



# CFP2000 Result

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## Advanced Micro Devices

Pogo Linux PerformanceWare 3566, AMD Opteron (TM) 865

SPECfp\_rate2000 = 113

SPECfp\_rate\_base2000 = 105

SPEC license #: 49 Tested by: AMD, Austin, TX Test date: Apr-2005 Hardware Avail: May-2005 Software Avail: May-2005

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	8	98.2	151	8	87.3	170
171.swim	8	258	111	8	253	114
172.mgrid	8	179	93.6	8	166	101
173.applu	8	184	106	8	161	121
177.mesa	8	101	128	8	94.0	138
178.galgel	8	158	171	8	146	185
179.art	8	191	126	8	123	196
183.equake	8	146	82.6	8	145	82.9
187.facerec	8	145	122	8	142	124
188.amp	8	255	79.9	8	241	84.7
189.lucas	8	174	107	8	175	106
191.fma3d	8	208	93.9	8	206	94.5
200.sixtrack	8	189	53.9	8	186	54.9
301.apsi	8	242	99.6	8	235	103

**Hardware**

CPU: AMD Opteron (TM) 865  
 CPU MHz: 1800  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 4 chips, 2 cores/chip  
 CPU(s) orderable: 1-4  
 Parallel: No  
 Primary Cache: 64KBI + 64KBD/core  
 Secondary Cache: 1024KB (I+D)/core  
 L3 Cache: N/A  
 Other Cache: N/A  
 Memory: 16x1024 MB PC3200 CL3.0 ECC Reg  
 Disk Subsystem: SCSI, Seagate Cheetah Ultra320  
 ST373307LC, 10000 RPM  
 Other Hardware: None

**Software**

Operating System: SuSE Linux Enterprise Server 9 for AMD64  
 SP1, kernel-smp-2.6.5-7.151.x86\_64.rpm  
 Compiler: PathScale EKOPath Compiler Suite, Release 2.0  
 File System: Linux/ext3  
 System State: Multi-user, run level 3

## Notes/Tuning Information

Tested by Advanced Micro Devices

+FDO: PASS1= -fb\_create fbdata PASS2= -fb\_opt fbdata  
+ACML means linking with AMD Core Math Library V2.5.1

### Baseline optimization

C programs: -Ofast -WOPT:mem\_opnds=on +FDO  
Fortran programs: -Ofast -LNO:fusion=2 -OPT:fast\_complex +FDO  
Portability Flags:  
178.galgel: -fixedform

### Peak Tuning:

168.wupwise: -Ofast -LNO:prefetch Ahead=5:prefetch=3  
-OPT:unroll\_times\_max=8:unroll\_size=128:IEEE\_NaN\_Inf=off:ro=3 -TENV:X=4  
-IPA:space=1000:linear=on:plimit=50000:callee\_limit=5000  
-INLINE:aggressive=on



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## Notes/Tuning Information (Continued)

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171.swim: -Ofast -LNO:fusion=2 -m3dnow
172.mgrid: -O3 -LNO:fusion=2:blocking=off
          -OPT:Ofast:unroll_times_max=8:unroll_size=256:ro=3
          -CG:gcm=off:cflow=off -m3dnow
173.applu: -Ofast -CG:local_fwd_sched=on
          -LNO:fusion=2:fission=2:full_unroll_size=10000:prefetch=3
          -OPT:ro=3 -TENV:X=3 -WOPT:val=2
177.mesa: -O2 -ipa -OPT:Ofast -fno-math-errno -CG:local_fwd_sched=on +FDO
178.galgel: -Ofast -OPT:fast_complex -CG:use_movlpd=on RM_SOURCES=lapak.f90 +ACML
179.art: -O3 -OPT:ro=2:div_split=on:alias=typed -fno-math-errno -m32
183.equake: -Ofast -WOPT:mem_opnds=on -CG:local_fwd_sched=on
187.facerec: -Ofast -OPT:treeheight=on:IEEE_NaN_Inf=off:ro=3 -CG:load_exe=0
          -LNO:fusion=2 -IPA:plimit=1500 +FDO
188.ammp: -O3 -OPT:alias=disjoint:unroll_times_max=8:Ofast:ro=3
          -fno-math-errno -TENV:X=4 +FDO
189.lucas: -Ofast -CG:local_fwd_sched=on -LNO:fusion=2
          +FDO
191.fma3d: -O2 -ipa -CG:load_exe=1 -OPT:Ofast:IEEE_arith=3:ro=3
          -WOPT:mem_opnds=on:retype_expr=on -IPA:pu_reorder=1 +FDO
200.sixtrack:= -O3 -OPT:Ofast:Olimit=6000 -fno-math-errno -CG:load_exe=1 +FDO
301.apsi: -Ofast -TENV:X=4 -LNO:fusion=2:prefetch=0
Bios Rev 2.33.1.1
All memory slots populated on all CPU(s).
Taskset utility used to bind CPU(s) to processes.

```