



# SPEC<sup>®</sup> CFP2006 Result

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ASUSTeK Computer Inc.

(Test Sponsor: Intel Corporation)

ASUS A88X-PRO Motherboard (AMD A10-7700K with Radeon R7 Graphics)

SPECfp<sup>®</sup>\_rate2006 = 69.1

SPECfp\_rate\_base2006 = 68.4

CPU2006 license: 13

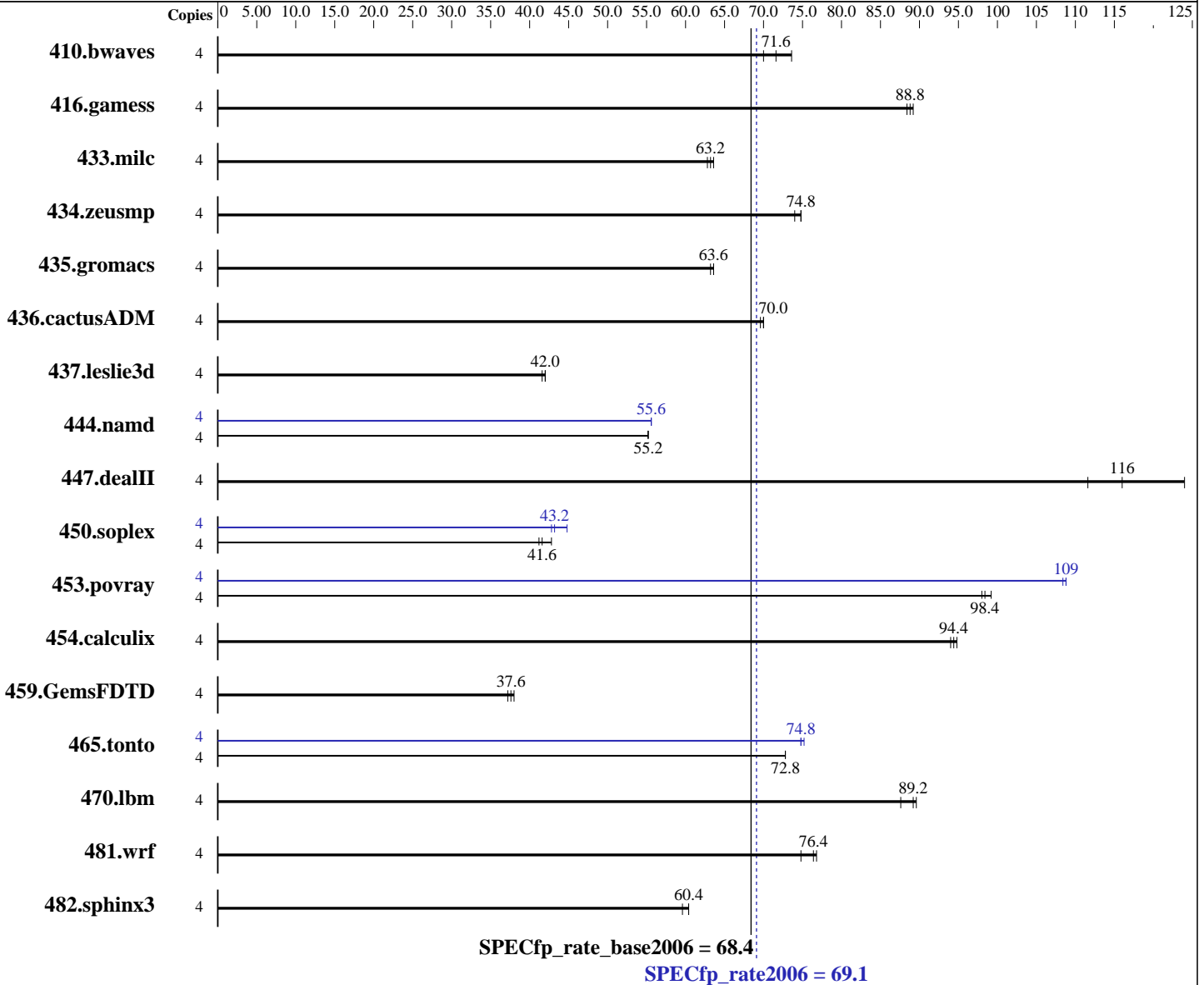
Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: Jun-2016

Hardware Availability: Jan-2014

Software Availability: Aug-2015



## Hardware

CPU Name: AMD A10-7700K  
 CPU Characteristics: AMD Turbo CORE technology up to 3.80 GHz  
 CPU MHz: 3400  
 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

