



# CFP2000 Result

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IBM Corporation  
IBM System X 3755 (AMD Opteron (TM) 8212)

SPECfp2000 = 1689  
SPECfp\_base2000 = 1538

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	74.0	2162	67.4	2373	[Bar chart showing ratio bars for 168.wupwise]			
171.swim	3100	137	2263	127	2450	[Bar chart showing ratio bars for 171.swim]			
172.mgrid	1800	142	1268	117	1542	[Bar chart showing ratio bars for 172.mgrid]			
173.applu	2100	130	1612	117	1800	[Bar chart showing ratio bars for 173.applu]			
177.mesa	1400	88.4	1584	82.8	1691	[Bar chart showing ratio bars for 177.mesa]			
178.galgel	2900	114	2546	113	2566	[Bar chart showing ratio bars for 178.galgel]			
179.art	2600	136	1915	98.8	2632	[Bar chart showing ratio bars for 179.art]			
183.quake	1300	108	1200	98.0	1327	[Bar chart showing ratio bars for 183.quake]			
187.facerec	1900	96.0	1978	94.1	2020	[Bar chart showing ratio bars for 187.facerec]			
188.amp	2200	188	1169	180	1221	[Bar chart showing ratio bars for 188.amp]			
189.lucas	2000	116	1727	97.2	2057	[Bar chart showing ratio bars for 189.lucas]			
191.fma3d	2100	162	1296	164	1282	[Bar chart showing ratio bars for 191.fma3d]			
200.sixtrack	1100	165	668	157	701	[Bar chart showing ratio bars for 200.sixtrack]			
301.apsi	2600	202	1289	188	1383	[Bar chart showing ratio bars for 301.apsi]			

### Hardware

CPU: AMD Opteron 8212  
 CPU MHz: 2000  
 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.ampp:     -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

```