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

ASUSTek M4A89GTD PRO/USB3 (Phenom II X2 550)

$SPECint^{®}_rate2006 = $ 44.3

$SPECint_rate_base2006 = $ 39.4

CPU2006 license: 13

Test sponsor: Intel Corporation

Tested by: Intel Corporation

Test date: Jun-2011

Hardware Availability: Feb-2011

Software Availability: Apr-2011

	Copies	
400.perlbench	2	46.0
	2	36.4
401.bzip2	2	30.2
	2	29.4
403.gcc	2	36.6
	2	34.6
429.mcf	2	36.6
	2	36.6
445.gobmk	2	44.6
	2	41.2
456.hmmer	2	41.8
	2	24.4
458.sjeng	2	38.0
	2	34.8
462.libquantum	2	186
	2	144
464.h264ref	2	64.8
	2	62.0
471.omnetpp	2	32.8
	2	29.8
473.astar	2	28.6
	2	29.0
483.xalancbmk	2	38.6

SPECint_rate_base2006 = 39.4

SPECint_rate2006 = 44.3

Hardware

CPU Name:	AMD Phenom II X2 550
CPU Characteristics:	
CPU MHz:	3100
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 2Rx4 PC3-10600U-9)
Disk Subsystem:	1 TB Seagate 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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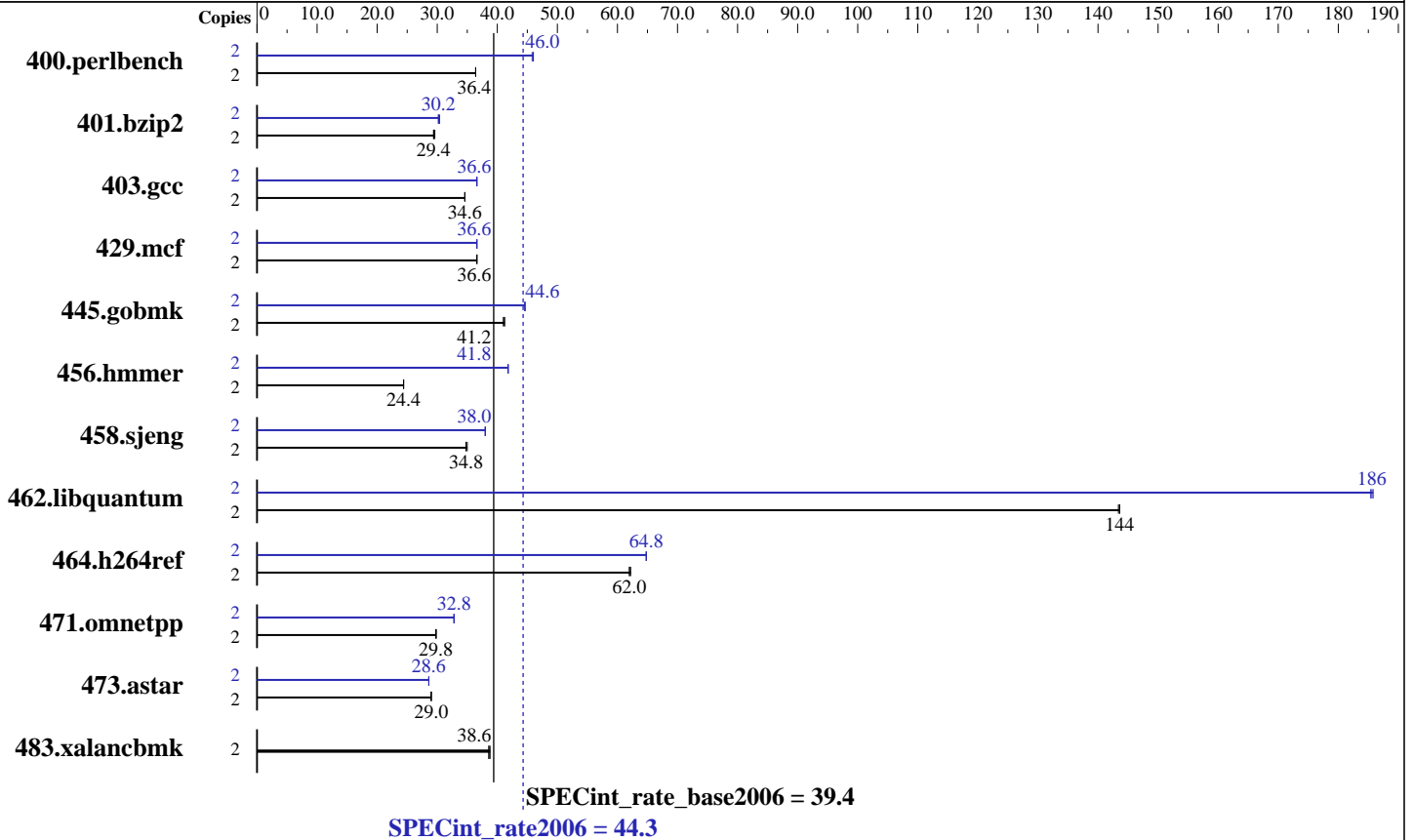
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Results Table

Benchmark	Copies	Base Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Peak Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	2	537	36.4	**537**	**36.4**	536	36.4	2	426	45.8	**426**	**46.0**	426	46.0
401.bzip2	2	656	29.4	**655**	**29.4**	653	29.6	2	638	30.2	**637**	**30.2**	637	30.4
403.gcc	2	464	34.6	466	34.6	**465**	**34.6**	2	441	36.6	440	36.6	**440**	**36.6**
429.mcf	2	500	36.6	**499**	**36.6**	498	36.6	2	**499**	**36.6**	499	36.6	499	36.6
445.gobmk	2	511	41.0	510	41.2	**510**	**41.2**	2	**470**	**44.6**	470	44.6	469	44.6
456.hmmer	2	764	24.4	763	24.4	**763**	**24.4**	2	446	41.8	446	41.8	**446**	**41.8**
458.sjeng	2	693	35.0	**694**	**34.8**	694	34.8	2	**638**	**38.0**	638	38.0	638	38.0
462.libquantum	2	289	143	289	144	**289**	**144**	2	**223**	**186**	223	186	224	185
464.h264ref	2	713	62.0	**713**	**62.0**	712	62.2	2	684	64.8	**684**	**64.8**	684	64.8
471.omnetpp	2	419	29.8	**418**	**29.8**	418	29.8	2	380	32.8	**380**	**32.8**	380	32.8
473.astar	2	485	29.0	**485**	**29.0**	485	29.0	2	**492**	**28.6**	492	28.6	491	28.6
483.xalancbmk	2	**357**	**38.6**	357	38.6	356	38.8	2	**357**	**38.6**	357	38.6	356	38.8

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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Test sponsor: Intel Corporation		**Hardware Availability:**	Feb-2011
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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-revC.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-revC.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.

Tested with SPEC CPU2006 v1.1.
Report generated on Wed Jul 23 22:24:45 2014 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 20 September 2011.