



SPEC[®] CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

(Test Sponsor: Intel Corporation)

ASUS A88X-PRO Motherboard (AMD A8-7600 with Radeon R7 Graphics)

SPECfp[®]2006 = 35.3

SPECfp_base2006 = 34.3

CPU2006 license: 13

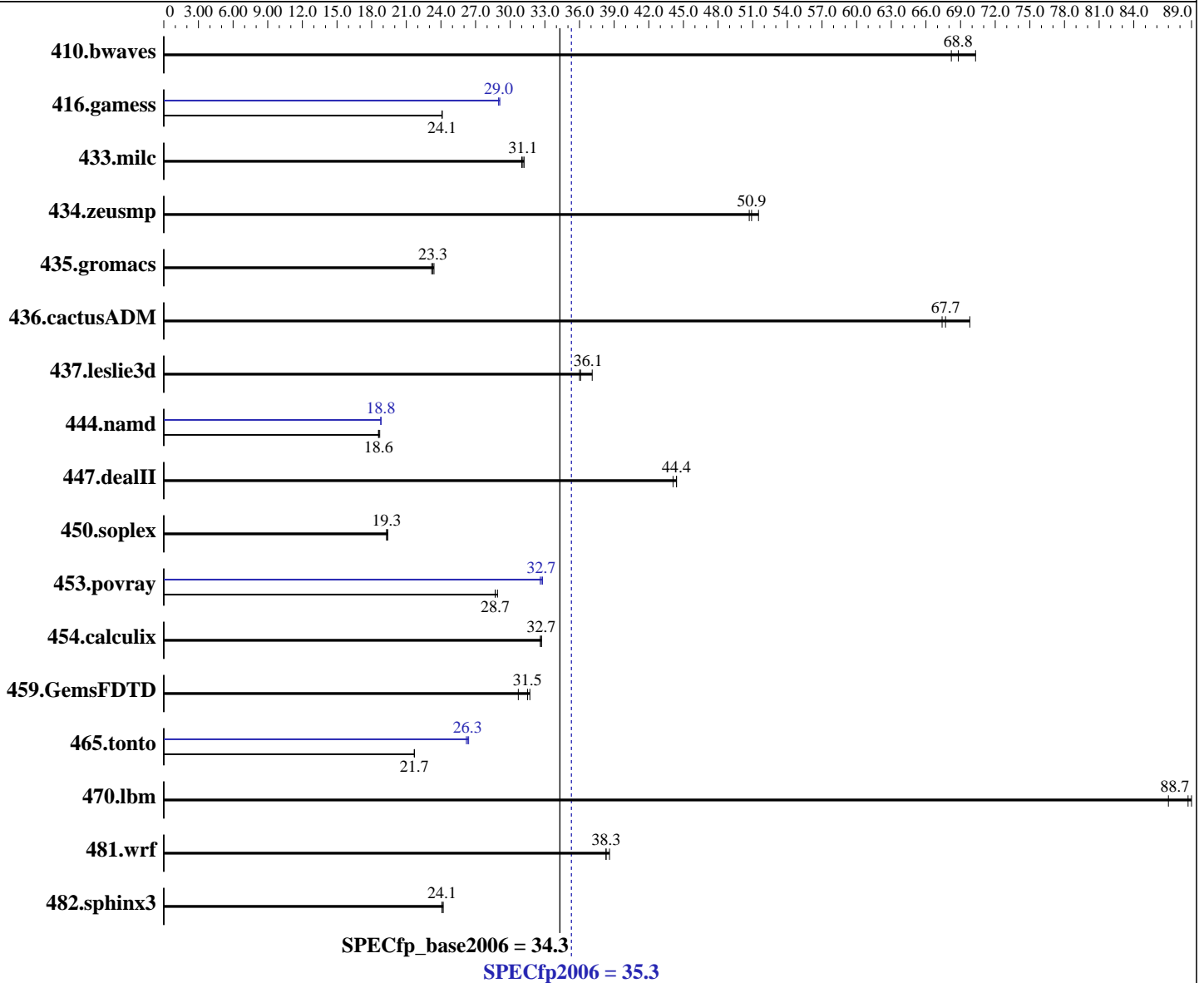
Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: May-2016

Hardware Availability: Jul-2014

Software Availability: Aug-2015



Hardware

CPU Name: AMD A8-7600
 CPU Characteristics: AMD Turbo CORE technology up to 3.80 GHz
 CPU MHz: 3100
 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

Continued on next page

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: Yes

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

(Test Sponsor: Intel Corporation)

ASUS A88X-PRO Motherboard (AMD A8-7600 with Radeon R7 Graphics)

