SPEC® CINT2006 Result
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GIGA-BYTE Technology Co. Ltd.
(Test Sponsor: Intel Corporation)

Gigabyte MA78GM-S2H Motherboard (AMD Phenom X4 9350e)

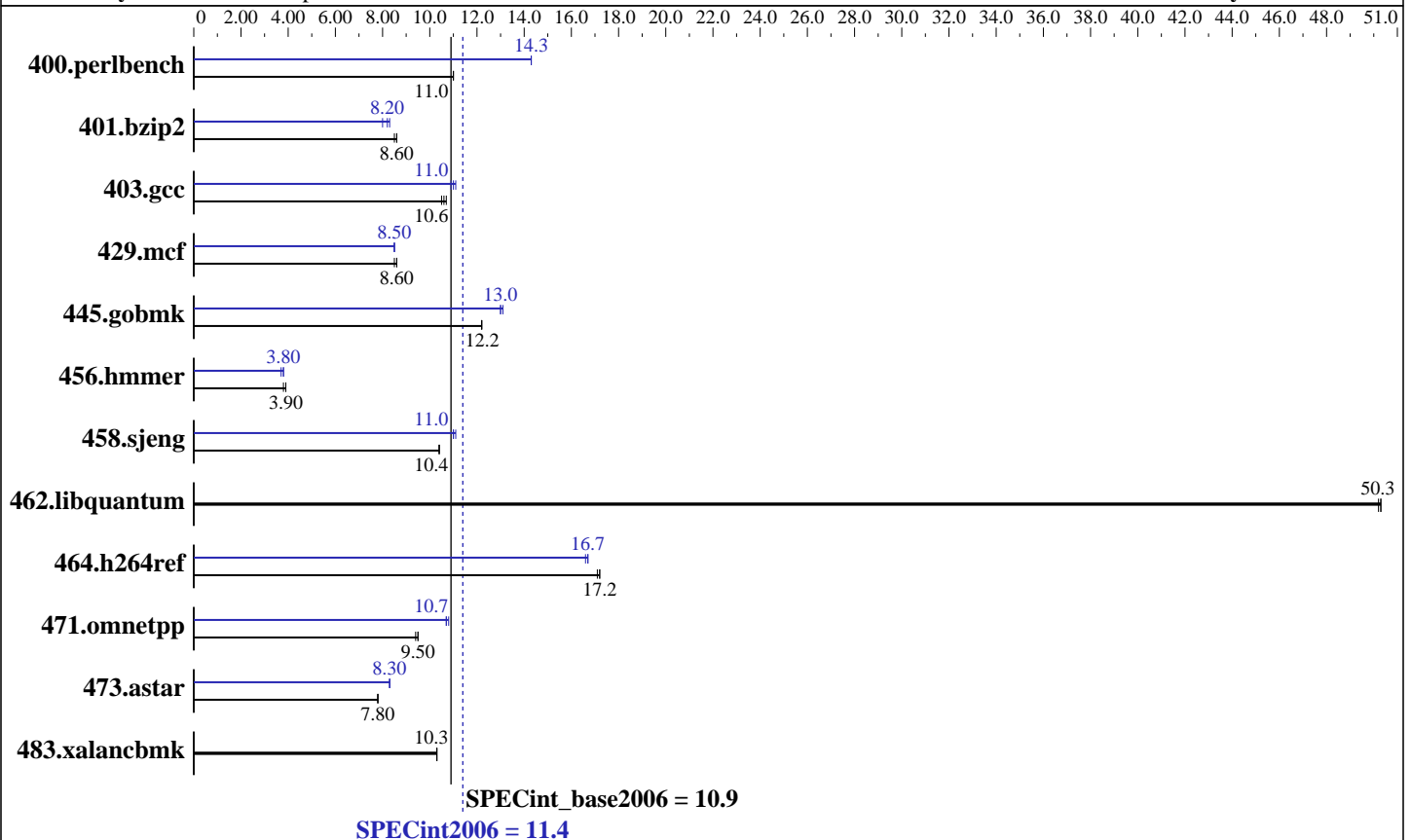$SPECint^{®}2006 =$ 11.4

SPECint_base2006 =   10.9

CPU2006 license: 13		**Test date:**	Jan-2009
Test sponsor:	Intel Corporation	**Hardware Availability:**	Jun-2008
Tested by:	Intel Corporation	**Software Availability:**	Nov-2008

SPECint_base2006 = 10.9

SPECint2006 = 11.4

Hardware

CPU Name:	AMD Phenom X4 9350e
CPU Characteristics:	
CPU MHz:	2000
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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	890	11.0	**886**	**11.0**	886	11.0	**684**	**14.3**	684	14.3	685	14.3
401.bzip2	1125	8.60	1141	8.50	**1126**	**8.60**	1164	8.30	1208	8.00	**1180**	**8.20**
403.gcc	770	10.5	**763**	**10.6**	753	10.7	737	10.9	**730**	**11.0**	724	11.1
429.mcf	1059	8.60	**1064**	**8.60**	1067	8.50	1069	8.50	**1070**	**8.50**	1070	8.50
445.gobmk	**863**	**12.2**	863	12.2	862	12.2	805	13.0	**804**	**13.0**	804	13.1
456.hmmer	2407	3.90	2425	3.80	**2419**	**3.90**	2497	3.70	2472	3.80	**2486**	**3.80**
458.sjeng	1164	10.4	1165	10.4	**1165**	**10.4**	1095	11.1	1096	11.0	**1096**	**11.0**
462.libquantum	412	50.3	412	50.2	**412**	**50.3**	412	50.3	412	50.2	**412**	**50.3**
464.h264ref	1293	17.1	1285	17.2	**1286**	**17.2**	1330	16.6	1324	16.7	**1326**	**16.7**
471.omnetpp	656	9.50	**660**	**9.50**	662	9.40	579	10.8	582	10.7	**582**	**10.7**
473.astar	904	7.80	898	7.80	**900**	**7.80**	**848**	**8.30**	846	8.30	848	8.30
483.xalancbmk	**670**	**10.3**	670	10.3	671	10.3	**670**	**10.3**	670	10.3	671	10.3

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

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
```

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

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Base Optimization Flags

C benchmarks:
```
/arch:SSE2 -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qparallel
-Qpar-runtime-control -Qvec-guard-write /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

  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- /F512000000
```

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Peak Optimization Flags (Continued)

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

445.gobmk: `/arch:SSE2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2) -Qipo -O2 -Qprec-div- -Qansi-alias /F512000000`

456.hmmer: `/arch:SSE2(pass 2) -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: `basepeak = yes`

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`

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 questions about this result, please contact the tester.
For other inquiries, please contact webmaster@spec.org.

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