SPEC® CFP2006 Result

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GIGA-BYTE Technology Co. Ltd.

(Test Sponsor: Intel Corporation)

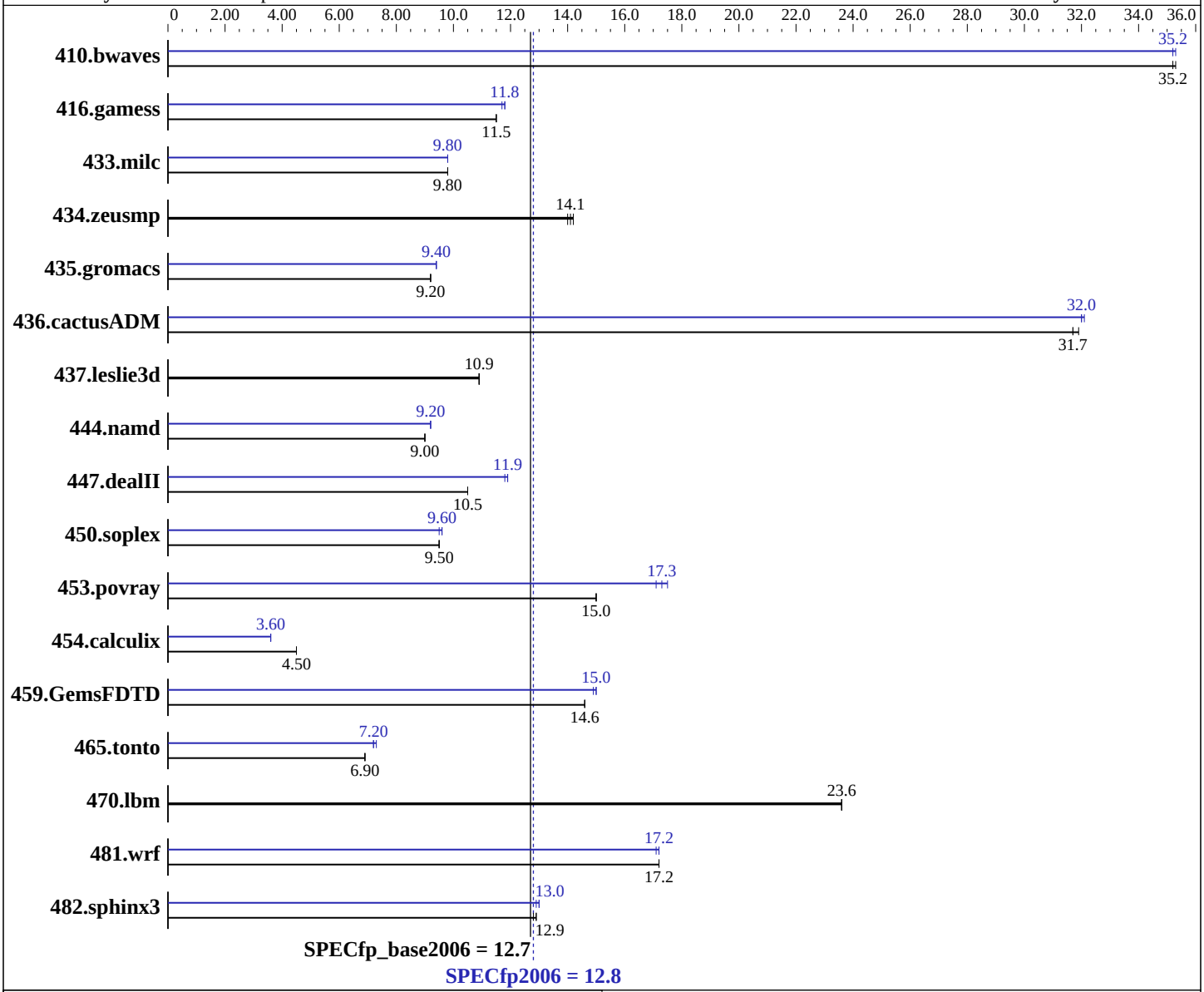
Gigabyte MA78GM-S2H Motherboard (AMD Phenom X4 9350e)

