



# SPEC® CINT2006 Result

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GIGA-BYTE Technology Co. Ltd.

(Test Sponsor: Intel Corporation)

Gigabyte MA78GM-S2H Motherboard (AMD Phenom II X4 910)

SPECint®\_rate2006 = 46.7

SPECint\_rate\_base2006 = 45.2

CPU2006 license: 13

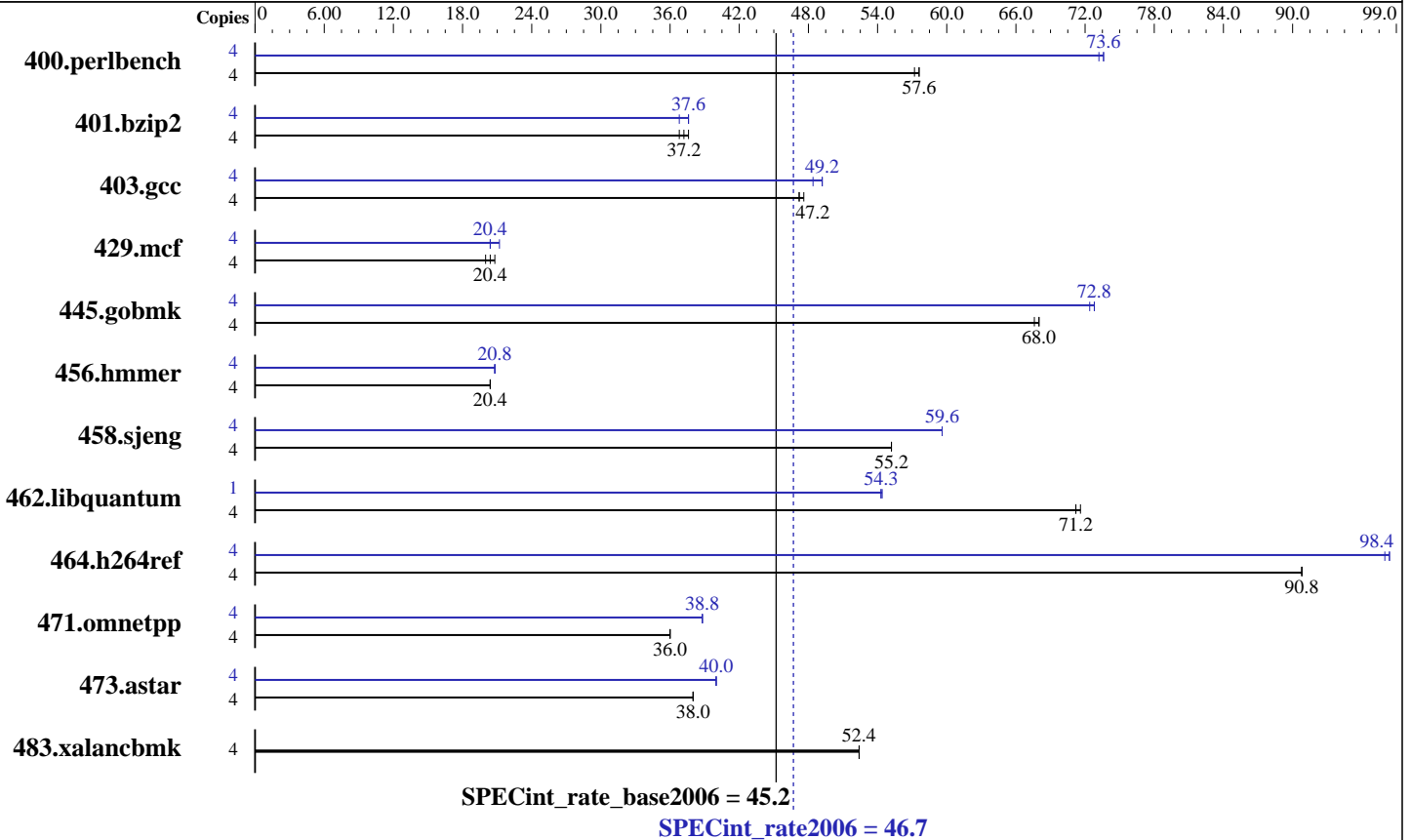
Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: May-2009

Hardware Availability: Feb-2009

Software Availability: Nov-2008



## Hardware

CPU Name: AMD Phenom II X4 910  
 CPU Characteristics:  
 CPU MHz: 2600  
 FPU: Integrated  
 CPU(s) enabled: 4 cores, 1 chip, 4 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 (4x1GB DDR2-800 CL5)  
 Disk Subsystem: Seagate 320 GB SATA, 7200RPM  
 Other Hardware: None

