SPEC® CFP2006 Result

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IWILL Corporation

(Test Sponsor: QLogic [formerly PathScale])

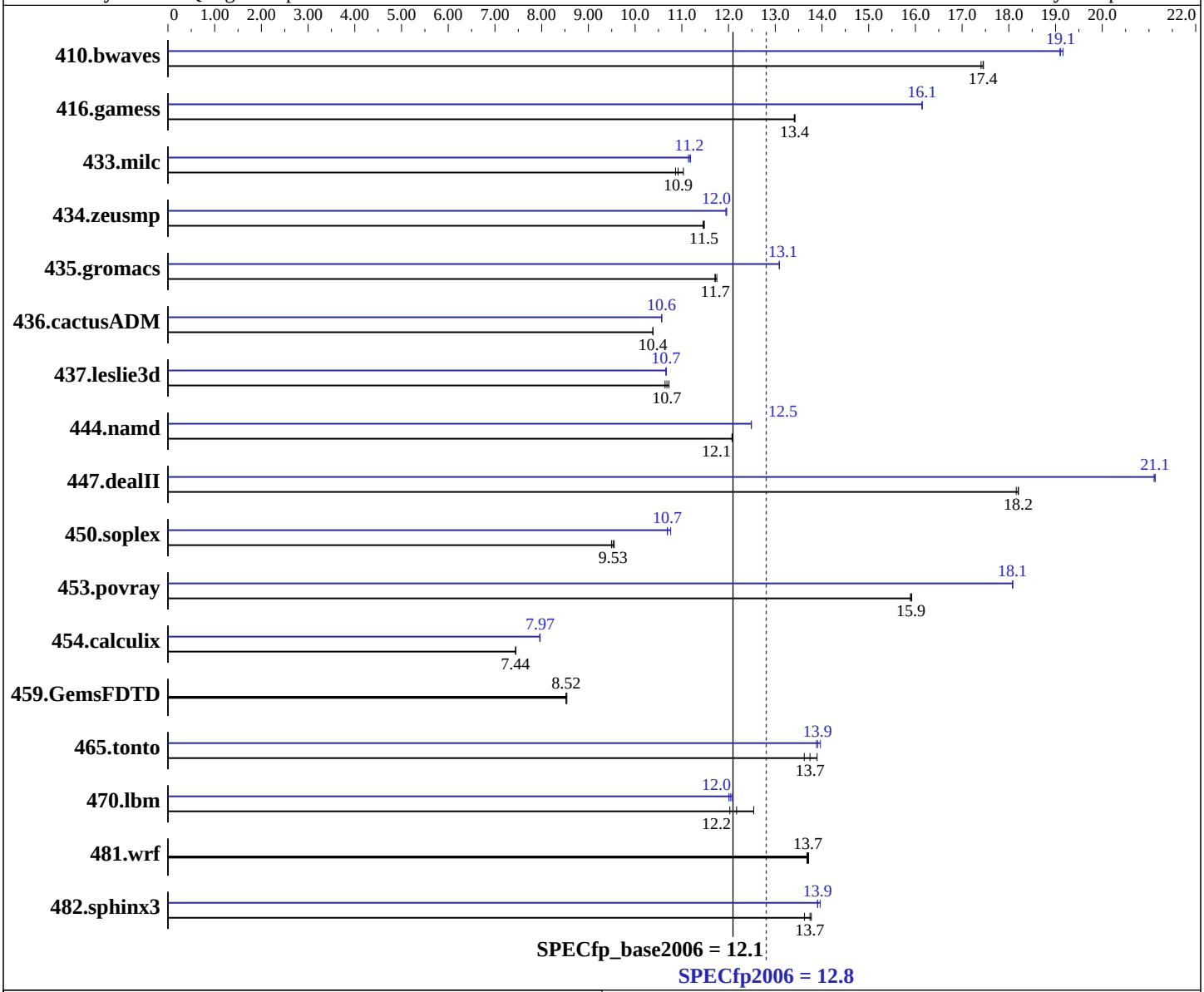
IWILL DK8-HTX motherboard, AMD Opteron 254

SPECfp®2006 = 12.8

SPECfp_base2006 = 12.1

CPU2006 license: 2323
Test sponsor: QLogic [formerly PathScale]
Tested by: QLogic Corporation

