



# CFP2000 Result

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**Dell**  
PowerEdge 6950 (AMD Opteron (TM) 8220SE)

SPECfp\_rate2000 = 175  
SPECfp\_rate\_base2000 = 161

SPEC license #: 55 | Tested by: Dell, Round Rock, TX | Test date: Oct-2006 | Hardware Avail: Dec-2006 | Software Avail: Aug-2006

Benchmark	Base Copies	Base Runtime	Base Ratio	Copies	Runtime	Ratio
168.wupwise	8	63.5	234	8	58.9	252
171.swim	8	180	160	8	178	162
172.mgrid	8	123	136	8	116	143
173.applu	8	115	169	8	105	185
177.mesa	8	64.9	200	8	60.8	214
178.galgel	8	101	266	8	94.0	286
179.art	8	128	188	8	86.6	278
183.equake	8	109	110	8	98.1	123
187.facerec	8	87.1	202	8	83.6	211
188.amp	8	145	141	8	135	151
189.lucas	8	124	149	8	116	159
191.fma3d	8	138	142	8	137	142
200.sixtrack	8	118	86.2	8	112	91.4
301.apsi	8	152	158	8	148	163

**Hardware**

CPU: AMD Opteron (TM) 8220SE  
 CPU MHz: 2800  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 4 chips, 2 cores/chip  
 CPU(s) orderable: 2,4  
 Parallel: No  
 Primary Cache: 64KB(I) + 64KB(D) on chip, per core  
 Secondary Cache: 1MB(I+D) on chip, per core  
 L3 Cache: N/A  
 Other Cache: N/A  
 Memory: 32GB (16 x 2GB PC2-5300P CL5)  
 Disk Subsystem: 1 x 73GB 15K SAS  
 Other Hardware:

**Software**

Operating System: SUSE Linux Enterprise Server 10 (x86\_64)  
 Kernel 2.6.16.21-0.8-smp  
 Compiler: PathScale EKOPath Compiler Suite, Release 2.5  
 File System: Linux/reiserfs  
 System State: Multi-user, run level 3

## Notes/Tuning Information

+FDO: PASS1= -fb\_create fbdata PASS2= -fb\_opt fbdata  
 +ACML means -L<acml3.5.0-install-dir>/pathscale64/lib -lacml,  
 which causes linking with AMD Core Math Library V3.5.0

### Baseline optimization

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

### Peak Tuning:

168.wupwise: -Ofast -IPA:linear=on -LNO:prefetch Ahead=5:prefetch=3  
 -OPT:unroll\_times\_max=8:unroll\_size=128:IEEE\_NaN\_Inf=off:ro=3  
 171.swim: -Ofast -CG:local\_fwd\_sched=on -LNO:fusion=2 -m3dnow  
 172.mgrid: -Ofast -CG:gcm=off -OPT:IEEE\_arith=3:unroll\_size=200  
 -LNO:fusion=2:fission=1:blocking=off:prefetch Ahead=2  
 -WOPT:mem\_opnds=on:aggstr=0



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## Notes/Tuning Information (Continued)

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173.applu: -Ofast -CG:local_fwd_sched=on -OPT:ro=3 -TENV:X=3
           -LNO:fusion=2:fission=2:full_unroll_size=10000 +FDO
177.mesa:  -O2 -ipa -OPT:Ofast -fno-math-errno -CG:local_fwd_sched=on -WOPT:mem_opnds=on +FDO
178.galgel: -Ofast -OPT:fast_complex=on +ACML +FDO
           RM_SOURCES=lapak.f90
179.art:    -O3 -OPT:Ofast -fno-math-errno -mno-sse2 -m32
183.quake: -Ofast -CG:load_exe=2 -WOPT:mem_opnds=on -m32 +FDO
187.facerec: -Ofast -IPA:plimit=1500 -LNO:fusion=2
            -OPT:IEEE_NaN_Inf=off:ro=3:unroll_size=0 +FDO
188.ammp:   -O3 -OPT:alias=disjoint:unroll_times_max=8:Ofast:ro=3
            -GRA:optimize_boundary=on -fno-math-errno -TENV:X=4 +FDO
189.lucas:  -Ofast -OPT:ro=3:fast_nint=off:unroll_size=256 -WOPT:mem_opnds=on +FDO
191.fma3d:  -Ofast -IPA:plimit=400 -LNO:fu=9:full_unroll_size=7000
200.sixtrack: -O3 -OPT:Ofast:early_intrinsics=on
            -fno-math-errno -CG:load_exe=1 +FDO
301.apsi:   -Ofast -CG:load_exe=0 -LNO:opt=0

```

### Other Configuration Notes

Taskset utility used to bind CPU(s) to processes