SPEC® CINT2006 Result

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GIGA-BYTE Technology Co. Ltd.

(Test Sponsor: Intel Corporation)

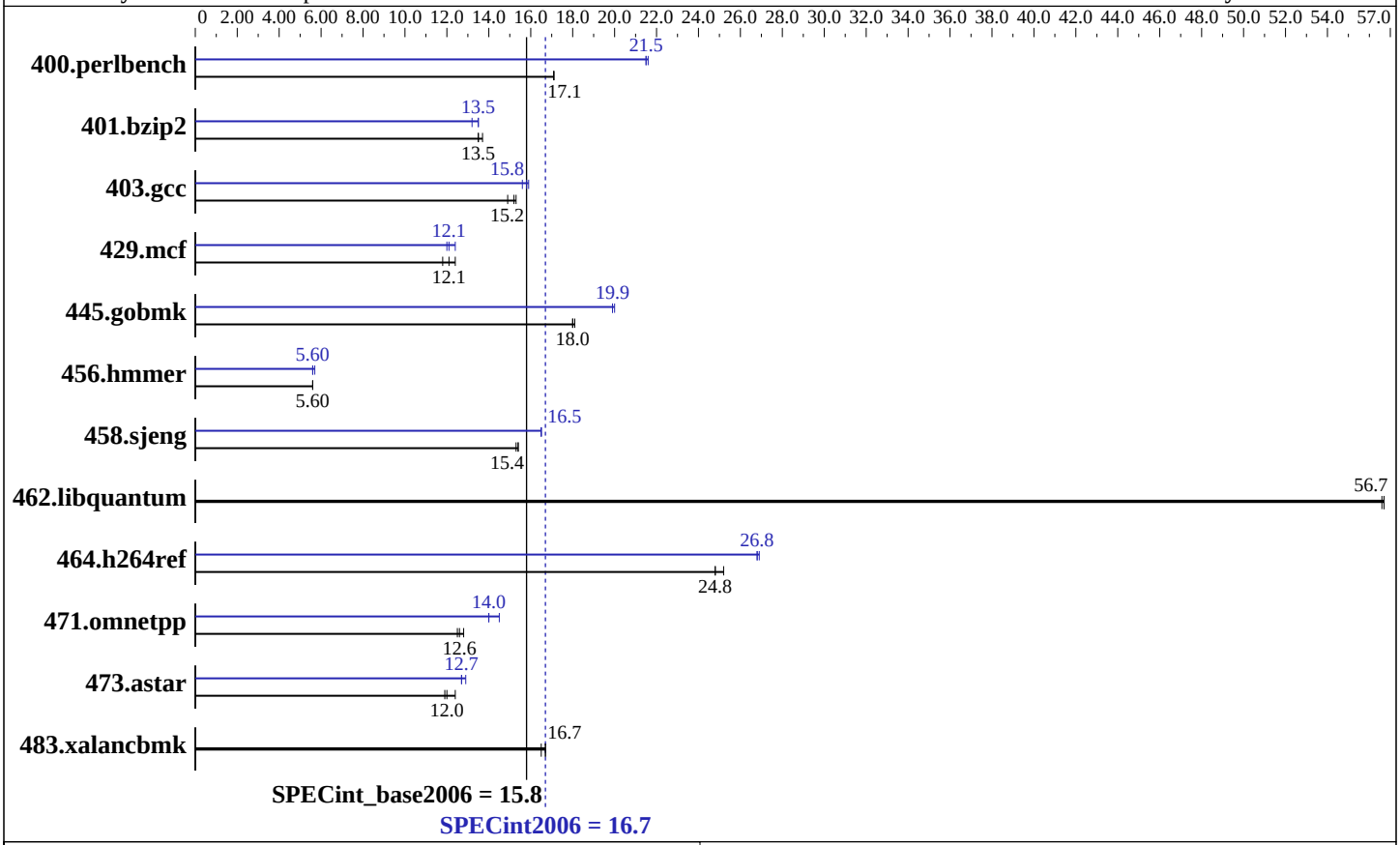
Gigabyte MA78GM-S2H Motherboard (AMD Phenom II X4 920)

SPECint®2006 = 16.7

SPECint_base2006 = 15.8

CPU2006 license: 13
Test sponsor: Intel Corporation
Tested by: Intel Corporation

Test date: May-2009
Hardware Availability: Jan-2009
Software Availability: Nov-2008



Hardware

CPU Name:	AMD Phenom II X4 920
CPU Characteristics:	
CPU MHz:	2800
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					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	572	17.1	571	17.1	**571**	**17.1**	455	21.5	453	21.6	**454**	**21.5**
401.bzip2	**715**	**13.5**	716	13.5	705	13.7	717	13.5	732	13.2	**717**	**13.5**
403.gcc	**529**	**15.2**	542	14.9	527	15.3	506	15.9	**510**	**15.8**	517	15.6
429.mcf	**755**	**12.1**	771	11.8	734	12.4	**754**	**12.1**	738	12.4	758	12.0
445.gobmk	**582**	**18.0**	581	18.1	583	18.0	527	19.9	526	20.0	**526**	**19.9**
456.hmmer	1654	5.60	1672	5.60	**1657**	**5.60**	1651	5.70	1664	5.60	**1663**	**5.60**
458.sjeng	**787**	**15.4**	789	15.3	786	15.4	731	16.5	733	16.5	**731**	**16.5**
462.libquantum	366	56.7	366	56.6	**366**	**56.7**	366	56.7	366	56.6	**366**	**56.7**
464.h264ref	**891**	**24.8**	892	24.8	880	25.2	**825**	**26.8**	823	26.9	826	26.8
471.omnetpp	489	12.8	498	12.5	**495**	**12.6**	**445**	**14.0**	432	14.5	447	14.0
473.astar	591	11.9	568	12.4	**585**	**12.0**	553	12.7	546	12.9	**551**	**12.7**
483.xalancbmk	417	16.5	414	16.7	**414**	**16.7**	417	16.5	414	16.7	**414**	**16.7**

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`

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`

Continued on next page

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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