SPEC® CFP2006 Result

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GIGA-BYTE Technology Co. Ltd.

(Test Sponsor: Intel Corporation)

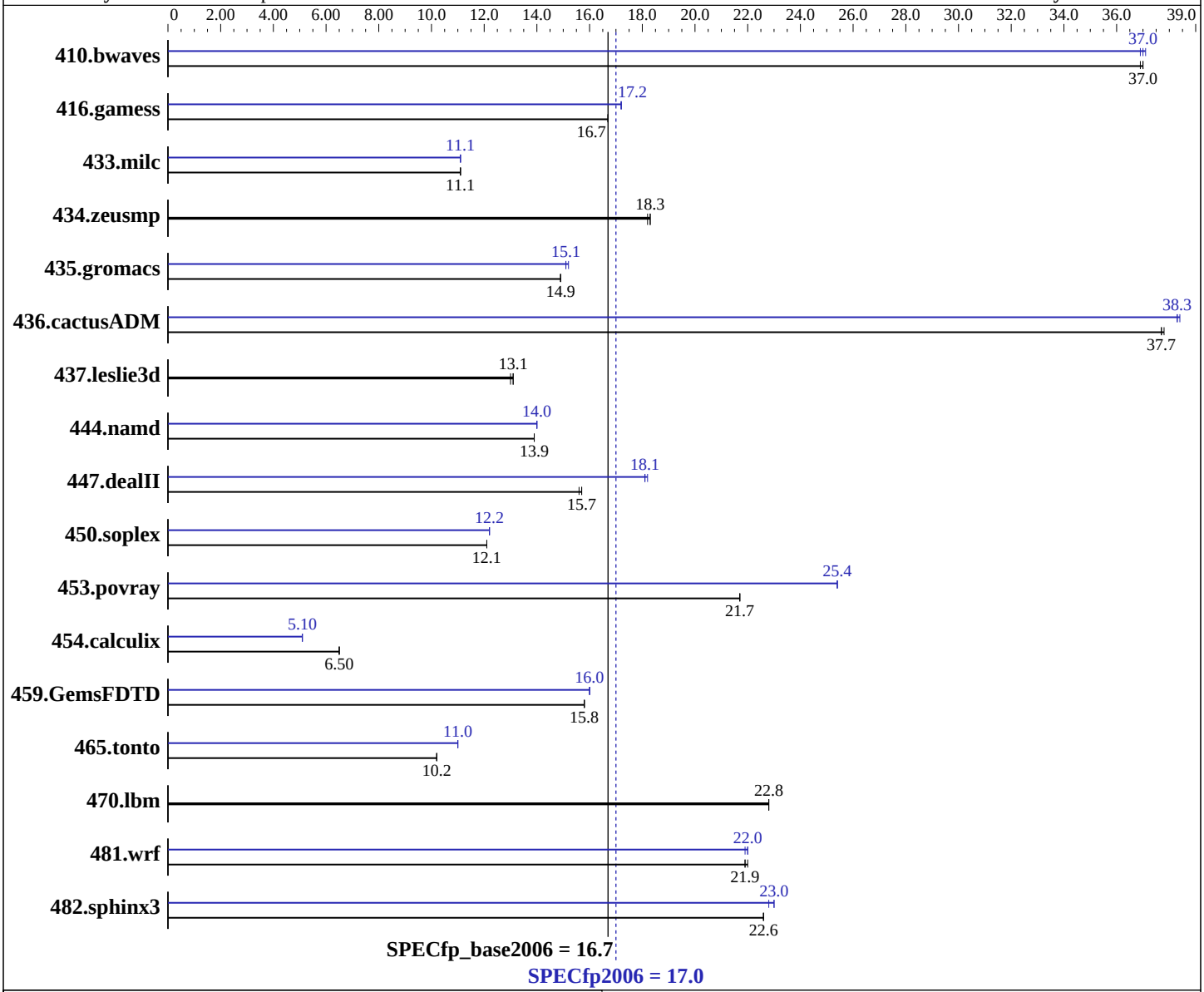
Gigabyte MA78GM-S2H Motherboard (AMD Phenom II X3 720)

SPECfp®2006 = 17.0

SPECfp_base2006 = 16.7

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

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



Hardware

CPU Name:	AMD Phenom II X3 720
CPU Characteristics:	
CPU MHz:	2800
FPU:	Integrated
CPU(s) enabled:	3 cores, 1 chip, 3 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: 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

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	**368**	**37.0**	368	36.9	367	37.0	367	37.1	368	36.9	**367**	**37.0**
416.gamess	1174	16.7	**1175**	**16.7**	1175	16.7	**1141**	**17.2**	1141	17.2	1141	17.2
433.milc	828	11.1	826	11.1	**826**	**11.1**	825	11.1	**826**	**11.1**	826	11.1
434.zeusmp	500	18.2	**497**	**18.3**	497	18.3	500	18.2	**497**	**18.3**	497	18.3
435.gromacs	478	14.9	479	14.9	**479**	**14.9**	472	15.1	471	15.2	**471**	**15.1**
436.cactusADM	**317**	**37.7**	316	37.8	317	37.7	**312**	**38.3**	312	38.4	312	38.3
437.leslie3d	718	13.1	721	13.0	**720**	**13.1**	718	13.1	721	13.0	**720**	**13.1**
444.namd	577	13.9	**577**	**13.9**	577	13.9	573	14.0	**573**	**14.0**	573	14.0
447.dealII	733	15.6	730	15.7	**731**	**15.7**	632	18.1	**631**	**18.1**	630	18.2
450.soplex	688	12.1	687	12.1	**687**	**12.1**	683	12.2	**683**	**12.2**	683	12.2
453.povray	246	21.7	**246**	**21.7**	246	21.7	**210**	**25.4**	210	25.4	210	25.4
454.calculix	1274	6.50	1274	6.50	**1274**	**6.50**	1630	5.10	1630	5.10	**1630**	**5.10**
459.GemsFDTD	**671**	**15.8**	671	15.8	673	15.8	664	16.0	665	16.0	**665**	**16.0**
465.tonto	**965**	**10.2**	965	10.2	964	10.2	892	11.0	**893**	**11.0**	894	11.0
470.lbm	**602**	**22.8**	602	22.8	602	22.8	**602**	**22.8**	602	22.8	602	22.8
481.wrf	510	21.9	509	22.0	**509**	**21.9**	508	22.0	**508**	**22.0**	509	21.9
482.sphinx3	861	22.6	864	22.6	**863**	**22.6**	**849**	**23.0**	847	23.0	853	22.8

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

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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

Continued on next page

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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