ASUSTek Computer Inc.
(Test Sponsor: Intel Corporation)
ASUS A88X-PRO Motherboard (AMD A10-7800 with Radeon R7 Graphics)

<table>
<thead>
<tr>
<th>SPECfp_rate2006</th>
<th>= 69.2</th>
</tr>
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<tbody>
<tr>
<td>SPECfp_rate_base2006</td>
<td>= 68.6</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Hardware</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPU Name:</strong></td>
<td><strong>Operating System:</strong></td>
</tr>
<tr>
<td>AMD A10-7800</td>
<td>Microsoft Windows 7 Ultimate</td>
</tr>
<tr>
<td><strong>CPU Characteristics:</strong></td>
<td><strong>Compiler:</strong></td>
</tr>
<tr>
<td>AMD Turbo CORE technology up to 3.90 GHz</td>
<td>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</td>
</tr>
<tr>
<td><strong>CPU MHz:</strong></td>
<td><strong>Auto Parallel:</strong></td>
</tr>
<tr>
<td>3500</td>
<td>No</td>
</tr>
<tr>
<td><strong>FPU:</strong></td>
<td></td>
</tr>
<tr>
<td>Integrated</td>
<td></td>
</tr>
<tr>
<td><strong>CPU(s) enabled:</strong></td>
<td></td>
</tr>
<tr>
<td>4 cores, 1 chip, 4 cores/chip</td>
<td></td>
</tr>
<tr>
<td><strong>CPU(s)ordable:</strong></td>
<td></td>
</tr>
<tr>
<td>1 chip</td>
<td></td>
</tr>
<tr>
<td><strong>Primary Cache:</strong></td>
<td></td>
</tr>
<tr>
<td>192 KB I on chip per chip, 96 KB I shared / 2 cores; 16 KB D on chip per core</td>
<td></td>
</tr>
<tr>
<td><strong>Secondary Cache:</strong></td>
<td></td>
</tr>
<tr>
<td>4 MB I+D on chip per chip, 2 MB shared / 2 cores</td>
<td></td>
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</tbody>
</table>

Test date: Jul-2016
Hardware Availability: Jul-2014
Software Availability: Aug-2015

<table>
<thead>
<tr>
<th>Test Sponsor: Intel Corporation</th>
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<tbody>
<tr>
<td>Tested by: Intel Corporation</td>
</tr>
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</table>

| Copies | 5.00 | 10.0 | 15.0 | 20.0 | 25.0 | 30.0 | 35.0 | 40.0 | 45.0 | 50.0 | 55.0 | 60.0 | 65.0 | 70.0 | 75.0 | 80.0 | 85.0 | 90.0 | 95.0 | 100 | 105 | 110 | 115 | 120 | 125 |
|--------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 410.bwaves | 4 | 70.8 | 70.8 |
| 416.gamess | 4 | 63.6 | 63.6 |
| 433.milc | 4 | 75.2 | 75.2 |
| 434.zeusmp | 4 | 64.4 | 64.4 |
| 435.gromacs | 4 | 69.6 | 69.6 |
| 436.cactusADM | 4 | 42.0 | 42.0 |
| 437.leslie3d | 4 | 56.4 | 56.4 |
| 444.namd | 4 | 55.6 | 55.6 |
| 447.dealII | 4 | 114 | 114 |
| 450.soplex | 4 | 42.8 | 42.8 |
| 453.povray | 4 | 42.0 | 42.0 |
| 454.calculix | 4 | 110 | 110 |
| 459.GemsFDTD | 4 | 37.6 | 37.6 |
| 465.tonto | 4 | 74.4 | 74.4 |
| 470.lbm | 4 | 72.8 | 72.8 |
| 481.wrf | 4 | 89.2 | 89.2 |
| 482.sphinx3 | 4 | 76.8 | 76.8 |
| SPECfp_rate_base2006 | = 68.6 |

Continued on next page
### SPEC CFP2006 Result

**ASUSTeK Computer Inc.**
(Test Sponsor: Intel Corporation)
ASUS A88X-PRO Motherboard (AMD A10-7800 with Radeon R7 Graphics)

