



SPEC® CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

(Test Sponsor: Intel Corporation)

ASUS A88X-PRO Motherboard (AMD A8-8650 with Radeon R7 Graphics)

SPECint®_rate2006 = 91.1

SPECint_rate_base2006 = 86.9

CPU2006 license: 13

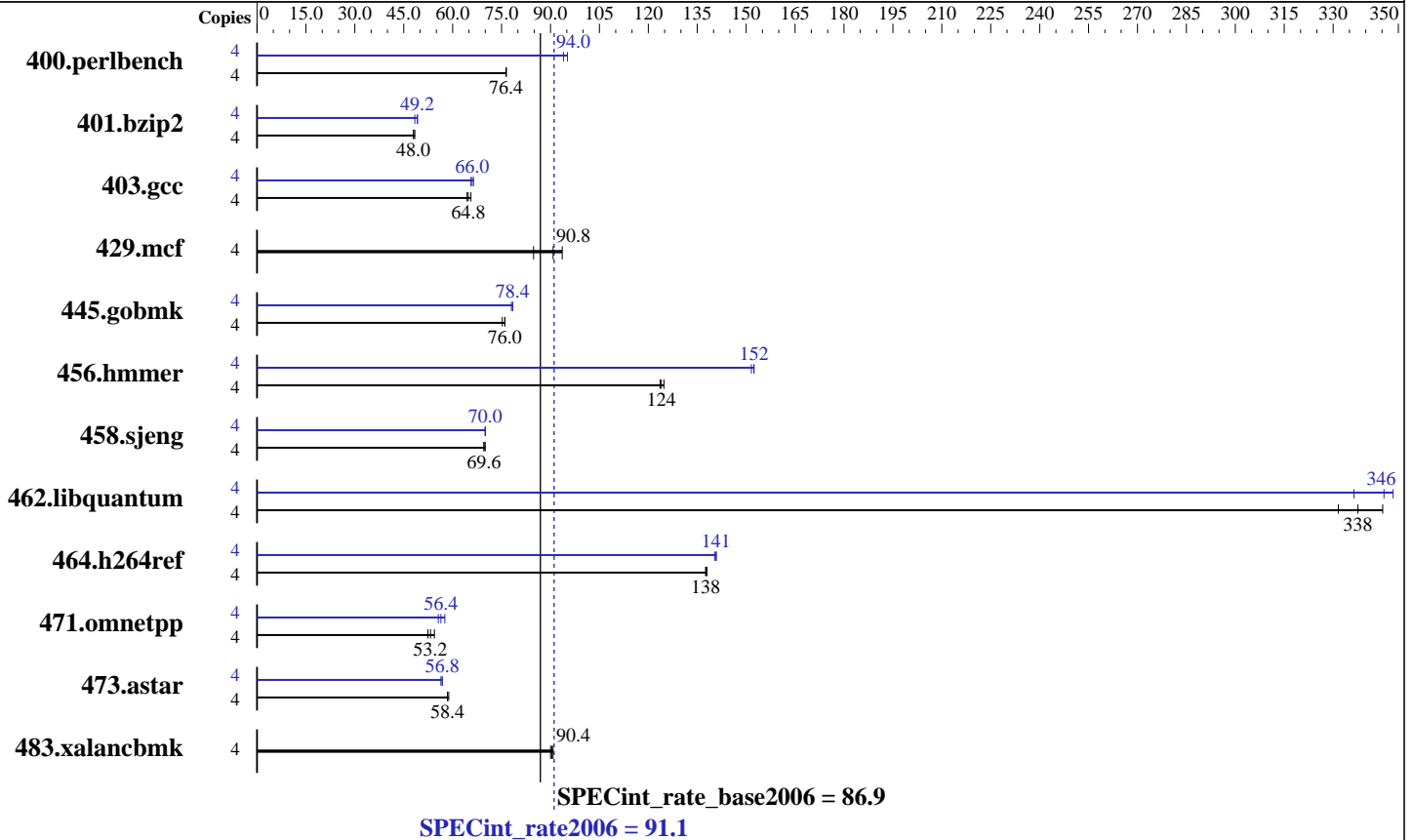
Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: May-2016

Hardware Availability: Dec-2015

Software Availability: Aug-2015



Hardware

CPU Name: AMD A8-8650
 CPU Characteristics: AMD Turbo CORE technology up to 3.80 GHz
 CPU MHz: 3200
 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
 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

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; Libraries: Version 18.00.30723 of Microsoft Visual Studio 2013
 Auto Parallel: No
 File System: NTFS
 System State: Default
 Base Pointers: 32-bit
 Peak Pointers: 32/64-bit
 Other Software: SmartHeap Library Version 11.0 from <http://www.microquill.com/>



SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

(Test Sponsor: Intel Corporation)

ASUS A88X-PRO Motherboard (AMD A8-8650 with Radeon R7 Graphics)

