



# CFP2000 Result

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IBM Corporation  
IBM System X 3455 (AMD Opteron (TM) 2218)

SPECfp2000 = 2126  
SPECfp\_base2000 = 1939

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

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio	1000 2000 3000 4000			
168.wupwise	1600	61.1	2620	54.2	2952	[Bar chart showing ratio vs reference time]			
171.swim	3100	114	2715	104	2978	[Bar chart showing ratio vs reference time]			
172.mgrid	1800	103	1744	93.1	1933	[Bar chart showing ratio vs reference time]			
173.applu	2100	104	2024	91.9	2286	[Bar chart showing ratio vs reference time]			
177.mesa	1400	68.6	2039	64.3	2177	[Bar chart showing ratio vs reference time]			
178.galgel	2900	89.9	3227	89.9	3226	[Bar chart showing ratio vs reference time]			
179.art	2600	109	2387	77.8	3342	[Bar chart showing ratio vs reference time]			
183.earthquake	1300	86.9	1496	78.0	1666	[Bar chart showing ratio vs reference time]			
187.facerec	1900	76.3	2491	75.0	2533	[Bar chart showing ratio vs reference time]			
188.amp	2200	148	1489	141	1564	[Bar chart showing ratio vs reference time]			
189.lucas	2000	96.1	2082	81.4	2457	[Bar chart showing ratio vs reference time]			
191.fma3d	2100	127	1647	129	1625	[Bar chart showing ratio vs reference time]			
200.sixtrack	1100	128	863	121	908	[Bar chart showing ratio vs reference time]			
301.apsi	2600	159	1640	147	1764	[Bar chart showing ratio vs reference time]			

### Hardware

CPU: AMD Opteron 2218  
CPU MHz: 2600  
FPU: Integrated  
CPU(s) enabled: 4 cores, 2 chips, 2 cores/chip  
CPU(s) orderable: 1,2  
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: 8x2GB, PC2-5300  
Disk Subsystem: SATA, 80GB 10K 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

```