



# SPEC® CINT2006 Result

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ASUSTeK Computer Inc.  
(Test Sponsor: Intel Corporation)

SPECint®\_rate2006 = 46.4

ASUSTek M4A89GTD PRO/USB3 (Phenom II X2 560)

SPECint\_rate\_base2006 = 41.4

CPU2006 license: 13

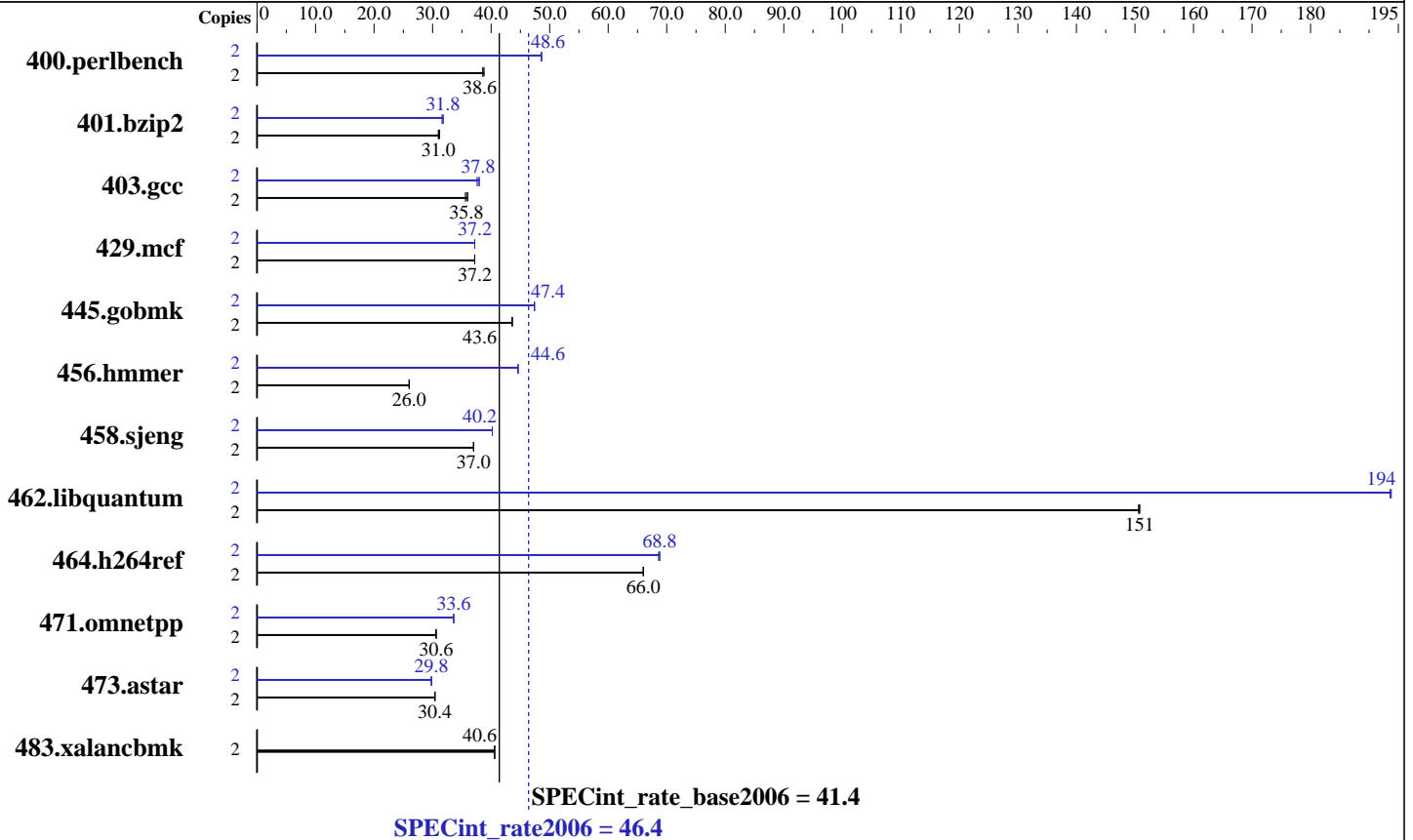
Test date: Jun-2011

Test sponsor: Intel Corporation

Hardware Availability: Feb-2011

Tested by: Intel Corporation

Software Availability: Apr-2011



## Hardware

CPU Name: AMD Phenom II X2 560  
 CPU Characteristics:  
 CPU MHz: 3300  
 FPU: Integrated  
 CPU(s) enabled: 2 cores, 1 chip, 2 cores/chip  
 CPU(s) orderable: 1 chip  
 Primary Cache: 64 KB I + 64 KB D on chip per core  
 Secondary Cache: 512 KB I+D on chip per core  
 L3 Cache: 6 MB I+D on chip per chip  
 Other Cache: None  
 Memory: 4 GB (2 x 2 GB 2Rx4 PC3-10600U-9)  
 Disk Subsystem: 1 TB Seagate SATA, 7200 RPM  
 Other Hardware: None

## Software

Operating System: Windows 7 Ultimate (64-bit)  
 Compiler: Intel C++ Compiler XE for IA32 and Intel 64 Version 12.0.3.176 Build 20110309  
 Microsoft Visual Studio 2008 Professional SP1 (for libraries)  
 Auto Parallel: No  
 File System: NTFS  
 System State: Default  
 Base Pointers: 32-bit  
 Peak Pointers: 32/64-bit  
 Other Software: SmartHeap Library Version 9.01 from <http://www.microquill.com/>



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## Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	2	506	38.6	504	38.8	<b>505</b>	<b>38.6</b>	2	402	48.6	<b>402</b>	<b>48.6</b>	401	48.6
401.bzip2	2	622	31.0	<b>622</b>	<b>31.0</b>	620	31.2	2	<b>606</b>	<b>31.8</b>	610	31.6	605	31.8
403.gcc	2	452	35.6	447	36.0	<b>449</b>	<b>35.8</b>	2	429	37.6	<b>427</b>	<b>37.8</b>	424	38.0