Test date: Apr-2006
Hardware Availability: Oct-2005
Software Availability: Apr-2006



Hardware

CPU Name:	AMD Opteron 254
CPU Characteristics:	
CPU MHz:	2800
FPU:	Integrated
CPU(s) enabled:	2 cores, 2 chips, 1 core/chip
CPU(s) orderable:	1,2 chips
Primary Cache:	64 KB I + 64 KB D on chip per chip
Secondary Cache:	1 MB I+D on chip per chip

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Software

Operating System:	SuSE Linux 9.3, 64-bit kernel 2.6.11.4-20a-smp
Compiler:	QLogic PathScale Compiler Suite, Release 2.4
Auto Parallel:	No
File System:	ext3
System State:	Multi-user, run level 3
Base Pointers:	64-bit
Peak Pointers:	32/64-bit

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L3 Cache: None
Other Cache: None
Memory: 8 GB (8x1024 MB, DDR400, CL3)
Disk Subsystem: IDE, 80 GB
Other Hardware: None

Other Software: None

Results Table

Benchmark	Base						Peak					
	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	**779**	**17.4**	778	17.5	781	17.4	712	19.1	709	19.2	**711**	**19.1**
416.gamess	**1459**	**13.4**	1461	13.4	1459	13.4	**1213**	**16.1**	1213	16.1	1213	16.1
433.milc	845	10.9	**841**	**10.9**	832	11.0	**822**	**11.2**	821	11.2	824	11.1
434.zeusmp	793	11.5	**793**	**11.5**	794	11.5	761	12.0	**761**	**12.0**	762	11.9
435.gromacs	610	11.7	**609**	**11.7**	608	11.7	545	13.1	**546**	**13.1**	546	13.1
436.cactusADM	**1151**	**10.4**	1151	10.4	1151	10.4	**1131**	**10.6**	1130	10.6	1131	10.6
437.leslie3d	876	10.7	**880**	**10.7**	883	10.6	882	10.7	881	10.7	**881**	**10.7**
444.namd	**664**	**12.1**	664	12.1	664	12.1	**642**	**12.5**	642	12.5	642	12.5
447.dealII	**629**	**18.2**	628	18.2	630	18.2	**541**	**21.1**	542	21.1	541	21.1
450.soplex	873	9.55	**875**	**9.53**	878	9.50	775	10.8	780	10.7	**780**	**10.7**
453.povray	**334**	**15.9**	335	15.9	334	15.9	**294**	**18.1**	294	18.1	294	18.1
454.calculix	1107	7.45	**1108**	**7.44**	1109	7.44	**1036**	**7.97**	1036	7.97	1037	7.96
459.GemsFDTD	**1245**	**8.52**	1245	8.52	1242	8.54	**1245**	**8.52**	1245	8.52	1242	8.54
465.tonto	708	13.9	**716**	**13.7**	722	13.6	705	14.0	**708**	**13.9**	709	13.9
470.lbm	1096	12.5	**1129**	**12.2**	1142	12.0	1138	12.1	**1142**	**12.0**	1144	12.0
481.wrf	814	13.7	**816**	**13.7**	817	13.7	814	13.7	**816**	**13.7**	817	13.7
482.sphinx3	1415	13.8	**1418**	**13.7**	1430	13.6	**1401**	**13.9**	1396	14.0	1402	13.9

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

General Notes

```
Tested by QLogic Corporation
 submit = taskset -c 1 $command
taskset utility used to bind CPU(s) to processes
The tested system can be assembled using a standard ATX case and
a Silverstone Zeus 650 watt ST65ZF ATX 12V Power Supply.
The particular system tested was custom-built by Verari Systems.
AMI BIOS: DK8S-HT/78105 BIOS Version:PATHV180   Date:07/19/2005
```

Base Compiler Invocation

C benchmarks:
pathcc

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Base Compiler Invocation (Continued)

C++ benchmarks:
pathCC

Fortran benchmarks:
pathf95

Benchmarks using both Fortran and C:
pathcc pathf95

Base Portability Flags

410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64
436.cactusADM: -DSPEC_CPU_LP64 -fno-second-underscore
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64 -DSPEC_CPU_TABLE_WORKAROUND
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX -fno-second-underscore
482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:
-Ofast

