SPEC® CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.
(Test Sponsor: Intel Corporation)

ASUS H97M-PLUS Motherboard (Intel Core i3-4160)

$SPECfp^{®}\_rate2006 = \quad 91.0$

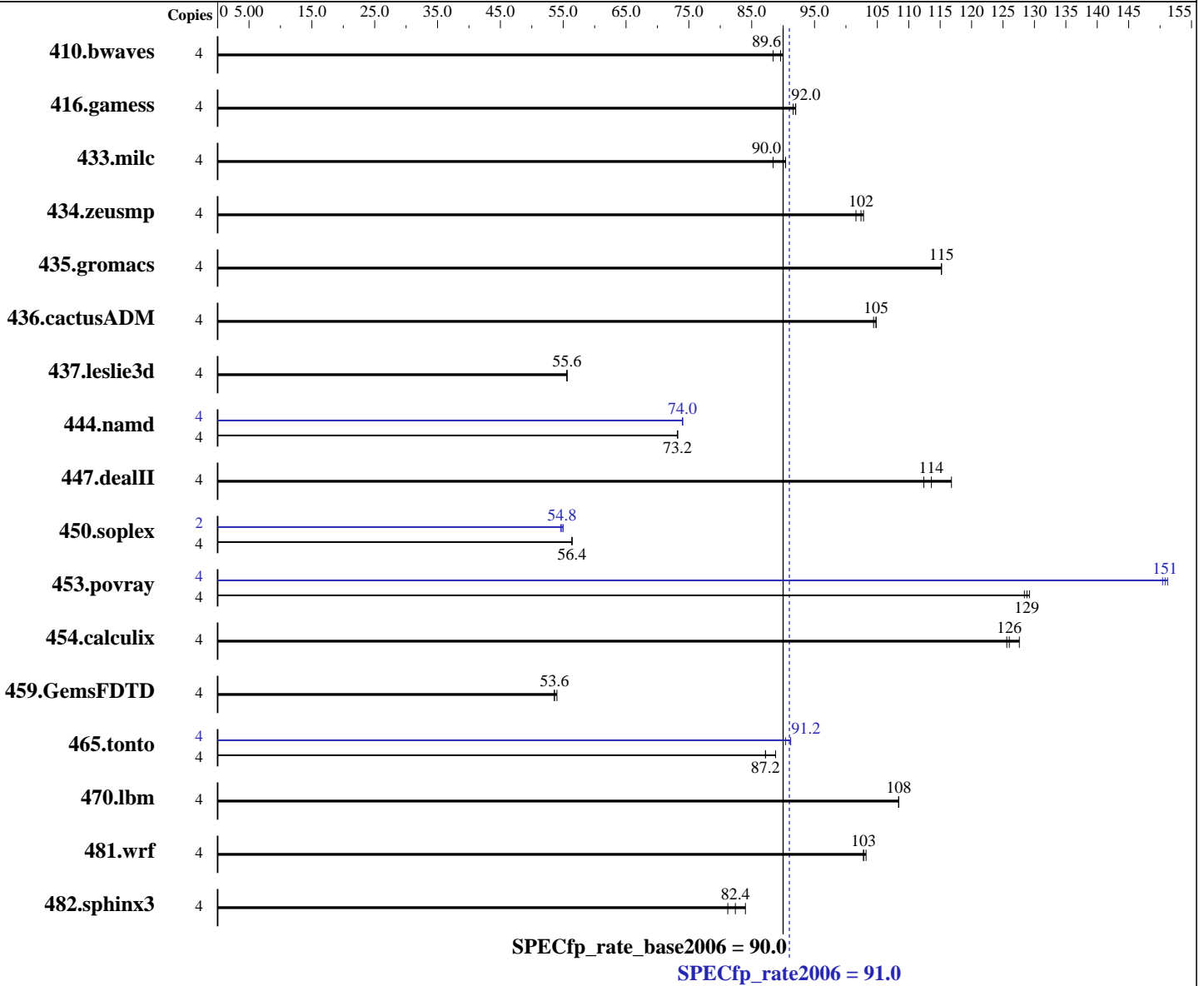$SPECfp\_rate\_base2006 = \quad 90.0$

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

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

Benchmark	Copies	Result
410.bwaves	4	89.6
416.gamess	4	92.0
433.milc	4	90.0
434.zeusmp	4	102
435.gromacs	4	115
436.cactusADM	4	105
437.leslie3d	4	55.6
444.namd	4	74.0
444.namd	4	73.2
447.dealII	4	114
450.soplex	2	54.8
450.soplex	4	56.4
453.povray	4	151
453.povray	4	129
454.calculix	4	126
459.GemsFDTD	4	53.6
465.tonto	4	91.2
465.tonto	4	87.2
470.lbm	4	108
481.wrf	4	103
482.sphinx3	4	82.4

SPECfp_rate_base2006 = 90.0

SPECfp_rate2006 = 91.0

Hardware
CPU Name: Intel Core i3-4160
CPU Characteristics:
CPU MHz: 3600
FPU: Integrated
CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip, 2 threads/core
CPU(s) orderable: 1 chip
Primary Cache: 32 KB I + 32 KB D on chip per core
Secondary Cache: 256 KB I+D on chip per core

Continued on next page

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

Continued on next page

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.
(Test Sponsor: Intel Corporation)

ASUS H97M-PLUS Motherboard (Intel Core i3-4160)

SPECfp_rate2006 =   91.0

SPECfp_rate_base2006 = 90.0

CPU2006 license: 13

Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: Dec-2014

Hardware Availability: Jul-2014

Software Availability: Oct-2013

L3 Cache:	3 MB I+D on chip per chip
Other Cache:	None
Memory:	8 GB (2 x 4 GB 2Rx4 PC3-12800U-11)
Disk Subsystem:	1 TB Seagate SATA, 7200RPM
Other Hardware:	None

