SPEC® CINT2006 Result

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GIGA-BYTE Technology Co. Ltd.

(Test Sponsor: Intel Corporation)

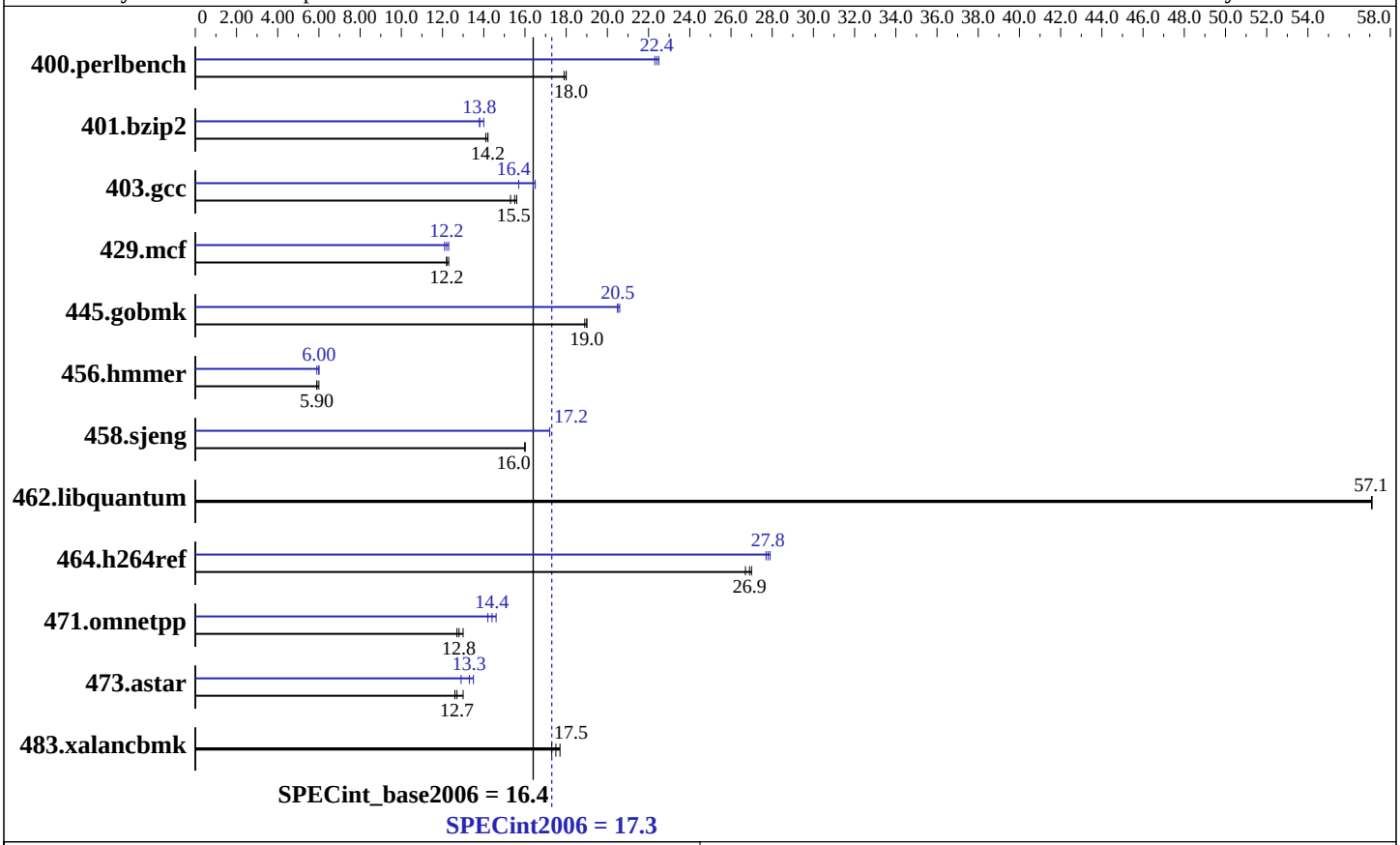
Gigabyte MA78GM-S2H Motherboard (AMD Phenom II X4 940)

SPECint®2006 = 17.3

SPECint_base2006 = 16.4

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 940
CPU Characteristics:	
CPU MHz:	3000
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	547	17.9	542	18.0	**544**	**18.0**	**437**	**22.4**	435	22.5	438	22.3
401.bzip2	**678**	**14.2**	682	14.1	677	14.2	691	14.0	**698**	**13.8**	699	13.8
403.gcc	526	15.3	517	15.6	**519**	**15.5**	512	15.7	**491**	**16.4**	488	16.5
429.mcf	748	12.2	741	12.3	**747**	**12.2**	754	12.1	**745**	**12.2**	743	12.3
445.gobmk	555	18.9	552	19.0	**553**	**19.0**	510	20.6	**512**	**20.5**	513	20.5
456.hmmer	1574	5.90	**1572**	**5.90**	1568	6.00	1570	5.90	**1567**	**6.00**	1566	6.00
458.sjeng	**757**	**16.0**	757	16.0	758	16.0	703	17.2	705	17.2	**705**	**17.2**
462.libquantum	363	57.1	**363**	**57.1**	363	57.1	363	57.1	**363**	**57.1**	363	57.1
464.h264ref	820	27.0	830	26.7	**821**	**26.9**	794	27.9	**797**	**27.8**	799	27.7
471.omnetpp	482	13.0	491	12.7	**487**	**12.8**	439	14.2	**434**	**14.4**	429	14.6
473.astar	540	13.0	**552**	**12.7**	555	12.6	522	13.5	**526**	**13.3**	546	12.9
483.xalancbmk	389	17.7	**395**	**17.5**	400	17.3	389	17.7	**395**	**17.5**	400	17.3

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`

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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