



# SPEC® CFP2006 Result

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Tyan

(Test Sponsor: Advanced Micro Devices)

SPECfp®\_rate2006 = NA

Tyan Thunder n4250QE (S4985E), AMD Opteron 8350

SPECfp\_rate\_base2006 = NA

CPU2006 license: 49

Test sponsor: Advanced Micro Devices

Tested by: Advanced Micro Devices

Test date: Aug-2007

Hardware Availability: Oct-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 SPEC OSG requirements for continued availability.**

	Copies
410.bwaves	
416.gamess	
433.milc	
434.zeusmp	
435.gromacs	
436.cactusADM	
437.leslie3d	
444.namd	
447.dealII	
450.soplex	
453.povray	
454.calculix	
459	
465.totopso	
470.lbm	
481.wrf	
482.sphinx3	

**NOT AVAILABLE**



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### Hardware

CPU Name: AMD Opteron 8350  
CPU Characteristics:  
CPU MHz: 2000  
FPU: Integrated  
CPU(s) enabled: 16 cores, 4 chips, 4 cores/chip  
CPU(s) orderable: 1 to 4 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: 32 GB (16x2GB, DDR2-667 CL5 Reg)  
Disk Subsystem: SATA, 250 GB, 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  
QLogic PathScale Compiler Suite  
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

**Not Available**



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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	16	NA	NA	NA	NA	NA	NA	16	NA	NA	NA	NA	NA	NA
416.gamess	16	NA	NA	NA	NA	NA	NA	16	NA	NA	NA	NA	NA	NA
433.milc	16	NA	NA	NA	NA	NA	NA	16	NA	NA	NA	NA	NA	NA
434.zeusmp	16	NA	NA	NA	NA	NA	NA	16	NA	NA	NA	NA	NA	NA
435.gromacs	16	NA	NA	NA	NA	NA	NA	16	NA	NA	NA	NA	NA	NA
436.cactusADM	16	NA	NA	NA	NA	NA	NA	16	NA	NA	NA	NA	NA	NA
437.leslie3d	16	NA	NA	NA	NA	NA	NA	16	NA	NA	NA	NA	NA	NA
444.namd	16	NA	NA	NA	NA	NA	NA	16	NA	NA	NA	NA	NA	NA
447.dealII	16	NA	NA	NA	NA	NA	NA	16	NA	NA	NA	NA	NA	NA
450.soplex	16	NA	NA	NA	NA	NA	NA	16	NA	NA	NA	NA	NA	NA
453.povray	16	NA	NA	NA	NA	NA	NA	16	NA	NA	NA	NA	NA	NA
454.calculix	16	NA	NA	NA	NA	NA	NA	16	NA	NA	NA	NA	NA	NA
459.GemsFDTD	16	NA	NA	NA	NA	NA	NA	16	NA	NA	NA	NA	NA	NA
465.tonto	16	NA	NA	NA	NA	NA	NA	16	NA	NA	NA	NA	NA	NA
470.lbm	16	NA	NA	NA	NA	NA	NA	16	NA	NA	NA	NA	NA	NA
481.wrf	16	NA	NA	NA	NA	NA	NA	16	NA	NA	NA	NA	NA	NA
482.sphinx3	16	NA	NA	NA	NA	NA	NA	16	NA	NA	NA	NA	NA	NA

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

## Operating System Notes

```
'ulimit -s unlimited' was used to set environment stack size
'ulimit -l 4915200' was used to set environment locked pages in memory quantity
'numactl' was used to bind copies to the cores
Set vm/nr_hugepages=2400 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 tested system can be assembled using an EMACS PSL-6701P-SATA 700-Watt 12V power supply.

## Base Computer 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
411.gamess: -DSPEC_CPU_LP64
435.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64 -Mnomain
435.gromacs: -DSPEC_CPU_LP64 -Mnomain
437.les3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
453.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calix: -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

```



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## 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:

Benchmarks using both Fortran and C:

-w

## Peak Compiler Invocation

C benchmarks (except as noted below):

pathcc

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## Peak Compiler Invocation (Continued)

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: pathc 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 -Mnomain

436.cactusADM: -DSPEC\_CPU\_LP64 -fno-second-underscore

437.milc3d: -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

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## Peak Portability Flags (Continued)

482.sphinx3: -DSPEC\_CPU\_LP64

## Peak Optimization Flags

C benchmarks:

433.milc: -Mphi(pass 1) -Mipa=inline(pass 2) -Mipa=inline(pass 2)  
-Mipa=noarg(pass 2) -Mprofn=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 -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

447.deal: -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

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## Peak Optimization Flags (Continued)

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: -Ofast -LNO:fisher=2 -LNO:prefetch=0

465.tonto: -fast -O4 -Mfprefixed -Msmartalloc=huge:448 -Mipa=fast  
-Mipa=inline -Mvect=noaltcode -tp barcelona-64 -Bstatic\_pgi

Benchmarks using both Fortran and C:

435.gromacs: -fast -Mfpapprox=rsqr -Mipa=fast -Mipa=inline -Mfprefixed  
-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

454.calculix: basepeak = yes

461.wrf: -fast -Mfprefixed -Msmartalloc=huge:448 -Mvect=noaltcode  
-tp barcelona-64 -Bstatic\_pgi

## Peak Other Flags

C benchmarks:

435.gcc: -w

C++ benchmarks (except as noted below):

-w

447.dealIII: -static

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## Peak Other Flags (Continued)

450.soplex: No flags used

Fortran benchmarks:

434.zeusmp: -w

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/amd8314GH-flags.20090714.html>

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

<http://www.spec.org/cpu2006/flags/amd8314GH-flags.20090714.xml>

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For questions about this result, please contact the tester.  
For other inquiries, please contact [webmaster@spec.org](mailto:webmaster@spec.org).

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