ASUSTeK Computer Inc. (Test Sponsor: Intel Corporation)
ASUS A88X-PRO Motherboard (AMD A10 PRO-7850B with Radeon R7 Graphics)

SPECfp_rate2006 = 49.0
SPECfp_rate_base2006 = 48.6

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

Hardware
CPU Name: AMD A10 PRO-7850B
CPU Characteristics: AMD Turbo CORE technology up to 4.00 GHz
CPU MHz: 3700
FPU: Integrated
CPU(s) enabled: 4 cores, 1 chip, 4 cores/chip
CPU(s) orderable: 1 chip
Primary Cache: 192 KB I on chip per chip, 96 KB I shared / 2 cores; 16 KB D on chip per core
Secondary Cache: 4 MB I+D on chip per chip, 2 MB shared / 2 cores

Software
Operating System: Microsoft Windows 8.1 Pro 6.3.9600 N/A Build 9600
Compiler: C/C++: Version 14.0.1.139 of Intel C++ Studio XE for Windows;
Fortran: Version 14.0.1.139 of Intel Fortran Studio XE for Windows;
Libraries: Version 16.00.30319.01 of Microsoft Visual Studio 2010 Professional SP1
Auto Parallel: No

Software Availability: Oct-2013
Hardware Availability: Jul-2014
Test date: Nov-2014
ASUSTeK Computer Inc.  
(Test Sponsor: Intel Corporation)  
ASUS A88X-PRO Motherboard (AMD A10 PRO-7850B with Radeon R7 Graphics)  

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

L3 Cache: None  
Other Cache: None  
Memory: 8 GB (2 x 4 GB 2Rx4 PC3-17000U-14)  
Disk Subsystem: 160 GB Western Digital SATA HDD, 7200 RPM  
Other Hardware: None  

File System: NTFS  
System State: Default  
Base Pointers: 32/64-bit  
Peak Pointers: 32/64-bit  
Other Software: Microquill SmartHeap V10.0  

Results Table

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Copies</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
<th>Seconds</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>410.bwaves</td>
<td>4</td>
<td>1327</td>
<td>40.8</td>
<td>1357</td>
<td>41.7</td>
<td>1317</td>
<td>41.2</td>
</tr>
<tr>
<td>416.gamess</td>
<td>4</td>
<td>850</td>
<td>92.0</td>
<td>852</td>
<td>92.4</td>
<td>849</td>
<td>92.4</td>
</tr>
<tr>
<td>433.milc</td>
<td>4</td>
<td>1023</td>
<td>36.0</td>
<td>1034</td>
<td>36.4</td>
<td>1012</td>
<td>36.4</td>
</tr>
<tr>
<td>434.zeuomp</td>
<td>4</td>
<td>755</td>
<td>48.4</td>
<td>765</td>
<td>49.6</td>
<td>736</td>
<td>49.6</td>
</tr>
<tr>
<td>435.gromacs</td>
<td>4</td>
<td>437</td>
<td>65.6</td>
<td>438</td>
<td>65.2</td>
<td>439</td>
<td>65.2</td>
</tr>
<tr>
<td>436.cactusADM</td>
<td>4</td>
<td>1034</td>
<td>46.4</td>
<td>1040</td>
<td>46.0</td>
<td>1027</td>
<td>46.4</td>
</tr>
<tr>
<td>437.leslie3d</td>
<td>4</td>
<td>1496</td>
<td>25.2</td>
<td>1519</td>
<td>24.8</td>
<td>1498</td>
<td>25.2</td>
</tr>
<tr>
<td>444.namd</td>
<td>4</td>
<td>558</td>
<td>57.6</td>
<td>557</td>
<td>57.6</td>
<td>559</td>
<td>57.2</td>
</tr>
<tr>
<td>447.dealII</td>
<td>4</td>
<td>669</td>
<td>68.4</td>
<td>681</td>
<td>72.2</td>
<td>644</td>
<td>71.2</td>
</tr>
<tr>
<td>450.soplex</td>
<td>4</td>
<td>1365</td>
<td>24.4</td>
<td>1367</td>
<td>24.4</td>
<td>1348</td>
<td>24.8</td>
</tr>
<tr>
<td>453.povray</td>
<td>4</td>
<td>211</td>
<td>101</td>
<td>207</td>
<td>103</td>
<td>210</td>
<td>102</td>
</tr>
<tr>
<td>454.calculix</td>
<td>4</td>
<td>360</td>
<td>91.6</td>
<td>366</td>
<td>90.4</td>
<td>366</td>
<td>90.4</td>
</tr>
<tr>
<td>459.GemsFDTD</td>
<td>4</td>
<td>1873</td>
<td>22.8</td>
<td>1875</td>
<td>22.8</td>
<td>1890</td>
<td>22.4</td>
</tr>
<tr>
<td>465.tonto</td>
<td>4</td>
<td>741</td>
<td>53.2</td>
<td>729</td>
<td>54.0</td>
<td>741</td>
<td>53.2</td>
</tr>
<tr>
<td>470.lbm</td>
<td>4</td>
<td>1067</td>
<td>51.6</td>
<td>1052</td>
<td>52.4</td>
<td>1063</td>
<td>51.6</td>
</tr>
<tr>
<td>481.wrf</td>
<td>4</td>
<td>1008</td>
<td>44.4</td>
<td>977</td>
<td>45.6</td>
<td>1003</td>
<td>44.4</td>
</tr>
<tr>
<td>482.sphinx3</td>
<td>4</td>
<td>2089</td>
<td>37.2</td>
<td>2048</td>
<td>38.0</td>
<td>2054</td>
<td>38.0</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 14.0 was set up to generate 64-bit binaries with the command: 
"ipxe-comp-vars.bat intel64 vs2010" (shortcut provided in the Intel(r) Parallel Studio XE 2013 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.
ASUSTeK Computer Inc.  
(Test Sponsor: Intel Corporation)  
ASUS A88X-PRO Motherboard (AMD A10 PRO-7850B with Radeon R7 Graphics)  