SPECint_rate2006 = 91.1

SPECint_rate_base2006 = 86.9

CPU2006 license: 13

Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: May-2016

Hardware Availability: Dec-2015

Software Availability: Aug-2015

Results Table

| Benchmark | Base | | | | | | | Peak | | | | | | |
|----------------|--------|------------|-------------|------------|-------------|------------|-------------|--------|------------|-------------|------------|-------------|------------|-------------|
| | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Copies | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | 4 | 510 | 76.4 | 512 | 76.4 | <u>510</u> | <u>76.4</u> | 4 | <u>415</u> | <u>94.0</u> | 410 | 95.2 | 416 | 94.0 |
| 401.bzip2 | 4 | 796 | 48.4 | 803 | 48.0 | <u>802</u> | <u>48.0</u> | 4 | 798 | 48.4 | <u>787</u> | <u>49.2</u> | 785 | 49.2 |
| 403.gcc | 4 | 492 | 65.6 | <u>496</u> | <u>64.8</u> | 499 | 64.4 | 4 | <u>487</u> | <u>66.0</u> | 491 | 65.6 | 486 | 66.4 |
| 429.mcf | 4 | 430 | 84.8 | 390 | 93.6 | <u>401</u> | <u>90.8</u> | 4 | 430 | 84.8 | 390 | 93.6 | <u>401</u> | <u>90.8</u> |
| 445.gobmk | 4 | 552 | 76.0 | <u>552</u> | <u>76.0</u> | 559 | 75.2 | 4 | <u>536</u> | <u>78.4</u> | 534 | 78.4 | 537 | 78.0 |
| 456.hammer | 4 | 302 | 124 | 299 | 125 | <u>301</u> | <u>124</u> | 4 | 246 | 152 | <u>245</u> | <u>152</u> | 245 | 152 |
| 458.sjeng | 4 | 693 | 70.0 | 695 | 69.6 | <u>694</u> | <u>69.6</u> | 4 | 690 | 70.0 | 692 | 70.0 | <u>691</u> | <u>70.0</u> |
| 462.libquantum | 4 | <u>246</u> | <u>338</u> | 240 | 345 | 250 | 332 | 4 | <u>240</u> | <u>346</u> | 246 | 336 | 238 | 348 |
| 464.h264ref | 4 | 642 | 138 | <u>643</u> | <u>138</u> | 644 | 138 | 4 | 629 | 141 | <u>629</u> | <u>141</u> | 630 | 140 |
| 471.omnetpp | 4 | <u>469</u> | <u>53.2</u> | 461 | 54.4 | 476 | 52.4 | 4 | 435 | 57.6 | 449 | 55.6 | <u>442</u> | <u>56.4</u> |
| 473.astar | 4 | <u>481</u> | <u>58.4</u> | 478 | 58.8 | 482 | 58.4 | 4 | 493 | 56.8 | 498 | 56.4 | <u>494</u> | <u>56.8</u> |
| 483.xalancbmk | 4 | 304 | 90.8 | <u>305</u> | <u>90.4</u> | 306 | 90.0 | 4 | 304 | 90.8 | <u>305</u> | <u>90.4</u> | 306 | 90.0 |

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 16.0 was set up to generate 32-bit binaries with the command:
"ipsxe-comp-vars.bat ia32 vs2010" (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 CltE03F49ACBFDE Thu May 26 22:18:51 2016

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 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 56 Stepping 1 AuthenticAMD ~3200 Mhz
BIOS Version  : American Megatrends Inc. 2502, 12/11/2015
Total Physical Memory: 7,108 MB
```

