



# SPEC® CINT2006 Result

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ASUSTeK Computer Inc.  
(Test Sponsor: Intel Corporation)

SPECint®\_rate2006 = 114

ASUSTek M4A89GTD PRO/USB3 (Phenom II X6 1090T)

SPECint\_rate\_base2006 = 107

CPU2006 license: 13

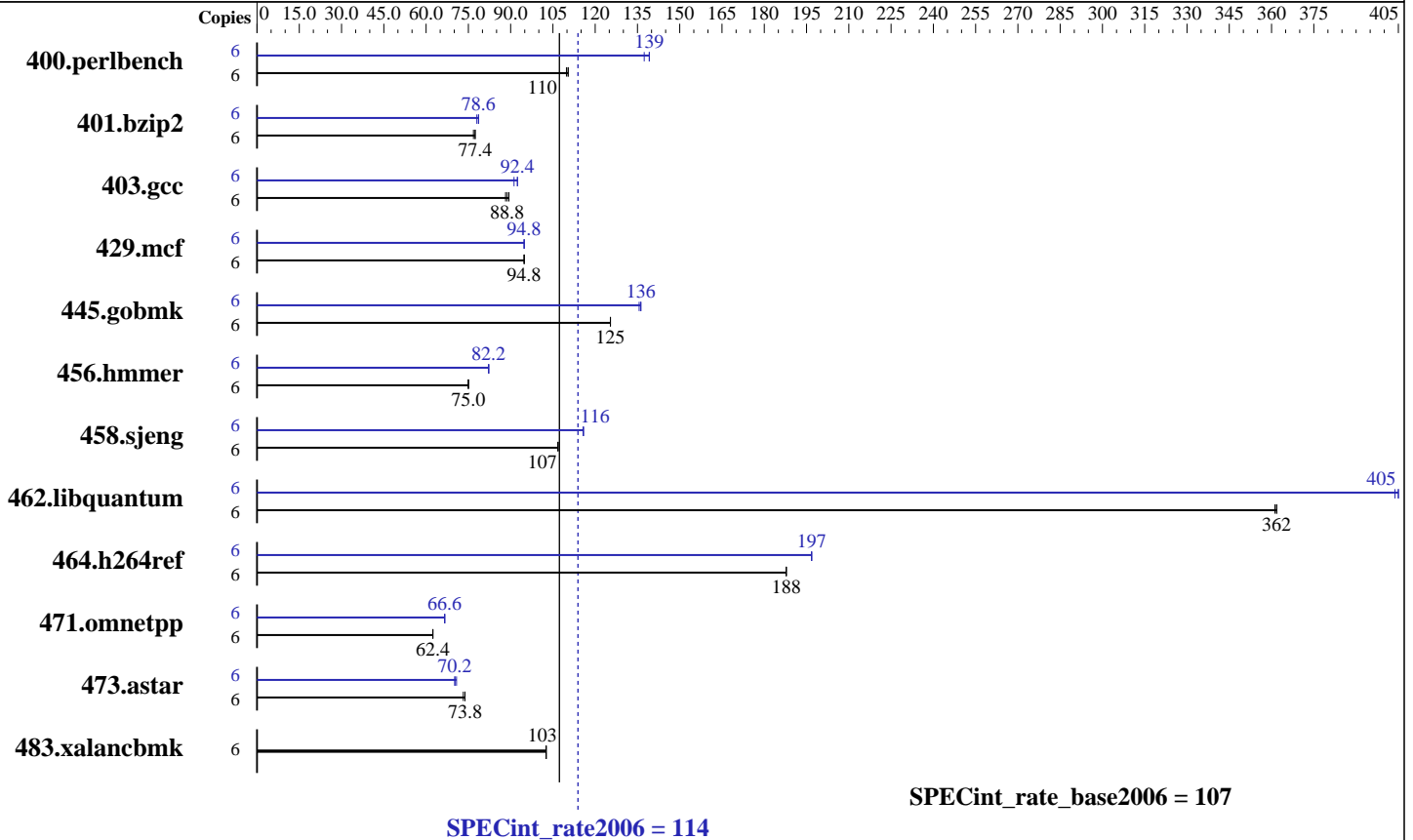
Test date: Jul-2011

Test sponsor: Intel Corporation

Hardware Availability: Feb-2011

Tested by: Intel Corporation

Software Availability: Apr-2011



## Hardware

CPU Name: AMD Phenom II X6 1090T  
 CPU Characteristics: AMD Turbo CORE technology up to 3.6 GHz  
 CPU MHz: 3200  
 FPU: Integrated  
 CPU(s) enabled: 6 cores, 1 chip, 6 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: 8 GB (2 x 4 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	6	<u>532</u>	<u>110</u>	534	110	531	110	6	426	137	421	139	<u>422</u>	<u>139</u>
401.bzip2	6	752	76.8	751	77.4	<u>751</u>	<u>77.4</u>	6	<u>738</u>	<u>78.6</u>	737	78.6	740	78.0
403.gcc	6	<u>544</u>	<u>88.8</u>	540	89.4	548	88.2	6	522	92.4	530	91.2	<u>524</u>	<u>92.4</u>
429.mcf	6	579	94.8	577	94.8	<u>578</u>	<u>94.8</u>	6	<u>577</u>	<u>94.8</u>	576	94.8	577	94.8
445.gobmk	6	502	125	<u>502</u>	<u>125</u>	502	125	6	<u>463</u>	<u>136</u>	463	136	463	136
456.hammer	6	<u>745</u>	<u>75.0</u>	745	75.0	744	75.0	6	683	82.2	<u>683</u>	<u>82.2</u>	683	82.2
458.sjeng	6	680	107	<u>680</u>	<u>107</u>	679	107	6	626	116	<u>626</u>	<u>116</u>	626	116
462.libquantum	6	344	361	343	362	<u>344</u>	<u>362</u>	6	308	404	307	405	<u>307</u>	<u>405</u>
464.h264ref	6	<u>707</u>	<u>188</u>	707	188	707	188	6	675	197	<u>675</u>	<u>197</u>	675	197
471.omnetpp	6	600	62.4	601	62.4	<u>600</u>	<u>62.4</u>	6	562	66.6	565	66.6	<u>562</u>	<u>66.6</u>
473.astar	6	571	73.8	573	73.2	<u>571</u>	<u>73.8</u>	6	598	70.2	<u>598</u>	<u>70.2</u>	597	70.8
483.xalancbmk	6	404	103	<u>404</u>	<u>103</u>	405	103	6	404	103	<u>404</u>	<u>103</u>	405	103

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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## 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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