SPEC® CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Tyan
(Test Sponsor: Advanced Micro Devices)

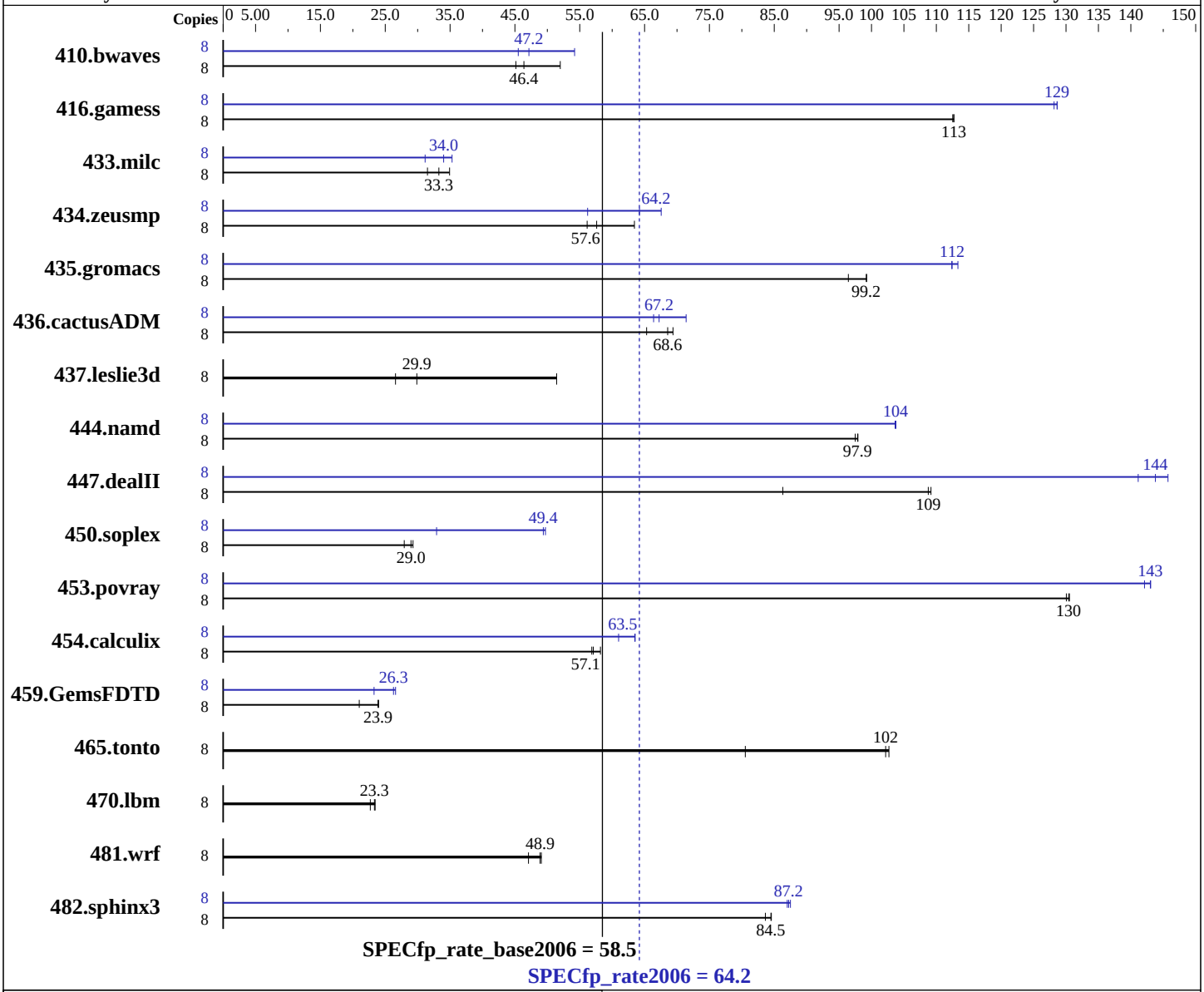
Thunder K8QW (S4881) Opteron 890

SPECfp®_rate2006 = 64.2

SPECfp_rate_base2006 = 58.5

CPU2006 license: 49
Test sponsor: Advanced Micro Devices
Tested by: Advanced Micro Devices

Test date: Apr-2007
Hardware Availability: Feb-2007
Software Availability: Feb-2007



Hardware

CPU Name:	AMD Opteron 890
CPU Characteristics:	
CPU MHz:	2800
FPU:	Integrated
CPU(s) enabled:	8 cores, 4 chips, 2 cores/chip
CPU(s) orderable:	1,2,4 chips
Primary Cache:	64 KB I + 64 KB D on chip per core
Secondary Cache:	1 MB I+D on chip per core

Continued on next page

Software

Operating System:	SuSE Linux Enterprise Server 10 64-bit kernel
Compiler:	QLogic PathScale Compiler Suite, Release 3.0
Auto Parallel:	No
File System:	ext3
System State:	Multi-user, run level 3
Base Pointers:	64-bit
Peak Pointers:	32/64-bit