```
Trying 'wmic cpu get /value'
DeviceID      : CPU0
```

Continued on next page



SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

(Test Sponsor: Intel Corporation)

ASUS A88X-PRO Motherboard (AMD A8-8650 with Radeon R7 Graphics)

SPECint_rate2006 = 91.1

SPECint_rate_base2006 = 86.9

CPU2006 license: 13

Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: May-2016

Hardware Availability: Dec-2015

Software Availability: Aug-2015

Platform Notes (Continued)

L2CacheSize : 25359
L3CacheSize : 0
MaxClockSpeed : 3200
Name : AMD A8-8650 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

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

C++ benchmarks:

icl -Qvc12

Base Portability Flags

403.gcc: -DSPEC_CPU_WIN32
464.h264ref: -DWIN32
483.xalancbmk: -Qoption,cpp,--no_wchar_t_keyword

Base Optimization Flags

C benchmarks:

/arch:AVX -Qipo -O3 -Qprec-div- -Qopt-prefetch /F256000000

C++ benchmarks:

/arch:AVX -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qcxx-features
/F256000000 shlw32M.lib -link /FORCE:MULTIPLE



SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

(Test Sponsor: Intel Corporation)

ASUS A88X-PRO Motherboard (AMD A8-8650 with Radeon R7 Graphics)

SPECint_rate2006 = 91.1

SPECint_rate_base2006 = 86.9

CPU2006 license: 13

Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: May-2016

Hardware Availability: Dec-2015

Software Availability: Aug-2015

Base Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):

icl -Qvc12 -Qstd=c99

456.hmmr: C:\Program Files (x86)\IntelSWTools\parallel_studio_xe_2016.0.041ompilers_and_libraries_2016\windows/bin/intel64/icl.exe

458.sjeng: C:\Program Files (x86)\IntelSWTools\parallel_studio_xe_2016.0.041ompilers_and_libraries_2016\windows/bin/intel64/icl.exe

462.libquantum: C:\Program Files (x86)\IntelSWTools\parallel_studio_xe_2016.0.041ompilers_and_libraries_2016\windows/bin/intel64/icl.exe
-Qstd=c99

C++ benchmarks (except as noted below):

icl -Qvc12

473.astar: C:\Program Files (x86)\IntelSWTools\parallel_studio_xe_2016.0.041ompilers_and_libraries_2016\windows/bin/intel64/icl.exe

Peak Portability Flags

403.gcc: -DSPEC_CPU_WIN32

456.hmmr: -DSPEC_CPU_P64

458.sjeng: -DSPEC_CPU_P64

462.libquantum: -DSPEC_CPU_P64

464.h264ref: -DWIN32

473.astar: -DSPEC_CPU_P64

483.xalancbmk: -Qoption,cpp,--no_wchar_t_keyword

Peak Optimization Flags

C benchmarks:

400.perlbench: /arch:AVX(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch
/F256000000 shlw32M.lib -link /FORCE:MULTIPLE

401.bzp2: /arch:AVX(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qprec-div- -Qopt-prefetch -Qansi-alias
/F256000000

Continued on next page



SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

(Test Sponsor: Intel Corporation)

ASUS A88X-PRO Motherboard (AMD A8-8650 with Radeon R7 Graphics)

SPECint_rate2006 = 91.1

SPECint_rate_base2006 = 86.9

CPU2006 license: 13

Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: May-2016

Hardware Availability: Dec-2015

Software Availability: Aug-2015

Peak Optimization Flags (Continued)

403.gcc: /arch:AVX(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qprec-div- -Qopt-prefetch /F256000000

429.mcf: basepeak = yes

445.gobmk: /arch:AVX(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O2 -Qprec-div- -Qansi-alias /F256000000

456.hmmer: -Qauto-ilp32 /arch:AVX(pass 2) -Qprof_gen(pass 1)
-Qprof_use(pass 2) -Qipo(1) -O3(1) -Qprec-div-(1)
-Qopt-prefetch(1) /F256000000

458.sjeng: -Qauto-ilp32 /arch:AVX(pass 2) -Qprof_gen(pass 1)
-Qprof_use(pass 2) -Qipo(1) -O3(1) -Qprec-div-(1)
-Qunroll4(1) /F256000000

462.libquantum: -Qauto-ilp32 /arch:AVX -Qipo -O3 -Qprec-div-
-Qopt-prefetch /F256000000

464.h264ref: /arch:AVX(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qprec-div- -Qunroll2 -Qansi-alias /F256000000

C++ benchmarks:

471.omnetpp: /arch:AVX(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qprec-div- -Qansi-alias
-Qopt-ra-region-strategy=block /F256000000 shlW32M.lib
-link /FORCE:MULTIPLE

473.astar: -Qauto-ilp32 /arch:AVX -Qipo -O3 -Qprec-div-
-Qopt-prefetch /F256000000 shlW64M.lib

483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

456hmmer -link -LIBPATH:C:\Program Files (x86)\IntelSWTools\parallel_studio_xe_2016.0.041\compilers_and_libraries_2016\windows\compiler\lib\intel64 -link -LIBPATH:C:\Program Files (x86)\Microsoft SDKs\Windows7.1A\lib
-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 12.0/VC/lib/AMD64
458sjeng -link -LIBPATH:C:\Program Files (x86)\IntelSWTools\parallel_studio_xe_2016.0.041\compilers_and_libraries_2016\windows\compiler\lib\intel64 -link -LIBPATH:C:\Program Files (x86)\Microsoft SDKs\Windows7.1A\lib
-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 12.0/VC/lib/AMD64
462libquantum -link -LIBPATH:C:\Program Files (x86)\IntelSWTools\parallel_studio_xe_2016.0.041\compilers_and_libraries_2016\windows\compiler\lib\intel64 -link -LIBPATH:C:\Program Files (x86)\Microsoft SDKs\Windows7.1A\lib
-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 12.0/VC/lib/AMD64

Continued on next page



SPEC CINT2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

ASUSTeK Computer Inc.

(Test Sponsor: Intel Corporation)

ASUS A88X-PRO Motherboard (AMD A8-8650 with Radeon R7 Graphics)

SPECint_rate2006 = 91.1

SPECint_rate_base2006 = 86.9

CPU2006 license: 13

Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: May-2016

Hardware Availability: Dec-2015

Software Availability: Aug-2015

Peak Other Flags (Continued)

C++ benchmarks:

```
473.exe -link /FORCE:MULTIPLE -link -LIBPATH:C:\Program Files (x86)\Intel\IntelTool\parallel_studio_w_2016.0.04\compiler_and_libraries_2016\windows\compiler\lib\intel64 -LIBPATH:C:\Program Files (x86)\Microsoft SDKs\Windows7.1A\lib
```

```
-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 12.0/VC/lib/AMD64
```

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 SPECint 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.