



# SPEC® CINT2006 Result

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GIGA-BYTE Technology Co. Ltd.

(Test Sponsor: Intel Corporation)

Gigabyte MA78GM-S2H Motherboard (AMD Phenom X4 9950)

SPECint®\_rate2006 = 46.1

SPECint\_rate\_base2006 = 44.9

CPU2006 license: 13

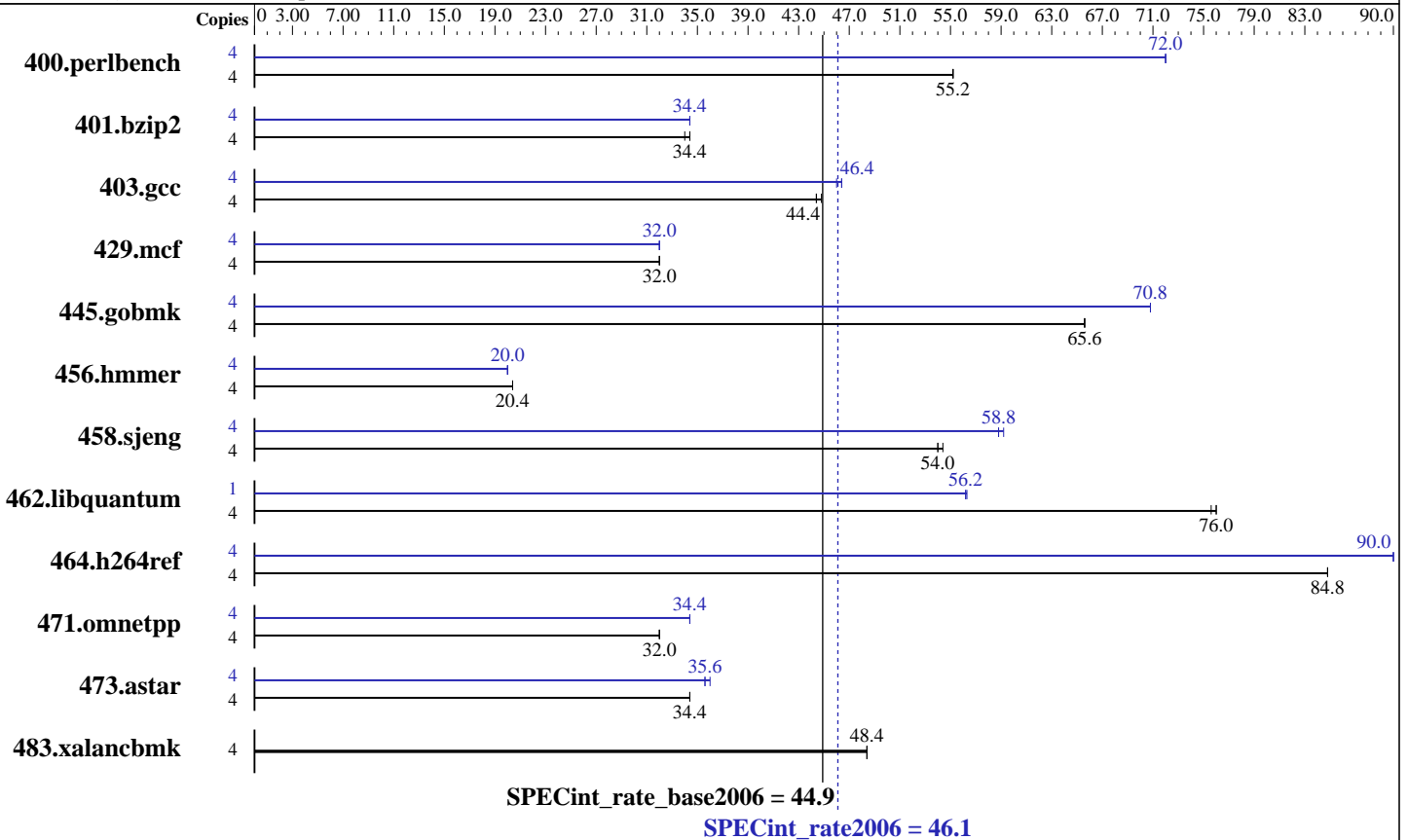
Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: Jan-2009

Hardware Availability: Jul-2008

Software Availability: Nov-2008



## Hardware

CPU Name: AMD Phenom X4 9950  
 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: 2 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	<b>710</b>	<b>55.2</b>	710	55.2	711	55.2	4	542	72.0	543	72.0	<b>542</b>	<b>72.0</b>
401.bzip2	4	1132	34.0	1125	34.4	<b>1127</b>	<b>34.4</b>	4	1123	34.4	1128	34.4	<b>1126</b>	<b>34.4</b>
403.gcc	4	717	44.8	723	44.4	<b>722</b>	<b>44.4</b>	4	700	46.0	<b>697</b>	<b>46.4</b>	696	46.4
429.mcf	4	<b>1134</b>	<b>32.0</b>	1133	32.0	1134	32.0	4	<b>1133</b>	<b>32.0</b>	1133	32.0	1133	32.0
445.gobmk	4	<b>638</b>	<b>65.6</b>	638	65.6	638	65.6	4	<b>593</b>	<b>70.8</b>	592	70.8	593	70.8
456.hammer	4	1825	20.4	<b>1833</b>	<b>20.4</b>	1834	20.4	4	<b>1854</b>	<b>20.0</b>	1852	20.0	1855	20.0
458.sjeng	4	893	54.4	<b>894</b>	<b>54.0</b>	894	54.0	4	821	58.8	820	59.2	<b>821</b>	<b>58.8</b>
462.libquantum	4	<b>1093</b>	<b>76.0</b>	1093	76.0	1094	75.6	1	<b>368</b>	<b>56.2</b>	368	56.2	368	56.3
464.h264ref	4	1043	84.8	<b>1043</b>	<b>84.8</b>	1044	84.8	4	<b>982</b>	<b>90.0</b>	982	90.0	982	90.0
471.omnetpp	4	<b>786</b>	<b>32.0</b>	786	32.0	786	32.0	4	731	34.4	<b>731</b>	<b>34.4</b>	730	34.4
473.astar	4	820	34.4	<b>819</b>	<b>34.4</b>	819	34.4	4	<b>785</b>	<b>35.6</b>	785	35.6	783	36.0
483.xalancbmk	4	571	48.4	569	48.4	<b>571</b>	<b>48.4</b>	4	571	48.4	569	48.4	<b>571</b>	<b>48.4</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.hmmcr: /arch:SSE2 -Qprof\_gen(pass 1) -Qprof\_use(pass 2) -Qipo  
-O3 -Qprec-div- -Qunroll12 -Qansi-alias /F512000000

458.sjeng: /arch:SSE2(pass 2) -Qprof\_gen(pass 1) -Qprof\_use(pass 2)  
-Qipo -O3 -Qprec-div- -Qunroll14 /F512000000

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

464.h264ref: Same as 456.hmmcr

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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