## Software

Operating System: Windows Vista Ultimate w/ SP1 (64-bit)  
 Compiler: Intel C++ Compiler Professional 11.0 for IA32  
 Build 20080930 Package ID: w\_cproc\_p\_11.0.054  
 Microsoft Visual Studio 2008 (for libraries)  
 Auto Parallel: Yes  
 File System: NTFS  
 System State: Default  
 Base Pointers: 32-bit  
 Peak Pointers: 32-bit  
 Other Software: SmartHeap Library Version 8.1 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	4	683	57.2	<b>680</b>	<b>57.6</b>	680	57.6	4	<b>532</b>	<b>73.6</b>	533	73.2	531	73.6
401.bzip2	4	1052	36.8	1023	37.6	<b>1037</b>	<b>37.2</b>	4	1052	36.8	1021	37.6	<b>1024</b>	<b>37.6</b>
403.gcc	4	675	47.6	685	47.2	<b>684</b>	<b>47.2</b>	4	<b>657</b>	<b>49.2</b>	656	49.2	667	48.4
429.mcf	4	<b>1772</b>	<b>20.4</b>	1813	20.0	1751	20.8	4	1708	21.2	<b>1776</b>	<b>20.4</b>	1804	20.4
445.gobmk	4	617	68.0	619	67.6	<b>618</b>	<b>68.0</b>	4	577	72.8	<b>577</b>	<b>72.8</b>	578	72.4
456.hammer	4	<b>1814</b>	<b>20.4</b>	1820	20.4	1814	20.4	4	1810	20.8	<b>1809</b>	<b>20.8</b>	1803	20.8
458.sjeng	4	<b>878</b>	<b>55.2</b>	879	55.2	878	55.2	4	811	59.6	<b>811</b>	<b>59.6</b>	811	59.6
462.libquantum	4	1161	71.6	1163	71.2	<b>1162</b>	<b>71.2</b>	1	382	54.3	<b>381</b>	<b>54.3</b>	381	54.4
464.h264ref	4	<b>974</b>	<b>90.8</b>	974	90.8	975	90.8	4	902	98.0	901	98.4	<b>901</b>	<b>98.4</b>
471.omnetpp	4	698	36.0	698	36.0	<b>698</b>	<b>36.0</b>	4	645	38.8	645	38.8	<b>645</b>	<b>38.8</b>
473.astar	4	736	38.0	738	38.0	<b>737</b>	<b>38.0</b>	4	<b>700</b>	<b>40.0</b>	699	40.0	702	40.0
483.xalancbmk	4	525	52.4	527	52.4	<b>526</b>	<b>52.4</b>	4	525	52.4	527	52.4	<b>526</b>	<b>52.4</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.

## General Notes

Tested systems can be used with Shin-G ATX case, Antec NeoPower 480W power supply  
Binaries were built on Windows Vista Ultimate (32-bit)  
OMP\_NUM\_THREADS set to number of logical processors as seen by the OS  
KMP\_AFFINITY set to physical,0  
submit disabled for 462.libquantum peak

## Base Compiler Invocation

C benchmarks:  
icl -Qvc9 -Qc99

C++ benchmarks:  
icl -Qvc9

## Base Portability Flags

403.gcc: -DSPEC\_CPU\_WIN32  
464.h264ref: -DSPEC\_CPU\_NO\_INTTYPES -DWIN32

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## Base Portability Flags (Continued)

483.xalanbmk: -Qoption,cpp,--no\_wchar\_t\_keyword

## Base Optimization Flags

C benchmarks:

/arch:SSE2 -Qipo -O3 -Qprec-div- -Qopt-prefetch /F512000000

C++ benchmarks:

/arch:SSE2 -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:

icl -Qvc9 -Qc99

C++ benchmarks:

icl -Qvc9

## Peak Portability Flags

403.gcc: -DSPEC\_CPU\_WIN32  
464.h264ref: -DSPEC\_CPU\_NO\_INTTYPES -DWIN32  
483.xalanbmk: -Qoption,cpp,--no\_wchar\_t\_keyword

## Peak Optimization Flags

C benchmarks:

400.perlbench: /arch:SSE2(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qprec-div- -Qansi-alias -Qopt-prefetch  
/F512000000 shlw32m.lib -link /FORCE:MULTIPLE

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## Peak Optimization Flags (Continued)

401.bzip2: /arch:SSE2(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qprec-div- -Qopt-prefetch -Qansi-alias  
/F512000000

403.gcc: /arch:SSE2(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qprec-div- -Qopt-prefetch /F512000000

429.mcf: /arch:SSE2 -Qipo -O3 -Qprec-div- -Qopt-prefetch  
/F512000000

445.gobmk: /arch:SSE2 -Qprof\_gen(pass 1) -Qprof\_use(pass 2) -Qipo  
-O2 -Qprec-div- -Qansi-alias /F512000000

456.hmmer: /arch:SSE2 -Qprof\_gen(pass 1) -Qprof\_use(pass 2) -Qipo  
-O3 -Qprec-div- -Qunroll2 -Qansi-alias /F512000000

458.sjeng: /arch:SSE2(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qprec-div- -Qunroll4 /F512000000

462.libquantum: /arch:SSE2 -Qipo -O3 -Qprec-div- -Qopt-prefetch  
-Qparallel -Qpar-runtime-control -Qvec-guard-write  
/F512000000

464.h264ref: Same as 456.hmmer

C++ benchmarks:

471.omnetpp: /arch:SSE2(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: /arch:SSE2(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qprec-div- -Qansi-alias  
-Qopt-ra-region-strategy=routine /F512000000 shlw32m.lib  
-link /FORCE:MULTIPLE

483.xalancbmk: basepeak = yes

## Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=\_alloca



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The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-win32-revA.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/Intel-ic11.0-win32-revA.xml>

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For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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