SPEC® CFP2006 Result

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Supermicro
(Test Sponsor: Advanced Micro Devices)

Supermicro H8DMU+, AMD Opteron 2360 SE

SPECfp®_rate2006 = NC

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.

Non-Compliant

Hardware

CPU Name:	AMD Opteron 2360 SE
CPU Characteristics:	
CPU MHz:	2500
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, DDR2-667 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

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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.sphinx3	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 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

```
410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64 -Mnomain
436.cactusADM: -DSPEC_CPU_LP64 -Mnomain
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 -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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Non-Compliant

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.zeusmp: `pgf95`

465.tonto: `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 -fno-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: -Mpfi(pass 1) -Mipa=fast(pass 2) -Mipa=inline(pass 2)
-Mipa=noarg(pass 2) -Mpfo(pass 2) -fast -O4 -Mdse
-Mfprelaxed -Msmartalloc=huge:448 -tp barcelona-64
-Bstatic_pgi

470.lbm: -Ofast

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

C++ benchmarks:

444.namd: -fast -O4 -Mfprelaxed -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.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: 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 -OPT:ro=3 -OPT:unroll_size=256

434.zeusmp: basepeak = yes

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

459.GemsFDTD: -fast -LNO:fission=2 -LNO:prefetch=0

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

Benchmarks using both Fortran and C:

435.gromacs: -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 -Msmartalloc -huge:448 -Mvect=noaltcode
-tp barcelona-64 -Bstatic_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.zeusmp:

465.tonto: -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 other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.0.
Report generated on Tue Sep 13 11:29:49 2016 by SPEC CPU2006 PS/PDF formatter v6932.
Originally published on 2 October 2007.