



# CFP2000 Result

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## IBM

AMD Opteron LS20 for IBM eServer Blade Center (Opteron(tm) 254)

SPECfp2000 = 2220

SPECfp\_base2000 = 2009

SPEC license #: 11 | Tested by: IBM Corporation | Test date: Feb-2006 | Hardware Avail: Feb-2006 | Software Avail: Nov-2005

Benchmark	Reference Time	Base Runtime	Base Ratio	Runtime	Ratio	1000 2000 3000 4000			
168.wupwise	1600	58.3	2746	53.5	2990				
171.swim	3100	122	2533	117	2659				
172.mgrid	1800	99.1	1817	92.7	1941				
173.applu	2100	98.1	2140	88.8	2365				
177.mesa	1400	63.7	2198	60.3	2321				
178.galgel	2900	88.3	3284	79.5	3647				
179.art	2600	97.9	2657	68.4	3800				
183.earthquake	1300	78.3	1660	70.7	1838				
187.facerec	1900	73.2	2597	70.2	2706				
188.amp	2200	135	1625	128	1723				
189.lucas	2000	99.6	2007	88.7	2254				
191.fma3d	2100	129	1634	123	1707				
200.sixtrack	1100	136	811	113	975				
301.apsi	2600	144	1805	139	1876				

### Hardware

CPU: AMD Opteron(tm) Processor 254  
CPU MHz: 2800  
FPU: Integrated  
CPU(s) enabled: 2 cores, 2 chips, 1 core/chip  
CPU(s) orderable: 1,2  
Parallel: No  
Primary Cache: 64KBI + 64KBD on chip  
Secondary Cache: 1024KB (I+D) on chip  
L3 Cache: N/A  
Other Cache: N/A  
Memory: 4 x 2048GB PC3200  
Disk Subsystem: SCSI, 36GB 10K 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

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

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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
179.art:       -O3 -OPT:ofast -fno-math-errno -mno-sse2 -m32 +FDO
183.earthquake: -Ofast -CG:load_exe=2 -WOPT:mem_opnds=on -m32
187.facerec:   -Ofast -LNO:fusion=2 -IPA:plimit=1500
               -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)

```