SPECfp®2006 = 12.8

SPECfp_base2006 = 12.7

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

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



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

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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 Intel Visual Fortran Compiler Professional 11.0 for IA32 Build 20080930 Package ID: w_cprof_p_11.0.054 Microsoft Visual Studio 2008 (for libraries)
Auto Parallel:	Yes
File System:	NTFS

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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

System State:	Default
Base Pointers:	32-bit
Peak Pointers:	32-bit
Other Software:	SmartHeap Library Version 8.1 from http://www.microquill.com/

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	**386**	**35.2**	385	35.3	387	35.2	385	35.3	387	35.2	**386**	**35.2**
416.gamess	1703	11.5	**1704**	**11.5**	1705	11.5	**1664**	**11.8**	1667	11.7	1664	11.8
433.milc	**937**	**9.80**	937	9.80	937	9.80	939	9.80	**939**	**9.80**	940	9.80
434.zeusmp	641	14.2	651	14.0	**645**	**14.1**	641	14.2	651	14.0	**645**	**14.1**
435.gromacs	774	9.20	**774**	**9.20**	774	9.20	**763**	**9.40**	763	9.40	762	9.40
436.cactusADM	377	31.7	**376**	**31.7**	375	31.9	**373**	**32.0**	373	32.1	373	32.0
437.leslie3d	**864**	**10.9**	863	10.9	864	10.9	**864**	**10.9**	863	10.9	864	10.9
444.namd	890	9.00	**891**	**9.00**	891	9.00	875	9.20	**875**	**9.20**	875	9.20
447.dealII	1091	10.5	1085	10.5	**1090**	**10.5**	**963**	**11.9**	967	11.8	963	11.9
450.soplex	879	9.50	**879**	**9.50**	880	9.50	873	9.60	**873**	**9.60**	874	9.50
453.povray	355	15.0	354	15.0	**354**	**15.0**	303	17.5	312	17.1	**307**	**17.3**
454.calculix	1817	4.50	**1817**	**4.50**	1818	4.50	**2302**	**3.60**	2302	3.60	2300	3.60
459.GemsFDTD	726	14.6	**727**	**14.6**	728	14.6	**710**	**15.0**	710	14.9	709	15.0
465.tonto	**1424**	**6.90**	1423	6.90	1428	6.90	**1360**	**7.20**	1360	7.20	1356	7.30
470.lbm	**582**	**23.6**	582	23.6	582	23.6	**582**	**23.6**	582	23.6	582	23.6
481.wrf	651	17.2	**650**	**17.2**	649	17.2	649	17.2	**650**	**17.2**	652	17.1
482.sphinx3	1519	12.8	**1517**	**12.9**	1515	12.9	**1505**	**13.0**	1512	12.9	1504	13.0

