



SPEC[®] CINT2006 Result

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ASUSTeK Computer Inc.

(Test Sponsor: Intel Corporation)

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

SPECint[®]2006 = 30.0

SPECint_base2006 = 29.4

CPU2006 license: 13

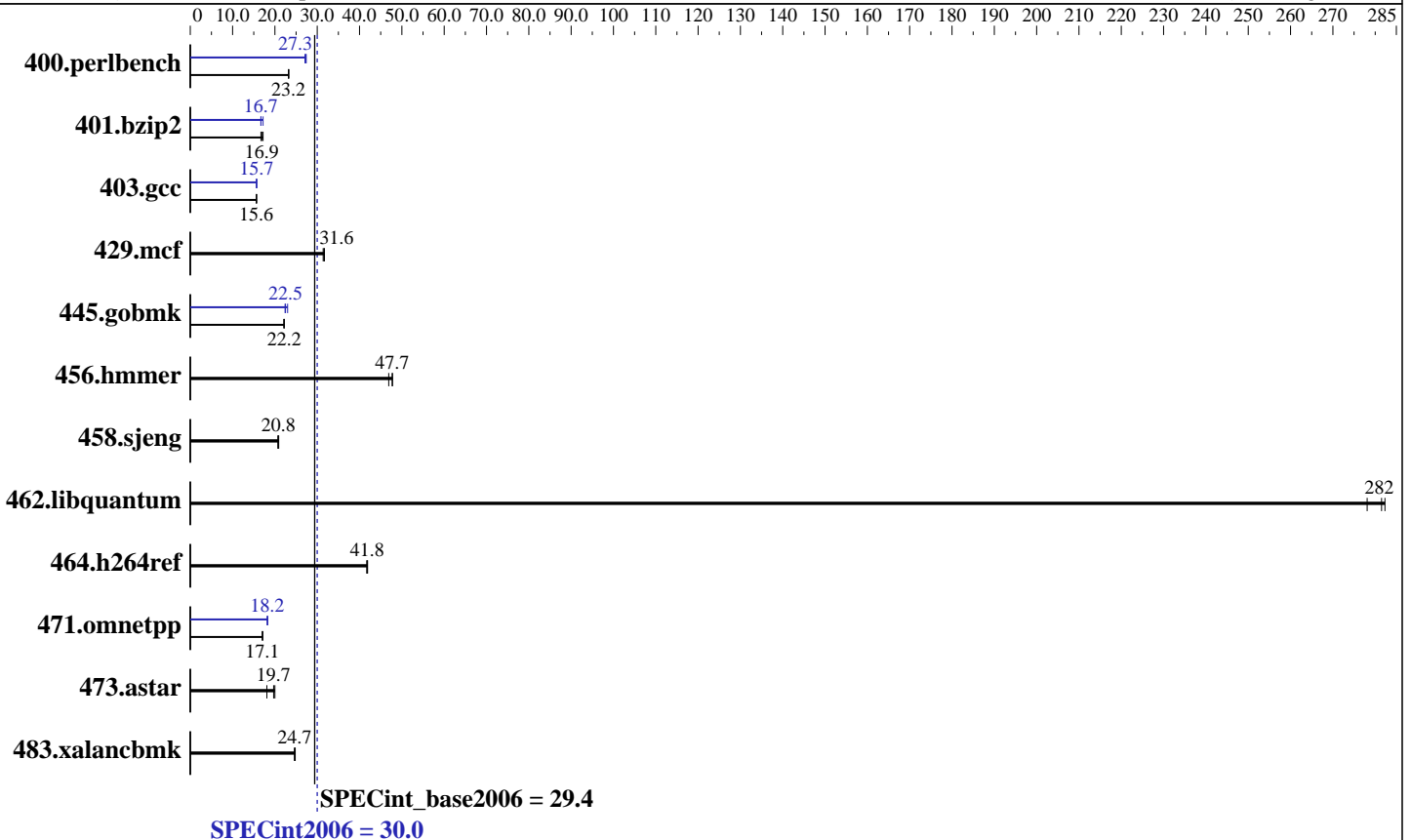
Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: Jun-2016

Hardware Availability: Jul-2014

Software Availability: Aug-2015



Hardware

CPU Name: AMD A8 PRO-7600B
 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
 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: Yes
 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/>