File System:	NTFS
System State:	Default
Base Pointers:	32/64-bit
Peak Pointers:	32/64-bit
Other Software:	SmartHeap Library Version 10.0 from http://www.microquill.com/

Results Table

Benchmark	Copies	Base Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Peak Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	4	616	88.4	605	90.0	**605**	**89.6**	4	616	88.4	605	90.0	**605**	**89.6**
416.gamess	4	854	91.6	852	92.0	**853**	**92.0**	4	854	91.6	852	92.0	**853**	**92.0**
433.milc	4	**408**	**90.0**	415	88.4	406	90.4	4	**408**	**90.0**	415	88.4	406	90.4
434.zeusmp	4	**356**	**102**	354	103	359	102	4	**356**	**102**	354	103	359	102
435.gromacs	4	248	115	**248**	**115**	248	115	4	248	115	**248**	**115**	248	115
436.cactusADM	4	457	104	456	105	**457**	**105**	4	457	104	456	105	**457**	**105**
437.leslie3d	4	677	55.6	**676**	**55.6**	675	55.6	4	677	55.6	**676**	**55.6**	675	55.6
444.namd	4	439	73.2	438	73.2	**439**	**73.2**	4	**433**	**74.0**	433	74.0	432	74.0
447.dealII	4	408	112	**403**	**114**	391	117	4	408	112	**403**	**114**	391	117
450.soplex	4	**593**	**56.4**	594	56.4	592	56.4	2	303	55.0	**305**	**54.8**	305	54.6
453.povray	4	165	129	**165**	**129**	166	128	4	142	150	**141**	**151**	141	151
454.calculix	4	259	128	**262**	**126**	263	126	4	259	128	**262**	**126**	263	126
459.GemsFDTD	4	**790**	**53.6**	788	54.0	790	53.6	4	**790**	**53.6**	788	54.0	790	53.6
465.tonto	4	444	88.8	**451**	**87.2**	452	87.2	4	435	90.4	432	91.2	**432**	**91.2**
470.lbm	4	507	108	**507**	**108**	508	108	4	507	108	**507**	**108**	508	108
481.wrf	4	**434**	**103**	435	103	433	103	4	**434**	**103**	435	103	433	103
482.sphinx3	4	**945**	**82.4**	961	81.2	926	84.0	4	**945**	**82.4**	961	81.2	926	84.0

