



SPEC[®] CFP2006 Result

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Supermicro

(Test Sponsor: Advanced Micro Devices)

SPECfp[®]_rate2006 = **NC**

Supermicro H8DMU+, AMD Opteron 2356

SPECfp_rate_base2006 = **NC**

CPU2006 license: 49

Test sponsor: Advanced Micro Devices

Tested by: Advanced Micro Devices

Test date: Sep-2007

Hardware Availability: Dec-2007

Software Availability: Oct-2007

SPEC has determined that this result was not in compliance with the SPEC CPU2006 run and reporting rules. Specifically, the submitter reported that the result would not meet the 3 month availability requirement in the SPEC CPU2006 run rules due to a change in the availability date of the processor.

Hardware

CPU Name: AMD Opteron 2356
 CPU Characteristics:
 CPU MHz: 2300
 FPU: Integrated
 CPU(s) enabled: 8 cores, 2 chips, 4 cores/chip
 CPU(s) orderable: 1,2 chips
 Primary Cache: 64 KB I + 64 KB D on chip per core
 Secondary Cache: 512 KB I+D on chip per core
 L3 Cache: 2 MB I+D on chip per chip
 Other Cache: None
 Memory: 16 GB (8x2GB, DDR2-6600, 5 Reg Dual Rank)
 Disk Subsystem: 1x400GB SATA, 7200 RPM
 Other Hardware: None

Software

Operating System: SuSE Linux Enterprise Server 10 SP1 64-bit kernel
 Compiler: The Portland Group (PGI)
 PGI pgf90 7.1-0 Fortran Compiler
 PGI pgcc 7.1-0 C Compiler
 PGI pgCC 7.1-0 C++ Compiler
 The PathScale Compiler v3.0
 PathScale pathf95 3.0 Fortran Compiler
 PathScale pathcc 3.0 C Compiler
 PathScale pathCC 3.0 C++ Compiler
 Auto Parallel: No
 File System: ReiserFS
 System State: Multi-user, run level 3
 Base Pointers: 64-bit
 Peak Pointers: 32/64-bit
 Other Software: None

Non-Compliant



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Results Table

Benchmark	Base								Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio		
410.bwaves	8	NC	NC	NC	NC	NC	NC	8	NC	NC	NC	NC	NC	NC		
416.gamess	8	NC	NC	NC	NC	NC	NC	8	NC	NC	NC	NC	NC	NC		
433.milc	8	NC	NC	NC	NC	NC	NC	8	NC	NC	NC	NC	NC	NC		
434.zeusmp	8	NC	NC	NC	NC	NC	NC	8	NC	NC	NC	NC	NC	NC		
435.gromacs	8	NC	NC	NC	NC	NC	NC	8	NC	NC	NC	NC	NC	NC		
436.cactusADM	8	NC	NC	NC	NC	NC	NC	8	NC	NC	NC	NC	NC	NC		
437.leslie3d	8	NC	NC	NC	NC	NC	NC	8	NC	NC	NC	NC	NC	NC		
444.namd	8	NC	NC	NC	NC	NC	NC	8	NC	NC	NC	NC	NC	NC		
447.dealII	8	NC	NC	NC	NC	NC	NC	8	NC	NC	NC	NC	NC	NC		
450.soplex	8	NC	NC	NC	NC	NC	NC	8	NC	NC	NC	NC	NC	NC		
453.povray	8	NC	NC	NC	NC	NC	NC	8	NC	NC	NC	NC	NC	NC		
454.calculix	8	NC	NC	NC	NC	NC	NC	8	NC	NC	NC	NC	NC	NC		
459.GemsFDTD	8	NC	NC	NC	NC	NC	NC	8	NC	NC	NC	NC	NC	NC		
465.tonto	8	NC	NC	NC	NC	NC	NC	8	NC	NC	NC	NC	NC	NC		
470.lbm	8	NC	NC	NC	NC	NC	NC	8	NC	NC	NC	NC	NC	NC		
481.wrf	8	NC	NC	NC	NC	NC	NC	8	NC	NC	NC	NC	NC	NC		
482.spm	8	NC	NC	NC	NC	NC	NC	8	NC	NC	NC	NC	NC	NC		

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

Operating System Notes

```
'ulimit -s unlimited' used to set environment stack size
'ulimit -l 2457600' was used to set environment lock pages quantity
'numactl' was used to bind copies to the cores
Set vm/nr_hugepages=1200 in /etc/sysctl.conf
mount -t hugetlbfs nodev /mnt/hugepages
Environment variable PGI_HUGE_PAGES set to 150
```



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General Notes

The test system can be assembled by using two Ablecom PWS-702A-1R 700W 12V redundant power supplies.

