



# CFP2000 Result

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## IBM

IBM eServer 326m, 1.8 GHz Dual Core AMD Opteron(tm) Processor 265

SPECfp2000 = 1653

SPECfp\_base2000 = 1464

SPEC license #: 11 | Tested by: IBM Corporation | Test date: Nov-2005 | Hardware Avail: Oct-2005 | Software Avail: Jan-2005

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio	1000 2000 3000 4000			
168.wupwise	1600	78.4	2041	71.2	2248				
171.swim	3100	144	2151	136	2278				
172.mgrid	1800	136	1323	122	1476				
173.applu	2100	135	1560	121	1734				
177.mesa	1400	116	1202	90.5	1546				
178.galgel	2900	119	2435	105	2756				
179.art	2600	122	2124	91.1	2853				
183.quake	1300	97.3	1337	88.6	1467				
187.facerec	1900	106	1797	93.5	2032				
188.amp	2200	196	1120	186	1183				
189.lucas	2000	115	1735	102	1952				
191.fma3d	2100	178	1179	170	1234				
200.sixtrack	1100	209	527	173	635				
301.apsi	2600	204	1275	197	1321				

### Hardware

CPU: Dual Core AMD Opteron(tm) Processor 265  
 CPU MHz: 1800  
 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: 8 x 1024GB PC3200  
 Disk Subsystem: SCSI, 36GB 15K RPM  
 Other Hardware: None

### Software

Operating System: SuSE Linux 9.0 SP2 SLES 64 bit Kernel 2.6.5-7.191-smp (SP2)  
 Compiler: PathScale EKO Compiler Suite, Release 2.2.1  
 AMD Core Math Library 2.5.1  
 File System: Linux/reiserfs  
 System State: Multi-user, run level 3

## Notes/Tuning Information

Tested by IBM Corporation

+ACML: Linked with AMD Core Math Library

Base tuning for C programs: -Ofast -WOPT:mem\_opnds=on +FDO

Base tuning for 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

-IPA:linear=on:plimit=50000:callee\_limit=5000

-INLINE:aggressive=on

171.swim: -Ofast -CG:local\_fwd\_sched=on -LNO:fusion=2 -m3dnw

172.mgrid: -Ofast -CG:gcm=off:cflow=on -OPT:IEEE\_a=3:unroll\_size=200

-LNO:fusion=2:fission=1:blocking=off:prefetch Ahead=2

-WOPT:memopnds=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:prefetch=3 +FDO

Standard Performance Evaluation Corporation

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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 +ACML +FDO
179.art:       -O3 -OPT:ofast -fno-math-errno -mno-sse2 -m32
183.earthquake: -Ofast -CG:load_exe=2 -WOPT:mem_opnds=on -m32 +FDO
187.facerec:   -Ofast -LNO:fusion=2
               -OPT:fast_complex=on:IEEE_NaN_Inf=off:unroll_size=0 +FDO
188.amp:       -O3 -OPT:alias=disjoint:unroll_times_max=8:Ofast:ro=3
               -fno-math-errno -TENV:X=4 -LNO:prefetch=0 +FDO
189.lucas:     -Ofast -OPT:ro=3:fast_nint=off:unroll_size=256 -WOPT:memopnds=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:Olimit=60000:early_intrinsics=on
               -fno-math-errno -CG:load_exe=1 +FDO
301.apsi:      -Ofast -CG:load_exe=0 -LNO:prefetch=0:simd=2

```

BIOS Configuration Notes  
Node Interleaving is Disabled

Other Configuration Notes  
Taskset utility used to bind process to CPU(s)