SPEC® CINT2006 Result
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ASUSTeK Computer Inc.
(Test Sponsor: Intel Corporation)

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

$SPECint^{®}2006 =$ 30.7

$SPECint\_base2006 =$ 29.9

CPU2006 license: 13	**Test date:** Jul-2016
Test sponsor: Intel Corporation	**Hardware Availability:** Sep-2015
Tested by: Intel Corporation	**Software Availability:** Aug-2015

Scale: 0 10.0 20.0 30.0 40.0 50.0 60.0 70.0 80.0 90.0 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 290

- 400.perlbench: 28.6 / 24.5
- 401.bzip2: 17.9 / 17.7
- 403.gcc: 15.9 / 15.8
- 429.mcf: 31.8
- 445.gobmk: 23.8 / 23.0
- 456.hmmer: 48.7
- 458.sjeng: 21.4
- 462.libquantum: 285
- 464.h264ref: 42.4
- 471.omnetpp: 18.4 / 17.1
- 473.astar: 19.0
- 483.xalancbmk: 25.4

SPECint_base2006 = 29.9
SPECint2006 = 30.7

Hardware

CPU Name:	AMD A8 PRO-8650B
CPU Characteristics:	AMD Turbo CORE technology up to 3.90 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:	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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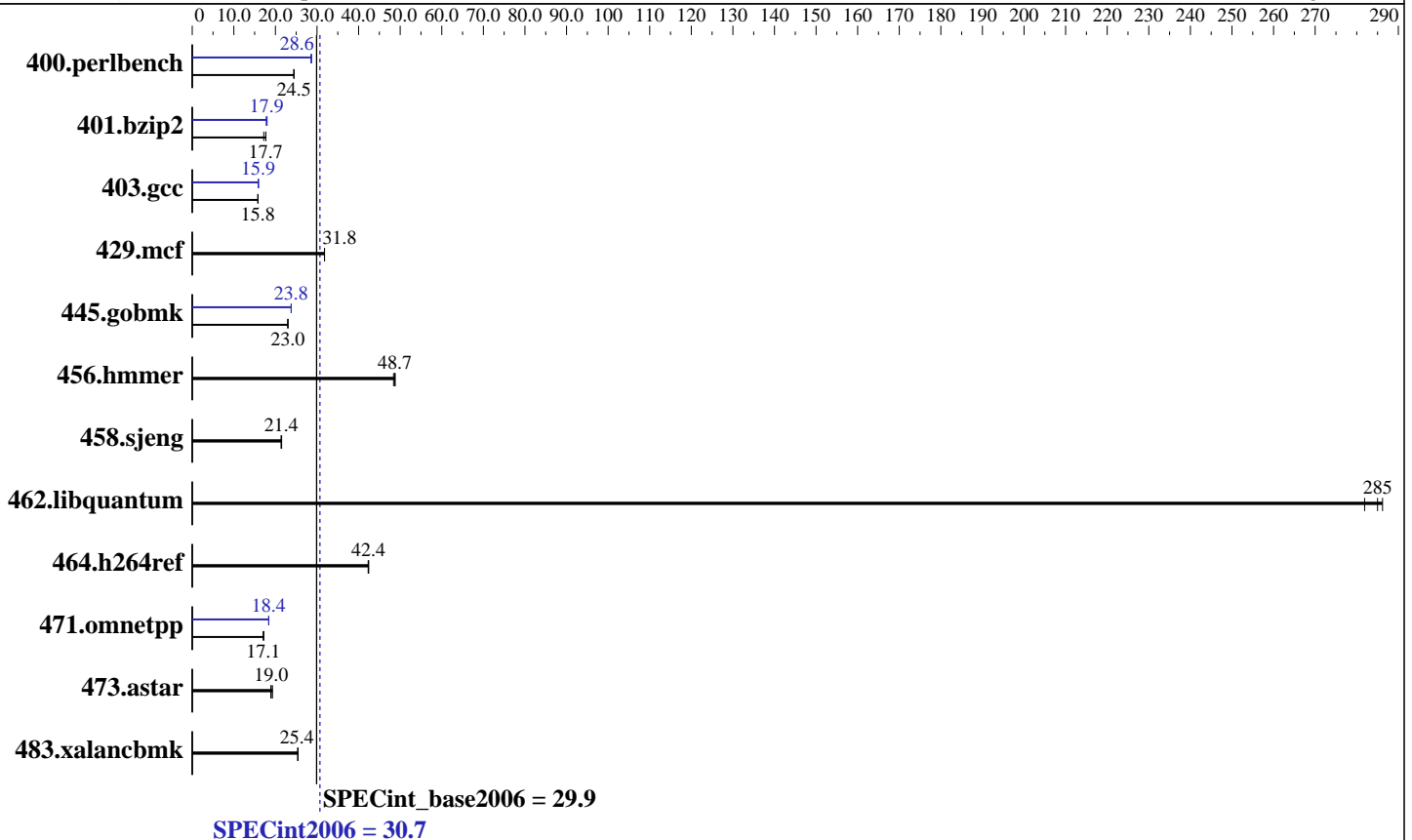SPECint2006 = 30.7

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Results Table

Benchmark	Base						Peak					
	Seconds	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**	**Seconds**	**Ratio**
400.perlbench	400	24.4	399	24.5	**400**	**24.5**	**341**	**28.6**	341	28.6	340	28.7
401.bzip2	560	17.2	**546**	**17.7**	546	17.7	536	18.0	544	17.8	**538**	**17.9**
403.gcc	510	15.8	511	15.8	**510**	**15.8**	**506**	**15.9**	505	15.9	506	15.9
429.mcf	**287**	**31.8**	287	31.8	287	31.8	**287**	**31.8**	287	31.8	287	31.8
445.gobmk	456	23.0	**456**	**23.0**	456	23.0	441	23.8	440	23.8	**441**	**23.8**
456.hmmer	193	48.4	**192**	**48.7**	191	48.8	193	48.4	**192**	**48.7**	191	48.8
458.sjeng	563	21.5	566	21.4	**565**	**21.4**	563	21.5	566	21.4	**565**	**21.4**
462.libquantum	73.5	282	**72.7**	**285**	72.4	286	73.5	282	**72.7**	**285**	72.4	286
464.h264ref	**522**	**42.4**	523	42.3	522	42.4	**522**	**42.4**	523	42.3	522	42.4
471.omnetpp	363	17.2	365	17.1	**365**	**17.1**	340	18.4	339	18.4	**339**	**18.4**
473.astar	**370**	**19.0**	364	19.3	372	18.9	**370**	**19.0**	364	19.3	372	18.9
483.xalancbmk	272	25.4	**272**	**25.4**	272	25.4	272	25.4	**272**	**25.4**	272	25.4

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 CltE03F49ACBFDE Mon Jul 25 23:28:37 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
```

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Platform Notes (Continued)

```
    L2CacheSize    : 25359
    L3CacheSize    : 0
    MaxClockSpeed  : 3200
    Name           : AMD PRO A8-8650B 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.hmmer: -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
```

Continued on next page

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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 questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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