Base Compiler Invocation

C benchmarks:

pgcc

C++ benchmarks:

pgcpp

Fortran benchmarks:

pgf95

Benchmarks using both Fortran and C:

pgcc pgf95

Base Portability Flags

416.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
433.mcc: -DSPEC_CPU_LP64
434.mmm: -DSPEC_CPU_LP64
453.gtomacs: -DSPEC_CPU_LP64 -Mnomain
453.cactusADM: -DSPEC_CPU_LP64 -Mnomain
477.leslie3d: -DSPEC_CPU_LP64
477.namd: -DSPEC_CPU_LP64
447.leall: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -Mnomain
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64

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Base Portability Flags (Continued)

481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:

-fast -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc=huge:448
-tp barcelona-64 -Bstatic_pgi

C++ benchmarks:

-fast -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc=huge:448
--zc_eh -tp barcelona-64 -Bstatic_pgi

Fortran benchmarks:

-fast -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc=huge:448
-tp barcelona-64 -Bstatic_pgi

Benchmarks using both Fortran and C:

-fast -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc=huge:448
-tp barcelona-64 -Bstatic_pgi

Base Other Flags

C benchmarks:

-w

C++ benchmarks:

-w

Fortran benchmarks:

-w

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Base Other Flags (Continued)

Benchmarks using both Fortran and C:

-w

Peak Compiler Invocation

C benchmarks (except as noted below):

pathcc

433.milc: pgcc

C++ benchmarks (except as noted below):

pathCC

444.namd: pgcpp

453.povray: pgcpp

Fortran benchmarks (except as noted below):

pathf95

434.usmp: pgf95

465.tonk: pgf95

Benchmarks using both Fortran and C (except as noted below):

pgcc pgf95

436.cactusADM: pathcc pathf95

Peak Portability Flags

410.bwaves: -DSPEC_CPU_LP64

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Peak Portability Flags (Continued)

```

416.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64 -Mnomain
436.cactusADM: -DSPEC_CPU_LP64 -ino-second-underscore
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -Mnomain
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64

```

Peak Optimization Flags

C benchmarks:

```

433.milc: -Mmpi(pass 1) -Mipa=fast(pass 2) -Mipa=inline(pass 2)
-Mipa=rbarg(pass 2) -Mpfo(pass 2) -fast -O4 -Mdse
-Mfpelaxed -Msmartalloc=huge:448 -tp barcelona-64
-Bstatic_pgi

```

470.lbm: -Ofast

```

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

```

C++ benchmarks:

```

444.namd: -fast -O4 -Mfpelaxed -Msmartalloc=huge:448 --zc_eh
-tp barcelona-64 -Mnodepchk -Mprefetch -Msafe_lastval
-Msafeptr=static -Mstride0 -Munroll=n:4 -Mvect=noidiom
-Mvect=prefetch -Bstatic_pgi

```

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Peak Optimization Flags (Continued)

447.dealIII: -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: basepeak = yes

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 -LNO:ro=3 -OPT:unroll_size=256

434.zeusmp: basepeak = yes

437.leslie3d: -Ofast -OPT:malloc_alg=1

459.GemV.DTD: -Ofast -LNO:fission=2 -LNO:prefetch=0

465.tonit: -fast -O4 -Mfprelaxed -Msmartalloc=huge:448 -Mipa=fast -Mipa=inline -Mvect=noaltcode -tp barcelona-64 -Bstatic_pgi

Benchmarks using both Fortran and C:

435.gamacs: -fast -Mfpapprox=rsqrt -Mipa=fast -Mipa=inline -Mfprelaxed -Msmartalloc=huge:448 -tp barcelona-64 -Bstatic_pgi

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

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Peak Optimization Flags (Continued)

454.calculix: basepeak = yes

481.wrf: -fast -Mfprelaxed -Msmm -alloc -m:448 -Mvect=noaltcode
-tp barcelona-64 -static -pgi

Peak Other Flags

C benchmarks:

433.milc: -w

C++ benchmarks (except as noted below):

-w

447.dealII: -static

450.soplex: No flags used

Fortran benchmarks:

434.zusmp:

465.tonit: -w

Benchmarks using both Fortran and C (except as noted below):

-w

436.cactusADM: No flags used

The flags file that was used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/amd814GH-flags.20090714.html>

You can also download the XML flags source by saving the following link:

<http://www.spec.org/cpu2006/flags/amd814GH-flags.20090714.xml>



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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 11:29:40 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 2 October 2007.