SPECfp2006 = 35.3

SPECfp_base2006 = 34.3

CPU2006 license: 13

Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: May-2016

Hardware Availability: Jul-2014

Software Availability: Aug-2015

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 | | | | | |
|---------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 410.bwaves | 198 | 68.8 | 193 | 70.3 | 199 | 68.2 | 198 | 68.8 | 193 | 70.3 | 199 | 68.2 |
| 416.gamess | 814 | 24.1 | 814 | 24.1 | 814 | 24.1 | 675 | 29.0 | 673 | 29.1 | 676 | 29.0 |
| 433.milc | 294 | 31.2 | 295 | 31.1 | 296 | 31.0 | 294 | 31.2 | 295 | 31.1 | 296 | 31.0 |
| 434.zeusmp | 177 | 51.5 | 179 | 50.9 | 180 | 50.7 | 177 | 51.5 | 179 | 50.9 | 180 | 50.7 |
| 435.gromacs | 305 | 23.4 | 307 | 23.2 | 306 | 23.3 | 305 | 23.4 | 307 | 23.2 | 306 | 23.3 |
| 436.cactusADM | 171 | 69.8 | 177 | 67.4 | 177 | 67.7 | 171 | 69.8 | 177 | 67.4 | 177 | 67.7 |
| 437.leslie3d | 253 | 37.1 | 261 | 36.0 | 260 | 36.1 | 253 | 37.1 | 261 | 36.0 | 260 | 36.1 |
| 444.namd | 429 | 18.7 | 431 | 18.6 | 431 | 18.6 | 426 | 18.8 | 427 | 18.8 | 427 | 18.8 |
| 447.dealII | 259 | 44.1 | 258 | 44.4 | 258 | 44.4 | 259 | 44.1 | 258 | 44.4 | 258 | 44.4 |
| 450.soplex | 429 | 19.4 | 432 | 19.3 | 431 | 19.3 | 429 | 19.4 | 432 | 19.3 | 431 | 19.3 |
| 453.povray | 185 | 28.7 | 184 | 28.9 | 186 | 28.7 | 163 | 32.6 | 162 | 32.8 | 163 | 32.7 |
| 454.calculix | 253 | 32.7 | 252 | 32.7 | 253 | 32.6 | 253 | 32.7 | 252 | 32.7 | 253 | 32.6 |
| 459.GemsFDTD | 337 | 31.5 | 346 | 30.7 | 335 | 31.7 | 337 | 31.5 | 346 | 30.7 | 335 | 31.7 |
| 465.tonto | 453 | 21.7 | 453 | 21.7 | 454 | 21.7 | 373 | 26.4 | 374 | 26.3 | 375 | 26.2 |
| 470.lbm | 155 | 88.7 | 158 | 87.0 | 154 | 89.0 | 155 | 88.7 | 158 | 87.0 | 154 | 89.0 |
| 481.wrf | 290 | 38.6 | 292 | 38.3 | 292 | 38.3 | 290 | 38.6 | 292 | 38.3 | 292 | 38.3 |
| 482.sphinx3 | 808 | 24.1 | 807 | 24.2 | 808 | 24.1 | 808 | 24.1 | 807 | 24.2 | 808 | 24.1 |

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 Fri May 20 12:23:23 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

Copyright 2006-2016 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

(Test Sponsor: Intel Corporation)

ASUS A88X-PRO Motherboard (AMD A8-7600 with Radeon R7 Graphics)

SPECfp2006 = 35.3

SPECfp_base2006 = 34.3

CPU2006 license: 13

Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: May-2016

Hardware Availability: Jul-2014

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.
               [01]: AMD64 Family 21 Model 48 Stepping 1 AuthenticAMD ~3100 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 : 3100
Name          : AMD A8-7600 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
```



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

(Test Sponsor: Intel Corporation)

ASUS A88X-PRO Motherboard (AMD A8-7600 with Radeon R7 Graphics)

SPECfp2006 = 35.3

SPECfp_base2006 = 34.3

CPU2006 license: 13

Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: May-2016

Hardware Availability: Jul-2014

Software Availability: Aug-2015

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

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

(Test Sponsor: Intel Corporation)

ASUS A88X-PRO Motherboard (AMD A8-7600 with Radeon R7 Graphics)

SPECfp2006 = 35.3

SPECfp_base2006 = 34.3

CPU2006 license: 13

Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: May-2016

Hardware Availability: Jul-2014

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
```

Continued on next page



SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

(Test Sponsor: Intel Corporation)

ASUS A88X-PRO Motherboard (AMD A8-7600 with
Radeon R7 Graphics)

SPECfp2006 = 35.3

SPECfp_base2006 = 34.3

CPU2006 license: 13

Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: May-2016

Hardware Availability: Jul-2014

Software Availability: Aug-2015

Peak Optimization Flags (Continued)

```
453.povray: /arch:AVX(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
           -Qipo -O3 -Qprec-div- -Qunroll4 -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- -Qunroll2 -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- -Qunroll4 -Qauto -Qinline-alloc
           /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

<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>

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.
Report generated on Tue Sep 20 15:06:37 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 20 September 2016.