SPEC® CINT2006 Result
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ASUSTeK Computer Inc.
(Test Sponsor: Intel Corporation)

$SPECint^{®}\_rate2006 =$ 45.7

Asus M4A89GTD-PRO (Phenom II X2 560)
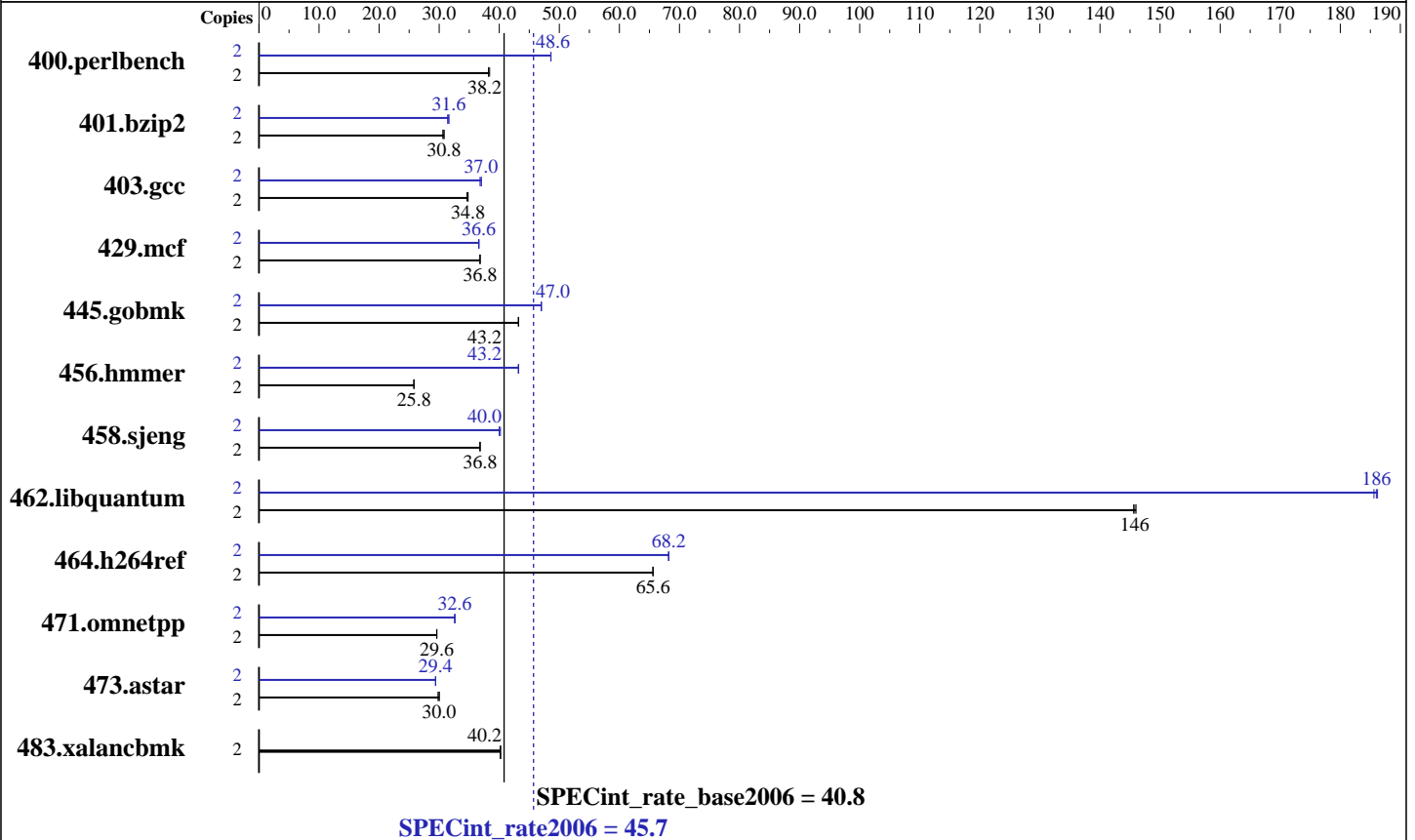
$SPECint\_rate\_base2006 =$ 40.8