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Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|----------------|------------|-------------|-------------|-------------|------------|-------------|------------|-------------|-------------|-------------|------------|-------------|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | 421 | 23.2 | 419 | 23.3 | <u>421</u> | <u>23.2</u> | <u>358</u> | <u>27.3</u> | 356 | 27.4 | 360 | 27.1 |
| 401.bzip2 | 578 | 16.7 | <u>570</u> | <u>16.9</u> | 562 | 17.2 | 562 | 17.2 | <u>577</u> | <u>16.7</u> | 579 | 16.7 |
| 403.gcc | 512 | 15.7 | <u>517</u> | <u>15.6</u> | 517 | 15.6 | <u>514</u> | <u>15.7</u> | 511 | 15.7 | 515 | 15.6 |
| 429.mcf | 288 | 31.7 | <u>289</u> | <u>31.6</u> | 290 | 31.4 | 288 | 31.7 | <u>289</u> | <u>31.6</u> | 290 | 31.4 |
| 445.gobmk | 475 | 22.1 | <u>472</u> | <u>22.2</u> | 472 | 22.2 | <u>466</u> | <u>22.5</u> | 455 | 23.0 | 468 | 22.4 |
| 456.hammer | 199 | 46.9 | <u>195</u> | <u>47.7</u> | 195 | 47.8 | 199 | 46.9 | <u>195</u> | <u>47.7</u> | 195 | 47.8 |
| 458.sjeng | <u>583</u> | <u>20.8</u> | 585 | 20.7 | 580 | 20.9 | <u>583</u> | <u>20.8</u> | 585 | 20.7 | 580 | 20.9 |
| 462.libquantum | 74.5 | 278 | <u>73.6</u> | <u>282</u> | 73.4 | 282 | 74.5 | 278 | <u>73.6</u> | <u>282</u> | 73.4 | 282 |
| 464.h264ref | 528 | 41.9 | 531 | 41.7 | <u>530</u> | <u>41.8</u> | 528 | 41.9 | 531 | 41.7 | <u>530</u> | <u>41.8</u> |
| 471.omnetpp | <u>366</u> | <u>17.1</u> | 365 | 17.1 | 369 | 17.0 | 342 | 18.3 | <u>343</u> | <u>18.2</u> | 343 | 18.2 |
| 473.astar | <u>356</u> | <u>19.7</u> | 351 | 20.0 | 388 | 18.1 | <u>356</u> | <u>19.7</u> | 351 | 20.0 | 388 | 18.1 |
| 483.xalancbmk | 278 | 24.8 | <u>279</u> | <u>24.7</u> | 280 | 24.6 | 278 | 24.8 | <u>279</u> | <u>24.7</u> | 280 | 24.6 |

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 Clt1C872C5DF572 Wed Jun 1 12:56:09 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 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
```

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Platform Notes (Continued)

L2CacheSize : 25359
L3CacheSize : 0
MaxClockSpeed : 3100
Name : AMD A8 PRO-7600B 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

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

Base Compiler Invocation

C benchmarks:

icl -Qvc12 -Qstd=c99

C++ benchmarks:

icl -Qvc12

Base Portability Flags

400.perlbench: -DSPEC_CPU_P64 -DSPEC_CPU_WIN64_X64
401.bzip2: -DSPEC_CPU_P64
403.gcc: -DSPEC_CPU_P64 -DSPEC_CPU_WIN64
429.mcf: -DSPEC_CPU_P64
445.gobmk: -DSPEC_CPU_P64
456.hmmmer: -DSPEC_CPU_P64
458.sjeng: -DSPEC_CPU_P64
462.libquantum: -DSPEC_CPU_P64
464.h264ref: -DSPEC_CPU_P64 -DWIN32
471.omnetpp: -DSPEC_CPU_P64 -DSPEC_CPU_WIN64
473.astar: -DSPEC_CPU_P64
483.xalancbmk: -DSPEC_CPU_P64 -Qoption,cpp,--no_wchar_t_keyword -DWIN64



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Base Optimization Flags

C benchmarks:

```
/arch:AVX -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qparallel
-Qauto-ilp32 /F64000000
```

C++ benchmarks:

```
/arch:AVX -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qcxx-features
-Qauto-ilp32 /F64000000 shlw64M.lib -link /FORCE:MULTIPLE
```

Base Other Flags

C benchmarks:

```
403.gcc: -Dalloca=_alloca
```

Peak Compiler Invocation

C benchmarks:

```
icl -Qvc12 -Qstd=c99
```

C++ benchmarks:

```
icl -Qvc12
```

Peak Portability Flags

Same as Base Portability Flags

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
-Qauto-ilp32 /F64000000 shlw64M.lib
/F256000000 -link /FORCE:MULTIPLE
```

```
401.bzip2: /arch:AVX(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qprec-div- -Qopt-prefetch -Qansi-alias
-Qauto-ilp32 /F64000000
```

```
403.gcc: /arch:AVX(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qprec-div- -Qauto-ilp32 /F64000000
```

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Peak Optimization Flags (Continued)

429.mcf: basepeak = yes

445.gobmk: /arch:AVX(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O2 -Qprec-div- -Qansi-alias -Qauto-ilp32
/F64000000

456.hmmer: basepeak = yes

458.sjeng: basepeak = yes

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

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 -Qauto-ilp32 /F64000000
shlW64M.lib -link /FORCE:MULTIPLE

473.astar: basepeak = yes

483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

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.

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