



# SPEC® CINT2006 Result

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GIGA-BYTE Technology Co. Ltd.

(Test Sponsor: Intel Corporation)

Gigabyte MA78GM-S2H Motherboard (AMD Phenom X4 9850)

SPECint®\_rate2006 = 45.1

SPECint\_rate\_base2006 = 43.9

CPU2006 license: 13

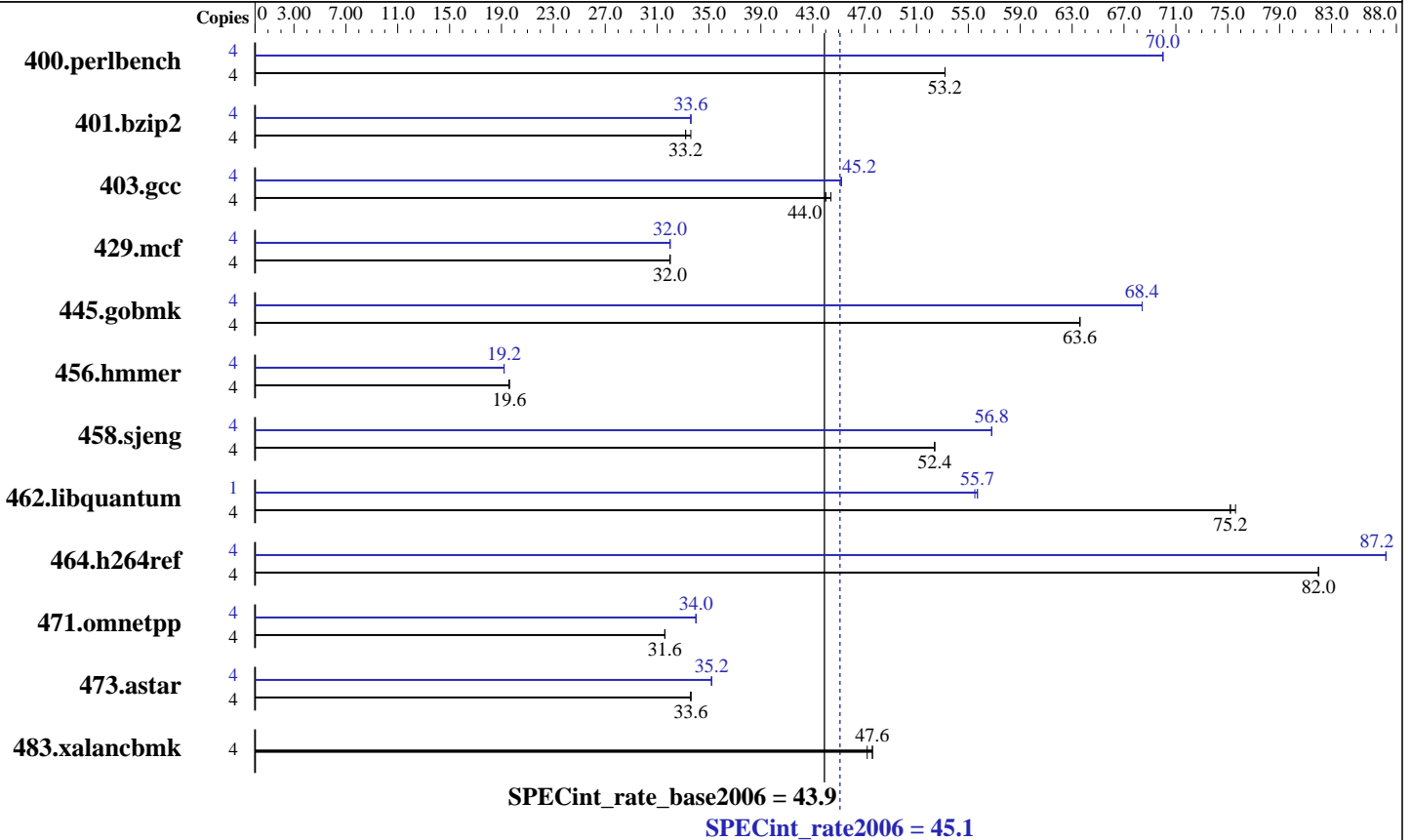
Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: Jan-2009

Hardware Availability: Apr-2008

Software Availability: Nov-2008



## Hardware

CPU Name: AMD Phenom X4 9850  
 CPU Characteristics:  
 CPU MHz: 2500  
 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	732	53.2	<u>732</u>	<u>53.2</u>	733	53.2	4	558	70.0	559	70.0	<u>558</u>	<u>70.0</u>
401.bzip2	4	1160	33.2	1143	33.6	<u>1158</u>	<u>33.2</u>	4	1151	33.6	1144	33.6	<u>1150</u>	<u>33.6</u>
403.gcc	4	734	44.0	728	44.4	<u>733</u>	<u>44.0</u>	4	715	45.2	711	45.2	<u>712</u>	<u>45.2</u>
429.mcf	4	<u>1136</u>	<u>32.0</u>	1136	32.0	1137	32.0	4	1137	32.0	<u>1137</u>	<u>32.0</u>	1136	32.0
445.gobmk	4	660	63.6	<u>660</u>	<u>63.6</u>	660	63.6	4	613	68.4	613	68.4	<u>613</u>	<u>68.4</u>
456.hammer	4	1906	19.6	<u>1902</u>	<u>19.6</u>	1899	19.6	4	1934	19.2	<u>1933</u>	<u>19.2</u>	1929	19.2
458.sjeng	4	924	52.4	923	52.4	<u>923</u>	<u>52.4</u>	4	<u>849</u>	<u>56.8</u>	849	56.8	849	56.8
462.libquantum	4	1101	75.2	<u>1100</u>	<u>75.2</u>	1099	75.6	1	374	55.5	372	55.7	<u>372</u>	<u>55.7</u>
464.h264ref	4	<u>1081</u>	<u>82.0</u>	1081	82.0	1080	82.0	4	<u>1017</u>	<u>87.2</u>	1017	87.2	1017	87.2
471.omnetpp	4	<u>790</u>	<u>31.6</u>	790	31.6	790	31.6	4	734	34.0	734	34.0	<u>734</u>	<u>34.0</u>
473.astar	4	837	33.6	<u>838</u>	<u>33.6</u>	838	33.6	4	<u>801</u>	<u>35.2</u>	800	35.2	801	35.2
483.xalancbmk	4	583	47.2	<u>582</u>	<u>47.6</u>	581	47.6	4	583	47.2	<u>582</u>	<u>47.6</u>	581	47.6

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.xalancbmk: -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.xalancbmk: -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- -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.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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