CPU2006 license: 13

Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: May-2011

Hardware Availability: Sep-2010

Software Availability: Apr-2011

SPECint_rate_base2006 = 40.8

SPECint_rate2006 = 45.7

	Hardware
CPU Name:	AMD Phenom II X2 560
CPU Characteristics:	
CPU MHz:	3300
FPU:	Integrated
CPU(s) enabled:	2 cores, 1 chip, 2 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 (2 x 2 GB 2Rx8 PC3-10600U-9)
Disk Subsystem:	Seagate 1 TB SATA, 7200 RPM
Other Hardware:	None

	Software
Operating System:	Windows 7 Ultimate (64-bit)
Compiler:	Intel C++ Compiler XE for IA32 and Intel 64 Version 12.0.3.176 Build 20110309 Microsoft Visual Studio 2008 Professional SP1 (for libraries)
Auto Parallel:	No
File System:	NTFS
System State:	Default
Base Pointers:	32-bit
Peak Pointers:	32/64-bit
Other Software:	SmartHeap Library Version 9.01 from http://www.microquill.com/

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Results Table

Benchmark	Base Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Peak Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	2	510	38.4	**510**	**38.2**	510	38.2	2	**403**	**48.6**	402	48.6	403	48.6
401.bzip2	2	**628**	**30.8**	627	30.8	629	30.6	2	616	31.4	**612**	**31.6**	611	31.6
403.gcc	2	**464**	**34.8**	465	34.6	463	34.8	2	**435**	**37.0**	437	36.8	435	37.0
429.mcf	2	497	36.8	496	36.8	**497**	**36.8**	2	**497**	**36.6**	498	36.6	497	36.6
445.gobmk	2	**486**	**43.2**	486	43.2	485	43.2	2	**446**	**47.0**	446	47.0	447	47.0
456.hmmer	2	**721**	**25.8**	721	25.8	721	25.8	2	432	43.2	432	43.2	**432**	**43.2**
458.sjeng	2	659	36.8	659	36.8	**659**	**36.8**	2	603	40.2	604	40.0	**604**	**40.0**
462.libquantum	2	285	146	284	146	**284**	**146**	2	223	186	223	186	**223**	**186**
464.h264ref	2	**675**	**65.6**	675	65.6	675	65.6	2	649	68.2	**649**	**68.2**	649	68.2
471.omnetpp	2	421	29.6	**421**	**29.6**	421	29.6	2	384	32.6	**384**	**32.6**	383	32.6
473.astar	2	468	30.0	**469**	**30.0**	470	29.8	2	**478**	**29.4**	479	29.4	478	29.4
483.xalancbmk	2	344	40.2	344	40.2	**344**	**40.2**	2	344	40.2	344	40.2	**344**	**40.2**

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.
     The start command with the /affinity switch was used to bind processes to cores

General Notes

     Tested systems can be used with Shin-G ATX case,
    PC Power and Cooling 1200W power supply

Base Compiler Invocation

C benchmarks:
     icl -Qvc9 -Qstd=c99

C++ benchmarks:
     icl -Qvc9

Base Portability Flags

        403.gcc: -DSPEC_CPU_WIN32
      464.h264ref: -DWIN32 -DSPEC_CPU_NO_INTTYPES
     483.xalancbmk: -Qoption,cpp,--no_wchar_t_keyword

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Base Optimization Flags

C benchmarks:
```
/arch:SSE3 -Qipo -O3 -Qprec-div- -Qopt-prefetch /F512000000
```

C++ benchmarks:
```
/arch:SSE3 -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 (except as noted below):
```
icl -Qvc9 -Qstd=c99
```

```
456.hmmer: C:/Program Files (x86)/Intel/ComposerXE-2011/bin/intel64/icl.exe
```

```
458.sjeng: C:/Program Files (x86)/Intel/ComposerXE-2011/bin/intel64/icl.exe
```

```
462.libquantum: C:/Program Files (x86)/Intel/ComposerXE-2011/bin/intel64/icl.exe
                -Qstd=c99
```

C++ benchmarks (except as noted below):
```
icl -Qvc9
```

```
473.astar: C:/Program Files (x86)/Intel/ComposerXE-2011/bin/intel64/icl.exe
```

Peak Portability Flags

