



# CFP2000 Result

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IBM Corporation  
IBM System X 3755 (AMD Opteron (TM) 8218)

SPECfp2000 = 2054  
SPECfp\_base2000 = 1849

SPEC license #: 11 | Tested by: IBM Corporation | Test date: Aug-2006 | Hardware Avail: Aug-2006 | Software Avail: Mar-2006

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio	1000 2000 3000 4000			
168.wupwise	1600	61.0	2621	55.4	2890				
171.swim	3100	150	2071	110	2822				
172.mgrid	1800	106	1701	97.0	1856				
173.applu	2100	107	1958	94.8	2214				
177.mesa	1400	68.9	2033	64.5	2172				
178.galgel	2900	92.8	3125	92.6	3133				
179.art	2600	117	2228	82.7	3144				
183.earth	1300	93.4	1392	84.2	1543				
187.facerec	1900	79.5	2389	77.5	2451				
188.amp	2200	150	1463	144	1527				
189.lucas	2000	100	1991	85.2	2347				
191.fma3d	2100	132	1590	134	1570				
200.sixtrack	1100	128	861	121	906				
301.apsi	2600	161	1613	151	1719				

### Hardware

CPU: AMD Opteron 8218  
 CPU MHz: 2600  
 FPU: Integrated  
 CPU(s) enabled: 8 cores, 4 chips, 2 cores/chip  
 CPU(s) orderable: 1,2,3,4  
 Parallel: No  
 Primary Cache: 64KBI + 64KBD (on chip) per core  
 Secondary Cache: 1024KB (I+D) (on chip) per core  
 L3 Cache: N/A  
 Other Cache: N/A  
 Memory: 16x2GB, PC2-5300  
 Disk Subsystem: SAS, 73GB 15K RPM  
 Other Hardware: None

### Software

Operating System: SuSE Linux 9.0 SP3 SLES 64 bit Kernel 2.6.5-7.244-smp  
 Compiler: PathScale EKO Compiler Suite, Release 2.4  
 PathScale EKOPATH(TM) Compiler Suite, Release 2.4  
 File System: Linux/reiserfs  
 System State: Multi-user, run level 3

## Notes/Tuning Information

+FDO: PASS1= -fb\_create fbdata PASS2= -fb\_opt fbdata

### 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  
 173.applu: -Ofast -CG:local\_fwd\_sched=on -OPT:ro=3 -TENV:X=3  
 -LNO:fusion=2:fission=2:full\_unroll\_size=10000 +FDO



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## Notes/Tuning Information (Continued)

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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 +FDO
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.amp:      -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:    -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:early_intrinsics=on
              -fno-math-errno -CG:load_exe=1 +FDO
301.apsi:     -Ofast -CG:load_exe=0 -LNO:prefetch=0:simd=2

```