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
```

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Base Compiler Invocation (Continued)

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
icl -Qvc9 -Qc99 ifort

Base Portability Flags

436.cactusADM: -Qlowercase /assume:underscore
444.namd: -TP
447.dealII: -DDEAL_II_MEMBER_VAR_SPECIALIZATION_BUG
453.povray: -DSPEC_CPU_WINDOWS_ICL
454.calculix: -DSPEC_CPU_NOZMODIFIER -Qlowercase
481.wrf: -DSPEC_CPU_WINDOWS_ICL

Base Optimization Flags

C benchmarks:
/arch:SSE2 -Qipo -O3 -Qprec-div- -Qparallel -Qopt-prefetch
/F1000000000

C++ benchmarks:
/arch:SSE2 -Qipo -O3 -Qprec-div- -Qparallel -Qopt-prefetch
-Qcxx-features /F1000000000 shlw32m.lib
-link /FORCE:MULTIPLE

Fortran benchmarks:
/arch:SSE2 -Qipo -O3 -Qprec-div- -Qparallel -Qopt-prefetch
/F1000000000

Benchmarks using both Fortran and C:
/arch:SSE2 -Qipo -O3 -Qprec-div- -Qparallel -Qopt-prefetch
/F1000000000

Peak Compiler Invocation

C benchmarks:
icl -Qvc9 -Qc99

C++ benchmarks:
icl -Qvc9

Fortran benchmarks:
ifort

Continued on next page

Peak Compiler Invocation (Continued)

Benchmarks using both Fortran and C:
icl -Qvc9 -Qc99 ifort

Peak Portability Flags

436.cactusADM: -Qlowercase /assume:underscore
444.namd: -TP
447.dealII: -DDEAL_II_MEMBER_VAR_SPECIALIZATION_BUG
453.povray: -DSPEC_CPU_WINDOWS_ICL
454.calculix: -DSPEC_CPU_NOZMODIFIER -Qlowercase
481.wrf: -DSPEC_CPU_WINDOWS_ICL

Peak Optimization Flags

C benchmarks:

433.milc: /arch:SSE2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qprec-div- -Oa /F1000000000

470.lbm: basepeak = yes

482.sphinx3: /arch:SSE2 -Qipo -O3 -Qprec-div- -Qunroll2 /F1000000000

C++ benchmarks:

444.namd: /arch:SSE2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qprec-div- -Oa /F1000000000 shlw32m.lib
-link /FORCE:MULTIPLE

447.dealII: /arch:SSE2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qprec-div- -Qunroll2 -Qopt-prefetch
-Qansi-alias -Qscalar-rep- /F1000000000 shlw32m.lib
-link /FORCE:MULTIPLE

450.soplex: /arch:SSE2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qprec-div- /F1000000000 shlw32m.lib
-link /FORCE:MULTIPLE

453.povray: /arch:SSE2(pass 2) -Qprof_gen(pass 1) -Qprof_use(pass 2)
-Qipo -O3 -Qprec-div- -Qunroll4 -Qansi-alias /F1000000000
shlw32m.lib -link /FORCE:MULTIPLE

Fortran benchmarks:

410.bwaves: /arch:SSE2 -Qipo -O3 -Qprec-div- -Qopt-prefetch
-Qparallel /F1000000000

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Peak Optimization Flags (Continued)

416.gamess: `/arch:SSE2`(pass 2) `-Qprof_gen`(pass 1) `-Qprof_use`(pass 2) `-Qipo -O3 -Qprec-div- -Qunroll2 -Ob0 -Qansi-alias -Qscalar-rep- /F1000000000`

434.zeusmp: `basepeak = yes`

437.leslie3d: `basepeak = yes`

459.GemsFDTD: `/arch:SSE2`(pass 2) `-Qprof_gen`(pass 1) `-Qprof_use`(pass 2) `-Qipo -O3 -Qprec-div- -Qunroll2 -Ob0 -Qopt-prefetch -Qparallel /F1000000000`

465.tonto: `/arch:SSE2`(pass 2) `-Qprof_gen`(pass 1) `-Qprof_use`(pass 2) `-Qipo -O3 -Qprec-div- -Qunroll4 -Qauto /F1000000000`

Benchmarks using both Fortran and C:

435.gromacs: `/arch:SSE2`(pass 2) `-Qprof_gen`(pass 1) `-Qprof_use`(pass 2) `-Qipo -O3 -Qprec-div- -Qopt-prefetch /F1000000000`

436.cactusADM: `/arch:SSE2`(pass 2) `-Qprof_gen`(pass 1) `-Qprof_use`(pass 2) `-Qipo -O3 -Qprec-div- -Qunroll2 -Qopt-prefetch -Qparallel /F1000000000`

454.calculix: `/arch:SSE2 -Qipo -O3 -Qprec-div- /F1000000000`

481.wrf: `/arch:SSE2 -Qipo -O3 -Qprec-div- -Qopt-prefetch -Qparallel /F1000000000`

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 other inquiries, please contact webmaster@spec.org.

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