```
403.gcc: -DSPEC_CPU_WIN32
456.hmmer: -DSPEC_CPU_P64
458.sjeng: -DSPEC_CPU_P64
462.libquantum: -DSPEC_CPU_P64
464.h264ref: -DWIN32 -DSPEC_CPU_NO_INTTYPES
473.astar: -DSPEC_CPU_P64
483.xalancbmk: -Qoption,cpp,--no_wchar_t_keyword
```

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Peak Optimization Flags

C benchmarks:

    400.perlbench: `/arch:SSE3(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:SSE3(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)`
             `-Qipo -O3 -Qprec-div- -Qopt-prefetch -Qansi-alias`
             `/F512000000`

          403.gcc: `/arch:SSE3(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)`
             `-Qipo -O3 -Qprec-div- -Qopt-prefetch /F512000000`

          429.mcf: `/arch:SSE3 -Qipo -O3 -Qprec-div- -Qopt-prefetch`
             `/F512000000`

       445.gobmk: `/arch:SSE3(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)`
             `-Qipo -O2 -Qprec-div- -Qansi-alias /F512000000`

       456.hmmer: `-Qauto-ilp32 /arch:SSE3(pass 2) -Qprof_gen(pass 1)`
             `-Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qopt-prefetch`
             `/F512000000`

        458.sjeng: `-Qauto-ilp32 /arch:SSE3(pass 2) -Qprof_gen(pass 1)`
             `-Qprof_use(pass 2) -Qipo -O3 -Qprec-div- -Qunroll4`
             `/F512000000`

  462.libquantum: `-Qauto-ilp32 /arch:SSE3 -Qipo -O3 -Qprec-div-`
             `-Qopt-prefetch /F512000000`

    464.h264ref: `/arch:SSE3(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)`
             `-Qipo -O3 -Qprec-div- -Qunroll2 -Qansi-alias /F512000000`

C++ benchmarks:

    471.omnetpp: `/arch:SSE3(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: `-Qauto-ilp32 /arch:SSE3 -Qipo -O3 -Qprec-div-`
             `-Qopt-prefetch /F512000000 shlW64M.lib`
                    `-link /FORCE:MULTIPLE`

  483.xalancbmk: `basepeak = yes`

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Peak Other Flags

C benchmarks:

```
403.gcc: -Dalloca=_alloca

456.hmmer: -link -LIBPATH:C:/Program Files (x86)/Intel/ComposerXE-2011/compiler/lib/intel64
           -link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 9.0/VC/lib/AMD64
           -link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 9.0/VC/lib
           -link -LIBPATH:C:/Program Files (x86)/Microsoft SDKs/Windows/v7.0A/lib/x64

458.sjeng: -link -LIBPATH:C:/Program Files (x86)/Intel/ComposerXE-2011/compiler/lib/intel64
           -link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 9.0/VC/lib/AMD64
           -link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 9.0/VC/lib
           -link -LIBPATH:C:/Program Files (x86)/Microsoft SDKs/Windows/v7.0A/lib/x64

462.libquantum: -link -LIBPATH:C:/Program Files (x86)/Intel/ComposerXE-2011/compiler/lib/intel64
           -link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 9.0/VC/lib/AMD64
           -link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 9.0/VC/lib
           -link -LIBPATH:C:/Program Files (x86)/Microsoft SDKs/Windows/v7.0A/lib/x64
```

C++ benchmarks:

```
473.astar: -link -LIBPATH:C:/Program Files (x86)/Intel/ComposerXE-2011/compiler/lib/intel64
           -link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 9.0/VC/lib/AMD64
           -link -LIBPATH:C:/Program Files (x86)/Microsoft Visual Studio 9.0/VC/lib
           -link -LIBPATH:C:/Program Files (x86)/Microsoft SDKs/Windows/v7.0A/lib/x64
```

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic12-win32-revB.20110511.html
http://www.spec.org/cpu2006/flags/Intel-Windows-Platform-Settings.20110719.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic12-win32-revB.20110511.xml
http://www.spec.org/cpu2006/flags/Intel-Windows-Platform-Settings.20110719.xml

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

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