Continued on next page

SPEC CFP2006 Result

Copyright 2006-2016 Standard Performance Evaluation Corporation

Tyan
(Test Sponsor: Advanced Micro Devices)

Thunder K8QW (S4881) Opteron 890

SPECfp_rate2006 = 64.2

SPECfp_rate_base2006 = 58.5

CPU2006 license: 49
Test sponsor: Advanced Micro Devices
Tested by: Advanced Micro Devices

Test date: Apr-2007
Hardware Availability: Feb-2007
Software Availability: Feb-2007

L3 Cache: None
Other Cache: None
Memory: 16 GB (16x1GB, DDR-400 CL3 ECC Reg Dual Rank)
Disk Subsystem: SATA, 250 GB
Other Hardware: None

Other Software: None

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	2408	45.1	2091	52.0	**2344**	**46.4**	8	2389	45.5	2006	54.2	**2305**	**47.2**
416.gamess	8	1392	113	1390	113	**1390**	**113**	8	1222	128	1218	129	**1218**	**129**
433.milc	8	2330	31.5	2103	34.9	**2207**	**33.3**	8	2358	31.2	2080	35.3	**2159**	**34.0**
434.zeusmp	8	1297	56.1	1148	63.4	**1264**	**57.6**	8	1295	56.2	1078	67.6	**1134**	**64.2**
435.gromacs	8	592	96.4	**576**	**99.2**	575	99.3	8	508	112	504	113	**508**	**112**
436.cactusADM	8	**1394**	**68.6**	1378	69.4	1464	65.3	8	1339	71.4	**1422**	**67.2**	1440	66.4
437.leslie3d	8	2829	26.6	1462	51.4	**2517**	**29.9**	8	2829	26.6	1462	51.4	**2517**	**29.9**
444.namd	8	658	97.5	655	97.9	**656**	**97.9**	8	619	104	**619**	**104**	618	104
447.dealII	8	1060	86.3	838	109	**842**	**109**	8	648	141	628	146	**636**	**144**
450.soplex	8	2389	27.9	2278	29.3	**2303**	**29.0**	8	2027	32.9	**1351**	**49.4**	1342	49.7
453.povray	8	326	131	**326**	**130**	327	130	8	297	143	**298**	**143**	299	142
454.calculix	8	1161	56.9	**1156**	**57.1**	1134	58.2	8	1082	61.0	1039	63.5	**1040**	**63.5**
459.GemsFDTD	8	4043	21.0	**3554**	**23.9**	3540	24.0	8	3647	23.3	**3231**	**26.3**	3192	26.6
465.tonto	8	977	80.5	767	103	**770**	**102**	8	977	80.5	767	103	**770**	**102**
470.lbm	8	4843	22.7	4689	23.4	**4711**	**23.3**	8	4843	22.7	4689	23.4	**4711**	**23.3**
481.wrf	8	1897	47.1	1821	49.1	**1828**	**48.9**	8	1897	47.1	1821	49.1	**1828**	**48.9**
482.sphinx3	8	1844	84.6	1864	83.6	**1846**	**84.5**	8	1782	87.5	**1788**	**87.2**	1792	87.0

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

General Notes

```
taskset utility used to bind cores to processes
All memory slots filled on all used CPU sockets.
Memory bank interleave is enabled.
The tested system can be assembled using an SSI-MEB case and
a Emacs PSL-6701P 700 watt ATX 12V Power Supply.
```

Base Compiler Invocation

C benchmarks:
pathcc

Continued on next page

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
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 -OPT:malloc_alg=1

Benchmarks using both Fortran and C:
-Ofast -OPT:malloc_alg=1

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
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: -Ofast -CG:cflow=off -LNO:prefetch=1 -OPT:malloc_alg=1

470.lbm: basepeak = yes

482.sphinx3: -fb_create fbdata(pass 1) -fb_opt fbdata(pass 2) -O3
-OPT:Ofast -WOPT:aggstr=0 -m32

C++ benchmarks:

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

Continued on next page

Peak Optimization Flags (Continued)

447.dealII: `-Ofast -INLINE:aggressive=on -OPT:malloc_alg=1 -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 -LNO:prefetch=1 -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: `basepeak = yes`

459.GemsFDTD: `-Ofast -LNO:fission=2 -LNO:prefetch=0`

465.tonto: `basepeak = yes`

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=3 -LNO:prefetch_ahead=5 -LNO:ou_prod_max=10 -LNO:full_unroll=5 -ipa`

454.calculix: `-Ofast -LNO:simd=0 -WOPT:mem_opnds=on`

481.wrf: `basepeak = yes`

Peak Other Flags

C++ benchmarks:

447.dealII: `-static`

The flags file that was used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.html

You can also download the XML flags source by saving the following link:
http://www.spec.org/cpu2006/flags/CPU2006_flags.20090714.xml

SPEC and SPECfp are registered trademarks of the Standard Performance Evaluation Corporation. All other brand and product names appearing in this result are trademarks or registered trademarks of their respective holders.

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

Tested with SPEC CPU2006 v1.0.
Report generated on Tue Sep 13 11:19:19 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 1 May 2007.