<table>
<thead>
<tr>
<th>SPECfp_rate2006 = 49.0</th>
<th>SPECfp_rate_base2006 = 48.6</th>
</tr>
</thead>
</table>

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

Platform Notes

Sysinfo program C:\SPEC14.0/Docs/sysinfo  
$Rev: 6775 $ $Date:: 2011-08-16 #$ \8787f7622badcf24e01c368b1db4377c  
running on CltE03F49B01E0D Fri Nov 7 09:36:46 2014

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 8.1 Pro  
OS Version : 6.3.9600 N/A Build 9600  
System Manufacturer: System manufacturer  
System Model : System Product Name  
Processor(s) : 1 Processor(s) Installed.  
[01]: AMD64 Family 21 Model 48 Stepping 1 AuthenticAMD ~3700 Mhz  
BIOS Version : American Megatrends Inc. 1301, 6/24/2014  
Total Physical Memory: 7,105 MB

Trying 'wmic cpu get /value'
DeviceID : CPU0  
L2CacheSize : 25359  
L3CacheSize : 0  
MaxClockSpeed : 3700  
Name : AMD A10 PRO-7850B 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

Binaries compiled on a system with 1x Intel Core i7-860 CPU  
+ 8GB memory using Windows 7 Enterprise 64-bit

Base Compiler Invocation

C benchmarks:  
icl -Qvc10 -Qstd=c99

C++ benchmarks:  
icl -Qvc10

Continued on next page
SPEC CFP2006 Result

ASUSTeK Computer Inc.  
(Test Sponsor: Intel Corporation)  
ASUS A88X-PRO Motherboard (AMD A10 PRO-7850B with Radeon R7 Graphics)

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

SPECfp_rate2006 = 49.0  
SPECfp_rate_base2006 = 48.6

Test date: Nov-2014  
Hardware Availability: Jul-2014  
Software Availability: Oct-2013

Base Compiler Invocation (Continued)

Fortran benchmarks:  
ifort

Benchmarks using both Fortran and C:  
icl -Qvc10 -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 -Qoption,cpp,--ms_incompat_treatment_of_commas_in_macros  
450.soplex: -DSPEC_CPU_P64  
453.povray: -DSPEC_CPU_P64 -DSPEC_CPU_NEED_INVHYP -DNEED_INVHYP  
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 -Qansi-alias -Qopt-prefetch  
-Qauto-ilp32 /F1000000000 -link /FORCE:MULTIPLE

C++ benchmarks:  
/ARCH:AVX -Qipo -O3 -Qprec-div -Qansi-alias -Qopt-prefetch  
-Qcxx-features -Qauto-ilp32 /F1000000000 shlw64M.lib  
-link /FORCE:MULTIPLE

Fortran benchmarks:  
/ARCH:AVX -Qipo -O3 -Qprec-div -Qansi-alias -Qopt-prefetch  
/F1000000000 -link /FORCE:MULTIPLE

Benchmarks using both Fortran and C:  
/ARCH:AVX -Qipo -O3 -Qprec-div -Qansi-alias -Qopt-prefetch  
-Qauto-ilp32 /F1000000000 -link /FORCE:MULTIPLE
ASUSTeK Computer Inc.  
(Test Sponsor: Intel Corporation)  
ASUS A88X-PRO Motherboard (AMD A10 PRO-7850B with Radeon R7 Graphics)

SPECfp_rate2006 = 49.0  
SPECfp_rate_base2006 = 48.6

CPU2006 license: 13  
Test sponsor: Intel Corporation  
Test date: Nov-2014  
Hardware Availability: Jul-2014  
Tested by: Intel Corporation  
Software Availability: Oct-2013

Peak Compiler Invocation

C benchmarks:
    icl -Qvc10 -Qstd=c99

C++ benchmarks:
    icl -Qvc10

Fortran benchmarks:
    ifort

Benchmarks using both Fortran and C:
    icl -Qvc10 -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 /F100000000000  
                shlW64M.lib -link /FORCE:MULTIPLE
    447.dealII: basepeak = yes
    450.soplex: /arch:AVX(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)  
                -Qipo -O3 -Qauto-ilp32 /F100000000000 shlW64M.lib  
                -link /FORCE:MULTIPLE
    453.povray: /arch:AVX(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)  
                -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qauto-ilp32  
                /F100000000000 shlW64M.lib -link /FORCE:MULTIPLE

Fortran benchmarks:
    410.bwaves: basepeak = yes

Continued on next page
ASUSTeK Computer Inc. (Test Sponsor: Intel Corporation)
ASUS A88X-PRO Motherboard (AMD A10 PRO-7850B with Radeon R7 Graphics)

| SPECfp_rate2006 | 49.0 |
| SPECfp_rate_base2006 | 48.6 |

CPU2006 license: 13
Tested by: Intel Corporation
Test date: Nov-2014
Test sponsor: Intel Corporation
Hardware Availability: Jul-2014
Software Availability: Oct-2013

Peak Optimization Flags (Continued)

416.gamess: 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:

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

For questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.
Originally published on 27 January 2015.