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:
"ipsxe-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.
```

SPEC CFP2006 Result

ASUSTeK Computer Inc.
(Test Sponsor: Intel Corporation)

ASUS H97M-PLUS Motherboard (Intel Core i3-4160)

$SPECfp_rate2006 = $ 91.0

$SPECfp_rate_base2006 = $ 90.0

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

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

Platform Notes

```
Sysinfo program C:\SPEC14.0/Docs/sysinfo
$Rev: 6775 $ $Date:: 2011-08-16 #$ \8787f7622badcf24e01c368b1db4377c
running on Clt7824AF406A17 Wed Dec  3 10:11:43 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: ASUS
System Model  : All Series
Processor(s)  : 1 Processor(s) Installed.
    [01]: Intel64 Family 6 Model 60 Stepping 3 GenuineIntel ~3600 Mhz
BIOS Version  : American Megatrends Inc. 2001, 6/13/2014
Total Physical Memory: 8,069 MB

Trying 'wmic cpu get /value'
DeviceID       : CPU0
L2CacheSize    : 512
L3CacheSize    : 3072
MaxClockSpeed : 3600
Name           : Intel(R) Core(TM) i3-4160 CPU @ 3.60GHz
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
```

ASUSTeK Computer Inc.
(Test Sponsor: Intel Corporation)

SPECfp_rate2006 = 91.0

ASUS H97M-PLUS Motherboard (Intel Core i3-4160)

SPECfp_rate_base2006 = 90.0

CPU2006 license: 13		**Test date:**	Dec-2014
Test sponsor:	Intel Corporation	**Hardware Availability:**	Jul-2014
Tested by:	Intel Corporation	**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:
```
-QxCORE-AVX2 -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch
-Qauto-ilp32 /F1000000000          -link /FORCE:MULTIPLE
```

C++ benchmarks:
```
-QxCORE-AVX2 -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch
-Qcxx-features -Qauto-ilp32 /F1000000000 shlW64M.lib
         -link /FORCE:MULTIPLE
```

Fortran benchmarks:
```
-QxCORE-AVX2 -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch
/F1000000000          -link /FORCE:MULTIPLE
```

Benchmarks using both Fortran and C:
```
-QxCORE-AVX2 -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch
-Qauto-ilp32 /F1000000000          -link /FORCE:MULTIPLE
```

SPEC CFP2006 Result
Copyright 2006-2014 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.
(Test Sponsor: Intel Corporation)

$SPECfp\_rate2006 =$ 91.0

ASUS H97M-PLUS Motherboard (Intel Core i3-4160)

$SPECfp\_rate\_base2006 =$ 90.0

CPU2006 license: 13		**Test date:**	Dec-2014
Test sponsor: Intel Corporation		**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: -QxCORE-AVX2(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: -QxCORE-AVX2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
              -Qipo -O3 -Qauto-ilp32 /F1000000000 shlW64M.lib
                      -link /FORCE:MULTIPLE

  453.povray: -QxCORE-AVX2(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
```

ASUSTeK Computer Inc.
(Test Sponsor: Intel Corporation)

$SPECfp\_rate2006 = \qquad 91.0$

ASUS H97M-PLUS Motherboard (Intel Core i3-4160)

$SPECfp\_rate\_base2006 = \quad 90.0$

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

Test date: Dec-2014
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: -QxCORE-AVX2(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-ic14.0-official-windows.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-windows.xml

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 Dec 30 16:12:26 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 30 December 2014.