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

<table>
<thead>
<tr>
<th>L3 Cache:</th>
<th>None</th>
<th>File System:</th>
<th>NTFS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other Cache:</td>
<td>None</td>
<td>System State:</td>
<td>Default</td>
</tr>
<tr>
<td>Memory:</td>
<td>8 GB (2 x 4 GB 2Rx8 PC3-10600U-11)</td>
<td>Base Pointers:</td>
<td>32/64-bit</td>
</tr>
<tr>
<td>Disk Subsystem:</td>
<td>Seagate Barracuda 250 GB SATA, 7200 RPM</td>
<td>Peak Pointers:</td>
<td>32/64-bit</td>
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<tr>
<td>Other Hardware:</td>
<td>None</td>
<td>Other Software:</td>
<td>SmartHeap Library Version 11.0 from <a href="http://www.microquill.com/">http://www.microquill.com/</a></td>
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</tbody>
</table>

**SPECFp_rate2006 = 69.2**
**SPECFp_rate_base2006 = 68.6**

**Test date:** Jul-2016  
**Hardware Availability:** Jul-2014  
**Software Availability:** Aug-2015

### Results Table

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<th>Base</th>
<th>Seconds</th>
<th>Ratio</th>
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<th>Seconds</th>
<th>Ratio</th>
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<td>768</td>
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<td>446</td>
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<td>686</td>
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<tr>
<td>437.leslie3d</td>
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<tr>
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<tr>
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<td>345</td>
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<tr>
<td>459.GemsFDTD</td>
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<td>37.6</td>
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<td>1124</td>
<td>37.6</td>
<td>1121</td>
</tr>
<tr>
<td>465.tonto</td>
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<td>544</td>
<td>72.4</td>
<td>538</td>
<td>73.2</td>
<td>540</td>
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<td>530</td>
<td>74.4</td>
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</tr>
<tr>
<td>470.lbm</td>
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<td>89.2</td>
<td>615</td>
</tr>
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<td>481.wrf</td>
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<td>77.2</td>
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<td>76.8</td>
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<td>76.8</td>
<td>4</td>
<td>580</td>
<td>77.2</td>
<td>581</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>4</td>
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<td>60.4</td>
<td>1297</td>
<td>60.0</td>
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<td>60.0</td>
<td>4</td>
<td>1294</td>
<td>60.4</td>
<td>1297</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 $s /8787f7622badcfc24e01c368b1db4377c  
running on Clt1C872C5DP572 Sun Jul 3 06:46:25 2016

This section contains SUT (System Under Test) info as seen by some common utilities. To remove or add to this section, see:
Continued on next page
SPEC CFP2006 Result
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ASUSTeK Computer Inc.  
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SPECfp_rate2006 = 69.2  
SPECfp_rate_base2006 = 68.6

CPU2006 license: 13  
Test sponsor: Intel Corporation  
Test date: Jul-2016  
Tested by: Intel Corporation  
Software Availability: Aug-2015

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.  
processor family: AMD64  
Model: 21  
Model Number: 48  
Stepping: 1  
AuthenticAMD : ~3500 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 : 3500  
Name : AMD A10-7800 Radeon R7, 12 Compute Cores 4C+8G  
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 (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
ASUSTeK Computer Inc. (Test Sponsor: Intel Corporation)
ASUS A88X-PRO Motherboard (AMD A10-7800 with Radeon R7 Graphics)

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SPECfp_rate2006 = 69.2
SPECfp_rate_base2006 = 68.6

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
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- -Qansi-alias -Qopt-prefetch
   -Qauto-1lp32 /F100000000000 -link /FORCE:MULTIPLE

C++ benchmarks:
   /arch:AVX -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch
   -Qcxx-features -Qauto-1lp32 /F100000000000 shlw64M.lib
   -link /FORCE:MULTIPLE

Fortran benchmarks:
   /arch:AVX -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch
   /F100000000000 -link /FORCE:MULTIPLE

Continued on next page
## Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:
```
/arch:AVX -Qipo -O3 -Qprec-div -Qansi-alias -Qopt-prefetch
-Qauto-ilp32 /F1000000000 -Qauto-ilp32 -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: 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 -Qauto-ilp32 /F1000000000
shlw64m.lib -link /FORCE:MULTIPLE
447.dealIl: basepeak = yes
450.soplex: /arch:AVX(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qauto-ilp32 /F10000000000 shlw64m.lib -link /FORCE:MULTIPLE
```

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ASUSTeK Computer Inc.  
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ASUS A88X-PRO Motherboard (AMD A10-7800 with Radeon R7 Graphics)  

| SPECfp_rate2006 | 69.2 |
| SPECfp_rate_base2006 | 68.6 |

**Peak Optimization Flags (Continued)**

453.povray: /arch:AVX(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: basepeak = yes  
- 416.gamesp: basepeak = yes  
- 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- -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  

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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