE technology up to 3.80 GHz</td>
<td>CPU MHz: 3200</td>
<td>FPU: Integrated</td>
</tr>
<tr>
<td>CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip</td>
<td>CPU(s) orderable: 1 chip</td>
<td>Primary Cache: 192 KB I on chip per chip, 96 KB I shared / 2 cores; 16 KB D on chip per core</td>
<td>Secondary Cache: 4 MB I+D on chip per chip, 2 MB shared / 2 cores</td>
</tr>
</tbody>
</table>

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### Software

Operating System: Microsoft Windows 7 Ultimate  
Auto Parallel: Yes  

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![Graph showing SPECfp2006 and SPECfp_base2006 scores]
SPEC CFP2006 Result

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SPECfp2006 = 36.4
SPECfp_base2006 = 35.2

CPU2006 license: 13
Test sponsor: Intel Corporation
Tested by: Intel Corporation
L3 Cache: None
Other Cache: None
Memory: 8 GB (2 x 4 GB 2Rx8 PC3-10600U-11)
Disk Subsystem: Seagate Barracuda 250 GB SATA, 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</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
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</thead>
<tbody>
<tr>
<td>410.bwaves</td>
<td>193</td>
<td>70.4</td>
<td>192</td>
<td>70.9</td>
<td>191</td>
<td>71.3</td>
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<td>70.4</td>
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<td>416.gamess</td>
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<td>24.8</td>
<td>791</td>
<td>24.8</td>
<td>792</td>
<td>24.7</td>
<td>647</td>
<td>30.3</td>
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<td>31.7</td>
<td>292</td>
<td>31.4</td>
<td>290</td>
<td>31.7</td>
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<td>52.6</td>
<td>174</td>
<td>52.3</td>
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<td>52.6</td>
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<td>435.gromacs</td>
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<td>24.1</td>
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<td>24.2</td>
<td>296</td>
<td>24.1</td>
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<td>24.1</td>
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<tr>
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<td>70.4</td>
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<td>168</td>
<td>71.3</td>
<td>170</td>
<td>70.4</td>
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<tr>
<td>437.leslie3d</td>
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<td>256</td>
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<td>37.2</td>
<td>253</td>
<td>37.2</td>
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<td>447.dealII</td>
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<td>45.4</td>
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<td>45.4</td>
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<tr>
<td>450.soplex</td>
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<td>19.7</td>
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<td>453.povray</td>
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<td>30.0</td>
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<td>30.4</td>
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<tr>
<td>454.gamess</td>
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<td>459.GemsFDTD</td>
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<tr>
<td>481.wrf</td>
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<td>39.6</td>
<td>283</td>
<td>39.5</td>
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<td>482.sphinx3</td>
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<td>24.3</td>
<td>804</td>
<td>24.2</td>
<td>804</td>
<td>24.3</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 $ $Date:: 2011-08-16 #$ \8787f7622b6d5f24e01c368b1db4377c
running on CltE03P495ABFDE Thu May 26 12:23:55 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 Ultimate  
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]}: AMD64 Family 21 Model 56 Stepping 1 AuthenticAMD ~3200 Mhz  
BIOS Version : American Megatrends Inc. 2502, 12/11/2015  
Total Physical Memory: 7,108 MB

Trying 'wmic cpu get /value'  
DeviceID : CPU0  
L2CacheSize : 25359  
L3CacheSize : 0  
MaxClockSpeed : 3200  
Name : AMD A8-8650 Radeon R7, 10 Compute Cores 4C+6G  
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:
  /arch:AVX -Qipo -O3 -Qprec-div -Qparallel -Qansi-alias
  -Qopt-prefetch /F1000000000

C++ benchmarks:
  /arch:AVX -Qipo -O3 -Qprec-div -Qparallel -Qansi-alias
  -Qopt-prefetch -Qcxx-features /F1000000000 shlw64M.lib
  -link /FORCE:MULTIPLE

Fortran benchmarks:
  /arch:AVX -Qipo -O3 -Qprec-div -Qparallel -Qansi-alias
  -Qopt-prefetch /F1000000000
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Test date: May-2016  
Hardware Availability: Dec-2015  
Software Availability: Aug-2015

Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:  
/arch:AVX -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: /arch:AVX(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: /arch:AVX(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: /arch:AVX(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: /arch:AVX(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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For other inquiries, please contact webmaster@spec.org.

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