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## Software

Operating System: Microsoft Windows 7 Ultimate 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;  
 Libraries: Version 18.00.30723 of Microsoft Visual Studio 2013  
 Auto Parallel: No

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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

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	738	73.6	777	70.0	<b>760</b>	<b>71.6</b>	4	738	73.6	777	70.0	<b>760</b>	<b>71.6</b>
416.gamess	4	879	89.2	<b>881</b>	<b>88.8</b>	884	88.4	4	879	89.2	<b>881</b>	<b>88.8</b>	884	88.4
433.milc	4	579	63.6	584	62.8	<b>579</b>	<b>63.2</b>	4	579	63.6	584	62.8	<b>579</b>	<b>63.2</b>
434.zeusmp	4	491	74.0	<b>488</b>	<b>74.8</b>	486	74.8	4	491	74.0	<b>488</b>	<b>74.8</b>	486	74.8
435.gromacs	4	<b>450</b>	<b>63.6</b>	449	63.6	452	63.2	4	<b>450</b>	<b>63.6</b>	449	63.6	452	63.2
436.cactusADM	4	688	69.6	<b>681</b>	<b>70.0</b>	681	70.0	4	688	69.6	<b>681</b>	<b>70.0</b>	681	70.0
437.leslie3d	4	902	41.6	<b>893</b>	<b>42.0</b>	891	42.0	4	902	41.6	<b>893</b>	<b>42.0</b>	891	42.0
444.namd	4	583	55.2	581	55.2	<b>582</b>	<b>55.2</b>	4	<b>577</b>	<b>55.6</b>	576	55.6	578	55.6
447.dealII	4	<b>395</b>	<b>116</b>	411	112	369	124	4	<b>395</b>	<b>116</b>	411	112	369	124
450.soplex	4	811	41.2	778	42.8	<b>799</b>	<b>41.6</b>	4	<b>770</b>	<b>43.2</b>	742	44.8	777	42.8
453.povray	4	217	98.0	<b>216</b>	<b>98.4</b>	215	99.2	4	196	109	<b>196</b>	<b>109</b>	197	108
454.calculix	4	349	94.8	<b>350</b>	<b>94.4</b>	351	94.0	4	349	94.8	<b>350</b>	<b>94.4</b>	351	94.0
459.GemsFDTD	4	1138	37.2	1115	38.0	<b>1126</b>	<b>37.6</b>	4	1138	37.2	1115	38.0	<b>1126</b>	<b>37.6</b>
465.tonto	4	539	72.8	542	72.8	<b>542</b>	<b>72.8</b>	4	<b>526</b>	<b>74.8</b>	527	74.8	524	75.2
470.lbm	4	626	87.6	612	89.6	<b>617</b>	<b>89.2</b>	4	626	87.6	612	89.6	<b>617</b>	<b>89.2</b>
481.wrf	4	597	74.8	581	76.8	<b>585</b>	<b>76.4</b>	4	597	74.8	581	76.8	<b>585</b>	<b>76.4</b>
482.sphinx3	4	1309	59.6	1287	60.4	<b>1293</b>	<b>60.4</b>	4	1309	59.6	1287	60.4	<b>1293</b>	<b>60.4</b>

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 Clt1C872C5C6B24 Thu Jun 2 16:44:04 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 48 Stepping 1 AuthenticAMD ~3400 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 : 3400
Name          : AMD A10-7700K 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 (peak): "getline_test" src.alt was used.
447.dealIII (base): "max_prototype" src.alt was used.
447.dealIII (base): "cxx11_make_pair" src.alt was used.
450.soplex (base): "getline_test" src.alt was used.
447.dealIII (base): "max_prototype" src.alt was used.
447.dealIII (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
```

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## 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  
 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

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## Base Optimization Flags (Continued)

Benchmarks using both Fortran and C:

```
/arch:AVX -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch
-Qauto-ilp32 /F1000000000 -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.dealII: basepeak = yes
```

```
450.soplex: /arch:AVX(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qauto-ilp32 /F1000000000 shlW64M.lib
-link /FORCE:MULTIPLE
```

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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- -Qopt-prefetch -Qauto-ilp32
           /F1000000000 shlw64M.lib -link /FORCE:MULTIPLE
```

Fortran benchmarks:

410.bwaves: basepeak = yes

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

<http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-windows.html>

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

<http://www.spec.org/cpu2006/flags/Intel-ic16.0-official-windows.xml>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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