C++ benchmarks:
-Ofast

Fortran benchmarks:
-Ofast

Benchmarks using both Fortran and C:
-Ofast

Peak Compiler Invocation

C benchmarks:
`pathcc`

C++ benchmarks:
`pathCC`

Fortran benchmarks:
`pathf95`

Benchmarks using both Fortran and C:
`pathcc pathf95`

Peak Portability Flags

410.bwaves: `-DSPEC_CPU_LP64`
416.gamess: `-DSPEC_CPU_LP64`
433.milc: `-DSPEC_CPU_LP64`
434.zeusmp: `-DSPEC_CPU_LP64`
435.gromacs: `-DSPEC_CPU_LP64`
436.cactusADM: `-DSPEC_CPU_LP64 -fno-second-underscore`
437.leslie3d: `-DSPEC_CPU_LP64`
444.namd: `-DSPEC_CPU_LP64`
447.dealII: `-DSPEC_CPU_TABLE_WORKAROUND`
453.povray: `-DSPEC_CPU_LP64`
454.calculix: `-DSPEC_CPU_LP64`
459.GemsFDTD: `-DSPEC_CPU_LP64`
465.tonto: `-DSPEC_CPU_LP64`
470.lbm: `-DSPEC_CPU_LP64`
481.wrf: `-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX -fno-second-underscore`
482.sphinx3: `-DSPEC_CPU_LP64`

Peak Optimization Flags

C benchmarks:

433.milc: `-fb_create fbdata`(pass 1) `-fb_opt fbdata`(pass 2) `-Ofast`

470.lbm: `Same as 433.milc`

482.sphinx3: `-fb_create fbdata`(pass 1) `-fb_opt fbdata`(pass 2) `-O3 -LNO:sclrze=off -LNO:prefetch=1`

C++ benchmarks:

444.namd: `-fb_create fbdata`(pass 1) `-fb_opt fbdata`(pass 2) `-Ofast`

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Peak Optimization Flags (Continued)

447.dealII: `-Ofast -m32 -fno-exceptions`

450.soplex: `-fb_create fbdata`(pass 1) `-fb_opt fbdata`(pass 2) `-m32 -O3 -OPT:IEEE_arith=3 -CG:load_exe=0 -CG:movnti=1 -LNO:minvariant=off -fno-exceptions`

453.povray: `-fb_create fbdata`(pass 1) `-fb_opt fbdata`(pass 2) `-Ofast -fno-fast-math`

Fortran benchmarks:

410.bwaves: `-fb_create fbdata`(pass 1) `-fb_opt fbdata`(pass 2) `-O3 -OPT:Ofast -OPT:IEEE_arith=3 -LNO:blocking=off -LNO:ignore_feedback=off`

416.gamess: `-fb_create fbdata`(pass 1) `-fb_opt fbdata`(pass 2) `-O2 -OPT:Ofast -OPT:ro=3 -OPT:unroll_size=256`

434.zeusmp: `-Ofast -CG:local_fwd_sched=on -LNO:blocking=off -LNO:interchange=off -LNO:fu=10 -LNO:full_unroll_outer=on`

437.leslie3d: `-O3 -OPT:Ofast`

459.GemsFDTD: `basepeak = yes`

465.tonto: `-Ofast -CG:local_fwd_sched=on -IPA:plimit=525`

Benchmarks using both Fortran and C:

435.gromacs: `-O3 -OPT:rsqrt=2 -OPT:ro=3`

436.cactusADM: `-fb_create fbdata`(pass 1) `-fb_opt fbdata`(pass 2) `-O3 -LNO:prefetch_ahead=5 -LNO:ou_prod_max=10 -LNO:full_unroll=5 -ipa`

454.calculix: `-Ofast -CG:prefetch=off -LNO:simd=0 -OPT:unroll_times_max=8 -WOPT:mem_opnds=on`

481.wrf: `basepeak = yes`

The flags file that was used to format this result can be browsed at
`http://www.spec.org/cpu2006/flags/CPU2006_flags.20090715.05.html`

You can also download the XML flags source by saving the following link:
`http://www.spec.org/cpu2006/flags/CPU2006_flags.20090715.05.xml`

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