429.mcf	2	491	37.2	<b>491</b>	<b>37.2</b>	491	37.2	2	<b>491</b>	<b>37.2</b>	491	37.2	491	37.2
445.gobmk	2	481	43.6	481	43.6	<b>481</b>	<b>43.6</b>	2	443	47.4	443	47.4	<b>443</b>	<b>47.4</b>
456.hammer	2	715	26.0	<b>716</b>	<b>26.0</b>	716	26.0	2	418	44.6	418	44.6	<b>418</b>	<b>44.6</b>
458.sjeng	2	656	37.0	<b>655</b>	<b>37.0</b>	655	37.0	2	603	40.2	603	40.2	<b>603</b>	<b>40.2</b>
462.libquantum	2	<b>275</b>	<b>151</b>	275	151	275	151	2	214	194	<b>214</b>	<b>194</b>	214	194
464.h264ref	2	671	66.0	<b>671</b>	<b>66.0</b>	671	66.0	2	645	68.6	<b>643</b>	<b>68.8</b>	643	68.8
471.omnetpp	2	409	30.6	<b>409</b>	<b>30.6</b>	409	30.6	2	373	33.6	<b>373</b>	<b>33.6</b>	372	33.6
473.astar	2	463	30.4	<b>463</b>	<b>30.4</b>	463	30.4	2	471	29.8	472	29.8	<b>471</b>	<b>29.8</b>
483.xalancbmk	2	340	40.6	340	40.6	<b>340</b>	<b>40.6</b>	2	340	40.6	340	40.6	<b>340</b>	<b>40.6</b>

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

## Submit Notes

The config file option 'submit' was used.

The start command with the /affinity switch was used to bind processes to cores

## General Notes

Tested systems can be used with Shin-G ATX case,  
PC Power and Cooling 1200W power supply

## Base Compiler Invocation

C benchmarks:

```
icl -Qvc9 -Qstd=c99
```

C++ benchmarks:

```
icl -Qvc9
```

## Base Portability Flags

```
403.gcc: -DSPEC_CPU_WIN32
```

```
464.h264ref: -DWIN32 -DSPEC_CPU_NO_INTTYPES
```

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



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## Base Optimization Flags

C benchmarks:

```
/arch:SSE3 -Qipo -O3 -Qprec-div- -Qopt-prefetch /F512000000
```

C++ benchmarks:

```
/arch:SSE3 -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qcxx-features  
/F512000000 shlw32M.lib -link /FORCE:MULTIPLE
```

## Base Other Flags

C benchmarks:

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

## Peak Compiler Invocation

C benchmarks (except as noted below):

```
icl -Qvc9 -Qstd=c99
```

```
456.hmmr: C:/Program Files (x86)/Intel/ComposerXE-2011/bin/intel64/icl.exe
```

```
458.sjeng: C:/Program Files (x86)/Intel/ComposerXE-2011/bin/intel64/icl.exe
```

```
462.libquantum: C:/Program Files (x86)/Intel/ComposerXE-2011/bin/intel64/icl.exe  
-Qstd=c99
```

C++ benchmarks (except as noted below):

```
icl -Qvc9
```

```
473.astar: C:/Program Files (x86)/Intel/ComposerXE-2011/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 -DSPEC_CPU_NO_INTTYPES
```

```
473.astar: -DSPEC_CPU_P64
```

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



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## Peak Optimization Flags

### C benchmarks:

```

400.perlbench: /arch:SSE3(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
               -Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch
               /F512000000 shlW32M.lib -link /FORCE:MULTIPLE

401.bzip2: /arch:SSE3(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
           -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qansi-alias
           /F512000000

403.gcc: /arch:SSE3(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
         -Qipo -O3 -Qprec-div- -Qopt-prefetch /F512000000

429.mcf: /arch:SSE3 -Qipo -O3 -Qprec-div- -Qopt-prefetch
         /F512000000

445.gobmk: /arch:SSE3(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
          -Qipo -O2 -Qprec-div- -Qansi-alias /F512000000

456.hmmer: -Qauto-ilp32 /arch:SSE3(pass 2) -Qprof_gen(pass 1)
           -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qopt-prefetch
           /F512000000

458.sjeng: -Qauto-ilp32 /arch:SSE3(pass 2) -Qprof_gen(pass 1)
           -Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll4
           /F512000000

462.libquantum: -Qauto-ilp32 /arch:SSE3 -Qipo -O3 -Qprec-div-
               -Qopt-prefetch /F512000000

464.h264ref: /arch:SSE3(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
            -Qipo -O3 -Qprec-div- -Qunroll2 -Qansi-alias /F512000000

```

### C++ benchmarks:

```

471.omnetpp: /arch:SSE3(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
            -Qipo -O3 -Qprec-div- -Qansi-alias
            -Qopt-ra-region-strategy=block /F512000000 shlW32M.lib
            -link /FORCE:MULTIPLE

473.astar: -Qauto-ilp32 /arch:SSE3 -Qipo -O3 -Qprec-div-
           -Qopt-prefetch /F512000000 shlW64M.lib
           -link /FORCE:MULTIPLE

483.xalancbmk: basepeak = yes

```



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**Software Availability:** Apr-2011

## Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca

456.hmmcr: -link -LIBPATH:C:/Program Files (x86)/Intel/ComposerXE-2011/compiler/lib/intel64  
-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 9.0/VC/lib/AMD64  
-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 9.0/VC/lib  
-link -LIBPATH:C:/Program Files (x86)/Microsoft SDKs/Windows/v7.0A/lib/x64

458.sjeng: -link -LIBPATH:C:/Program Files (x86)/Intel/ComposerXE-2011/compiler/lib/intel64  
-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 9.0/VC/lib/AMD64  
-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 9.0/VC/lib  
-link -LIBPATH:C:/Program Files (x86)/Microsoft SDKs/Windows/v7.0A/lib/x64

462.libquantum: -link -LIBPATH:C:/Program Files (x86)/Intel/ComposerXE-2011/compiler/lib/intel64  
-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 9.0/VC/lib/AMD64  
-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 9.0/VC/lib  
-link -LIBPATH:C:/Program Files (x86)/Microsoft SDKs/Windows/v7.0A/lib/x64

C++ benchmarks:

473.astar: -link -LIBPATH:C:/Program Files (x86)/Intel/ComposerXE-2011/compiler/lib/intel64  
-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 9.0/VC/lib/AMD64  
-link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 9.0/VC/lib  
-link -LIBPATH:C:/Program Files (x86)/Microsoft SDKs/Windows/v7.0A/lib/x64

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic12-win32-revC.html>  
<http://www.spec.org/cpu2006/flags/Intel-Windows-Platform-Settings.20110719.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic12-win32-revC.xml>  
<http://www.spec.org/cpu2006/flags/Intel-Windows-Platform-Settings.20110719.xml>

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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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